HIGHWAYS AGENCY

An Executive Agency of THE DEPARTMENT OF TRANSPORT

A259 Bexhill and Hastings Western Bypass

Environmental Statement Volume 1 (Text)

September 1994

cba
CHRIS BLANDFORD ASSOCIATES

Mott MacDonald

Document Ref 10059/RC/045/A
September 1994

A259 BEXHILL AND HASTINGS WESTERN BYPASS

Environmental Statement

Volume 1 of 2
Text

10059/105N/7

CONTENTS

CONTENTS OF VOLUME 1 OF 2 - DRAWINGS (Doc Ref 10059/RC/046/A)

CONTENTS OF VOLUME 2 OF 2 - REPORTS (Doc Ref 10059/RC/047/A)

1 INTRODUCTION

1.1 The Proposal and its Objectives (Figures 1, 5, 6, 10)

1.1.1 It is proposed to construct a new dual carriageway road to carry trunk road traffic currently using the A259 through Bexhill and Hastings. The road would be known as the A259 Bexhill and Hastings Western Bypass and will be referred to throughout this document as the Published Scheme.

1.1.2 The proposed scheme would pass to the north of Bexhill and to the north-west of Hastings passing through rural and urban fringe areas. The new road would reduce the volume of traffic passing through Bexhill and Hastings and would provide for future traffic growth along this section of the A259.

1.1.3 The road would pass through open countryside in areas to the west of Bexhill and between Bexhill and Hastings. It would affect the margin of the Pevensey Levels Site of Special Scientific Interest (SSSI) where the scheme connects to the proposed Pevensey to Bexhill Improvement and would cross the Combe Haven Site of Special Scientific Interest (SSSI) on a viaduct. To the north west of Hastings it would affect the margin of Marline Valley Woods SSSI and would enter the High Weald Area of Outstanding Natural Beauty (AONB) where it would connect with the proposed A259 Hastings Eastern Bypass.

1.1.4 The road would pass close to housing at several locations north of Bexhill and along the north western edge of Hastings, where it would require the demolition of a Listed building and the removal of holiday caravans.

1.1.5 The line of the road would cause some agricultural severance and the net loss of approximately 92 hectares (ha) of farmland. The scheme would include extensive landscaping incorporating the planting of 50 ha of trees and shrubs.

1.1.6 The objectives of the scheme can be summarised as those underlying trunk road building and improvement as a whole. The Department of Transport's publication "Trunk Roads, England into the 1990s" lists them as follows:

- to assist economic growth by reducing transport costs;
- to improve the environment by removing through traffic from unsuitable roads in towns and villages;
- to enhance road safety.

Further, the scheme and its mitigation measures should be designed so that the bypass has a minimum impact on the environment and provides value for money.

1.2 The Need for and Purpose of an Environmental Statement

1.2.1 This Environmental Statement is issued in accordance with EC Directive 85/337 as applied by Section 105A of the Highways Act 1980. This requires the Secretary of State for Transport to publish an Environmental Statement at the time draft Orders are published for the scheme, and requires that all schemes which are likely to have a significant effect on the environment must be subject to the process of environmental assessment. In this case, the requirement applies because the route is over 10km in length and passes within 100 m of a Site of Special Scientific Interest (SSSI). It has been prepared in accordance with the guidelines given in Volume 11 of the Department of Transport's Design Manual for Roads and Bridges (DMRB).

1.2.2 In preparing this statement, account has been taken of possible impacts from the adjacent Pevensey - Bexhill Improvement to the west and Hastings Eastern Bypass to the east, which are schemes at similar stages of development and are planned to be constructed at the same time (see 1.5 below).

1.2.3 The purpose of the Environmental Statement is to present all the environmental issues pertaining to the current proposal (The Published Scheme) and to summarise the effects in one document.

1.2.4 The draft highway orders with which the publication of this Environmental Statement is associated, are as follows:

The A259 Trunk Road (Bexhill and Hastings Western Bypass) Order 199
The A259 Trunk Road (Bexhill and Hastings Western Bypass Slip Roads) Order 199
The A259 Trunk Road (Bexhill and Hastings Western Bypass) Detrunking Order 199
The A259 Trunk Road (Bexhill and Hastings Western Bypass Side Roads) Order 199
The A21 Trunk Road (A259 Bexhill and Hastings Western Bypass Link) Order 199
The A21 Trunk Road (A259 Bexhill and Hastings Western Bypass Link Side Roads) Order 199

1.3 The Structure and Availability of the Environmental Statement

1.3.1 The Environmental Statement is contained within 2 volumes. Volume 1 (Text) comprises a description of the existing conditions and the details of the Published Scheme, together with an assessment of the environmental effects of the scheme and the mitigation measures proposed. Also described are the alternative routes that were considered, the reasons for the choice of the Published Scheme and the benefits that would be derived along the existing A259. Environmental Impact Tables (EIT) and a non-technical summary are appended to Volume 1. Volume 1 (Drawings) contains the accompanying figures. Volume 2 contains the technical reports.

1.3.2 The non-technical summary is available separately free of charge from the address given below and Volumes 1 and 2 of the Environmental Statement are available from the same office at a cost of £98 + VAT for Volume 1 and £172 + VAT for Volume 2. Volume 2 is in 15 parts which can be purchased separately.

1.3.3 All comments on this statement, requests for further information and copies of the non-technical summary and Environmental Statement should be addressed to:

Highways Agency
South East Construction Programme Division
Federated House
London Road
Dorking
Surrey RH4 1SZ

The closing date for receipt of comments is 23 December 1994.

1.4 The Consultants

1.4.1 The Consulting Engineers to the Department of Transport's Highways Agency for the project are Mott MacDonald, in association with Chris Blandford Associates, who are the environmental sub-consultants.

1.5 The Relationship with the A259 Hastings Eastern Bypass (Figure 10)

1.5.1 The A259 Hastings Eastern Bypass is complementary to this scheme. Together they form a complete bypass of Bexhill and Hastings. The Hastings Eastern Bypass connects with the Published Scheme at Baldslow and heads eastwards, passing north east of Hastings to rejoin the existing A259 south of Guestling Thorn. Both schemes are at similar stages and it is the Department of Transport's intention that the two schemes should open at about the same time to form a complete bypass. Therefore throughout this statement the impacts and effects reported assume that a complete bypass would exist (ie both bypasses open).

1.5.2 The Published Scheme would relieve the A259 of traffic through Bexhill and Hastings as far east as the junction with the B2093 at Ore. Therefore in considering effects along the existing road corridor, effects to the west of the junction with the B2093 are reported in this Statement, and to the east of the junction in the Environmental Statement for the A259 Hastings Eastern Bypass.

2 EXISTING CONDITIONS

2.1 Regional Context (Figure 1)

2.1.1 Bexhill and Hastings are coastal towns in the county of East Sussex lying on the A259 which runs through the area in an east-west direction, and is part of the Folkestone to Honiton Trunk Road. The A21 Chevening to Hastings Trunk Road is the main route leading into the area from the north, connecting with the A259 in central Hastings.

2.1.2 The Bexhill and Hastings Western Bypass is one of a number of schemes in the Department's National Trunk Road Programme planned for the improvement of the south coast trunk road. In Sussex to the west, the final section of Brighton Bypass is under construction and Polegate Bypass and an improvement between Pevensey and Bexhill are planned. To the east, planned schemes include Hastings Eastern Bypass, Guestling Thorn and Icklesham Bypass, and bypasses of Winchelsea and Rye.

2.2 The Study Area (Figures 5 and 6)

2.2.1 The study area for the proposed route extends from the west of Bexhill, near the junction of the A259 with the B2095, to the north of Hastings in the area of the A21. At the route selection stage, a broad study area was defined (shown on Figures 5 and 6) over which preliminary surveys were carried out. Following the Preferred Route announcement however, the detailed surveys undertaken for this Environmental Statement concentrated along the line of the route. The width of this study area varied depending on the nature of the subject matter. Where the potential impacts of the scheme could be widespread (for example visual impact) or it was appropriate to consider the wider context (for example landscape and cultural heritage) a broad study area was considered. Detailed specialist surveys tended to concentrate on a narrow corridor and on sites potentially affected.

2.3 Existing Road Network (Figure 2)

2.3.1 The A259 passes through Bexhill and Hastings and is the only direct link between the two towns. It is a trunk road except within the Borough of Hastings. The A21 trunk road enters Hastings from the north and joins the A259 on the seafront. The A21 also ceases to be a trunk road just south of the point at which it enters the Borough. The A269 from Ninfield enters Bexhill from the north-west, and the A2100 from Battle has a junction with the A21 at Baldslow. The A28 from Ashford joins the A21 just north of the junction with the A2100. The Ridge (A2100) continues eastward from the A21 as the B2093 and joins the A259 at Ore. The B2092 skirts the western edge of Hastings connecting the A2100 with south west Hastings. Part of this road, Queensway, was constructed in the early 1980s to serve the Hastings Town Development Area.

2.3.2 The A259 is a single carriageway road for the majority of its length between its junction with the B2095 west of Bexhill and its junction with the B2093 at Ore. Only the Bexhill Old Town Bypass (King Offa Way) and a short section along the seafront in Hastings are dual 7.3 m carriageway. However, the latter effectively operates as a single carriageway due to on-street parking and right turning lanes. Along the seafront there are hotels, guesthouses, shops, restaurants and other commercial facilities facing the beach and promenade.

2.3.3 For the majority of its length the A259 passes through urban or suburban surroundings where 30 mph or 40 mph speed limits apply. There are a number of sub-standard sections, in terms of alignment and visibility, and the railway bridge over the A259 east of Harley Shute Road has a height restriction of 4.8 m.

2.3.4 From the west of Bexhill to Glyne Gap the A259 passes through mostly residential development with numerous private direct accesses onto the A259, except for the Bexhill Old Town Bypass which has no frontage access. The majority of side road junctions are priority type with some roundabout and signal controlled junctions.

2.3.5 From the Bexhill/Hastings boundary at Glyne Gap to St Leonards the A259 continues through mostly residential areas until it meets the seafront which it then follows. Along the seafront the development on the north side of the road is mostly flats, guest houses, hotels, shops and leisure facilities. At the east end of Hastings the A259 swings inland and climbs steeply through the town to a junction with the B2093, The Ridge, at Ore. There is continuous residential, retail and commercial property along both sides of the road.

2.3.6 There are many side road junctions with the A259 in Hastings and most are of the priority type. There is a roundabout junction with the A21 and a number of traffic signal controlled junctions. Along the seafront there are five zebra and two pelican crossings.

2.3.7 Traffic flows vary considerably along the A259, ranging from 13,400 vehicles (1994 Annual Average Daily Traffic (AADT) - a measure of 24 hour flow on an average day in the year) east of Hastings, to 17,400 vehicles per day west of Bexhill and 31,900 vehicles per day at Glyne Gap, where the lack of route choice concentrates local traffic movements. Heavy goods vehicles account for 10.3%, 9.2% and 6.8% respectively at the three locations. Existing traffic flows are shown on Figures 11 and 12.

2.3.8 The heavy traffic flows result in unpleasant conditions for residents, holidaymakers and users of facilities alike and cause severance within the local community. Motorists are delayed by the congestion and the level of stress experienced by drivers using the existing roads is high except on the Old Town bypass in Bexhill where the improved road results in a moderate level of stress. Noise levels and air pollution brought about by the high traffic flows reduce the level of enjoyment of the area generally. Further details of the assessment of driver stress are given in Volume 2, Report 13.

2.4 **Topography, Hydrology, Geology and Climate** (Figures 3 and 4)

Topography (Figure 3)

2.4.1 The dominant topographical feature of the area is the prominent ridge which runs north-west/south-east between Hastings and Battle and reaches a height, locally, of 140 m Above Ordnance Datum (AOD). A lower ridge following the same direction but located to the south east, extends from Ninfield to Bexhill.

2.4.2 Between these two ridges lies the wide flat bottomed Combe Haven valley which has three main arms in its upper reaches. The Combe Haven drains into the sea at Bulverhythe between Bexhill and Hastings. South west of the Ninfield - Bexhill ridge lies the Barnhorn Level which drains into the low lying Hooe Level, part of the Pevensey Levels.

Geology (Figure 4)

2.4.3 The study area is underlain by all three subdivisions of the Hastings Beds which comprise part of the Wealden Series of Lower Cretaceous Age. The youngest deposit, Tunbridge Wells Sand, comprises fine grained sandstones and silts and outcrops, generally on the higher ground. Beneath, Wadhurst Clay, consisting of interlaminated shales and thin siltstones, overlies Ashdown Beds, predominantly massive clays with subordinate sandstones and siltstones. In two locations, however, at Barnhorn Level and Combe Haven, the solid deposits are masked by substantial accumulations of alluvium and colluvium.

2.4.4 The alluvial and colluvial drift deposits comprise a heterogeneous combination of estuarine clays, freshwater flood loams and peats of variable thickness. These deposits are derived from marine inundations and clearance from the Wealden hinterland. At Barnhorn Level the better drained areas form stagnogley soils. The depth of alluvium reaches 6.6 metres in the Barnhorn Level, but that in the Combe Haven is much more extensive and reaches a thickness in excess of 13.5 m.

2.4.5 The Tunbridge Wells Sand which forms the ridge at Hooe was an area of early clearance for agriculture. It comprises principally siltstones, sandstones and mudstones giving rise to predominantly acid soils. The outcrop continues northwards and covers most of the study area to about 1 km east of the A269 Bexhill to Ninfield road. North of the Whydown Fault there are outcrops of Wadhurst Clay which continue to form the surface geology of the Watermill Stream valley and are marked by bands of sand within the clay. The clay itself comprises silty mudstones and muddy siltstones giving rise to soils of impeded drainage. It continues to the head of the Combe Haven valley but gives way to the underlying Ashdown Beds which outcrop north east of the Sidley and Old Town Faults. From the northern side of Combe Haven the land rises to the crest of the Battle-Hastings ridge which comprises Ashdown Beds with frequent areas of Wealden Clay in a pattern dictated by numerous faults. The soils away from the clays are generally acidic sands and sandy brown earths.

Hydrology (Figure 3)

2.4.6 The two major drainage features in the area are the Barnhorn Level and the Combe Haven valley. The Barnhorn Level is continuous with the Pevensey Levels, and is a low lying flat area the drainage of which is managed artificially using pumps, to facilitate agricultural use. The groundwater is predominantly at a shallow depth, giving rise to areas of marsh and some parts are subject to occasional flooding.

2.4.7 Groundwater levels in the areas of higher ground from Barnhorn Level to the Combe Haven are at shallow depths, where the variable nature of the geology supports the development of perched water tables in the more permeable strata between bands of clay. A spring which rises just to the east of the A269 Bexhill to Ninfield Road is the source of the Combe Haven.

2.4.8 The Combe Haven and its tributaries have a large natural rural catchment, and in addition surface water from eastern Bexhill and western Hastings also discharges into the valley. A tidal flap at its outlet at Bulverhythe prevents the Combe Haven valley being inundated by the sea at high tide and allows discharge to the sea at low tide. This restriction to its outlet means that in periods of heavy winter rain the Combe Haven valley is flooded over a wide area. Because of the flooding problems, the National Rivers Authority (NRA) requires that all new developments discharging surface water into Combe Haven must do so via a balancing facility. The groundwater in the bottom of the valley is artesian, with a head of approximately one metre above prevailing ground level.

2.4.9 From the Combe Haven to Baldslow the land rises continuously and the underlying deposits possess perched water tables. Streams rising in this area flow predominantly to the west, outfalling to the sea via the Combe Haven. At Baldslow, the highest point, the water table is depressed, having been observed at a depth of 25 m below the ridge at Beauport Park. North of the ridge, near the A21, springs rise from sandy bands within the Ashdown Beds, at levels between approximately 95m and 100 m AOD and drain north eastward.

2.4.10 The NRA are responsible for the Combe Haven and its Watermill, Powdermill and Decoy Pond Stream tributaries, as it is for the Old East Stream and Hooe Sewer/East Stream in Barnhorn Level, all being classified by the NRA as 'main rivers'. They also have an overall supervisory duty on all land drainage matters as there are no Internal Drainage Boards within the area. The NRA have provided information on licensed abstractions, including groundwater, in the study area. There are eleven licenses registered; the nearest to the scheme is at Sweet Willow Pumping Station.

2.4.11 Further details of the drainage of the area are included in Volume 2, Report 9.

Climate

2.4.12 The area is not susceptible to any unusual or exceptional weather conditions except for the low lying areas which are prone to localised fogs. Radiation fog occurs on the Barnhorn Level and more

particularly, in the Combe Haven, where a study has shown that fogs occur with a greater frequency than in the surrounding areas.

2.5 **Landscape Character** (Figure 10)

2.5.1 The corridor of the Published Scheme can be readily divided into sections representing four distinct areas of different landscape character.

Section A - Barnhorn Level

2.5.2 This section extends from the A259 near Hooe to Whydown north west of Bexhill. It has an open rural character. It has a characteristic settlement pattern of farmsteads on the sides of the gentle ridges within a predominantly pasture landscape with low, sparse and intermittent hedges. There is a contrast between the wet pasture of the levels and the drier pasture and occasional arable land on the valley side. From within this area there are extensive views south westwards across the Pevensey Levels.

Section B - The Weald

2.5.3 This section extends from Whydown around the northern edge of Bexhill to the Combe Haven valley. It is a rural landscape of intricately formed ridges and moderately steep sided valleys. There is a transition from the Hooe ridge with small fields but little woodland cover to the much more heavily wooded area, with overgrown hedges in slightly larger fields to the east. Scattered farmsteads lie characteristically slightly below the ridge tops, with more recent settlement along roads running on the ridge crests.

Section C - The Combe Haven Valley

2.5.4 This section comprises the valley of the Combe Haven with attractive side valleys to the north. The wide valley bottom is dominated by rough, wet grassland drained by open ditches with standing water. There is a marked contrast between these fields and the well-drained arable land and pasture in fields of moderate size on the valley sides. Woodland is frequent on the mid to upper slopes. Despite the proximity of Bexhill to the south west, the overall character is rural, except in views of the dense settlement of Harley Shute to the south east. A feature of the valley is the now heavily wooded line of a dismantled railway which once crossed the valley on a brick arch viaduct. The viaduct has been demolished, but the approach embankments remain and are prominent landscape features.

Section D - Queensway to the A2100

2.5.5 This section comprises the urban fringe between Combe Haven and the A21. The Hastings Town Development Area (TDA) encompasses most of this section where both residential areas and light industrial units exist with more planned. The industrial estate at Castleham dominates the eastern side

of the minor ridge which Queensway follows, whilst new housing interspersed with existing woodland, lies to the west.

2.5.6 A landscape assessment has been carried out and is included in Volume 2, Report 6.

2.6 **Land Use and Designation** (Figures 5 and 6)

2.6.1 Most of the undeveloped land within the scheme corridor is grassland with a predominance of permanent pasture and significant amount of rough grazing. Field sizes are generally small and the grassland farming is extensive. Farmers typically rent additional summer grazing rather than fertilising their own land to any extent. There are only two specialist arable farms, where fields larger than the average are present, producing winter wheat with break crops of oilseed rape and peas. One of these lets land for turf production. A few other farms grow cereal and oilseed crops as part of a mixed farming economy, but only one has arable cropping on a significant scale.

2.6.2 The quality of the land in the scheme corridor is predominantly in Agricultural Land Classification (ALC) grade 3b (moderate quality) with a fair amount of grade 3a (good quality) and small amounts of grade 2 (very good quality) and grade 4 (poor quality). The grade 2 land occurs at various locations, usually on low knolls or benches on lower slopes, and the grade 4 occurs either on the steeper slopes or in marshlands. The majority of the land is not in the "best and most versatile" category. An agricultural survey and assessment has been carried out and is included in Volume 2, Report 7.

2.6.3 In the Weald and Queensway sections of the scheme there are considerable areas of woodland, mainly broadleaved and semi-natural. High Woods northwest of Bexhill and Marline Valley Woods adjacent to Queensway are Sites of Special Scientific Interest (SSSI's) part of which are accessible to the public (Figures 5 and 6). High Woods is managed woodland, and Marline Valley Woods is a Local Nature Reserve (LNR), but other woodlands are apparently unmanaged. At the western end of the study area, the Pevensey Levels are a SSSI and include an area designated as a National Nature Reserve (NNR). Similarly the low lying land in the flood plain of the Combe Haven and parts of the adjacent woodlands form the Combe Haven SSSI.

2.6.4 There are a number of areas of Public Open Space along the scheme corridor, including the woodland areas at High Woods, Levetts Wood and Marline Valley Woods, St Mary's recreation ground at 'The Highlands' north of Bexhill, the dismantled railway embankment south of the Combe Haven valley, playing fields at Castleham and land in the area of Beauharrow Road, Baldslow (Figures 5 and 6).

2.6.5 The land north of the A2100 (The Ridge West) is part of the High Weald Area of Outstanding Natural Beauty (AONB) the extent of which is shown on Figure 6. Beauport Park, which lies within the AONB, includes an hotel and a golf course and a permanent caravan site within a woodland setting.

2.6.6 The main residential and industrial areas of interest in the scheme corridor are the Sidley area of northern Bexhill and the new development lying along Queensway in western Hastings which is part of the Hastings Town Development Area. This area was designated for development in the 1970s when it was supported by the Greater London Council. That support no longer exists but development has continued and more is planned.

2.6.7 Other significant land uses within the general area include clay extraction and brick manufacture at the Ashdown Brickworks in Bexhill and a large landfill site at Pebsham, at the southern end of the Combe Haven valley.

2.7 Cultural Heritage (Figures 5 and 6)

2.7.1 A cultural heritage assessment comprising desk study, surface artefact collection and geophysical surveys has been carried out and is included in Volume 2, Report 8. The desk study revealed no known major archaeological sites within the landtake of the Published Scheme. Subsequent field survey, however, has highlighted several areas of subsurface archaeological potential (Figures 13 - 22), including a possible Roman iron-working site near Kiteye Farm.

2.7.2 The historic development, and principal interest of surviving features in the study area lies in the relationship between marshland, woodland and clearing for agriculture on the one hand and exploitation for iron, salt and brickearth on the other. Sediment and organic remains in Combe Haven show that much of the area had been cleared for agriculture by the beginning of the Iron Age. Evidence of Roman exploitation is apparent on the eastern part of the study area, particularly at Beauport Park, where there is an extensive iron-working site and a bath house within the industrial part of the settlement. This complex is designated as a Scheduled Ancient Monument.

2.7.3 Salt workings from the medieval period are present at the western end of the study area along the marshland edge. Much of the field pattern remains unchanged from the late eighteenth century and probably survives from the later middle ages. The continuity of land use and pattern is also apparent in the occurrence of Ancient Woodland, notably at High Woods and Marline Valley Woods and the small narrow panels of woodland known as shaws. The development of the area is also reflected in the surviving old lanes and trackways linking the marsh to higher ground and the coast to the Weald.

2.7.4 The historic interest of the post-medieval period is reflected in the numerous brick and timber-framed farm buildings and historic cores to the villages of Ninfield, Crowhurst and elsewhere. They date mainly from the seventeenth and eighteenth centuries. Later reshaping of the landscape is apparent in the historic parkland at Beauport.

2.7.5 Within the scheme corridor, there are no Conservation Areas, but the existing A259 passes through a total of six in the southern part of Hastings, one of which is noted as being an "area of outstanding architectural and historic interest".

2.8 **Nature Conservation** (Figures 5 and 6)

2.8.1 There are a number of sites of major conservation interest including four SSSIs within the inner study area. Pevensey Levels SSSI at the western end of the study area is a candidate Ramsar site under the terms of the Ramsar Convention 1971 because of its overall wetland interest. It is also possible that in the near future the SSSI may be designated a Special Area for Conservation (SAC) under EC Directive 92/43/EEC (the 'Habitats and Species' Directive). Barnhorn Level to the east was formerly considered part of the Pevensey Levels SSSI, but was not included when the SSSI was re-notified under the Wildlife and Countryside Act of 1981. Nevertheless, the ditches have diverse wetland communities and there is wet grassland of nature conservation interest of particular value for wildfowl and migrant birds.

2.8.2 Further to the east, Combe Haven SSSI has substantial reedbeds at its southern end with a mosaic of wet, neutral and acid grasslands extending inland. The Combe Haven valley is of significance for its breeding, wintering and passage migrant birds, including some Red Data Book species, both as a single site and as part of the local series of nationally important sites. The ditches within the SSSI are of outstanding plant and invertebrate interest, containing Red Data Book species. Red Data Books, produced by the Joint Nature Conservation Committee, provide information on the status, biology and necessary conservation measures for rare or endangered species. English Nature uses the 'Nationally Notable' description to aid assessment of other scarce species.

2.8.3 The two other SSSIs in the inner study area are probable ancient woodlands. High Woods SSSI contains several woodland types of notable interest lying on varied soils, which at the northern end are linked to a mosaic of unimproved grassland and shaws outside the SSSI. Marline Valley Woods comprises a group of typical Wealden woodlands on the steeply sloping sides of the Marline Stream valley. It also has a particularly rich breeding bird community. Ancient woodland is woodland known to have been in continuous existence since AD 1600. Woodlands over 2 ha which appear from historic map evidence to have had continuous woodland cover since that date are recorded in the Provisional East Sussex Inventory of Ancient Woodland (Nature Conservancy Council, 1989)

2.8.4 In addition to the SSSIs there are smaller woods, shaws and copses on the Wealden part of the route and on the sides of Combe Haven valley. The woodlands along the line of the Published Scheme provide habitat for a range of breeding birds. High Woods SSSI is known to include sparrowhawk, willow tit, green woodpecker and great spotted woodpecker. Several areas of grassland, principally on the lower valley sides and valley bottoms also have significant value. They contain plants typical of land unimproved for agriculture.

2.8.5 The grassland and woodland are linked by a varied network of hedges, predominantly of mixed species, creating mosaics of semi-natural habitats.

2.8.6 The following surveys relating to nature conservation have been carried out along the corridor and are included in Volume 2 reports:-

Grasslands and Invertebrates - Combe Haven SSSI	- Report 1
Birds - Combe Haven SSSI	- Report 2
Shadow Modelling - Combe Haven Viaduct	- Report 3
Vegetation	- Report 4
Aquatic Invertebrates	- Report 5
Water Quality and Drainage	- Report 9

Further details of the contents of these reports are given in Section 4.2.

2.8.7 Studies of specially protected species thought to occur in the area have been undertaken. These included surveys of badgers, crested newts and dormice. Information on these species and on bats was sought from English Nature and local wildlife groups. The results of the studies are not reported separately in Volume 2, but are incorporated into this Volume 1 report.

2.8.8 There are likely to be other mammals in the study area including rabbits, foxes, weasels, hedgehogs, moles and small mammals such as rats, voles, shrews and mice. High Woods SSSI is known to have a population of the very local yellow-necked mouse. Shrews are protected against being killed or taken by certain methods under the Wildlife and Countryside Act 1981. The other mammals which are likely to be abundant in the hedgerows and fields are not legally protected.

2.9 Recreation (Figures 5 and 6)

Introduction

2.9.1 The land to the north of Bexhill and north west of Hastings is an attractive rural area which provides a variety of recreational opportunities for those living in the countryside and nearby towns.

Walking (Figures 13 to 22)

2.9.2 There is an extensive network of public rights of way linking the coast, Bexhill and Hastings with the countryside to the north and its various small settlements. Footpaths are used both as local amenities for people and their dogs, on a daily basis walking from the urban area into the more rural countryside, and for longer distance recreational use by ramblers. The Bexhill Ramblers Club is active, meeting for walks at weekends and during the week on a regular basis. The footpaths are lightly used.

2.9.3 A survey of the usage of the Rights of Way affected by the scheme has been carried out and is included in Volume 2, Report 12.

2.9.4 In the centre of Bexhill and Hastings, there is a heavy pedestrian usage of the pavements along both sides of the A259, accessing the numerous facilities that line the road. There is a requirement for many people to cross the road, and there are a number of pedestrian crossings.

Horse Riding

2.9.5 Horse riding is popular in the area, with riding schools at Gotham Farm, Whydown Place, Beauport Park and Buckholt Lane (Oaktree Stables) (Figures 5 and 6). High Woods is public open space and is used for riding. Clients of the Beauport Park riding school have woodland trails available to them, and the network of country lanes north of Bexhill provides all riders in that area with recreational routes as there are a limited number of bridleways. Further details of equestrian facilities are included in Volume 2, Report 14.

Cycling

2.9.6 Recreational cycling is on the increase generally, and with increasing use of all terrain bikes, cycling activity is not restricted to using roads - off road cycling is becoming increasingly popular, making use of tracks and public open spaces. Cycling along the existing roads is becoming more dangerous with increasing traffic flows, as cycle facilities are limited.

Fishing

2.9.7 Parts of the Combe Haven are open to anglers with permits. The reservoir off the B2092 Crowhurst Road (Figure 6) provides a similar facility.

Shooting

2.9.8 Pheasant shooting takes place in the woodland and on the land to the north of Sweet Willow Pumping Station (Figure 5). Clay pigeon shooting occurs on the north abutment of the dismantled railway viaduct which used to cross the Combe Haven valley.

Caravanning, Hotels and Sports Clubs

2.9.9 There are touring caravan sites at Cobb's Hill Farm (Watermill Lane) and at 'The Kloofs' (Sandhurst Lane) and an extensive static caravan site in Beauport Park (Figures 5 and 6). Beauport Park also contains a hotel and a golf course. The golf course occupies a large amount of the western section of the park. High Beech Country Club, located to the west of Queensway has a number of chalets and is an hotel (Figure 21). Beauport Sports Club and Hollington Lodge Country Club are located further north and to the west of Queensway (Figure 22). Another golf course is located in northern Bexhill to the south of the corridor.

Public Open Space

2.9.10 High Woods, which include Jack O'Borehams Wood is used for walking and horse riding. St Mary's Recreation Ground at the Highlands is a sports field with a childrens playground and Levetts Wood off Buckholt Lane on the northern fringe of Bexhill is much used by children as a recreation area. The dismantled railway embankment is used by walkers, although it is not a designated footpath. Marline Valley Woods are an LNR as well as being an SSSI, to which the public have access. The land in the area of Beauharrow Road at Baldslow is used for walking. Ninfield Road allotments, although not Public Open Space, are well used and comprise the largest single area of allotments in Bexhill (Figure 17). Further details of Public Open Space are included in Volume 2, Report 7.

2.10 **Planning and Other Designations** (Figure 7)

National Planning Context

2.10.1 The national planning policy context for the study area is set out in statements of Government policy on roads and the environment in White Papers, Circulars and Planning Policy Guidance Notes (PPG's). The most relevant PPG's and Circulars are 7, 13, 16, 17 and Circular 27/87. These relate to transport, the countryside, archaeology and nature conservation.

2.10.2 It is the Government's policy that the countryside should be protected for the sake of its beauty, the diversity of its landscape, natural resources and its ecological, agricultural and recreational value. The PPG's emphasise that statutorily designated areas of countryside and archaeological sites should be given special protection from development which would adversely affect them, including new roads. These designated areas include Areas of Outstanding Natural Beauty (AONBs), Sites of Special Scientific Interest (SSSIs) and Scheduled Ancient Monuments (SAMs). Similarly, the "best and most versatile" agricultural land (Grades 1, 2 and 3a) is a national resource which should be given considerable weight in considering development proposals.

2.10.3 The national transport planning context is provided by White Papers and reports by the Department of Transport. These include "Roads for Prosperity" of May 1989, "Trunk Roads, England, Into the 1990's" of February 1990 and "Trunk Roads in England, 1994 Review". The Government is committed to investment in an extensive trunk road programme, of which the Bexhill and Hastings Western Bypass forms part. This programme is designed to improve major inter-urban routes, reduce congestion and improve access to the Channel Ports and the Channel Tunnel.

Development Plan Context

2.10.4 The whole of the study area is within East Sussex and subject to planning policies in the East Sussex Structure Plan of 1991 and several local plans. The planning designations of national significance which would be affected by the scheme are the High Weald AONB, the SSSIs at Pevensey Levels, Combe Haven, High Woods and Marline Valley Woods. For AONBs, PPG7 identifies criteria which

should form the basis of consideration of new trunk road proposals, namely: that there should be a proven national interest and lack of alternative sites; proposals should be subject to rigorous examination; and the route and design should be chosen to do as little damage to the environment as practicable.

2.10.5 The planning designations of material significance within the study area are described in Section 2.6.

Structure Plan Context

2.10.6 The whole of the study area is within East Sussex and subject to planning policies in the East Sussex Structure Plan of 1991. Structure Plan (Sixth Alteration) strategy is governed by the need to strike a balance between different and sometimes conflicting interests, such as economic revitalisation and the protection of the environment. The towns, villages and countryside of the County have high environmental quality including extensive designated AONB. However the County has a weak economy and high unemployment with poor road and rail links to other areas. These economic problems are particularly apparent in the Eastern Area (Hastings Borough and Rother District). The eastern area of the County is also particularly well located to take advantage of links to Europe for trade and tourism. The County Council has reviewed the Structure Plan policies and proposals and placed the Structure Plan Seventh Alteration (mineral policies) on deposit. A draft version of the reviewed Structure Plan is due to be published in Autumn 1994.

2.10.7 The overall Structure Plan Strategy aims to maintain the existing settlement pattern by concentrating new development within existing urban areas, restricting development in rural areas and giving added protection to the most vulnerable and designated areas of countryside which should be kept largely free from development. In the Bexhill/Hastings area, environmental constraints are less than elsewhere in the County and there are opportunities to provide for development that cannot be accommodated elsewhere in the County. The Structure Plan contains specific proposals for major housing and associated development at north Bexhill in association with the proposed Bypass. European markets and the opening of the Channel Tunnel represent economic opportunities for the Bexhill/Hastings area of East Sussex in particular and Structure Plan economic, employment, leisure and tourism, and transport policies seek to realise these opportunities.

2.10.8 The County Council recognise the need to improve the strategic road network, as part of an integrated approach to transport provision. This will, in turn, provide East Sussex with good access to regional, national and international transport facilities such as the motorway network, the Channel Tunnel and Gatwick Airport. An important element of this is the upgrading of the A27/A259 Trunk Roads to reduce the remoteness of the Hastings area, and to connect the coastal towns which form the main centres of existing and planned development in the County. Increased accessibility would also aid in the promotion of the local economy, reducing unemployment and catering for an increasing local workforce.

Local Plan Context

2.10.9 The Bexhill Local Plan of 1985 covers both the town itself and open countryside north and west of the town. The open countryside within the local plan is not shown as subject to any national or local landscape designations. Great High Woods is identified to be conserved for forestry, amenity and recreation purposes.

2.10.10 The North Bexhill Strategic Framework was formally adopted as supplementary planning guidance by East Sussex County Council and Rother District Council in June 1993. The strategic framework is to be incorporated in the emerging Rother District Local Plan.

2.10.11 The Hastings Borough Plan Second Alteration was adopted in December 1993. The third alteration is in preparation. Amendments to the local plan (August 1991) include the identification of the Preferred Route for the Department of Transport's Western Bypass and the line of East Sussex County Council's planned Spur Road. The line of the Western Bypass skirts the north-western edge of the town. Beyond lies the Marline Valley SSSI and Statutory Local Nature Reserves, together with new residential allocation. North and north-east of Hastings the whole area is shown as within the High Weald AONB (Figure 6).

2.10.12 The Combe Haven Valley District Plan (adopted in 1981) was prepared to define boundaries of the countryside gap between Bexhill and St Leonards, and to give support to proposals for recreational activity and environmental improvements. This plan defined the eastern boundary of the then proposed Combe Haven SSSI and provided for its protection (Policy P3). It safeguarded a "protection area" for a proposed Hastings - Bexhill Bypass, the route of which had not at that date been determined (Policy P4).

2.10.13 The South Wealden Local Plan affects only the most westerly part of the A259 improvement. Here the land south of the improvement line on the margins of the study area comes within the Pevensey Levels SSSI (Figure 5). A draft version of the new district wide Local Plan for Wealden has been published (September 1993) and the local authority is currently working towards publishing the Deposit Draft in response to it's public consultation.

Assisted Area Status

2.10.14 In August 1993, the Hastings Travel-To-Work Area (TTWA) was granted Intermediate Assisted Area status in response to the high unemployment rates in the area. The TTWA covers the whole of the Borough of Hastings, a major part of Rother District and the parishes of Ninfield and Hooe in Wealden District. In April 1994 The Rural Development Commission designated the rural wards surrounding Bexhill and Hastings Rural Development Area status.

2.10.15 Industrial and commercial businesses which meet certain criteria in the area are eligible to apply for one of two forms of grant: Regional Selective Assistance Project Grants or Innovation Grants. Both are discretionary and are administered and paid by the Department of Trade and Industry South East

Region and are made directly to businesses. Grants are primarily available to manufacturing industries although some service sector projects may also be eligible. Similarly, grants, loans and advice are available to business and community projects through the Rural Development Commission.

Development Plan Allocations (Figure 7)

2.10.16 Development plan allocations have been derived from the local plan coverage of the study area. In addition, information has been taken from the North Bexhill Strategic Framework supplementary planning guidance for the study area by Rother District.

2.10.17 Potential development sites within the study corridor are concentrated on those areas covered by the North Bexhill Strategic Framework (June 1993), and the undeveloped sites in the Hastings Town Development Area identified in the Hastings Borough Local Plan Second Alteration, (Figure 6). Due to the rural nature of the study corridor in general, and its nature conservation and landscape importance, most of the remaining land is covered by various protective policies precluding the likelihood of further development.

2.10.18 The Bexhill Local Plan of 1985 identifies the area surrounding Worsham Farm (immediately to the south of the line of the scheme) for the "development of a new community comprising dwellings and associated facilities including jobs sufficient for up to approximately 3600 people". The Local Plan states the Council's intention that the dismantled railway line, which forms part of the line of the scheme, should "remain undisturbed for informal public recreation", although it is recognised that this "is subject to the eventual proposals for the development of the Worsham area".

2.10.19 In the Combe Haven Valley District Plan, East Sussex County Council identify 12ha of land to the east of Monkham Woods for development as playing fields.

2.10.20 In the North Bexhill Strategic Framework the local authorities identify five areas within the Study Corridor for future development. These are:

(i) *Northeye Prison Development*
Identified for residential development with retention of existing sports facilities.

(ii) *Ashdown Brickworks Development (Turkey Farm)*
Proposed for small scale light industrial development, provided that an acceptable access to the Brickworks site can be achieved. There is potential for waste disposal by landfill in the long term.

(iii) *North Bexhill Business Park (Preston Hall)*
Allocated for mixed office and high technology uses, limited light manufacturing uses and a possible hotel/conference facility. The site would require access to the Bexhill Northern Approach Road (BNAR). Mounding and landscaping would be sought to reduce the adverse visual impact of the bypass on the business park to acceptable levels.

(iv) *The New Community (Worsham Farm)*
Identified for residential development (in the region of 1,000 - 1,500 dwellings, including a proportion of 'affordable housing'), a new primary school, small scale retail development and community facilities.

(v) *Pebsham Country Park (Combe Haven Valley)*
Allocated for development as a country park. Part of the site adjoining the scheme boundary is identified for golf course development.

Rother District Council, together with East Sussex County Council, are currently involved in producing development briefs for the above proposals.

2.10.21 Within the area covered by Hastings Borough Council, development allocations are laid down in the Hastings Borough Local Plan, Second Alteration, as adopted in December 1993. A number of industrial, residential and other development allocations are proposed within the study corridor.

2.10.22 Hastings Borough Council undertake to provide additional land for service and other industrial development between the A21 at Sedlescombe Road North and Beauharrow Road, and in the Whitworth Road area between Junction Road and Queensway, in addition to land for light industrial and general industrial purposes in the Churchfields area. Within the study corridor, industrial development will be encouraged within the areas of Castleham, Churchfields and West Ridge/Ashdown Estate.

2.10.23 With regard to housing allocations (shown on Figure 7), the Council has identified 2.8 ha of land at Maplesden[1], 3.0 ha of land at Highdown off Queensway[2], 10.3 ha of land at Hoads Wood[3], 12.9 ha of land at Mayfield[4] and 0.2 ha of land to the south of Beauport Park[5] for residential development. Additional land owned by the local authority is allocated for the development of 'affordable housing', including land at Mayfield Farm.

2.10.24 Beauport Park caravan site is identified as one of the sites within the Borough that could provide for camping/caravan/chalet development, and proposals include an extension to the south of the existing site.

2.10.25 It is proposed that land to the south-west of High Beech should be safeguarded for development of new primary school buildings. Furthermore, the Council have allocated the site immediately to the south-west of this site for the development of playing fields.

2.10.26 In addition to these proposals, the Council intends to construct a Spur Road Phase II from the Wishing Tree Roundabout to Sedlescombe Road South and will seek to secure a link road from the bypass to Sidley and Bexhill (BNAR). The Council also intends to provide new or improved footpath access on land north-west of Queensway and between the new residential area at Hoads Wood and the proposed public open space between High Beech and Queensway.

Extant Planning Permissions (Figure 7)

2.10.27 Possible future changes in land use in relation to extant planning permissions within the study area were derived from information extracted from the planning registers of the local authorities involved.

2.10.28 Within the study corridor, five sites were identified that have outstanding planning permissions. Three sites: land at Watermill Lane (RR/88/3251, RR/89/1255, RR/90/0659), land off Fletcher Avenue (93/303) and land formerly belonging to Mayfield Farm (93/435) have outstanding planning permissions relating to residential development. Only the Watermill Lane plot has full planning permission. This relates to the erection of up to twenty six dwellings. Of the remaining two sites, permission exists for the erection of a church also on land formerly belonging to Mayfield Farm in the Hastings Town Development Area (92/522), and the erection of an industrial building on land at Churchfields (94/59). The planning permission relating to the erection of 51 dwellings on land between Queensway and High Beech Chalet site (90/118) has been implemented and the houses are currently under construction.

Further Details

2.10.29 Further details of the planning aspects are included in Volume 2, Report 7.

2.11 Traffic Noise and Air Quality (Figures 34 - 41)

2.11.1 The scheme corridor is predominantly rural, and much of it is some distance from the nearest road. Ambient noise levels in these areas can be as low as 45 dB(L_{A10} 18 hour). Higher levels in the range 56 to 74 dB exist in the urban fringes of the A269 Ninfield Road area and along Queensway.

2.11.2 Noise levels along the existing A259 within the study area are typically in the range 77 to 80 dB at the facade of properties fronting the road. An assessment of noise is included in Volume 2, Report 11 and an explanation of terms is given in Appendix B to this document.

2.11.3 For similar reasons to the above, air pollutants from vehicles are very low in the rural areas along the scheme corridor, and the air quality is generally good. However, higher levels are experienced at houses close to the A269 and Queensway, (typically 4 ppm CO, 27 ppb NO_2 in 1994), although still well within air quality standards.

2.11.4 Along the existing A259, high traffic flows are the main contributor to air pollution at properties close to the road and to users of the many facilities. In close proximity to the existing road, the air quality is currently poor, in many cases the levels are in excess of the air quality standards. An assessment of air quality is included in Volume 2 Report 12 and a further explanation of the assessment is given in Appendix B to this document.

2.12 **Community Facilities** (Figures 8 and 9)

2.12.1 Almost all existing community facilities including schools, churches, hospitals, stations, libraries and post offices are contained within the urban areas of Bexhill and Hastings where traffic flows can cause severance and loss of amenity. Most of these facilities have large catchment areas and attract people from the outlying areas, who use roads that currently pass through the scheme corridor. A study of the community facilities in the area is included in Volume 2, Report 14 and the main effects summarised in Appendix A, Table A, Group 1.

3 THE PUBLISHED SCHEME

3.1 Location (Figure 10)

3.1.1 West of Bexhill, the route would leave the existing A259 in the area of New Lodge Farm. It would head north-eastward following the northern edge of Barnhorn Level before swinging round the northern tip of High Woods and heading south-eastward to meet the A269 just north of The Highlands. The route would continue eastward and then south eastward crossing the upper part of the Combe Haven valley before joining the line of the dismantled railway north-west of Worsham Farm. It would follow the northern edge of the old railway for a distance of approximately 1 kilometre (km), before heading north-eastward across the Combe Haven flood plain and the London - Hastings railway line to join Queensway (B2092) north-east of Upper Wilting Farm. The route would then follow the line of Queensway (B2092) for approximately 2.5 km before heading north-eastward to the scheme limit north of the A2100 at Baldslow. The total length of scheme would be 14.68 km.

3.2 Bexhill Northern Approach Road (BNAR)

3.2.1 East Sussex County Council proposes to construct the Bexhill Northern Approach Road (BNAR) at the same time as the bypass. This proposal was indicated at an early stage in scheme preparation, and so provision has been made in the Published Scheme for a junction in the area north-west of Worsham Farm and allowance made for the additional traffic it would generate.

3.2.2 The scheme description therefore assumes the provision of the BNAR at the date of opening of the bypass, although it should be noted that the viability of the bypass is not dependent on the BNAR or its junction.

3.3 General Standards of Provision

Junctions

3.3.1 Grade separated junctions allowing uninterrupted movement along the bypass would be provided at the following locations:

(i) A259 (West) (Figure 23)
(ii) A269 Ninfield Road (Figure 26)
(iii) Bexhill Northern Approach Road (Figure 28)
(iv) Queensway (Mayfield Farm) (Figure 30)
(v) Castleham (Figure 31)
(vi) A21/A2100 at Baldslow (Figure 32).

The junctions at A259 (West) and Castleham would allow limited turning movements only, the other junctions would allow full turning movements.

Side Roads

3.3.2 Bridges over or under the bypass would be provided for the following side roads, some of which would also be realigned to provide a suitable bridging location:

(i) Whydown Road (Figure 24)
(ii) Peartree Lane (Figure 26)
(iii) Watermill Lane (Figure 27)
(iv) Buckholt Lane (Figure 27)
(v) Battle Road (Figure 31)
(vi) A2100 The Ridge West (Figure 32)

3.3.3 In addition, St Mary's Lane would be realigned to join the A269 junction (Figure 26), Crowhurst Road would be realigned to join the junction at Mayfield Farm (Figure 30) and urban link roads would be provided from the junction at Baldslow to the A21 and the A2100 (Figure 32).

Carriageways

3.3.4 The bypass would be constructed throughout with dual two lane carriageways, each 7.3 m wide with 1 m hardstrips each side. Between the junctions at Castleham and Baldslow, an additional lane 3.7m wide would be provided in each direction. Verges 2.5 m wide and a central reserve of the same width would be provided in addition to the hardstrips. Where visibility standards require it, the verges and central reserve would be widened.

3.3.5 The carriageway and junction standards were derived from predicted flows given by a computer based traffic model covering the Bexhill and Hastings area. Traffic surveys undertaken between 1987 and 1994 were used to set up the model; techniques used included automatic and manual traffic counts, roadside interviews and journey time surveys. The model can be used to predict traffic flows in the future using nationally available road traffic forecasts in addition to growth information available from the local authority (East Sussex County Council). This local information enables specific proposed developments that may cause substantial changes in local traffic movements to be modelled accurately.

3.3.6 The traffic flows predicted for the bypass and other roads in the opening year and in the design year (2015) are shown on Figures 11 and 12. The flows on the bypass assume the Hastings Eastern Bypass is open at the same time and include an allowance for strategic transfer of traffic to a fully improved A27/A259 route from other east-west routes to the north.

Laybys

3.3.7 The areas where laybys could be provided are limited because of the frequency of junctions, proximity of housing or environmental considerations. Five are proposed, at the following locations:

- A pair at the southern end of Barnhorn Level (Figures 23 and 24).
- A pair between Whydown Road and Jack O'Boreham's Wood (Figure 25).
- A single layby on the westbound carriageway to the south of Combe Haven (Figure 28). A combination of the proximity of the junctions at BNAR and Mayfield Farm, the Combe Haven Viaduct and nature conservation interests on the dismantled railway embankment, means that there are no suitable locations for an eastbound layby in this area.

Street Lighting

3.3.8 Street lighting would be provided on all roundabout junctions and for short lengths on slip road and side road approaches. In addition lighting would be provided on the A21 and A2100 link roads, the A2100 and the connection to the existing road at Castleham. Lighting along the line of the route is not proposed. The lighting would be high pressure sodium lighting with columns 10-12m high.

Traffic Signs

3.3.9 Major traffic signs would be provided on the bypass adjacent to the carriageway at locations approximately 800 m before slip road exits. Confirmatory signs would be provided at the slip road tapers. Similar signs would be necessary on side roads that join the bypass junctions, although their proximity to the junction would be closer than on the bypass, due to lower traffic speeds.

3.3.10 Minor traffic signs giving local directions, and informatory, regulatory and warning signs would be located along the route and on slip roads and side roads as necessary.

3.3.11 Signs close to, or within, areas of street lighting may be illuminated. All others, including the major signs along the bypass itself, would not. Non-illuminated signs would have a reflectorised surface.

3.3.12 The precise location for a sign depends on a number of factors including visibility, available space, visual impact, proximity of other signs and safety considerations, and would be decided at detailed design stage.

Safety Fencing

3.3.13 Safety fencing would be provided in the central reserve of the bypass, and where design standards require, along embankment edges, in front of bridge abutments, major signs and street lighting and attached to retaining walls and noise barriers.

Drainage

3.3.14 Existing watercourses would be realigned where necessary, and culverts would be constructed to carry the watercourses below the bypass. Balancing facilities would be provided at twelve sites along the scheme to limit the flow from the road drainage system into watercourses to a level acceptable to the National Rivers Authority (NRA). Nine of these would be in the form of ponds, two would be tanks and one a ditch. These would allow some sediment to settle out before the water enters local watercourses. Two outfalls would not require balancing but these and all the others would be protected by the provision of a sediment trap and an oil interceptor to prevent spillages entering the watercourses.

Planting

3.3.15 Tree and shrub planting of native species would be provided as an integral part of the scheme, both within the highway and in areas acquired for landscape mitigation. The scheme would include extensive landscaping incorporating planting a total of 50 ha of trees and shrubs along the route. Other planting including the establishment of species rich grassland and reed beds would be carried out in order to benefit wildlife.

3.4 Introduction to Detailed Description of Scheme

3.4.1 Sections 3.5 to 3.9 describe the main features of the Published Scheme, how it would be constructed and the maintenance that would be required after completion.

3.4.2 The description of the scheme that follows makes reference to the heights of embankments and depths of cuttings as measured at the centre line of the route. Reference is also made to mounds and false cuttings. A mound is formed by depositing soil to a given height, normally at the back of the verge (described in relation to adjacent road level) with normal earthwork slopes to both sides. A false cutting is formed in a similar manner, but the side away from the road is graded to a much flatter slope, and may allow its return to agricultural use.

3.5 The Main Alignment

Section A - Barnhorn Level (Figures 23 and 24)

3.5.1 The Published Scheme would commence on the A259 just to the east of the Lamb Inn close to the junction with the B2095. The new route would swing north eastward away from the existing road alignment in a cutting up to 7 m deep passing to the south of New Lodge Farm and Cottages. The junction would allow limited turning movements to and from the west only; other movements would be available via a junction with the B2095 which is part of the proposed Pevensey to Bexhill Improvement. False cuttings up to 2 m high would be utilised to blend the junction in with the

existing landform. The eastbound link towards Bexhill would cross over the bypass cutting on a skewed bridge in front of New Lodge Cottages. The bridge deck would be about 1.5 m above existing ground level.

3.5.2 The route would continue along the northern side of Barnhorn Level on an embankment of up to 4 m in height. Over a length of about 900 m, commencing just north of the point where the route first crosses the Old East Stream, a false cutting would be provided on the south side of the embankment to a height of two to three metres above road level. This false cutting would be graded out to the south at a slope of approximately 1 in 20, to enable the land to be returned to agriculture. Access tracks to balancing ponds located adjacent to the carriageway would be provided parallel to the road. On the north side of the bypass the embankment would be graded out down to the Old East Stream.

3.5.3 The route would enter a cutting up to 6 m deep to the south east of Broad Green Farm. Here the ground falls south eastward into Barnhorn Level and the bypass would require a slope to be cut back into the hillside. This would be graded at a maximum of 1 in 7 with the top section of slope rounded off to tie in with the existing landform. The land would be available for return to agriculture. A combined footpath and farm access bridge would be provided over the bypass at this location.

3.5.4 The route would emerge from cutting to cross the Hooe Sewer on an embankment of a maximum height of 6 m. A combined culvert, farm access and footpath underpass would be provided at this location. An access track to a balancing pond would be provided in this area. From this point the route would start to climb, remaining on embankment through Highfield Wood before entering cutting and passing under Whydown Road where the cutting would be up to 9.5 m deep. Whydown Road would be carried over the bypass on a bridge.

Section B - The Weald (Figures 25 and 26)

3.5.5 The route would continue on a right hand curve on low embankment before passing to the north of Sweet Willow Pumping Station where it would enter a short length of cutting up to 6 m deep. A combined footpath and access bridge would be provided over the bypass at this location.

3.5.6 On leaving the cutting the route would pass onto low embankment and cut through a copse. A 4 m high screening mound would be provided on the north side of the bypass for about 300 m in this area. On the south side of the bypass access tracks leading to balancing ponds would be provided. Continuing on a curve to the right, in alternating shallow cutting or low embankment, the route would pass through the northern tip of Jack O'Boreham's Wood, climbing at a maximum gradient of 3.7% to Peartree Lane which would be realigned and carried over the bypass on a bridge. At this point the route would enter a cutting up to 13 m deep through the southern edge of Kiln Wood.

3.5.7 From Kiln Wood the bypass would continue in cutting, before passing over a short length of embankment and entering a cutting generally 6 m, but up to 9 m deep, which would commence at St Mary's Lane and continue through the A269 Ninfield Road area. A two level junction with the A269 would be provided to the north of The Highlands. This would take the form of a roundabout carried

on two bridges over the bypass, which would be connected to the bypass by slip roads permitting traffic turning movements in all directions. St Mary's Lane would be severed by the bypass, forming a cul-de-sac to the north, but the south side would be diverted to connect with the new roundabout. The level of the roundabout bridges would be approximately at, or slightly below, the existing ground levels on the A269, but because the levels fall away quickly, the A269 would need to rise on embankment up to 3 m high to join the roundabout from the south.

3.5.8 Noise barriers would be provided to the west of the A269 junction. On the north side a barrier 3 m high and 270 m long would be provided and on the south side one 2 m high and 310 m long, both along the slip road verges. To the east of the junction a mound 2 m above slip road level would be provided on the south east verge.

Section C - The Combe Haven Valley (Figures 27, 28 and 29)

3.5.9 From the A269 junction the route would fall in an easterly direction curving gently to the right, and reaching a maximum downhill gradient of 3% approaching Watermill Lane. Between Kiteye Farm and Watermill Lane the route would be in shallow cutting or on low embankment. Watermill Lane would be realigned and carried over the bypass on a bridge. Access to a balancing pond would be provided from Watermill Lane.

3.5.10 To the east of Watermill Lane, the route would continue on a right hand curve in cutting up to 6.5 m deep. An extensive cutting slope would be created in the higher ground to the north of the bypass with only a shallow cut slope in the lower land on the south side. The northern cutting slope would be graded out to 1 in 8 with the top of the slope rounded off to tie in with the existing landform. The land would be available for return to agriculture.

3.5.11 On the north side of the route near Preston Hall Cottage a short length of mound at 3 m above road level is proposed to link the bypass cutting slopes on each side of the present line of Watermill Lane. On the south side of the route alongside Chetwynd, a 3 m high mound with a 2 m high noise barrier on top would be provided over a length of 150 m. Bunding would continue to Buckholt Lane up to a maximum of 4.5 m above bypass level.

3.5.12 On its exit from the cutting, the route would pass onto an embankment up to 8 m high through the southern edge of Cole Wood and over Buckholt Lane which would be taken under the bypass in an underpass. Continuing on embankment up to 5m high, the route would enter the open land of the Combe Haven valley and approach the two level junction which would be provided for the Bexhill Northern Approach Road (BNAR). The junction would be constructed as a roundabout below the bypass, at a level close to the existing ground. The bypass would be carried over the roundabout on two bridges. Slip roads would be provided in both directions and all traffic turning movements would be possible. Access to a balancing pond to the north of the route would be provided from the roundabout.

3.5.13 False cuttings and regrading would be provided on both sides of the bypass along the verges of the slip roads approaching the BNAR junction from the west. The mound on the north side would rise to a maximum of 8 m above the slip road level in the area of the roundabout. On the south side, the mound would be a maximum of 9 m above the slip road level. The land beyond the tops of the mounds would be regraded where possible to blend the junction into the surrounding landform.

3.5.14 From the BNAR junction the route would follow the northern side of, and stay at a similar level to the dismantled railway. The land here undulates sharply with consequent variations in cut and fill. Adjacent to Combe Wood a combined stock and footpath underpass would be provided underneath the bypass. Beyond Combe Wood the route would swing to the north-east before straightening out to cross the dismantled railway just south of the old viaduct approach embankment. In the same area the level of the bypass would drop below that of the dismantled railway and cut into the hillside, creating a long cutting slope rounded off at the top on the south side of the route approaching the Combe Haven flood plain. In this area an access would be provided to a balancing pond from the rear of the lay-by.

3.5.15 On the north side of the bypass the land would be regraded to blend the route with the surrounding landform. Commencing just after the BNAR junction and continuing as far as the remaining approach earthworks of the old viaduct, the areas would in part be available for return to agriculture.

3.5.16 The route would pass onto a short length of embankment before heading off across the flood plain of the Combe Haven in a north-easterly direction on a 705 m long, 17 span viaduct, set about 10 m above the valley floor. The viaduct would pass over the Combe Haven immediately to the east of the National River Authority's flow gauging station. No embankments would lie within the Combe Haven Site of Special Scientific Interest, but a corridor 29 m wide would be cleared of vegetation during construction of the pier bases.

3.5.17 From the end of the viaduct the route would pass onto an embankment up to 11 m high, and would start to rise towards the London - Hastings railway line. Both sides of the embankment would be regraded to blend the earthworks with the valley sides. A balancing pond would be provided on the south side, with an access track from the adjacent slip road.

Section D - Queensway to the A2100 (Figures 30, 31 and 32)

3.5.18 On leaving the embankment the bypass would continue to climb at a maximum gradient of 4%, crossing the railway to join the line of the existing Queensway (B2092) to the north of Mayfield Farm. The railway would pass into a short length of tunnel under the bypass and its slip roads. A two level junction would be provided with Queensway and Crowhurst Road at this location and would permit traffic turning movements in all directions. This junction would take the form of a roundabout with the bypass carried over on two bridges. Slip roads would connect to the roundabout, which would be in a 12 to 16 m deep cutting (measured along the route centre line) with the bypass between 3 and 7m below existing ground level. Crowhurst Road would be realigned to join the roundabout from the west crossing over the railway on a new bridge.

3.5.19 A 2 m high noise barrier 85 m long would be provided adjacent to Hollyhocks Cottage and Upper Wilting Farm Cottages, together with a 3 m high barrier 270 m long at the same level as, and along the north verge of, the main carriageway. The existing Queensway cutting slope to the east of the Mayfield Farm junction would be extensively regraded, and a 3 m high mound above existing ground level at the top of the slope in the immediate area of Mayfield Farm would also be provided.

3.5.20 From the Mayfield Farm junction the route would continue climbing at a gradient of generally between 3 and 4% following the line and level of Queensway which runs north-eastward between Marline Wood and Castleham Industrial Estate. A second carriageway would be provided on the west side of the existing Queensway which would be used as the north-eastbound carriageway between the Mayfield Farm and Castleham junctions.

3.5.21 At Castleham a two level junction would be constructed, which would take the form of two linked roundabouts in a "dumbell" layout with a single bridge under the bypass. The roundabouts would be linked to the bypass with north east facing slip roads. These would permit traffic movements from Castleham north eastward and vice versa only.

3.5.22 Between Castleham and the junction to the north at Baldslow, an additional lane would be provided in each direction to provide more space for weaving movements. From Castleham the route would initially continue to follow the level of Queensway, with local variations in the topography dictating shallow cut or fill slopes outside the existing carriageway. A 3 m high mound would be provided on the north side between Castleham junction and the cutting south of High Beech Close. From here the vertical alignment of the bypass would drop to some 2.5 m below the existing level of Queensway, with cutting slopes on both sides of the new road. Where the route would pass High Beech Close, a retaining wall would be constructed to minimise and to avoid where possible, landtake from the properties backing onto the bypass. The wall would be located directly behind the highway verge and would be surmounted by a noise barrier over a length of 220 m at a height not exceeding 2 m above the garden level of the houses.

3.5.23 The vertical alignment of the route would return to the existing level of Queensway on reaching Battle Road but the existing bridge, carrying Queensway, would be demolished, as its layout would not be compatible with the bypass alignment. A new bridge would be constructed in a similar position to that of the existing.

3.5.24 On the south side of the bypass a 2 m high noise barrier would be provided commencing near Moorhurst Road, continuing along the verge, across Battle Road bridge and extending to the A21/A2100 junction at Baldslow, a total length of 760 m.

3.5.25 From Battle Road the bypass would swing to the east, away from the line of the existing Queensway on embankment increasing to 6 m in height before entering into cutting to head through the A2100 ridge at a maximum depth of 21 m. East Lodge at the entrance to Beauport Park, would be demolished.

3.5.26 On the north side of the bypass between Battle Road and Beauport Gardens a 3 m high mound would be constructed. A 3 m high noise barrier 290 m long, part of which would be constructed on a shallow retaining wall would be provided to screen properties in Beauport Gardens. The screening would then continue westwards as a mound between the old and new alignments of the A2100.

3.5.27 A two level junction would be located at Baldslow just to the west of The Ridge West (A2100). The junction would include a roundabout on two bridges above the bypass and would permit all traffic turning movements between the bypass, the A2100 and the A21, to which dual carriageway link roads would be provided. The junction would lie within the existing valley, and at the southern bridge positions the bypass level would be approximately 2 m below valley bottom level and the roundabout level 4 m above. From this point northwards, the route would head into deeper cutting and the roundabout would lie below the adjacent existing Queensway level. The A2100 would be carried over the cutting at a level similar to that of the existing ridge at the eastern end, but approximately 7 m below existing ground level at the western end where it would meet a link road from the bypass at a new roundabout. To the south east of the main interchange an area of land adjacent to the embankments of the bypass south east slip road and the A21 Link Road would be regraded.

3.5.28 From the deepest part of the cutting in the area of the A2100, the route would continue in a north easterly direction, steepening downwards, to the limit of the scheme, where it would connect directly with the proposed A259 Hastings Eastern Bypass.

3.6 Side Roads

Green Road C706 (Figure 23)

3.6.1 Green Road would be shortened and realigned from New Lodge Cottages, to connect with the eastbound link road. The junction would allow left in, left out, turns only.

Whydown Road C346 (Figure 24)

3.6.2 Whydown Road would be retained on its existing horizontal alignment and pass over the bypass on a bridge. To achieve this, the side road would be raised on a 3 m high embankment on the north side of the route.

Peartree Lane C703 (Figure 26)

3.6.3 Peartree Lane would be realigned about 45 m to the west of its current alignment cutting the corner of the existing bend. It would pass over the bypass on a bridge with low approach embankments up to 3 m high. Redundant sections of Peartree Lane would be broken up and planted.

St Mary's Lane UC 6708 (Figure 26)

3.6.4 St Mary's Lane would be severed. It would be realigned on the south side of the bypass from the north end of Bexhill Cemetery to connect with the A269 junction roundabout. Remaining severed sections of St Mary's Lane would become culs-de-sac on either side of the bypass.

Ninfield Road A269 (Figure 26)

3.6.5 To the north of the bypass, Ninfield Road would be realigned eastward by up to 20 m, setting back the existing cutting slope in that direction, to connect with the A269 junction roundabout. To the south of the bypass there would be a minor realignment of Ninfield Road away from the dwellings on the south side and it would be raised on a low embankment of up to 2.5 m to connect with the roundabout. Redundant sections of Ninfield Road would be broken out and planted.

Watermill Lane C345 (Figure 27)

3.6.6 Watermill Lane would be realigned 30 m to the west of its existing line and would bridge over the bypass. Its approach embankments would reach 8 m in height on the south side and 3 m on the north. The remaining sections of Watermill Lane would form culs-de-sac on each side of the bypass.

Crowhurst Road C93 and Queensway B2092 (Figure 30)

3.6.7 Crowhurst Road, to the west of the bypass, would be realigned to bridge over the railway about 190 m north of its present crossing. Its realignment from near Upper Wilting Farm would require a 9.5 m high embankment crossing over the ground falling towards the railway. This embankment would be regraded to the south to tie the earthworks in with adjacent landform. To the east of the railway, the Crowhurst Road diversion would enter a cutting 7 m deep on its approach to the roundabout. Severed sections of Crowhurst Road would become culs-de-sac on both sides of the bypass. A short section of Crowhurst Road on the south side of the bypass would remain connected to the B2092.

Napier Road UC 3082 (Figure 31)

3.6.8 Napier Road would be set in cutting about 6.5 m deep and connected to a "dumbell" roundabout arrangement as part of Castleham grade separated junction proposals. The existing junction arrangements with Queensway, consisting of a priority junction and a westbound 'off' slip road, would be replaced by the proposed junction with north-east facing slip roads.

Battle Road B2159 (Figures 31 and 32)

3.6.9 The layout of Battle Road would remain unchanged since the bypass would be carried over it on a bridge in the same as Queensway is at present.

The Ridge West A2100 (Figure 32)

3.6.10 The A2100 would be diverted to connect with a new roundabout, located about 120 m north-eastward of its existing junction with Queensway, in what is currently the Beauport Park Caravan Park. The A2100 realignment, predominantly on a tight left hand curve to the west of the roundabout, would create a cutting up to 10 m deep. To the east of this roundabout, which would be about 7 m below existing ground level, the A2100 would be carried on a bridge over a 21 m deep cutting to the north of its existing alignment. Over the bridge, the road would be a single carriageway with two lanes in each direction. The offside lane in the eastbound direction would be marked as a right turning lane for entry into the Ridge West Industrial Estate at the eastern end of the bridge.

A21 and A2100 Link Roads (Figure 32)

3.6.11 The roundabout with the A2100 would be linked to the Baldslow junction roundabout by a short length of dual carriageway. The northbound carriageway of the link road would have three lanes to provide additional capacity. A further dual carriageway link road would connect eastward from the Baldslow junction roundabout, along the south side of the Ridge West Industrial Estate, to a traffic signal controlled junction with the A21. The construction of this junction would require the demolition of a car showroom. Whitworth Road would remain open, with access from the A2100 via the remaining part of Junction Road, which would not connect with the A21.

3.7 Footpaths, Byways, Access Tracks and Cycle Facilities

3.7.1 Footpath 8 (Figures 13 and 23) currently runs in a south-easterly direction from Court Lodge Cottage on the C706 Green Road towards Footpath 60 and the A259. The bypass would sever the footpath which would be diverted via Green Road, the new A259 link road and a field access track. Tracks would be provided from the layby and running along the south side of the bypass to give access to two balancing ponds.

3.7.2 A combined footpath and farm access overbridge (Figures 14 and 24) would be constructed over the cutting south-east of Broad Green Farm. Footpath 9b which would be severed by the bypass would be diverted over it. Access tracks would be provided either side of the bypass to enable landowners with severed land to use the bridge.

3.7.3 Footpaths 10c, 10d, 11e, 13a, 13b, 13c and 30 (Figures 14 and 24) would be combined and diverted via a combined culvert, farm access and footpath underpass west of Holmes Farm. A short track would be provided directly off the bypass to give access to a balancing pond to the east of Hooe Sewer. An access track would be provided on the south side of the bypass, running eastward from Whydown Road to access severed land.

3.7.4 A combined footpath and access overbridge (Figures 15 and 25) would be provided over the bypass cutting at Sweet Willow Pumping Station, for the use of local landowners, the Eastbourne Water

Company and for the diversion of Footpath 18b. Access tracks would be provided north and south of the bypass to maintain access for landowners and to balancing ponds.

3.7.5 Footpath No 47 (Figures 16 and 26), which would be severed by the route to the east of Peartree Lane, would be diverted along the scheme boundaries to cross the bypass via Peartree Lane bridge.

3.7.6 Footpath 18 (Figures 16 and 26) would be shortened to connect with the St Mary's Lane diversion.

3.7.7 Access to the Kiteye Farm buildings and adjacent land in other ownership (Figures 16, 17, 26 and 27) would be provided via a track from Freezeland Lane to replace access from the south which would be severed.

3.7.8 Footpath 56 would be truncated where it meets the access track at the boundary of the realigned Watermill Lane. A track would be provided off the west side of the realigned Watermill Lane to provide access to a balancing pond and to an area of severed land. A track north of Preston Cottage would give access to severed land east of Watermill Lane. Footpath 16b to the east of Watermill Lane (Figures 17 and 27) would be diverted via the access drive to Preston Hall on the south side of the bypass, and then along Watermill Lane and over the new bridge.

3.7.9 Buckholt Lane, *Byway Open to All Traffic* 58a (Figures 17 and 27), is used for pedestrian and equestrian access to the Combe Haven area and also provides the only access for motor vehicles to some properties north of Bexhill at the western end of the Combe Haven valley. It would pass under the bypass and would maintain its existing alignment. The underpass would be large enough to enable vehicular access to be maintained.

3.7.10 Footpath 33, and the access track along which it runs (Figures 18 and 28), would be severed by the BNAR and its junction. The northern part would connect to the new roundabout and also provide access to a balancing pond. The alternative route available to pedestrians would be eastward partly along the dismantled railway to connect with Footpath 31a (Figures 15 and 25), which runs northwards through Combe Wood. A Combined Stock and footpath underpass would be provided under the bypass at this location and the footpath would be realigned locally on the north side to suit. An access track would be provided along the southern boundary of the dismantled railway and would share the underpass with the footpath to provide access to severed land.

3.7.11 Footpath 1, which runs northwards to Combe Haven from Little Worsham Farm (Figures 18, 19, 28 and 29) would be diverted eastward along a track to the south of the route to run under the first span of the proposed viaduct. An access track for the use of the landowner would follow the same route. A further track to allow access to a balancing pond and to provide for long term maintenance of the viaduct would be provided from the rear of the adjacent layby. The track (3 m wide) would extend across the valley floor, between the viaduct piers before terminating south of the Combe Haven. This part of the track would not be intended for general use and would be covered in topsoil.

3.7.12 An access track would be provided on the south side of the bypass from the Mayfield Farm junction westbound slip road (Figures 20 and 30), to allow access to a balancing pond and to the viaduct for maintenance. The track would be available for use by the landowner to access fields east of the viaduct from land on the western side, but access in this case would not be available from the slip road. On the valley floor this track would also be situated between the piers of the viaduct would extend to the eastern bank of the Watermill Stream and in a similar way to the track from the south-west, would not be intended for general use. Footpath 22 (Figures 19 and 29) adjacent to the railway would be truncated and diverted along the verge of the slip road. Access to Crowhurst Road would be via the slip road and Mayfield Farm roundabout.

3.7.13 Footpaths 32 and 34A (Figures 20, 21, 30 and 31) from Marline Wood would be diverted via the proposed Castleham junction underbridge. A new footpath would also be provided along the western fenceline linking Footpath 32 to Mayfield Farm junction, replacing the unofficial facility which exists outside the Queensway boundary. Footpaths 34 and 39C would be diverted over a very short length to run along the new highway boundary.

3.7.14 Footpaths 130 and 131A and parts of Footpaths 129 and 131 in the area between Battle Road and the A2100 (Figures 22 and 32) would be stopped up as a result of construction of the bypass regrading and the A21 Link Road. A diversion route for pedestrians using Footpaths 129 and 130 would be available via the south verge of the link road and Whitworth Road to connect with Footpath 131. This would necessitate crossing the A21 link road at the traffic signal controlled junction. Footpath 131A would not be replaced, but the diverted routes of footpaths 131, 130 and 129 would be available for users.

Cycle Facilities

3.7.15 The need for cycling facilities has been fully considered in developing the Published Scheme. A number of facilities are proposed:

(i) On the bypass, cyclist use is not expected to be high and cyclists would be able to use the 1 m hardstrip on the nearside of the road. Slip road crossings would be provided across all slip roads in accordance with the Traffic Advisory Unit Leaflet "Provision for Cyclists at Grade Separated Junctions".

(ii) A 1 m wide hardstrip would be provided specifically for cyclists on the A21 Link Road in both directions where cycle use is expected to be significant.

(iii) Cycletracks and crossing points would be provided around the periphery of all roundabouts.

3.8 Construction of the Published Scheme

3.8.1 It is expected that the construction of the project would be undertaken by a contractor under the supervision of a Resident Engineer and his staff. The contract for construction would be awarded based on competitive tendering, with an estimated construction period of two years. The basic components of the construction of the works would be as given below.

Establishment of Site Compounds

3.8.2 Site compounds are areas where offices for the contractor and the Resident Engineer would be located and where materials would be stored. They would normally be outside the scheme boundaries in which case land for these facilities would be the subject of private agreements between the contractors and third parties. Contractors would need to comply with planning regulations in respect of these additional areas if they are located in areas not adjacent to the site.

Fencing and Site Clearance

3.8.3 Fencing of the site, whether permanent or temporary, would usually take place at an early stage of the contract, particularly where control of a landowners livestock would be required. Site clearance would involve the demolition and/or removal of building, trees, obstructions etc that lie within the site and which are not to be incorporated in the permanent works.

Services Diversions

3.8.4 Telecommunications, electricity, gas, water and sewerage pipelines and cables would require diversion where affected by the scheme. These operations would be phased throughout the construction period, with some possibly diverted before construction commences.

Earthworks and Drainage

3.8.5 Earthworks operations including the removal, transportation, storage and deposition of topsoil and other excavated material, are often restricted by weather conditions. Continuous wet weather can prevent the works from proceeding and so bulk earthmoving usually takes place between Spring and Autumn. The work would be carried out by heavy plant and can be a noisy and dusty operation.

3.8.6 This scheme requires the moving of excavated material along the scheme from areas of cutting to areas of embankment or landscaping/regrading. It is estimated that 2.85 Million (M) m^3 of material would be excavated with 2.0M m^3 deposited in embankments, regrading and landscape areas. The surplus of 0.85M m^3 would be disposed of as follows:

0.1M m^3 to the A259 Pevensey to Bexhill Improvement;
0.6M m^3 to the A259 Hastings Eastern Bypass;
0.15M m^3 to a tipsite adjacent to the bypass.

3.8.7 In general the movement of material would be over short haul distances. It is expected that about 0.4M m^3 of material would need to be hauled eastward across the A269 and that the 0.6M m^3 of material for the Hastings Eastern Bypass would need to be hauled eastward across the A21. No material would be hauled across the Combe Haven valley.

3.8.8 An area of land adjoining the scheme near Little Worsham Farm (7/8, Figure 30), would be acquired to accommodate surplus spoil that cannot otherwise be incorporated into the scheme. The contractor may opt to try and locate alternative sites for disposal. Any alternative sites identified would be the subject of planning applications to East Sussex County Council, which would consider the proposals in the light of haulage requirements and other environmental constraints.

3.8.9 Two sites comprising backfilled former pits would be affected by the preferred route. The larger pit is located near Peartree Lane where isolated high concentrations of some heavy metals have been recorded. Excavation of the fill material would be required from the proposed highway cutting and also from beneath the road pavement. It is proposed that excavated material be used in earthworks adjacent to the route in this location and the surface sealed with an impermeable capping. Provision for the venting of gas could also be provided if necessary but to date no gasseous emissions have been detected.

3.8.10 A second smaller pit has been examined adjacent to the dismantled railway and found to have been backfilled, predominantly with ash, bottles, china and other inert materials. It would be necessary for this material to be removed from beneath the new road but excavated material could be incorporated in areas of regrading in this part of the site and provided with an impermeable capping.

3.8.11 Drainage for the scheme would be developed as construction necessitates. Existing drainage, whether by ditches, streams, or land drains, would be maintained and provided with an outfall during construction and incorporated into the final scheme using replacement ditches and drains where necessary. The contract would require the contractor to take precautions to prevent runoff from the site or accidental spillages polluting watercourses.

Combe Haven Viaduct

3.8.12 At the crossing of the Combe Haven SSSI the works area for construction of the viaduct would be confined to a strictly-controlled corridor, limited in extent to 5 m south of the southern edge of the viaduct and 3 m north of the northern edge. Over this area a 0.1 m depth of topsoil would be removed and stockpiled. It is likely that a free draining layer would then be spread on a geotextile (a woven synthetic fabric) over the working area required to construct the viaduct foundations and deck.

3.8.13 On completion of the construction of the viaduct the free draining layer would be totally removed outside the line of the permanent access track. On the line of the permanent access track (3 m wide), the gravel layer would be removed to 0.1 m below the surrounding ground level. The geotextile would be removed and the stockpiled topsoil respread over the whole area to a thickness of 0.1 m and

sown with seed gathered from local sources. Existing drains would not be culverted - temporary bridging would be used for access.

Structures

3.8.14 Apart from the viaduct there would be 22 major structures along the scheme constructed using steel and reinforced concrete ten would be founded on piles. In addition there would be a number of more minor retaining wall and culvert structures. The construction of all these structures would involve excavation and/or piling operations, the latter being particularly noisy. Concrete would be delivered either from an offsite batching plant or as is often the case from an onsite batching plant operated by the contractor, thus avoiding use of local roads. This would however be decided upon by the contractor. It is expected that the amount of concrete required to construct the scheme would be in the region of 50,000 m^3.

Pavement

3.8.15 Materials for pavement construction would virtually all be delivered to the site from elsewhere, including the granular base for the road as well as the pavement itself, whether it be a bitumen bound or concrete surface. It is expected that the amount of granular base required would be in the region of 330,000 m^3 and bitumen bound pavement materials in the region of 135,000 m^3.

Street Furniture and Accommodation Works

3.8.16 All street furniture including traffic signs, safety fencing and lighting columns would be brought in to the site and would be erected prior to the opening of any part of the scheme. Accommodation works would be carried out along the scheme during the course of construction to maintain access and security for the affected landowners.

3.9 Maintenance of the Published Scheme

3.9.1 Maintenance of the carriageway areas including resurfacing, drain clearing, safety fence repairs, road marking renewal etc would be carried out periodically. The dual carriageway with two level junctions affords flexibility for maintenance operations by allowing lane closures, "contraflows" and at junctions, the use of slip roads.

3.9.2 Permanent access would be required to areas of planting and woodland management. This would be provided by small pull-off areas adjacent to the carriageway constructed of open cell concrete blocks filled with soil and seeded to give a natural appearance.

3.9.3 Access tracks would be provided to balancing ponds for regular maintenance. Emergency access may also be required for spillage control. The pollution interceptors would also have to be emptied periodically.

3.9.4 Bridges would be inspected regularly, and maintenance work including painting would be needed periodically. Generally access would be gained from above in the case of underbridges, using mobile gantries or hung scaffolding, and lane closures may be required. In the case of the Combe Haven Viaduct, the majority of maintenance would be carried out from above, access being taken along the hard area underneath only if necessary. Overbridges would be accessed from below for maintenance, although work to parapets would be carried out from the road above without need for lane closures below.

4 ENVIRONMENTAL EFFECTS AND THEIR MITIGATION

4.1 Environmental Impact Tables and Summary of Key Effects

4.1.1 The Environmental Impact Tables (EIT) are a tabular method of presenting the main environmental effects of the scheme and proposed mitigation measures. The EIT's have been prepared for this scheme in accordance with guidance provided by the Department of Transport's DMRB Volume 11 and are presented as Appendix A to this Statement.

4.1.2 A summary of the key effects of the Published Scheme is given in Section 6 of this Statement. This summarises the effects described in Sections 4 and 5.

4.2 Introduction to Impact Assessments and Mitigation Measures

Environmental Surveys and Impact Assessments

4.2.1 Environmental Surveys and Impact Assessments have been carried out generally in accordance with Volume 11, Section 3 of the DMRB. This section summarises the scope and findings of the studies undertaken to assess the effects of the scheme. The timing and methods of surveys are given and the main results presented. Full reports on the surveys and assessments are contained in Volume 2 of this Environmental Statement. The report findings are summarised below.

4.2.2 Water Quality and Drainage (Volume 2, Report 9)

Sites which would be affected by road run-off under the proposals were sampled. Surveys were undertaken in August 1992. The chemical water quality was medium - high at all sites; surveys of aquatic plants generally indicated nutrient-rich conditions. Snails and water beetles were abundant on the Barnhorn Levels and at Combe Haven: the invertebrates at these two sites reflecting the good to moderate water quality. Three wetland sites of national importance would be affected by the published scheme: 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 m of ditches and streams would be lost or culverted, of which 365 m are of national nature conservation value and 1,195 m are of local to county value. An assessment of the risk to water quality from accidents involving heavy goods vehicles carrying potential pollutants was undertaken.

Landscape (Volume 2, Report 6)

4.2.3 The landscape of the study area, was classified into four principal landscape character areas and described in depth at an early stage in the scheme development using the Countryside Commission Principles set out in the then current publication (CCD18). In preparing the Environmental Statement,

the landscape report has been revised to include additional material required under the current guidelines (CCP 423).

Visual Impact (Volume 2, Report 10)

4.2.4 Assessment of the visual impact on properties and public footpaths was first carried out when alternative route options were being considered. As the Preferred Route has been developed, additional assessment in line with the procedures of the Manual of Environmental Appraisal (MEA) were carried out as necessary.

4.2.5 Following publication of the DMRB, surveys to assess the visual impact of the published scheme were carried out in March and May 1994. In accordance with the DMRB three assessments were made, the first considers the effect of the scheme during the first winter after opening and the second and third consider the view in the summer and winter of the fifteenth year after opening and therefore consider the effect of established highway planting.

4.2.6 A total of 452 properties were assessed within the visual envelope of which the residents in 55 would experience a substantial impact during the first winter. In the summer 15 years later the number is expected to fall to 22 which is due mainly to the establishment of highway planting. Similarly, the view of the scheme from over 34 km of footpath, within the visual envelope, was assessed. Footpath users on approximately 10 km of path would experience a substantial impact during the first winter after opening which would reduce to approximately 6 km in the summer 15 years later.

Planning and Land Use (Volume 2, Report 7)

4.2.7 An assessment was made of the effects of the scheme on national, county and local planning policies. The potential environmental and other impacts of the route were evaluated as to the extent they would achieve or hinder the aims and objectives of the development plan for the area. The development plan coverage appertaining to the scheme included policy guidance at national, regional and local levels, including both adopted and appropriate draft policy documents and supplementary planning guidance. In addition, representatives of the local planning authorities were contacted to obtain their views on the impact of the scheme on planning policy objectives.

4.2.8 In order to assess the potential impact on private property, surveys were undertaken to establish the exact number of residential, commercial, industrial and other properties which would be demolished or from which land would be required.

4.2.9 Two residential properties along the line of the scheme would be demolished, substantial land would be required from the curtilage of two residential properties, and small strips of land would be required from a further six dwellings. Eight commercial and industrial properties would experience land take, of which three would need to be relocated.

4.2.10 With regard to community land (consisting of common land, town or village greens, allotments and public open space) information was obtained from the local authorities on the location and status of areas used by the public within the study corridor. Areas of public open space that would be required by the scheme were identified.

4.2.11 The potential impact of the scheme on development land was assessed. Development land was determined from allocations in development plans and supplementary planning guidance for the area, and from extant planning permissions identified in the planning registers of the local authorities. Following this, land that would be taken from these areas designated for future development was determined, and the extent to which the scheme would aid or hinder this development was evaluated. In addition, representatives of the local planning authorities were contacted to obtain their views on the potential impact of the scheme on these future developments.

4.2.12 The scheme, together with the development of the BNAR, would provide the necessary strategic access required for the development of the business park, community and light industrial development proposed to the north of Bexhill. Landscaping and mounding would help reduce adverse environmental effects that the scheme would have on these proposals.

4.2.13 A detailed agricultural survey and assessment has been undertaken to determine the scheme's impact. The work involved confidential interviews with the owners/tenants to ascertain the farm management. Soil samples were taken to classify the agricultural land quality.

4.2.14 The initial survey was carried out in August 1992 but has been updated in the light of refinements to the scheme design and its mitigation. A total of 31 holdings (35 plots) would be affected of which 20 are considered to be farm businesses. Only one of the 20 farms would suffer a major impact. In total there would be a permanent loss of 92 ha of agricultural land of which 32.2 ha is considered to be the "best and most versatile".

Nature Conservation

4.2.15 Areas of potential nature conservation interest were identified from an initial habitat reconnaissance survey, in consultation with the County Council's ecologist. Woodlands and semi-improved grassland thought to be of nature conservation interest were surveyed in more detail in spring 1991 and early summer 1992, using the National Vegetation Classification (Rodwell, J 1991 et seq British Plan Communities, Volumes I and II) in order to assess their value. Combe Haven SSSI was identified as a particularly important and sensitive area, known to contain endangered species. Specialist surveys were commissioned to cover these important aspects.

4.2.16 The surveys reported in separate Volume 2 reports are as follows:

(i) Vegetation (Volume 2, Report 4)

A National Vegetation Classification (NVC) survey of the area to be affected by the Published Scheme was carried out in 1992, with updates in Spring 1994. This indicated that eight grassland sites of local interest, two of local to county importance and one of county importance would be affected. About 19.7 ha of woodland and scrub would be lost, including the edge of Marline Valley Woods SSSI (some of which is of a nationally uncommon type) and the northern tip of Jack O'Boreham's Wood. Approximately 7,585m of hedgerow and 5,645 m of ditch would be lost or culverted: the vegetation interest of these has been assessed and mitigation proposals discussed.

(ii) Aquatic Invertebrates (Volume 2, Report 5)

Watercourses crossed by the Published Scheme were sampled for their invertebrate interest in Summer 1991 and 1992. Sites of high value were located at Pevensey Levels SSSI, the Barnhorn Level, in a pond at Little Bearsden and at Combe Haven.

Combe Haven

4.2.17 (i) Grasslands and Invertebrates (Volume 2, Report 1)

An NVC survey of grassland and ditches at Combe Haven was undertaken in summer 1991 and 1993. This identified five grassland types, ten swamp types and three aquatic communities. Aquatic and terrestrial invertebrates were investigated using standard techniques. These surveys confirmed the high value of the site for nature conservation.

(ii) Birds - Combe Haven SSSI (Volume 2, Report 2)

Registration mapping and temporal movement data collection were undertaken throughout a 12-month period between February 1992 and January 1993. The results confirmed that this site is of regional importance for breeding, wintering and passage migration birds, with 113 species being recorded during the study including Red Data Book and Candidate Red Data Book species. There was no evidence of breeding waders on the alluvial meadows, which was attributed to the high level of human disturbance and predation by other birds. The main issues concerning birds on this site would be the height of the viaduct and disruption due to road construction. The bird species of concern were found to fly mainly at between 10 - 30 m in height.

(iii) Shadow Modelling - Combe Haven Viaduct (Volume 2, Report 3)

Light levels under viaducts of different heights were modelled in February 1992 and the effects of reduced light levels on the vegetation were assessed. The study concluded that significant effects on the species composition of plant communities would be likely if the viaduct were 5 m or 8 m high. The shading effect of a viaduct of height 12 m would be much less, and would possibly be less noticeable than the effects of grazing and trampling by stock.

Crested Newts

4.2.18 Crested newts are protected under the Wildlife and Countryside Act 1981. Ponds within a 250 m corridor of the Published Scheme which may be affected were surveyed using torchlight survey techniques between May and July 1994. No crested newts were found.

Badgers

4.2.19 Badgers and their setts are protected under the Protection of Badgers Act 1992; a specialist badger survey was undertaken in 1992 and updated in 1994. The survey was conducted in order to assess the impacts of the scheme on badger populations, both as direct impacts to setts and as barriers to movement. The results of this report are not included in this Statement in order to prevent unauthorised use of the information and to protect the badgers. The survey located 78 setts within the study area of which 14 setts would be directly affected. Foraging areas and well-used paths would also be lost or truncated by construction of the scheme. Locations for mitigation measures such as badger tunnels and badger-proof fencing would be decided in consultation with English Nature.

Cultural Heritage (Volume 2, Report 8)

4.2.20 Research into cultural heritage has been undertaken throughout the development of the scheme. More recently, survey work has been conducted in accordance with the DMRB Volume 11. The cultural heritage report comprises archaeology, historic buildings and the historic landscape. A desktop study into the historical background, using a range of sources, has been carried out. This included information held by local authorities and societies. English Heritage and the County Council's archaeologist were consulted during the development of the scheme. Non-intrusive field evaluation (walkover survey, surface artefact collection, geophysical survey and the observation of geotechnical test-pits) has been undertaken where access was permitted.

4.2.21 Late eighteenth century maps show that the survival of field boundaries and the road network is high throughout the length of the scheme. The number of Listed isolated farm buildings also emphasise the seventeenth and eighteenth century pattern which remains relatively unchanged in this area.

4.2.22 The iron industry of the Weald was of considerable local importance from the Iron Age through to the post-medieval period and a number of features and finds associated with this have been located

dating to the Roman and medieval periods. Field names from nineteenth century maps record a number of names such as kiln field which could indicate the location of sites. Non-intrusive survey has detected a number of sub-surface features but none are thought to be of national importance.

Noise and Vibration (Volume 2, Report 11)

4.2.23 Ambient noise levels were surveyed at 27 selected locations along the route of the bypass in March 1992 using the shortened measurement procedure defined in 'Calculation for Road Traffic Noise' (CRTN). The survey indicated, not surprisingly, that the quietest areas were rural locations without major roads nearby an the noisiest areas were the major traffic route corridors such as A259, A269, Queensway and A2100.

4.2.24 The assessment was carried out on the assumption that the scheme opening year and design year (15 years after opening) would be 1998 and 2013 respectively, and was based on the predicted traffic flows for those years. Traffic forecasts have recently been reassessed and the year of opening of the scheme revised to 2000 (Design year 2015).

4.2.25 The noise assessment showed that properties closest to the scheme would generally experience 10-15 dB increases in the quiet areas and 3-10 dB along existing roads such as Queensway. Dwellings eligible for double glazing under the Noise Insulation Regulations were estimated as being approximately 60 in number. The effect on community land areas, such as public open space, was also assessed. Decreases at properties along the A259 were forecast in the assumed year of opening of the bypass as generally 3-6 dB through Bexhill and Bulverhythe and 1-3 dB through Hastings.

4.2.26 Noise nuisance effects on properties were assessed and expressed as the percentage changes of people 'bothered very much or quite a lot' by the noise changes. In general the changes in nuisance reflected the change of noise at the assumed day of opening of the scheme both for increases along the scheme corridor and decreases along the existing A259. Construction noise was assessed in accordance with CIRIA Report 64 for piling and TRRL Report LR 756 for earthworks operations. Dwellings, likely to benefit from discretionary powers to insulate against construction noise, are estimated to be approximately 65 in number, most of which would be eligible for insulation against traffic noise.

Air Quality (Volume 2, Report 12)

4.2.27 It was not considered necessary to carry out an air quality survey for the scheme. An assessment of emission levels for the three indicator pollutants of Carbon Monoxide (CO), Hydrocarbons (HC) and Nitrogen Dioxide (NO_2) was carried out for selected properties both along the bypass route and the A259 through Bexhill and Hastings as far as the B2093 junction at Ore. As with the noise assessment, the assumed scheme opening year and design year were 1998 and 2013 respectively. Levels at properties were forecast for the current year (1994) and the design year 'with' and 'without' the bypass.

4.2.28 Current emission levels along the existing A259 exceed, in many places, the relevant air quality standards for CO and NO_2. In 2013, even if the bypass was not to be built, the levels would be reduced below the standards due to improved vehicle emission control equipment. If the bypass was to be built emissions in the assumed design year would be even lower.

4.2.29 An overall impact assessment, which calculated total pollutant emissions for the combined Bexhill and Hastings Western and Hastings Eastern Bypasses, was carried out for the assumed year of opening over the road network covered by the traffic model. Comparisons between the 'with' and 'without' bypass situations in that year showed that the two bypasses would reduce total emissions of Carbon Monoxide by 12%, Hydrocarbons by 13% and Carbon Dioxide by less than 1%. Oxides of Nitrogen would, however, increase by about 6%. The effects of the two schemes cannot be separated in this respect.

Vehicle Travellers (Volume 2, Report 13)

4.2.30 An assessment was carried out of the likely effects of the Published Scheme on vehicle travellers. Assessments were made of the view from the road and driver stress.

4.2.31 The assessment of the views that would be available to road users was made by observation in the field and interpreting the scheme drawings.

4.2.32 The study concluded that the opportunities for wide views over long sections of road would be limited to the Combe Haven, where vehicles on the viaduct would have open views in both directions. Elsewhere, views would be intermittent and occasionally restricted, partly by landform and partly by mitigation measures designed to screen traffic in wider views and blend the scheme into the landscape. With the establishment of the proposed planting, the opportunities for views would reduce with time. It is considered however that the glimpses of open views and the variety of the landscape passed through would provide contrast and interest, giving the traveller a sense of place.

4.2.33 An assessment of the levels of driver stress that would be experienced along the existing A259 and other major roads within Bexhill and Hastings in the period 15 years after the assumed scheme opening year have been compared with and without a bypass. Consideration has also been given to driver stress levels on the new road.

4.2.34 The study concluded that the high levels of driver stress that would be experienced along the A259 in particular would be reduced substantially, but would still be classified as moderate in Bexhill and high in most of Hastings. The level of stress for users of the Published Scheme would however be low. Since much traffic would transfer to the bypass, there would be an overall reduction in driver stress.

Pedestrians, Cyclists, Equestrians and Community Effects (Volume 2, Report 14)

4.2.35 Information on the locations of key community facilities and the catchment areas which serve these facilities has been obtained recently for hospitals, churches, schools, post offices, aged persons homes, doctors surgeries, libraries, police stations, fire and ambulance stations, bus services, railway stations, riding schools and public open space. In addition a pedestrian survey was carried out in August 1993 of public footpath users. The assessment included consideration of changes in journey time, amenity, severance and the mitigation measures proposed.

4.2.36 The study concluded that there would be some loss of amenity in areas close to the bypass, but that the majority of the community facilities, excluding public footpaths were situated in the towns and that the effect of the scheme would be on people who travel to the town to use the facilities, not those who normally walk, cycle or ride. The provision of continuity of the majority of the side roads and new accommodation bridges and underpasses would allow access to remain relatively unimpeded for vehicle travellers.

4.2.37 Cyclists would be catered for in the new scheme by the provision of cycletracks and marked crossing points at junctions. Equestrians currently use side roads for access as there is a shortage of bridleways; the provision of new bridges would maintain access but reduce amenity. Public footpaths are not well used, but provision has been made for diverting them to a suitable crossing point over or under the bypass. Loss of amenity and some moderate increases in journey length would result.

4.2.38 The reductions of traffic flows along the existing A259 would reduce severance in the towns, making access to facilities easier and improving the general amenity value.

Disruption due to Construction (Volume 2, Report 15)

4.2.39 An assessment of the effect of the construction of the scheme on nearby residences, commercial property, public areas and ecological and heritage sites has been carried out.

4.2.40 Generally the report assesses the features that are within 100 metres of the limit of the construction works as surveys have shown that beyond this less than 20 % of people are seriously bothered by construction activities. Specific construction methods and effects are described in addition to likely access routes, earthworks movements and noise and dust restriction.

4.2.41 The report concludes that disruption would be localised, with impacts higher in northern Bexhill and Western Hastings where the scheme would be in close proximity to housing. The main impact on nature conservation during construction would be at Combe Haven SSSI, where there would be a temporary hard standing to construct the viaduct.

Geology and Soils

4.2.42 Ground Investigations into the soil and groundwater conditions that exist at present along the scheme corridor were carried out in the summer of 1991 and during the same period in 1993. The results were used to determine earthwork side slopes, structure foundation types, and special construction techniques that may be required. The Published Scheme design incorporates the findings of these surveys.

General

4.2.43 Site specific impacts and proposed mitigation measures are described in four sections (4.4 - 4.7) corresponding to those of the route descriptions. For further details of the aspects described, refer to the relevant report in Volume 2.

4.2.44 An explanation of the more technical aspects of the traffic noise and air quality assessments is given at Appendix B to this Statement.

4.2.45 A schedule of mitigation measures, which relates to each of the measures shown on Figures 23 - 32 (inc), is given as Appendix C to this Statement.

4.3 General Impacts and their Mitigation

Mitigation Achieved by Route Alignment

4.3.1 Throughout the development of the published scheme, adjustments in alignment have been made to minimise the impact on the built, historic and natural environments.

4.3.2 The A259(W) junction has been designed so that the link road and overbridge lie close to the higher ground which supports New Lodge Cottages. The line of the bypass along Barnhorn Level follows the bottom of the Hooe Ridge minimising the impact on the landscape and on the wildlife of the level and its ditches.

4.3.3 The route would avoid High Woods SSSI and by following low ground between Whydown Road and the A269, would largely be hidden from long distance views. The side road overbridges in this area would also be screened by landform.

4.3.4 The bypass (which would have the higher traffic flow) would maintain a low line through the A269 junction. The roundabout with the A269 would be raised, but still set at a level below the existing ground to the north. Noise barriers and mounds would be used here to reduce impact on properties in the proximity.

4.3.5 Between the A269 and the BNAR the route would be close to the bottom of the Combe Haven valley, largely out of view from northern Bexhill. The side road crossings would not be intrusive, except for a few properties on Watermill Lane. Use has also been made in this area of noise fences and mounds.

4.3.6 Between the BNAR junction and the crossing of the Combe Haven Valley the route would be alongside a disused railway, blending with the landform. The junction and roundabout would be partially screened by mounds and false cuttings, which would also reduce the impact of lighting.

4.3.7 The crossing of the Combe Haven Valley and its SSSI has been the subject of extensive surveys. It was concluded that a crossing at 10m above existing ground level represented the best balance between nature conservation, visual factors and cost.

4.3.8 The line of the route between the Combe Haven and the A2100 largely follows the line and level of the existing Queensway, an established road corridor. The junction at Mayfield Farm has been designed so that the area of the roundabout, (which would be lit), would be on low ground allowing only limited views from the south-west. The main carriageway would remain below the top of the present Queensway cutting. At Castleham the new junction would be below the existing ground level.

4.3.9 The layout and location of the A21/A2100 junction at Baldslow has also been the subject of much detailed investigation. After leaving Queensway at Battle Road the bypass would be set down in the valley. The roundabout junction would be below the existing level of Queensway in the area of Beauport Gardens. The A21 link road would fit in well between the industrial development on Whitworth Road to the north and the supermarket to the south. The A2100 link road would be in cutting, as would the approaches to and from the roundabout on the A2100. The Ridge bridge would be set slightly below the existing ridge line. The main carriageway would cross through the ridge at an angle, thereby reducing the effect of the skyline on views from the north.

Water Quality and Drainage

4.3.10 Approximately 5645 m of ditch and stream would be lost or culverted and four ponds totalling 0.24 ha would be destroyed. Wide ditches totalling about 2210 m, balancing ponds of 1.6 ha and various wetland areas would be created as mitigation.

4.3.11 The potential impacts of the road runoff on watercourses are scouring as a result of a rapid increase in velocity after heavy rain, and contamination by pollutants. The former would affect vegetation and invertebrates. The pollutants would be likely to include salt, heavy metals, organic materials and substances arising from spillages. These could affect individual species of low tolerance directly, or could lower water quality for example by reducing the amount of oxygen it contains, giving rise to longer-term change.

4.3.12 A total of fourteen outfalls would be proposed for surface run-off from the bypass. One outfall into East Stream with a low flow would not be balanced. For all other outfalls, the flow of water from road surface drainage would be balanced to restrict it to an acceptable level throughout a storm period.

This would ensure that the effect of an increase in flow would be minimised. All outfalls would incorporate on-line pollution interceptor tanks to prevent oils from the road surface entering watercourses. These proposals, including the maximum allowable flows into the watercourses, have been agreed in principle by the National Rivers Authority.

4.3.13 Storage capacity for balancing flows would be provided by using storage tanks buried underground for two of the outfalls and a storage ditch for one outfall. The remaining outfalls would use surface ponds. The ponds would be clay lined as necessary with reed beds incorporated and planting around the outside which when established would have a natural appearance and provide suitable habitats for colonisation. The reed beds may assist in filtering out some of the pollutants present in the road drainage run-off.

4.3.14 The road would affect field drainage, both open ditches and buried land drains. Detailed consideration has been given to the network of ditches and streams that run through the area. Flows along the majority would be maintained at the existing level by the provision of diversions and culverts under the bypass. Watercourse diversions would wherever possible be meandering in form with bank slopes varying between 1 in 3 and 1 in 6 giving a deep low flow channel and shallow edges with emergent vegetation, planted where appropriate, which when fully established would create a suitable wetland for natural colonisation. These principles were discussed and agreed with the National Rivers Authority. Land drains disrupted or severed by the bypass or its associated works would be connected into the bypass drainage system, or sealed as necessary.

4.3.15 An assessment of the pollution risk posed by the spillage of a hazardous material has been undertaken using the method described in Volume 11 of the DMRB. This suggests that there is a probability of an accident involving a heavy goods vehicle (HGV) carrying hazardous material somewhere on the bypass of less than once per year. However, an accident may not result in a spill but no data is available on this relationship. Research suggests that there is approximately one major spill for every ten spills. If it is assumed that every accident involving a HGV results in a spill, then the probability of a major spillage somewhere along the scheme is therefore less than once in 10 years.

4.3.16 In the event of a major spillage the first action of the emergency services would normally be to seal the drainage system, to contain the pollutant, by operation of the emergency shut off valve situated between the oil interceptor and the drainage pond. This would permit the services to identify the material and take appropriate action which could involve removal by suction to a waste disposal tanker. Should the valve not be shut off any pollutant not collected by the oil interceptor would reach the balancing pond. This would provide some storage, depending on the pond water level at the time. The pollutant could again be pumped out. It is possible that some hazardous material could reach the watercourse via the outfall pipe from the pond. However, the occurrence of major spills is relatively rare and the methods of dealing with them generally well organised and effective. The risk of serious pollution of a watercourse is therefore very small.

4.3.17 The National Rivers Authority provided information on all the licensed abstraction points within the study area. There were eleven licences registered for this Study area, mostly for crop irrigation, only four of which are within 1 km of the Published Scheme.

4.3.18 There are three public supply boreholes within the area, only two of which, Sweet Willow Pumping Station (TQ 709102) and Filsham Pumping Station (TQ 778093) are within 2km of the Published Scheme. The scheme would fall within the source protection zone for the Sweet Willow borehole, but the thickness of Wadhurst Clay would protect the aquifer. Filsham Pumping Station lies in an area where the Ashdown Beds are overlain by drift, which is not considered as a source protection (Zones I and II) or source catchment (Zone III) zone by the NRA.

Geology

4.3.19 There are no known mine workings or mineral deposits that would be affected by the scheme. The only known aquifer in the area would not be affected. There may however be localised lowering of the water table in areas of cutting.

4.3.20 The geological features of the area are described in 2.4.3 - 2.4.5, and do not contain any significant features of scientific interest or importance. All soils removed from cuttings on the scheme would be used within the scheme maintaining the soil types typical of the area.

4.3.21 A backfilled former pit containing a wide variety of materials was identified immediately to the east of Peartree Lane. Isolated high concentrations of some heavy metals have been recorded. This material would be removed but could be used in fill areas away from the carriageway with an impermeable capping. A second smaller pit has been identified adjacent to the dismantled railway and was found to contain ash, bottles, china and other inert materials. This material could also be used in areas of fill away from the carriageway with an impermeable capping.

Landscape

4.3.22 The earthworks for the scheme have been integrated with the existing land form by grading out wherever appropriate to allow return to agriculture where possible. Mounds and false cuttings have been used to screen the road from property and public places.

4.3.23 Tree and shrubs would be planted both to screen the road and to assist in the integration of the scheme into it's surroundings, by reflecting existing vegetation. The Department's practice for planting is to use mainly native trees and shrubs. They would generally be planted 1.5 m to 2.0 m apart. Two year old forestry plant material (0.4-0.6 m high) would be used in most cases. It is likely that within 10-15 years of planting, the trees would have matured sufficiently to form an effective visual screen.

The mitigation schedule given at Appendix C describes the planting design and management objective for each of the mitigation areas identified on Figures 23 - 32.

4.3.24 The planting would be carried out along the bypass and on adjacent land considered essential to the success of the overall scheme and consequently included within the Compulsory Purchase Order. Proposed planting is indicated by the letter P on Figures 23 - 32.

It is proposed to provide hedges along the edge of the bypass where possible. These hedges are proposed as accommodation works and as such are dependent upon the agreement of the landowners.

4.3.25 There are two types of earthworks proposed:

a) mounding and false cuttings to screen traffic on the road from views from property and public footpaths, indicated by the letter M.

b) The regrading of earthworks to integrate the scheme with the surrounding landform, (in places to offer to the landowner for return to agricultural use), indicated by the letter R.

4.3.26 Edges of woodlands which are severed by the scheme, would be given remedial treatment to ensure long term survival. Within a 25m wide belt, adjacent to the highway boundary, trees liable to windblow would be cleared and planting and other work carried out as necessary. Small remnant woodlands would be included within the essential landtake for the scheme. Woodland management operations are indicated by the letter W.

Land Use and Planning

4.3.27 Most of the land that would be affected by the scheme is agricultural. The initial survey was carried out in August 1992 but has been updated in the light of refinements to the scheme design. A total of 31 holdings (35 plots) would be affected of which 20 are considered to be farm businesses. Only one of the 20 farms would suffer a major impact. In addition to the direct loss of approximately 92 ha of land severance of holdings would occur along the route between the A259(W) and Queensway. An additional 35 ha would be temporarily lost during regrading operations giving a total initial requirement of 127 ha.

4.3.28 Access to severed areas of land, or land where access has been severed, would be provided wherever possible via new or existing roads, accommodation bridges or underpasses, or new access tracks as appropriate. The management of holdings has been taken into account in assessing how such severance can best be mitigated. Farm access tracks provided as mitigation are indicated on Figures 23 - 32 and crossings are indicated by the letter B on Figures 23 - 32 and in the mitigation schedule (Appendix C).

4.3.29 As a general principle the objective would be for all land to be regraded and offered for return to agriculture and to be reinstated to at least the Agricultural Land Classification (ALC) grade of the original land.

4.3.30 Three areas of Public Open Space would have land taken by the scheme with a total landtake of 7.2 ha. Exchange land would be provided in areas adjacent to those affected, totalling 8.6 ha.

4.3.31 The achievement of the integrated economic revitalisation, transport improvement, urban development and environmental safeguarding objectives for the eastern part of East Sussex as set out in the Structure Plan are dependent on the scheme proceeding. These major national and local policy considerations may justify overriding environmental policy restraints which apply to the area. The scheme, together with the development of the BNAR, would provide the necessary strategic access required for the development of the business park, community and light industrial development proposed to the north of Bexhill. Planting and mounding would help reduce any adverse environmental effects that the scheme would have on these proposals. No extant planting permissions would be directly affected by the scheme. The two development allocations that would be directly affected by the scheme are: that relating to the further development of Beauport Caravan Park; and the development of the dismantled railway for informal recreational use. Both developments would be precluded by the scheme, however this scenario is recognised by the local authority in the allocation of the dismantled railway, and exchange land would be provided. The remaining development proposals, including the development of a school, industrial and housing areas, alongside recreational development in the form of playing fields and new or improved footpaths, would only be indirectly affected through the environmental and visual impact of the scheme.

Cultural Heritage

Archaeology

4.3.32 There are fifteen known archaeological features within the study area (Figures 5 - 6). In addition to those sites a number of subsurface features have also been identified by surface collection and geophysical surveys. Areas of colluvium and alluvium have been noted where they may mask archaeological remains or contain paleo-environmental deposits. Trial- trenching and hand-augered boreholes would be carried out in order to identify the nature, extent and quality of survival of features within the landtake required for the Published Scheme. Excavation would subsequently be undertaken to the appropriate level of recording in consultation with English Heritage and East Sussex County Council, if preservation in situ of sites were not feasible. An archaeologist would be present at key phases of construction in areas of potential interest.

Listed and Historical Buildings

4.3.33 The mitigation measures for impacts on properties of historic interest are covered by landscape and noise mitigation proposals for property. One grade II Listed building would be demolished by the route; the East Lodge of Beauport Park. Consultations would take place with English Heritage and Hastings Borough Council and the agreed level of recording would be undertaken.

Historic Landscape

4.3.34 The measures to reduce the impact of the bypass on the landscape are considered in *Landscape* (4.3.19 onwards) and *Nature Conservation* (4.3.32 onwards). The route would sever historic field patterns, woodland and road networks which can be dated to at least the 1780's and are probably much older. Landscape measures would be sympathetic with the pattern of field boundaries and woodland and would thus blend the scheme as far as possible, into the existing historic landscape character of the area.

Nature Conservation

4.3.35 The areas of ancient woodland which would be removed (approximately 1.6 ha) could not be replaced. A further 12.0 ha of other more recent woodland would be removed. This would be mitigated by 50 ha of new planting. Species choice would reflect soil type and adjacent vegetation communities, for example, new planting adjacent to Kiln and Cole Woods (Figures 26 and 27) would reflect the species present adjacent to the new planting. To this end, different types of topsoil along the road corridor would be kept separate where possible and reinstated accordingly. There would be a loss of 7585m of hedges, which would be partially compensated for by replanting.

4.3.36 The 35.4 ha of semi-natural grassland that would be affected could not be exactly replaced. However, the grassland areas within the highway boundary would be prepared and seeded in accordance with Volume 10 of the Department of Transport's *Design Manual for Roads and Bridges* to create wildflower grassland. The total area of this new grassland type would be considerably greater than the area of grassland of nature conservation significance lost. Approximately 107 ha of the scheme would be grassed initially, 50 ha of which would be planted, leaving 57 ha of permanent grassland on the scheme.

4.3.37 Wetlands of nature conservation interest such as ditches, ponds and wet grassland are a feature of the study area, principally at Barnhorn Level and within Combe Haven SSSI. The mitigation measures discussed in principle in sections 4.3.10 and 4.3.13 and in detail below would provide replacement habitats. In the long term they would give a net nature conservation benefit. The scheme would remove a very small area of semi-improved grassland and scrub within the Pevensey Levels SSSI, but this would not be a significant impact.

4.3.38 Protected species would be dealt with in consultation with English Nature. None of the available information suggests that any legally protected bird species use the areas of woodland along the line of the Published Scheme. The main impact of the scheme on mammal populations would be habitat loss due to landtake. The scheme is unlikely to have a significant impact on populations of these common mammals as they would be able to recolonise areas reinstated after construction. A survey (approved by English Nature) has identified potential impacts on up to 45 badger setts of which 14 would be directly affected. The high density of badgers in this area is of county importance. Much of the road would have badger proof fencing along it and that several badger tunnels would be

provided. Site specific information on badgers is not given in this Statement in order to protect the species.

4.3.39 Habitats suitable for dormice were selected from vegetation surveys and were investigated in May 1994. Although locally common, this species has a restricted distribution in the UK and is protected under the Wildlife and Countryside Act, 1981. Woodlands in the study area were assessed based on their potential as dormouse habitat by looking for signs of dormouse activity such as the characteristically gnawed nuts, stripped honeysuckle or nests, and from previous records (Bright P and Morris P, 1992, *The Dormouse*, The Mammal Society, Bristol). Evidence of dormice was found in Highfield Wood, Combe Wood and Marline Wood, as well as several hedgerows and woods away from the line of the route. There is also the potential for dormice in woods such as Park Wood, Monkham Wood, and shaws near Jack O'Boreham's Wood. Some of the small fragments of woodland along the route contain a mixture of species which would be suitable for this species, but small, isolated habitat is less valuable than large areas joined together. The mitigation of effects on dormice in the woods directly affected by the scheme would be subject to further consultation with English Nature.

4.3.40 All bats are statutorily protected under the Wildlife and Countryside Act, 1981, but there are no records for the study area which has few suitable sites for bat roosts or hibernation sites, with few over-mature trees, suitable buildings or structures. It is likely that bats feeding in the area would be displaced to similar sites nearby. English Nature would be consulted prior to demolition of any structure or building thought to contain bats.

4.3.41 Smooth snakes and sand lizards are fully protected under the Wildlife and Countryside Act 1981, but their distribution is restricted and they do not occur in the areas to be affected by the Published Scheme. Adders, grass snakes, common lizards and slow worms are less restricted in their distribution. These species are protected only against killing, injury or sale under the Wildlife and Countryside Act, as amended. Detailed surveys of reptiles were therefore not considered appropriate.

4.3.42 The crested newt is afforded full protection under Schedule 5 of the Wildlife and Countryside Act 1981, against damage, destruction or obstruction of access to their place of shelter. Ponds which would be affected by the scheme which were potentially suitable for crested newts were surveyed using torchlight survey techniques from May to July 1994 but none were located. Smooth newts, palmate newts and common frogs were found. Common toads are likely to occur in the study area. They are protected against killing, injury or sale, but their habitat is not protected in the same way as for crested newts. The natterjack toad is fully protected but is restricted in its distribution and does not occur in the areas which would be affected by the scheme. No further amphibian surveys were considered necessary.

4.3.43 None of the available information suggests that any legally protected bird species use the habitats which would be lost to the scheme. Habitats similar to those which would be lost are available elsewhere in the study area and it is predicted that there would be negligible impacts on populations of common woodlands and hedgerow birds.

Recreation

4.3.44 A total of 21 Public Footpath routes and one *Byway Open to All Traffic* would be physically affected by the route of the bypass. The following table summarises how the bypass would affect existing footpaths:

FOOTPATHS AFFECTED BY THE BYPASS

Footpath Route No	Additional Length of Route Where Diverted	Proposed Treatment
Figures 13 and 23		
8	405 m	via new A259 Link Road, Green Road and field alongside Green Road
Figures 14 and 24		
9a/9b	490 m	via footpath along boundary of bypass and combined footpath and farm access overbridge
13a, 13b, 13c 10c, 10d 11e 30	60 m 80 m 310 m 170 m	diverted along footpaths on the northern and southern boundaries of bypass and via a combined culvert, farm access and footpath underpass
Figures 15 and 25		
18b	-	via diverted combined footpath and field access track and overbridge
Figures 16 and 26		
47	450 m	via footpaths on the northern and southern edge of bypass and Peartree Lane bridge
18	-	truncated at St Mary's Lane diversion
Figures 17 and 27		
56	-	truncated at Watermill Lane diversion
16b	100 m	via Preston Hall access track and Watermill Lane bridge
Figures 18 and 28		
33	625 m	via dismantled railway, combined footpath and field access underpass and Footpath 31a
31a	30 m	via combined footpath and field access underpass
Figures 19 and 29		
1	680 m	diverted along existing track and under first span of Combe Haven viaduct

Footpath Route No	Additional Length of Route Where Diverted	Proposed Treatment
Figures 20 and 30		
22	-	truncated at Westbound slip road of junction at Mayfield Farm
Figures 21 and 31		
32	1070 m	diverted along the northern boundary of bypass, under bridge at Castleham and Footpath 33
34a	580 m	diverted along the northern boundary of the bypass and under bridge at Castleham
34/39c	-	diverted within bypass boundary
Figures 22 and 32		
131A	-	extinguished
131	330 m	diverted via verges of A21 Link Road
129/130	-	diverted via south verge of A21 Link Road

4.3.45 With the exception of Footpath 131A which would be stopped up, all those affected would be either diverted to use an alternative route or adjacent Public Footpath or would be provided with a bridge or underpass crossing of the bypass. Where the footpath is combined with a farm or access crossing of the bypass, it is indicated by the letter B in Figures 24 - 33 (inc) and in the mitigation schedule. The details of how each of the footpaths would be dealt with are given in Section 3.7. Footpaths near the scheme would have reduced amenity due to visual impact, noise and air pollution from the scheme.

4.3.46 The impact of the scheme on cycle use in the area would be minor as no existing routes would be severed. There would however be some loss of amenity for recreational cycling in close proximity to the bypass. Cycle Facilities as described in 3.7.15 would be provided on the scheme.

4.3.47 Equestrian activities would be affected in amenity value adjacent to the road only, as the provision of side road bridges would maintain the routes that are currently used.

4.3.48 The scheme would affect recreational use of High Woods, St Mary's Recreation Ground, the dismantled railway, Marline Valley Woods and Castleham Playing Fields. All of these areas would be subject to increased noise levels and loss of amenity. Land adjacent to Beauharrow Road would be taken by the scheme.

Property

4.3.49 Two residential properties along the line of the scheme would be demolished, substantial land would be required from the curtilage of two residential properties, and small strips of land would be required

from a further six dwellings. Seven commercial and industrial properties would experience land take, of which three would need to be relocated.

4.3.50 As described in 4.2.24 and 4.2.27, the noise and air quality assessments were carried out assuming the year of opening as 1998 and the design year as 2013. Some selected checks have been carried out for the revised year of opening and design year which showed that noise increases experienced at properties, increased further by less than 1 dB. Some forecast noise levels for 2000 and 2015 would be higher than those illustrated for 1998 and 2013 where forecast traffic flows have increased. Air pollution forecasts were higher in parts of the scheme corridor, but in all cases tests were still well below the level at which further study would be necessary.

4.3.51 Noise barriers, mounds and false cuttings would be provided, as indicated by the letter N in the mitigation schedule (Appendix C) and on Figures 23 - 32, to reduce the noise levels at residential properties. Heights of barriers and mounds are quoted in relation to the level of the adjacent road.

Community Facilities

4.3.52 Users of community facilities would be largely unaffected by the provision of the Published Scheme, in that access to the facilities listed in 4.2.35 would be maintained by the provision of bridges over or under the bypass. The effects on public footpaths would be of reduced amenity, and in some cases the diversions would result in increased journey times. The effect on public open space used for recreation is described under 4.3.48, and in addition there would be loss of amenity for users of the Ninfield Road allotments and visitors to the Bexhill cemetery.

4.4 Site Specific Impacts and their Mitigation

Section A - Barnhorn Level (Figures 13, 14, 23 and 24)

Water Quality and Drainage

4.4.1 There would be four outfalls for surface water runoff from the road within this section. One would outfall to East Stream and two to Old East Stream. There would also be an outfall to Hooe Sewer. Near New Lodge Farmhouse the water is of high quality in ecological terms, with good vegetation and supports a population of Fen Raft Spider, (a national rarity protected under Schedule 5 of the Wildlife and Countryside Act 1981 and Red Data Book species. The ditches to the east of Broad Green Farm contain moderate quality water. In contrast to these sluggish marshland ditches, the Hooe Sewer has a more rapid flow and good water quality but poor invertebrate life, probably as a result of variable flow. Ditches totalling 2755 m would be lost or culverted in this section. These are generally of low to local nature conservation interest, apart from Old East Stream.

4.4.2 Three of the outfalls would enter a balancing pond before discharging into an existing watercourse but the small outfall to East Stream would not be balanced. The balancing ponds together with 890m of watercourse diversions and the highway ditches with meandering courses and varying bank slopes,

would provide suitable areas for natural colonisation. This mitigation is described further in Sections 4.3.10 - 4.3.14. A survey (Volume 2, Report 5) has demonstrated that the fen raft spider is widely distributed in the area of the Pevensey Levels and the construction of the road would not affect the population. The net effect of the scheme on hydrology in this section would be low, apart from the loss of a section of Old East Stream.

Landscape

4.4.3 The proposed scheme would alter the landscape character of this section of the route. It is predominantly rural and marked by a pleasant contrast between the levels and the Hooe, Whydown and Barnhorn ridges. The scale of the road would dominate this landscape, while disrupting the pattern of hedges and trackways extending down from the Hooe Ridge. At the northern end, two small areas of woodland would be lost.

4.4.4 By following the junction between the Hooe ridge and the levels, the route would not be seen against the skyline of the Hooe ridge in views from the east. Moreover, it would be generally below the field of view (dead ground) in views eastward from that ridge.

4.4.5 Overall, the impact of the road in Barnhorn Level, both in its dominance of a small valley and loss of individual features, would be severe. However, it would be well concealed by the Hooe and Barnhorn ridges from views to the east and west.

4.4.6 In this area 23 landscape measures would be carried out and these are listed in the mitigation schedule (Appendix C) and shown on Figures 23 and 24. They comprise a mixture of planting linked to the existing vegetation pattern, regrading and return to agriculture and false cuttings to screen the road. Their combined effect would be to integrate the road as far as possible into a predominantly agricultural landscape with a pattern of intermittent small copses and hedges.

Land Use (Figures 7 and 33)

4.4.7 Almost all the land affected on the Barnhorn Level is in productive agricultural use, apart from a small area of woodland on Plot 8. Twelve holdings would be affected, although six of these are managed by two family groups - one family group embraces four holdings whose management and ownership is highly complex.

4.4.8 The land is put to a mixture of uses. Close to the south-western limit of the Scheme, land devoted to turf production on a two year cycle is affected on three holdings (Plots 34, 101 and 123). The rest of the land on this section of the route is down to a mix of grass and cereals, most holdings opting for both in a rotation based mainly on winter wheat. Two holdings however do not have any cereals; one (Plot 2) being only a small holding with horses, and the other (Plot 9) concentrating on beef cattle and sheep. A small hectarage is devoted to cut flowers on Plot 1.

4.4.9 The majority of the land affected would be of moderate quality (Grade 3b), although some land in Grades 2, 3a, 4 and 5 would also be required. The total land lost would be 24.5 ha (mainly from Plots 1, 5, 9 and 10) with an additional 12.6 ha being taken during the construction period (mainly on Plots 1, 9 and 10).

4.4.10 The Scheme would sever land on six of the eleven holdings. An overbridge at 2/4 B and underpass at 2/8 B would enable Plots 3 and 4, 5, 9 and 10 to reach the land severed. Small parcels of land in the ownership of Plots 2 and 8 that are no longer accessible would be compulsorily purchased. Four holdings (Plots 1, 34, 101 and 123) would be provided with new field gateways to enable the owners to reach fields or blocks of land otherwise made inaccessible.

4.4.11 An intensive network of drainage ditches and field drains present on almost all the holdings reflects the low-lying nature of this section of the route and the need to remove excess water, although there is one area of perennial wetland on Plot 10. All the drainage affected would be intercepted or diverted appropriately. Water supply severed to drinking troughs on three holdings (Plots 123, 5 and 9) would be re-instated.

4.4.12 Within the Barnhorn Level section of the Scheme one holding (Plot 2) would suffer a major impact, seven would experience a slight residual impact, and the impact on three holdings would be negligible. Plots 1, 9 and 10 would experience additional disturbance during the construction period due to the higher landtake at that time.

4.4.13 No Public Open Space or other community land would be affected by the scheme.

4.4.14 There are no extant planning permissions potentially affected in this section of the scheme corridor. Northeye Prison has been allocated for development in the North Bexhill Strategic Framework and would be affected only indirectly by the Published Scheme.

Cultural Heritage

4.4.15 Fieldwork along this section has identified areas where archaeological features may exist below ground. The nature, extent and quality of survival of these features is as yet unknown. The impact is therefore uncertain, but it is unlikely that features discovered would be of major significance. Several field names such as 'kiln' or 'pit' are shown on the tithe map of the 1840s. These could indicate past areas of activity and there may be archaeological features in the vicinity.

4.4.16 The archaeological potential of alluvial deposits in the Barnhorn Level is considerable. There is the possibility of finding further salt-working sites in addition to those known to the south of the study area. There is even the possibility of prehistoric wooden artefacts existing below the surface. Palaeo-environmental deposits would also be disturbed by construction. There is therefore an uncertain adverse risk to features of between local and county importance. The site of sixteenth century buildings by Whydown Road may be affected by the scheme although their precise location is unclear. They are of local importance. Where appropriate a specialist advisor would be on site during

construction to record palaeo-environmental deposits. Further fieldwork would be carried out in accordance with 4.3.32.

4.4.17 The route would have a high impact on the setting of Longdown Farmhouse, a grade II Listed building dating from the sixteenth century or perhaps earlier. Planting (Figure 24) is proposed as mitigation.

4.4.18 As already stated the Published Scheme would require landtake within the historic Barnhorn Level. The relationship between Barnhorn Level and the settlement on higher ground has determined the pattern of roads, trackways and field boundaries. The route would sever these historic patterns. This would be a high local impact. Highfield Wood south-east of Longdown Farm would be severed by the scheme; a moderate impact on a feature of local importance. Landscape measures where practicable would re-establish the historic landscape pattern.

Nature Conservation

4.4.19 Within this section of the route, the principal direct nature conservation impact would be the loss of 1.6 ha of the edge of Pevensey Levels SSSI, mainly road verge. In addition there would be the loss of ditches, wetland and wet grassland of local interest, together with two small areas of woodland. There would be indirect impacts from severance and pollutants and possible disturbance of feeding and breeding birds on Barnhorn Level.

4.4.20 Approximately 2755 m of ditches and streams would be lost. These contain plant communities and individual species that are uncommon and a varied invertebrate assemblage of national value that includes the Fen Raft Spider. Near New Lodge Farm a pond designed and managed for its wildlife interest would be lost. Overall these wetland habitats would experience severe localised impact. In addition, 3555 m of hedges and 1 ha of woodland and scrub would be lost. The loss of grassland of local nature conservation significance would be confined to 1.8 ha at Longdown Farm. The remaining grassland lost in this section is of little nature conservation interest.

4.4.21 Severance of the ditches would reduce the free movement of invertebrates along them. The changes to ditch management that may arise from altered farm management could affect nature conservation interest. One of these ditches, Old East Stream is of high value due to the presence of the Fen Raft Spider. However, most are of low to local nature conservation value.

4.4.22 At the easternmost end of this section, approximately 0.9 ha of woodland at Highfield Wood and less than 0.1 ha at Birchtree Wood would be affected. The direct impact would be high on sites of local interest. Evidence of dormice has been recorded in the areas of landtake at Highfield Wood. Mitigation of the effects of this protected species would be the subject of consultations with English Nature.

4.4.23 To the east of the route the wetter areas of Barnhorn Level are of interest, notably for wintering snipe, a candidate Red Data Bird. Noise and moving traffic on the road would be likely to disturb the birds,

reducing feeding time and possibly breeding densities for up to 200 m from the road on the south eastern side.

4.4.24 The provision of new wetland habitats is discussed in section 4.4.2 and the principles of creating new grassland areas are set out in 4.3.17. New tree and shrub planting would produce a greater area than the trees, shrubs and woodland lost.

Recreation

4.4.25 Six footpath routes would be affected in this section of the route. Diversion routes would be provided for all footpaths affected via overbridges and an underpass, as described in Section 3.7. There is an extensive network of footpaths totalling 8.0 km within the visual envelope for this section of the scheme, for which, users enjoy uninterrupted views across the levels. The extent of the visual envelope is shown on Figure 44.

4.4.26 Generally, users of footpaths on the low lying ground to the south of the scheme would experience a slight to moderate impact during the first winter after opening, as the provision of false cuttings and regrading would largely screen the road from view. As the footpaths ascend the Hooe Ridge to the north, the road and traffic on it would become more widely visible. Consequently, users would experience a moderate to substantial impact.

4.4.27 By the summer of the fifteenth year, users of footpaths across Barnhorn Level, would generally experience no discernable adverse change in their view, or at worst a slight impact. From the more elevated views on the ridge to the north, the length of footpath from which users would experience a substantial impact would also reduce from 3.9 km in the first winter to 2.6km.

Property

4.4.28 No residential properties require demolition within the Barnhorn Level section of the route.

4.4.29 Other than the existing A259 corridor, where prevailing noise levels reflect the existing traffic flow, the Barnhorn Level is a quiet rural area with existing levels typically between 45 and 53 dB. Noise increases resulting from the bypass would be up to 15 dB depending on the proximity of the property to the bypass. (See Figure 34)

4.4.30 Barnhorn Level has few properties near the bypass. Forecast levels of both Carbon Monoxide (CO) and Nitrogen Dioxide (NO_2) in the assumed design year would be well within the air quality standards.

4.4.31 Figure 44 shows the extent of the visual envelope for this section of the route. To the south, the envelope extends over 1 km across the flat, open levels. In contrast, the envelope is generally more restricted to the north by the rising ground of the Hooe Ridge.

4.4.32 Out of the 59 properties assessed within the visual envelope, the residents of 37 would experience no discernable deterioration in their view during the first winter after opening. Of the remaining 22 properties, the 4 for which residents would experience a substantial change are New Lodge Cottages, Holmes Farm and Longdown Farm. Residents in Hill Farm and Rosemary Cottage would experience a moderate adverse impact.

4.4.33 Whilst the former Northeye Prison (Figure 7) site is visible from the centreline of the route, views towards the scheme from residential properties adjoining the former prison are largely prevented by street trees and the prison buildings.

4.4.34 By the summer of the fifteenth year it is expected that the highway planting would have established sufficiently, to form an effective screen blending the road into the surrounding landscape. Therefore 10 properties would experience a substantial impact, whilst the residents in 16 would experience either a moderate or slight effect, but there would be no adverse change in the view from 42 properties.

4.4.35 Within this section mitigation for properties would be provided by bunding and planting shown on Figures 23 - 32.

4.5 Site Specific Impacts and their Mitigation

Section B - The Weald (Figures 15, 16, 25 and 26)

Water Quality and Drainage

4.5.1 In this section there would be two outfalls. The ditch north west of Sweet Willow Pumping Station that would receive an outfall is of high water quality, but nettle-dominated and of low nature conservation interest. The ditch adjacent to Jack O'Boreham's Wood which would receive an outfall is a typical deeply-shaded woodland edge stream dominated by nettle and hairy willowherb. It has medium water quality. In total approximately 840 m of ditch would be lost or culverted.

4.5.2 Balancing ponds would be provided on the outfalls taking carriageway runoff. Watercourse diversions and highway drainage ditches would be established with meandering courses and varying bank slopes where possible, as discussed in 4.3.14. In total, 790 m of open ditch would be created in this section. The net effect on water quality and drainage in this section would be low.

Landscape

4.5.3 In this section the route would cut across the grain of an attractive and predominantly rural landscape. However, while the local landscape character of the road corridor would be severely affected, the undulating landform would generally conceal the road from wider views.

4.5.4 From Whydown Road eastward the route would enter a deep cutting and be concealed from lateral views, but hedgerows and shaws would be removed. Emerging from cutting the road would become locally prominent.

4.5.5 To the north of Jack O'Borcham's Wood, a mosaic of hedges, shaws and copses would be removed, as would a small part of the wood itself. The impact of the road on this small scale but high quality landscape would be severe, but it would be largely concealed from wider views by the wooded Whydown - High Woods ridge to the south and the lower slopes of the Ninfield - Bexhill ridge to the north.

4.5.6 The southern edge of Kiln Wood and interconnecting hedges and shaws would be removed, but the road would be concealed in cutting. To the east, the junction with the A269 would have a significant impact on views from property but its low lying site would conceal it from the wider landscape.

4.5.7 As it drops down to the head of the Combe Haven valley the route would require the removal of hedges and shaws and would dominate the small valley. However, it would be concealed from the rural areas to the north and from the northern edge of Bexhill to the south.

4.5.8 In this area 22 landscape measures combining planting, grading out and return to agriculture, management of woodland to minimise the effects of windblow and construction of mounds to screen properties would be carried out. These measures are listed in the mitigation schedule (Appendix C) and shown on Figures 25 and 26. Their effect would be to integrate the road with the undulating landscape and with the strong pattern of woodland and hedges.

Land Use (Figures 7 and 33)

4.5.9 Most of the land affected by the Scheme in this Section is agricultural and eleven holdings would be affected. Apart from two holdings at the western end farmed in conjunction with holdings in the Barnhorn Level (Plots 127 (126) and 11(1)), none of the holdings exceeds 25 ha in size. There is also a marked change in land use from cereal rotations on the two plots above, and permanent grassland on the other, smaller nine. The grassland supports mainly beef and sheep enterprises but there is a dairy herd on Plot 15 and horses are kept on Plots 33 and 26. The farmers of Plots 17 and 19 let all their grass during the summer.

4.5.10 The majority of land that would be lost in this section of the Scheme would be of moderate quality (Grade 3b) though there would be pockets of better land lost, mostly on Plots 127 and 19. Land lost permanently would amount to 26.0 ha. Only a small area amounting to 0.5 ha would be required additionally during the construction period.

4.5.11 Seven of the eleven holdings would be split by the Scheme. New access tracks and/or Overbridges would enable five of the seven (Plots 127, 11, 28, 15 and 58) to reach their severed land, though the additional travelling in the case of Plot 58 would be burdensome. Plot 19 would only be fragmented

by the split. The severed land on Plot 33 would be compulsorily purchased. Two holdings (Plot 12 and 26) would be completely or almost completely taken.

4.5.12 The Scheme would involve the loss of buildings on Plot 58, and essential farm services such as water and electricity would be affected on Plots 28, 15, 19 and 58. These effects would either be mitigated by compensation or re-instatement, as agreed with the District Valuer.

4.5.13 On this section of the route there would be a major impact on two of the holdings (Plots 12 and 26), and a moderate impact in the longer term on four holdings (Plots 28, 33, 19 and 58). The long term impact on three holdings (Plots 127, 11 and 15) would be slight, and the impact on Plot 17 would be negligible. Plot 107 was unable to be assessed. Some Non-Agricultural land would be taken in the St Mary's Lane/A269 area.

4.5.14 The scheme would take 0.1 ha of public open space from St Mary's Recreation Ground. An equivalent area of exchange land would be provided from adjacent woodland.

4.5.15 In this section of the scheme corridor there are no extant planning permissions potentially affected. The Ashdown Brickworks Site is the only development plan allocation in this section. This has been identified for light industrial development subject to access arrangements. The Published Scheme would improve access to this site.

Cultural Heritage

4.5.16 Fieldwork along this section has identified areas where archaeological features may exist below ground level. The nature, extent and quality of survival of these features is as yet unknown. The impact of the route would therefore be uncertain, but is unlikely that features discovered will be of major significance. A probable Saxon boundary exists along the northern edge of High Woods here and would be severed. This would be a locally high impact on a feature of county importance. The site of a farmhouse 'Farneland' and a cottage both recorded in the seventeenth century may be affected by the scheme although their exact locations are unclear. The scheme is a low risk to these features of local importance. Further fieldwork prior to road construction would be carried out in accordance with 4.3.32.

4.5.17 Three Listed buildings lie within this section of the route. The bypass would have a slight impact on the setting of one of these, High House. It is a grade II building of late eighteenth and early nineteenth century date and would be about 250 m north of the scheme.

4.5.18 This section is a typical Wealden landscape with a pattern of small fields and shaws which the bypass would sever. The route is aligned contrary to the earlier roads which run roughly north/south linking lowland areas with the Weald. The scheme would disrupt and truncate this established pattern. This constitutes a low impact. The southern section of Kiln Wood, also probably ancient woodland, would be lost. This would be a low impact. Landscape measures would help to re-establish boundaries and areas of woodland in keeping with the character of the area.

Nature Conservation

4.5.19 Within this section the principal impacts would be twofold. Firstly there would be direct habitat loss from woodlands, shaws, copses and hedges along the line of the route. Secondly there would be severance of the mosaic of habitats to the north of High Woods SSSI, although the SSSI itself would not be directly affected. The total loss of woodland and scrub within this section would be 2.90 ha, and 690 m of hedge would also be lost.

4.5.20 At the northern end of High Woods an area of wet flush, the scrub edge and a shaw would be lost, as would 2.36 ha of unimproved grassland of local interest. The shaw has a rich ground flora and a small section of uncommon wet woodland. These habitats are of local interest intrinsically, but are raised to county level by being part of a habitat mosaic linked to an SSSI. Therefore there would be severe impacts on features of county value.

4.5.21 The remaining hedges in this section of the route are principally of the hawthorn - ivy scrub community (W21) and of low intrinsic interest.

4.5.22 The copse (total area 0.7 ha) to the north of High Woods would be lost. About 90% (0.6 ha) would be removed by the scheme; the remainder may suffer from windblow. This would be a severe impact on a site of local significance.

4.5.23 Northeast of High Woods, up to 0.8 ha (20%) of Kiln Wood would be removed. This wood is a poor example of a nationally common type: the impact would be severe on a site of local to low significance.

4.5.24 At the A269 junction approximately 0.9 ha of coniferous woodland would be removed.

4.5.25 The pond at Little Bearsden containing a number of Nationally Notable and one Red Data Book beetle species would be lost, together with the watercourses mentioned in 4.5.1. It is proposed to transfer the contents of the pond to a balancing pond, prior to filling if the construction programme allows. If not, it may be possible to use similar ponds in the area for translocation.

4.5.26 The loss of woodland and hedges would be partially compensated by new tree and shrub planting as part of the landscape proposals. The Department would manage exposed woodland edges to mitigate the effects of windblow and wildflower grassland would be provided in this section of the route. It is intended that the balancing pond at Watermill Lane in Section C would replace the Little Bearsden Pond and that ditch creation would compensate for ditch loss.

Recreation

4.5.27 Three footpath routes would be affected within this section. One would be truncated and the others diverted via overbridges as described in Section 3.7.

4.5.28 In comparison to Section A, there is a less extensive network of footpaths within the visual envelope (totalling 3.8 km). The extent of the envelope is shown on Figure 44. Footpaths along this section of the route are generally well contained by both landform and woodland. Therefore, in the first winter after opening, most views from the footpaths would be intermittent with comparatively short lengths close to the road (2.3 km), experiencing a moderate to substantial impact.

4.5.29 By the summer of the fifteenth year, the overall level of impact would have decreased. Users on 1.1 km of footpath would experience a substantial impact but elsewhere established vegetation would help screen the road from view.

4.5.30 Users of the land to the north of the route near Sweet Willow Pumping Station, where pheasant shooting takes place, would be subject to traffic noise and visual impact. Users of High Woods and Jack O'Borcham's Wood would enjoy a less pleasant environment from similar effects. The use of Peartree Lane and Whydown Road by equestrians would be unaffected by the new scheme, but amenity would be reduced close to the bypass.

4.5.31 A field owned by the St John's Ambulance Brigade to the west of Thorne Crescent is used by scouting organisations for camping. Although the small area of land taken would not have an appreciable effect on the use of the site overall, the increased noise levels (although attenuated by the deep cutting) would reduce the amenity of this facility.

4.5.32 St Mary's Recreation Ground would not be seriously affected by the bypass or the new A269 junction, since the route would be in cutting at this location. The prevailing noise levels are already relatively high due to the ground's proximity to Ninfield Road. The land taken by the scheme would not affect the playing fields. A view of the A269 junction would be possible from the northern edge of the Recreation Ground. The view would however be broken up by surrounding vegetation and consequently the level of impact would be slight.

Property

4.5.33 No residential properties would require demolition within The Weald section of the route.

4.5.34 The area between Whydown Road and Kiteye Farm is generally moderately quiet with existing levels of between 48 and 56 dB, except for the immediate vicinity of A269 Ninfield Road where noise levels are higher. Noise increases due to the bypass would be up to 10 dB at dwellings in the quieter areas and up to 15 dB in the Ninfield Road area. (See Figures 35 and 36)

4.5.35 Emission levels in the assumed design year have been forecast at Sweet Willow Pumping Station and a number of properties near the proposed A269 Ninfield Road junction. For details see Report 12 in Volume 2 of this Statement.

4.5.36 At Sweet Willow the forecast levels of CO and NO_2 are below the level for which an assessment can be carried out. A number of the dwellings on Ninfield Road have forecasts of CO below threshold,

and NO_2 of 25 - 27 ppb. However, if the scheme were not built the levels of CO would still be below threshold, with NO_2 levels of 13 - 14 ppb. There would therefore be an increase in NO_2 levels due to the scheme, but levels of emissions would be well within the air quality standards.

4.5.37 Figure 44 shows the extent of the visual envelope for this section of the route. Initially, views of the road would be possible up to 600 m away, but generally landform and vegetation would restrict the envelope to a much narrower band on either side.

4.5.38 Out of the 62 properties assessed within the visual envelope, the residents of 23 would experience no discernable deterioration in their view during the first winter after opening. Of the 39 remaining properties, the 18 for which the residents would experience a substantial change are The Spinney, Bramble Cottage, Little Bearsden, Jasmine and Caritas Cottages, and Terina and St Mary's Cottages. The close proximity to and the scale of the A269 junction is a significant factor. The residents in a further 12 properties would experience a moderate adverse impact which would include properties on Thorne Crescent, Pashley Farm and Scallets Wood.

4.5.39 By the summer of the fifteenth year, the number of properties from which residents would experience a substantial impact would have decreased to 3 - The Spinney, Bramble Cottage and Little Bearsden, from where the view of the noise barriers would remain unchanged. In all other views, the established highway planting would help screen the scheme resulting in a moderate or slight impact on 30 properties and no adverse change to 25 properties.

4.5.40 Lighting the A269 junction would result in impacts with lighting columns visible during the day and additional night-time glare to the adjacent properties, in particular those on Ninfield Road.

4.5.41 Mitigation for properties in this section would be provided by substantial earthworks and planting along the line of the route and by a 2 m high noise fence which would also serve as a visual screen (Figure 26).

4.6 **Site Specific Impacts and their Mitigation**
Section C - Combe Haven Valley (Figures 17, 18, 19, 27, 28 and 29)

Water Quality and Drainage

4.6.1 There would be six outfalls within the Combe Haven catchment. The densely-shaded upper section of the Combe Haven stream that would receive the first outfall has very little aquatic life and is of moderate water quality. To the east there are two further outfalls to the Combe Haven stream. The fourth small outfall is to a dry ditch. The fifth outfall would be direct to the Combe Haven. Decoy Pond Stream, which would receive the sixth outfall is nutrient enriched but nevertheless of medium to high quality. Approximately 1760 m of streams and ditches would be lost or culverted in this section.

4.6.2 Four of the outfalls would enter balancing ponds before discharging into watercourses. One outfall is via a storage ditch and one via a buried storage tank. 530 m of new ditches with a larger surface area would be provided to replace those lost. The balancing ponds either side of Combe Haven would restrict the outflow from carriageway runoff entering the Combe Haven watercourses to a flow acceptable to the NRA. The net effect on water quality and drainage would be low in this section.

Landscape

4.6.3 This section of the route can be divided falls into four parts: the route in the narrow head to the Combe Haven Valley, the route from the Bexhill Northern Approach Road (BNAR) to the southern abutment of the viaduct, the viaduct itself, and the route rising up the northern side of the Combe Haven Valley.

4.6.4 At the western end of this section, the route would dominate the narrow valley which is enclosed by the wooded ridge between Cole Wood and Acton's Farm to the north and by high ground to the south. The latter largely screens the route from the northern edge of Bexhill. The landscape impact on this section would be locally severe.

4.6.5 Lighting and earthworks for the BNAR junction would be a prominent feature in the landscape as would the earthworks adjacent to the road along the dismantled railway embankment. As the Combe Haven valley opens out, the route would be visible from up to 3 km away to the north at Crowhurst. However, it would be seen in the distance against a background of intermittent vegetation and below the skyline.

4.6.6 The viaduct crossing the Combe Haven would have a severe impact on the present rural character of the valley. It would be largely visible along the entire length of the valley, although in most views the viaduct and traffic on it would be seen below the skyline. The viaduct would not be visible from the tributory valleys of the Watermill, Powdermill and Decoy Pond streams.

4.6.7 As the route rises up the northern side of the Combe Haven Valley to the locally prominent roundabout with the B2092, the embankment and subsequent cutting would be prominent in views from the southern side of the valley. It would have a significant impact on local landscape character.

4.6.8 In this area, 21 landscape measures would be provided. These measures are listed in the Mitigation Schedule (Appendix C) and shown on Figures 27 to 29. At the head of the Combe Haven Valley there would be dense planting and extensive mounding and regrading to screen the road and to integrate it with the landscape (Figure 27 measures 5/1 and 5/7). On the southern edge of the Combe Haven Valley the road would be aligned to make best use of the existing vegetation along the dismantled railway. Extensive grading, mounding and planting would enhance this effect (measures 6/1 - 6/6, Figure 28 and 7/1 - 7/4 on Figure 29). The height and simple format of the Combe Haven viaduct would prevent it from dominating the valley floor. The appearance of the western abutment would be softened with planting which would link into the existing woodland. The eastern abutment would be graded out and partially planted to blend into the landform of the valley side. As the route rises up the northern side of the valley it would be integrated with the existing landscape by large scale regrading and new planting (7/5 - 7/7, Figure 29).

Land Use (Figures 7 and 33)

4.6.9 Most of the land taken for the scheme would be agricultural. Eleven holdings would be affected, of which six are (large) farms in the conventional sense (Plots 109, 73, 74, 80, 82 and 84). Three are of mixed type with cereals supported by beef and sheep enterprises (Plots 80, 82 and 84), one has cereals and a dairy herd together with a livery enterprise (Plot 75), one is concerned solely with beef production (Plot 73), and one mainly with beef and sheep, but with some pigs (Plot 109). Three (Plots 74, 80 and 82) include rough grazing land on Combe Haven. One holding (Plot 84) has a farm shop, let shoot, scout camping, and general caravan site.

4.6.10 The remaining smaller holdings are concerned mainly with horse-related enterprises (particularly Plots 110, 124, 72 and 85).

4.6.11 The majority of the land affected is of moderate quality (Grade 3b) but some better quality land would be lost on Plot 74 in particular. Land on Combe Haven affected would mainly be in the poorer Grades. A total of 38.7 ha would be lost permanently, mainly from the larger farms with the exception of Plot 82. Land taken temporarily would amount to 21.4 ha and would be mainly located on Plots 73, 74, 80 and 84.

4.6.12 Severance of land, water supply and access difficulties would be common throughout this section of the route, irrespective of holding size. New access tracks would enable Plots 109, 110, 124, 72 and 73 to reach land severed. Around the edge of Combe Haven tracks under the proposed viaduct would similarly enable Plots 80, 82 and 84 to reach blocks of their land made distant. An underpass and new access off a proposed roundabout would be provided for Plot 74 to reach land severed north of the Scheme. With the possible exception of Plot 82, all of these plots would require a water supply since all run livestock. Plot 72 would lose all its stabling.

4.6.13 Additional adverse effects would be incurred during the construction period on Plots 72, 73, 74, 80 and 84 due to the extent of additional land loss at this time.

4.6.14 The effects of the Scheme on agriculture are more pronounced on this section of the route than in other sections. Even after mitigation there would be a major impact on four holdings (Plots 110, 124, 72 and 74), one of which (Plot 74) is a large farm. A further three holdings (Plots 73, 84 and 85) would experience a moderate impact in the longer term, but this would be greater in the short term on Plot 73. Plots 109 and 80 would experience a slight effect. The impact on Plots 75 and 82 would be negligible.

4.6.15 The scheme would affect 2.6 ha of public open space at the dismantled railway in the Combe Wood/Little Worsham Farm area. An equivalent area of exchange land would be provided from the adjacent Combe Wood.

4.6.16 Much of the area to the south of the Published Scheme in this section is covered by the North Bexhill Strategic Framework. Development plan allocations include the North Bexhill business park (affecting plots 73, 85 and 74), Worsham Farm development (affecting plots 74 and 80) and Pebsham Country Park (affecting plot 80). (Shown on Figure 7) All of these proposals would benefit from improved access as a result of the Published Scheme.

4.6.17 Three extant planning permissions (RR/88/3251, RR/89/1255, RR/90/0659) relating to a housing development on land at Little Preston off Watermill Lane would be unaffected by the Published Scheme. (Figure 7)

Cultural Heritage

4.6.18 There are known archaeological sites within this section of the scheme. The possible remains of an undated enclosure or lynchet discovered during the field survey, would be removed by the scheme to the north of Preston Hall. This is a substantial effect on a feature of between local and county importance. Close to the bypass the BNAR may have an impact on a possible bloomery site adjacent to the disused railway line. The scheme would be a low risk to a feature of between local and county importance. The site of Combe Farm may also be at risk from the scheme, although it's precise location is unclear.

4.6.19 Fieldwork along this section has identified areas where archaeological features may exist below ground level. The nature, extent and quality of survival of these features is as yet unknown. The impact of the route is therefore uncertain but it is unlikely that the features discovered are of major significance. Further fieldwork would be carried out in accordance with 4.3.32.

4.6.20 The construction of the Combe Haven Viaduct may destroy or severely affect palaeo-environmental deposits within the area of proposed landtake for the piers. There is also an uncertain risk of damaging buried archaeological remains such as boats. There would be trial investigations for palaeo-environmental deposits followed by excavation and monitoring during construction as appropriate.

4.6.21 There are seven grade II Listed buildings within the Combe Haven section of the scheme, five of which are over 200 m away from the bypass centre line and upon which the impact would be slight. There would be views from Preston Hall, a nineteenth century Listed building and the adjacent Preston Hall Cottage down into the Combe Haven valley and the impact on their setting would be high.

4.6.22 Chetwynd and Preston Lodge at Watermill Lane are not Listed but are of some historic interest, both dating back to the nineteenth century. The impact on these properties would be high. The impact on the Listed buildings would be mitigated by the landscape measures.

4.6.23 Much of the field pattern and road network of the Combe Haven Valley was in existence in the 1780's and probably much earlier. The southern tip of Cole Wood, an ancient woodland, would be taken by the proposed scheme. This would have a low impact.

Nature Conservation

4.6.24 Within this section, the major impact would be on Combe Haven SSSI, but there would also be a significant impact on the scrub and rough grass habitats of the dismantled railway embankment and adjacent woodlands. Approximately 2470 m of hedges would be lost and a total of about 6 ha of woodland and scrub and 2.2 ha of semi natural grassland would also be taken in this section.

4.6.25 Volume 2 contains surveys and impact assessments of the complex issues raised by the crossing of Combe Haven. In addition to the direct loss of habitat there would be indirect impacts of shading, of microclimatic change and of severance which would affect the notable invertebrate and bird communities on the site. There would also be a direct loss of 0.1 ha of wood and scrub on the embankment within the SSSI.

4.6.26 During construction of the viaduct there would be a serious localised impact due to the requirement of a construction corridor 29 m wide across wetland habitats. This would result in the loss of grassland and aquatic communities from this part of the SSSI.

4.6.27 There would be a long term change in the habitat beneath the viaduct, particularly along the 3 m wide access track. The resulting settlement, compaction and shading would lead to increased waterlogging and a change in vegetation reduced by the proposed mitigation.

4.6.28 Shading from the viaduct would alter the aquatic microclimate for the rich invertebrate fauna, including notable species. Some would be unlikely to cross the shaded area, but overall this would be a moderate impact. The altered humidity, shade and windspeed from the viaduct may affect movement of flying insects, but probably not the strong fliers such as dragonflies for which the site is noteworthy.

4.6.29 A study has been undertaken to determine the height at which birds in the Combe Haven valley fly in relation to the proposed viaduct, and whether this would have any effect on bird mortality. At the point where the viaduct would cross, 79% of birds in summer were found to be flying higher than 10 m, the height of the viaduct road surface, and 20% at over 30 m high. In winter they would fly lower. There would thus be modification to flight paths, but hirundines, such as swallows and martins, for instance would fly beneath the viaduct. While there may be casualties caused by road traffic, they are unlikely to be high since most recorded instances of road casualties are where there is dense vegetation on either side of the road.

4.6.30 The noise and visual obstruction caused by the scheme would reduce the feeding times of birds adjacent to the road, reducing the potential for nesting birds. However, the breeding bird population adjacent to the viaduct is very low at present, as a result of predation from crows and magpies, using the adjacent Pebsham landfill site and probably predation from badgers.

4.6.31 The design of the proposed viaduct is regarded as the most important means of mitigating the impact of the bypass. The clearance between existing ground level and the underside would reduce the severance effect of a change in microclimate and some form of grassland vegetation would be able to re-establish under the viaduct. Elsewhere new planting and wildflower seeding would partially compensate for areas lost.

4.6.32 About 0.2 ha of the Southern tip of Cole Wood would be removed. This would be a locally severe impact on a site of local significance. Four small woodlands between the BNAR and the southern embankment of the viaduct would also be affected by the road. About 2.9 ha of woodland and scrub would be lost. The community types present are nationally common and three of the four are probably recent secondary woodland. They all lie adjacent to the scrub, scattered trees and rough grass of the dismantled railway, from which about 0.2 ha would be lost. The overall impact on the woodland and railway would be severe on vegetation of local importance. Evidence of dormice has been recorded in Combe Wood some of which would be aquired as replacement for Public Open Space taken by the scheme, but would be unaffected.

Recreation

4.6.33 A total of five footpath routes would be affected in this section. One would be truncated and the remainder diverted: one via an overbridge, two via underpasses and one under the viaduct. The proposals are described in Section 3.7. The dismantled railway, between the BNAR junction and Combe Haven, although not a designated footpath is a well used facility. There would be traffic noise and visual impact affecting this amenity.

4.6.34 There is an extensive network of footpaths within the visual envelope for the scheme within the Combe Haven valley totalling 15.4 km (including the dismantled railway), on which footpath users enjoy wide views across this rural landscape. The visual envelope, shown on Figure 45 shows the extent to which the scheme would be visible.

4.6.35 The valley's open character and the scheme's position on the side of the valley would result in an extensive visual envelope. However, with the remaining woodland backdrop to the south of the road and the provision of false cuttings and regrading on the north side, the earthworks would be successfully integrated into the valley landscape and most of the traffic screened, resulting in a slight to moderate level of visual impact in the first winter after opening.

4.6.36 By the summer of the fifteenth year the overall level of impact would have decreased, due mainly to the screening effect to highway planting. Consequently the length of footpath on which users would experience a substantial impact would decrease from 3.9 km in the first winter to 2.2 km.

4.6.37 In addition to the visual impact for users of public rights of way, users of the dismantled railway line (POS) would have intermittent views of the scheme, however the impact would be substantial due to the close proximity of the road. By the summer of the fifteenth year the impact would remain substantial to moderate in most views. There would also be views of the scheme from the Ninfield Road allotments and Levetts Wood. In both instances the initial impact would be moderate but would reduce to slight/no change by the fifteenth year after opening.

4.6.38 Oaktree riding stables in Buckholt Lane would suffer from increased noise levels and visual intrusion from the bypass.

4.6.39 In future, walking, fishing, birdwatching and clay pigeon shooting activities in the Combe Haven valley would take place in a noisier environment which would also be visually affected by the proposed viaduct. Ninfield Road allotments would suffer increased traffic noise and visual impact from the bypass.

Property

4.6.40 No residential properties require demolition within the Combe Haven Valley section of the route.

4.6.41 From Kiteye Farm eastward along the Combe Haven Valley is a quiet rural area with existing noise levels of between 45 and 51 dB. Noise increases of between 3 and 15 dB would occur at dwellings in the route corridor. (Figures 37 and 38)

4.6.42 Emission levels in the assumed design year have been forecast at Kiteye Farm and properties on Watermill Lane. At all these locations the predicted CO levels were below the threshold. NO_2 levels were 10 - 21 ppb, well within the air quality standard.

4.6.43 Figure 45 shows the extent of the visual envelope for this section of the route. Initially, the envelope would be restricted to 200-300 m either side, but as the Combe Haven broadens out the visual envelope would extend up to 2.2 km to the north and 2 km to the south-east towards Harley Shute.

4.6.44 Out of the 262 properties assessed within the visual envelope, the residents of 133 would experience no discernable deterioration in their view during the first winter after opening. Of the 129 remaining

properties the residents of 10 properties would experience a substantial impact, these are Preston Lodge, Chetwynd, Preston Hall and Preston Hall Cottage, Upper Wilting Farm, Hollyhocks Cottage and Upper Wilting Farm Cottages. The residents in a further 44 properties would experience a moderate impact.

4.6.45 By the summer of the fifteenth year, highway planting would have established sufficiently to screen the scheme, consequently the number of properties from which residents would experience a substantial impact would have reduced to 6 - Upper Wilting Farm, Hollyhocks Cottage and Upper Wilting Farm Cottages. Elsewhere as a result, the number of properties moderately affected would have significantly reduced to 8, whilst those experiencing a slight adverse impact would be 82 and those experiencing no change 166.

4.6.46 Lighting of the BNAR junction would result in an adverse night-time impact to 7 properties.

4.6.47 False cuttings, mounding and planting would be provided to screen properties close to the road at the head of the Combe Haven Valley (Figure 27).

4.7 Site Specific Impacts and their Mitigation

Section D - Queensway to the A2100 (Figures 20, 21, 22, 30, 31 and 32)

Water Quality and Drainage

4.7.1 The surface water from the bypass to the south of Battle Road would flow south and be carried into a balancing pond on the north side of the Combe Haven. Road drainage north of Battle Road would outfall via balancing tanks into the pond alongside Footpath 129 (feeding the Hollington Stream).

4.7.2 Approximately 290 m of low value ditch would be lost with the provision of about 270 m of new ditches. The net effect of the scheme on water quality and drainage in this section would be low.

Landscape

4.7.3 In this section the route would mainly follow the line of the existing road, so that its landscape effects would be a progression of those already created by the present Queensway.

4.7.4 The route would be screened from the north by the landform and Marline Valley Woods, although there may be distant glimpses of the traffic on the skyline. To the south there would be views from the urban edge of Hastings but the route would not generally be prominent.

4.7.5 The Baldslow grade separated roundabout junction would dominate the immediate urban area but would be largely concealed in views from the AONB to the north. At the eastern end of the scheme, (before joining the A259 Hastings Eastern Bypass) the road would enter the southern boundary of the AONB. In doing so, it would cut through the Hastings - Battle Ridge in 180 m wide and 21 m deep

cutting. Despite this however, the visual impact of the scheme on the AONB would be low. The top of the cutting and the ridge bridge, would be visible in views from the village of Westfield, which is located approximately 2.5 km to the north of the ridge. In most views however the impact would not be significant due to the screening effect of vegetation either in the foreground or surrounding the cutting itself. In addition, more distant views would be possible, but the cutting would be seen within the overall context of the ridge and therefore, there would be no measurable level of impact.

4.7.6 Vegetation removed along the line of the road would be replaced where possible as part of the new landscape scheme. In total, 16 landscape measures would be carried out. These are shown on Figures 30, 31 and 32 and listed in the Mitigation Schedule (Appendix C). The siting of the Baldslow junction to the south of Hastings - Battle Ridge, has been chosen to minimise impact on the landscape of the AONB.

Land Use (Figure 33)

4.7.7 Only one agricultural holding would be affected, (Plot 90). Almost all of it (3.0 ha) would be removed by the road. Along most of the rest of the route the land to be taken comprises highway and small areas of grassland and woodland not in agricultural use. The roundabout junction at Baldslow and connections to the A21 and A2100 would remove 2.8 ha of land zoned for commercial development and require the demolition of a car showroom.

4.7.8 An area of 2.3 ha of public open space would be taken from the edge of the Marline Valley. An area of 2.5 ha of exchange land would be provided nearby. A further area of 2.3 ha in the area of Beauharrow Road would be taken. An area of 3.3 ha of exchange land would be provided nearby.

4.7.9 In section, much of the area adjacent to the Published Scheme is covered by development plan allocations in the Hastings Borough Local Plan. To the south of the scheme these include residential development at Mayfield Farm and Industrial Development in the Churchfields Area (Castleham Industrial Estate). There are also allocations for provision of service and industrial development between the A21 Sedlescombe Road North and Beauharrow Road and in the Whitworth Road area. (Figure 7)

4.7.10 North of the scheme, development plan allocations include footpath improvements along part of Queensway, residential development at Maplesden[1], Highdown[2], Hoads Wood[3] and to the south of Beauport Park[5], and a primary school south west of High Beech Country Club. An allocation for an extension to the Beauport Caravan Park is the only allocation that would be directly affected by the Published Scheme as an alternative area for this use would probably be required. The other allocations would be affected by temporary construction disturbance, but would probably benefit from the improved access arrangements. An improved footpath would be provided near Park Wood.

4.7.11 Within this section two sites were identified that have outstanding planning permissions for residential development, land off Fletcher Avenue (93/303) and land formerly belonging to Mayfield Farm

(93/435). A further two permissions exist: one for the erection of a church also on land formerly belonging to Mayfield Farm in the Hastings Town Development Area (92/522), and the other the erection of an industrial building on land at Churchfields (94/59). The planning permission relating to the erection of 51 dwellings on land between Queensway and High Beech Chalet site (90/118) has been implemented and the houses are currently under construction.

Cultural Heritage

4.7.12 Geophysical survey has shown two possible areas of archaeological potential near Mayfield Farm. Further fieldwork prior to road construction would be carried out in accordance with 4.3.28.

4.7.13 Six grade II Listed buildings would be affected by the proposed scheme. At the start of this section, Upper Wilting Farmhouse is a grade II Listed building of eighteenth century date or earlier. There are a number of historic buildings associated with it. The scheme would have a high impact on their setting. The most severe impact of the bypass is on East Lodge of Beauport Park a grade II Listed building (now two cottages), which is part of the parkland landscape of Beauport. The scheme would require its demolition.

4.7.14 Mayfield Farmhouse (Listed building Grade II) is already affected by the existing road and new housing development, and there would therefore be no significant change due to the scheme. The remaining three Listed buildings would only be slightly affected by the scheme. East Lodge of Beauport Park would be recorded to the appropriate level in consultation with English Heritage and Hastings Borough Council.

Nature Conservation

4.7.15 The principal nature conservation impacts of this section would be the loss of about 11.7ha of woodland and scrub and semi-improved grassland along the roadside edge. About 870m of hedge would be lost in this section, together with 10.76 ha of woodland and scrub.

4.7.16 About 0.3 ha of woodland would be lost from Marline Valley Woods SSSI and 2.9 ha of semi-natural grass adjacent to it. The communities present are species-rich and of national and county/local significance respectively. The habitat loss would be minor, but the woodland and grassland edge would be subject to increased secondary effects from the larger volume of traffic. Evidence of dormice has been recorded in the woodland to be lost. Mitigation measures for this protected species would be subject to consultations with English Nature.

4.7.17 Between the Mayfield Farm junction and the A2100, eight small areas of woodland, all of which have already been partially lost to Queensway itself, would be further removed by the widening of the road to dual carriageway standard. The woodland affected is protected under Tree Preservation Orders (TPO) which are shown on Figures 20, 21 and 22 and includes woodland within Marline Woods and a remnant copse to the south of the route, which contains wild service trees.

4.7.18 At Beauport Park 5.5 ha would be lost from a complex pattern of secondary woodland. The site is of local significance and the impact would be severe but localised.

4.7.19 New planting would compensate for trees and shrubs lost. While the grassland at the edge of Marline Valley Woods cannot be replaced, new grassland would be provided within the highway boundary.

Recreation

4.7.20 Seven footpaths would be affected within this section of the scheme. One would be truncated and another extinguished. The remaining footpaths would be diverted along the verges of proposed roads as described in Section 3.7. The existing footpaths which total 3 km adjoin or run parallel with Queensway, and so have a lower level of amenity than those in the more rural areas. The extent of the visual envelope for Section D is shown on Figures 45 and 46. With this section of the scheme being an on-line widening of the existing Queensway the resulting visual impact during the first winter after opening would generally be slight to moderate due mainly to the removal of established highway planting and the encroachment of earthworks, with over 1.4 km experiencing no change in view. In the fifteenth year after opening, the length of footpath from which users would experience no descernable change in their view would have increased to 4.2 km (out of a total of 4.5 km).

4.7.21 Marline Valley is a local nature reserve which is considered to be Public Open Space and some areas would be taken by the bypass scheme. Exchange land would be provided. The nature reserve would be subject to some increase in noise levels and visual intrusion from the bypass, as would the public playing fields at Castleham.

4.7.22 Initially the visual impact on users would be substantial, but once replacement planting was sufficiently established (15 years after opening) there would be no descernable change in the view. Views from the playing fields at Castleham would be only slightly affected during the first winter after opening and by the fifteenth year there would be effectively no change in the existing view.

4.7.23 Most existing cycle routes would be maintained. It would not be possible to travel between Napier Road, Castleham and Mayfield Farm using Queensway. However, an alternative, less trafficked route is available via Ingleside and Church Wood Drive. Slip road crossings and cycle tracks would be provided at Castleham and Baldslow Junctions. Cycle tracks would also be provided at the A2100 roundabout and the A21 traffic signal junction, where cyclists would be able to cross the junction in stages using the traffic islands. Cycle lanes would be provided along the link road between the Baldslow Roundabout and A21.

4.7.24 High Beech and Hollington Lodge Country Clubs and Beauport Sports Club would suffer a small increase in traffic noise and an increase in visual impact. By summer of the fifteenth year however, there would be little or no change in the view.

4.7.25 5.8 ha of the static holiday caravan park within Beauport Park would be lost. The remaining area adjacent to the bypass would be subject to a noise increase of between 3 and 10 dB.

Property

4.7.26 The published scheme requires the demolition of East Lodge, two semi-detached properties in Beauport Park, a car showroom and the relocation or loss of 106 caravan plots.

4.7.27 Between Crowhurst Road and High Beech Country Club existing noise levels at dwellings are in the main 56 to 60 dB, depending on proximity to Queensway and other noise sources. Noise increases in the Crowhurst Road area would range generally from 5 to 15 dB and in the area of High Beech Country Club would be in the order of 3 to 5 dB. (Figures 39 and 40)

4.7.28 Between High Beech Close and the junction at Baldslow there is a noisier urban area with existing level near Queensway of 66 to 70 dB generally. Future noise levels would increase between 3 and 10 dB. With the exception of properties in Beauport Home Farm Close which would benefit from a reduction in noise level of 3 to 10 dB, there would be little change at other properties in that area. Noise levels at Beauport Gardens would remain relatively unchanged because noise barriers and mounds would be provided. (Figures 40 and 41)

4.7.29 Emission levels in the assumed design year have been forecast for sample properties at Crowhurst Road, Queensway, High Beech Close, Augustus Way, Beauport Home Farm Close, Beauport Gardens and The Ridge. See Volume 2, Report 12 of this statement for details.

4.7.30 All the above properties have forecast CO levels below the threshold for which an assessment can be carried out. Nitrogen Dioxide levels were typically 17 - 21 ppb at Crowhurst Road, 13 - 19 ppb along Queensway, 22 - 25 ppb at High Beech Close, Augustus Way and Beauport Home Farm Close and 13 - 15 ppb at Beauport Gardens and The Ridge. (See Appendix B)

4.7.31 Figures 45 and 46 shows the extent of the visual envelope for this section of the route. Despite its location on the top of a ridgeline the envelope is generally restricted to a narrow band either side.

4.7.32 Out of the 69 properties assessed within the visual envelope, residents of 15 would experience no discernable deterioration in the view during the first winter after opening. Of the remaining 54 properties, the residents in 23 would experience a substantial adverse impact. These would include properties in Beauport Gardens, Beauport Home Farm Close, High Beech Close, Augustus Way and the Sanctuaire where the scale of the junction would be a major factor. 4 properties at Beauport Home Farm Close and 7 properties on Beauport Gardens would loose all or part of their existing tree screen. The remaining 31 properties would be either slightly or moderately affected.

4.7.33 There would also be intermittent views of the cutting through the Battle - Hastings ridge and the A2100 ridge bridge, beyond the visual envelope, from properties in Westfield. However the cutting would be 2.5 km away and seen within the context of the ridge. The impact on the view would therefore be considered as slight.

4.7.34 Lighting of the B2092 junction would cause an adverse night-time impact for residential properties at Mayfield Farm. Similarly light at the A2100 junction would result in an adverse night-time impact for residents in Beauport Gardens.

4.7.35 Mounds and noise barriers would be provided as described in the Mitigation Schedule (Appendix C) and shown on Figures 31 and 32 in order to minimise the effect on adjacent property.

4.8 Disruption due to Construction

Programme

4.8.1 The programming of the construction of the works and the method of working are largely determined by the appointed contractor based on constraints laid down in the Contract Documents. The major constraints that would be laid down in the Contract for the contractor to adhere to are given below.

Site Access

4.8.2 Access to the site as a whole would be limited under the Contract to major routes in and out of the area. The routes would be agreed with the relevant Local Authorities prior to the letting of the Contract, and would apply to all vehicles used by the contractor or his suppliers with a laden weight of greater than 1 tonne. No access would be permitted along minor side roads and notices would be erected to reinforce the requirement. Major roads for which no significant problems of carrying the additional traffic were envisaged, would be classified as being available for "unrestricted access", whereas in other locations on less major routes, "restricted access" may be permitted to carry out certain specified or agreed works.

4.8.3 The delivery of concrete and other materials to any locations on the site would be covered by the above requirements.

Noise, Vibration and Working Hours

4.8.4 The Local Authorities have power under the Control of Pollution Act 1974 to impose requirements as to the way in which the work would be carried out and, in particular;-

(i) the hours during which work may be carried out and
(ii) the level of noise which may be emitted.

4.8.5 These requirements are usually agreed with the Local Authorities and specified in the Contract. Site monitoring of noise levels and control of working hours would normally be undertaken by the Resident Engineer, although ultimate control remains with the District Council's Environmental Health Officer.

4.8.6 All plant must be silenced in accordance with BS 5228 Code of Practice for 'Noise Control on Construction and Open Sites' and vibration limits would be specified where site operations would be carried out close to property.

Air and Water Pollution

4.8.7 The contractor would be required to avoid nuisance from dust, dirt and debris, both airborne and if deposited as pollution in watercourses. Strict control over the methods of working in areas susceptible to such nuisance would be administered by the Resident Engineer, and the provision of measures to protect watercourses from accidental spillages would be a requirement of the Contract.

Maintenance of Rights of Way and Access

4.8.8 The Contract would require Rights of Way on Footpaths, Byways Open to All Traffic and roads to be maintained during construction, or a reasonable alternative provided. This could take the form of temporary structures or roads, or diversions to use facilities nearby. The same applies to private access, which would be maintained at all times to properties, fields and other facilities.

Effect on Residences

4.8.9 The method of assessing disruption to residents is based upon the number of properties within 100 metres of the perimeter of the works, to give an indication of the number of people who would be seriously bothered by the works. In all 424 residences would fall within this category along the scheme. They would be affected by noise, dust and the working methods, although these would be regulated as described in 4.8.4 - 4.8.7 above.

4.8.10 If the construction noise 'seriously affects or will affect for a substantial period of time the enjoyment of an eligible building adjacent to the site...', the Highway Authority has discretionary powers under the Noise Insulation Regulations 1975 to provide insulation in the form of secondary glazing. A preliminary assessment shows that 65 residences could benefit from these powers. Installation in this situation would take place at an early stage to derive maximum benefit. An assessment of construction noise is included in Volume 2, Report 11.

4.8.11 The early erection of noise barriers and earth mounds that form part of the final scheme would be implemented whenever possible to afford benefits during construction.

Effect on Commercial Properties

4.8.12 There would be 42 commercial properties within 100 metres of the perimeter of the works, and due to their location close to residential areas, would be likely to benefit from the same limitations in construction working hours and noise levels.

4.8.13 Access to these properties would be maintained during construction, but temporary access routes or traffic management measures may be necessary.

Effect on Farms

4.8.14 Extensive areas of land would be temporarily acquired during the construction period to permit the construction of earthworks that would blend the scheme in with its surroundings. This would have a varying impact on the farms involved, but compensation would be paid, and where possible the land offered for return to agriculture upon completion.

4.8.15 Access across the site would be maintained for farms including livestock. Fencing would be provided as appropriate and water supplies would be maintained. Measures would be taken to safeguard against the possible spread of plant and animal diseases in accordance with MAFF Booklet PB0486.

Effect on Community Facilities

4.8.16 Recreational facilities that lie in close proximity to or would be affected by the scheme, including some areas of public open space, public footpaths and byways would be maintained during construction with access unobstructed. There are no key community facilities in the immediate area of the Published Scheme, but access across the site into Bexhill and Hastings from the outlying areas would not be restricted apart from temporary traffic management measures.

Effects on Nature Conservation and Heritage

4.8.17 Topsoil removed for construction would be carefully stockpiled for re-use after completion of the earthworks. Topsoil from ecologically sensitive areas would be segregated from other topsoil. Where possible removal of trees and shrubs would be restricted to the period of August - January, and where woodland would be partly taken, woodland management would be carried out in the form of thinning and replanting to prevent damage to the exposed edge of the woodland.

4.8.18 Watercourses would be protected during construction by the use of holding tanks to reduce the risks of pollution from spillages. Water quality would be monitored during construction at all outfalls.

4.8.19 Further details of the effects of disruption due to construction are given in Volume 2, Report 15.

4.9 Effects of Maintenance

4.9.1 Maintenance of the carriageway areas as described in 3.9.1 would be carried out entirely from within the highway boundary, with access along the new road. Some maintenance operations such as repairs to the carriageway could increase noise levels locally, but the duration would be relatively short and at infrequent intervals.

4.9.2 Maintenance of planting and woodland management would be carried out from within the highway boundary, and would have negligible impact on the surroundings.

4.9.3 Balancing ponds and oil interceptors would be maintained on a periodic basis, typically every six months to a year. Access would be provided from within the highway boundary to all these facilities. The maintenance operations would have negligible impact on the surroundings.

4.9.4 Bridge maintenance works would be required periodically and would be carried out as described in 3.9.4. Generally access would be from within the highway boundary or from side roads. Maintenance operations may increase noise levels locally, but would have little other impact.

4.9.5 In the case of the Combe Haven viaduct, the majority of maintenance would be carried out from the deck of the structure, but in some circumstances, access may have to be taken from the access track underneath (see 3.8.12). This would be a very infrequent occurrence, and disturbance of the SSSI would be kept to a minimum.

5 EFFECT ON EXISTING ROAD CORRIDOR

5.1 Introduction (Figure 2)

5.1.1 As explained in 1.5.2, the section of the existing A259 that would directly benefit from the Published Scheme is between the junction with the B2095 at the western end and the junction with the B2093 at Ore. The A259 runs through the centre of Bexhill and then along the seafront at Hastings. In Hastings in particular, there is a heavy use by pedestrians both along the adjacent promenade and across the road to and from the beach, pier, shops, restaurants, hotels, theatres and guest houses.

5.1.2 The reduction in traffic along the existing A259 brought about by the provision of a bypass would improve the local environment by reducing accidents, severance, noise and air pollution problems. The amount of reduction in traffic would, it is predicted, reach 70% on the A259 in Bexhill and 30% on the A259 through Hastings in the assumed design year (2015) (Figure 12).

5.1.3 Within Bexhill the omission of the BNAR would have little effect on traffic volumes on the Old Town Bypass and along the existing A259 to the west. To the east of this point the traffic relief offered by the bypass would be reduced by some 25% in the design year if the BNAR were omitted.

5.2 Cultural Heritage

5.2.1 The removal of through traffic from the six Conservation Areas in the southern part of St Leonards through which the existing A259 passes, would increase the amenity of the area by reducing the noise and air pollution levels. Access to these areas would be improved.

5.3 Recreation

5.3.1 The use of the beach, promenade, parks and gardens which line the sea front at Hastings would benefit from the reduction in traffic flows along the A259. The amenity value of the area would be increased and severance between these facilities and the town would be reduced. Pedestrians and cyclists passing along and across the A259 would similarly benefit.

5.4 Property

5.4.1 There are a large number of residential properties lining the A259 through the area of interest, as well as a number of shops, schools, a hospital, churches, public houses, hotels, sport and other community facilities and commercial properties. These would benefit from reductions in noise levels if the bypass were constructed (see Appendix A - EIT, Table 1), as a consequence of a reduction in traffic flows.

5.4.2 Along the existing A259 corridor air quality would reduce from the current high levels (in many cases above the air quality standard levels) to levels well within the air quality standards (typically 25%) depending on location, in the assumed year of opening of the bypass. This would benefit considerable numbers of properties. Benefits would also be realised on the other roads with lower traffic flows, but those with increased flows would receive a proportionate increase in air pollution. Over all the network considered there would be an immediate reduction in the year of opening of 12 - 13% in carbon monoxide and hydrocarbons, a 5% increase in oxides of nitrogen, and no appreciable change in carbon dioxide. (See Volume 2, Report 12)

5.4.3 Other roads in the area which would benefit from a reduction in flow, include those which lead to the Glyne Gap area from eastern Bexhill and western Hastings (Figure 2). Those having the largest predicted reductions would be the A2036 in Bexhill and Harley Shute Road in western Hastings. There would however be an increase in flows on some roads in Hastings as a result of the diversion of traffic from Glyne Gap. The largest increase would occur on the Hastings Spur Road, which is the extension of the B2092 (Queensway and Crowhurst Road) into Hastings. This road is also proposed for improvement by the County Council at the same time as construction of the BNAR.

5.5 Community Effects

5.5.1 There would be slight to moderate relief from community severance along the existing A259, depending on location. Vehicular access would be improved as a result of traffic reductions. This reduction would allow easier access across the carriageway for pedestrians thus reducing the likelihood of accidents (Volume 2, Report 14).

5.5.2 The removal of longer distance through traffic and traffic with origins and destinations in the north of the two towns, would allow the use of the existing A259 by local residents without suffering the long delays that occur at peak periods at present.

5.5.3 The reduction in flows may allow the introduction of traffic management measures that would increase safety for pedestrians and road users alike. Other environmental improvements may also be considered, and additional parking facilities could be incorporated.

5.5.4 A large number of community facilities are located close to the existing A259, including schools, a fire station, post offices, churches and a hospital. Access to these facilities would improve and would benefit from the other environmental improvements given above.

6 SUMMARY OF KEY EFFECTS OF THE PUBLISHED SCHEME

Transport, Communication and Planning

6.1 The construction of the Published Scheme would assist in achieving strategic national transport objectives as set out in the Department of Transport's policy document *Trunk Roads England into the 1990's*. It is supported in principle by East Sussex County, Hastings Borough, Rother District and Wealden District Councils, although it is in conflict with some of their environmental policies.

6.2 The provision of the scheme would enable local and regional planning objectives to be achieved. The improvement of transport links to and within East Sussex is an important part of the overall planning strategy for the county. An improved A27/A259 south coast trunk road would provide a good link between East Sussex and the Channel Tunnel. This would be particularly beneficial in improving the accessibility of the Bexhill and Hastings area. The associated provision of a new link into Bexhill from the trunk road (The Bexhill Northern Approach Road) would unlock major commercial and housing land allocations north of Bexhill. This in turn would assist in promoting the local economy, reducing unemployment and catering for an increasing local workforce in line with the of the Hastings Travel-to-Work Area Assisted Area Status. This would be a major benefit.

6.3 There would be a substantial reduction in traffic flows along the existing A259 through Bexhill and Hastings which would improve the environment for residents, visitors and other users of the facilities, by reducing noise, the risk of accidents, general community severance and improving air quality. This would be a major benefit.

6.4 In contrast to the transport, communication and planning benefits, the road would have a number of disbenefits on nature conservation, landscape character and agriculture in particular.

Nature Conservation

6.5 The Published Scheme would require land take from Pevensey Levels SSSI. This is a proposed Ramsar site under the terms of the Ramsar Convention 1971. This internationally important site for nature conservation would experience a very small land take (1.6 ha) compared with its total area (3501 ha), occurring on the margin of the designated area. This small loss would be due to widening on the line of the existing road rather than by creating a new road corridor in this section. The residual effect on the site would be minor.

6.6 Combe Haven SSSI is a nationally important habitat for nature conservation with an area of 156 ha. The Published Scheme would cross the middle of the site which may cause some long term severance and disturbance effects as well as loss of habitat. The crossing point was influenced by the route alignment to the west which was considered to be the most appropriate in landscape terms. The road would cross the SSSI on a viaduct in order to reduce the land take and potential severance effects which would be more likely to occur if an embankment were constructed across the Combe Haven valley. Important species of invertebrates such as dragonflies and birds would experience short term disturbance effects during the construction period. The residual effect on the SSSI would be moderate.

6.7 The road corridor supports large numbers of badgers at high densities, representing a population of county importance for this protected species. The scheme would have a major impact on this population, involving the loss of nine setts and severance of feeding areas and paths. The mitigation of these effects would be subject to consultation with English Nature.

6.8 Marline Valley Woods SSSI is of national importance for nature conservation. The site would lose 0.3 ha of ancient woodland to the scheme, a small part of which is also a designated Local Nature Reserve. The total area of the SSSI is 55 ha. Residual effects on the SSSI would be minor.

6.9 The scheme would involve the loss and fragmentation of a mosaic of habitats including ancient woodland, hedgerows, ditches and ponds. This would be a moderate impact on nature conservation of local importance.

Cultural Heritage

6.10 The scheme would require the demolition of East Lodge, Beauport Park which is a grade II Listed Building; this would be a high impact on a nationally designated structure.

Landscape Character

6.11 Extensive mitigation measures have been designed to screen the road in sensitive views and to integrate the earthworks into the surrounding landscape. Despite this however, the local landscape impact would be high along most of the route.

6.12 The route alignment along the northern edge of the Barnhorn Level, would disrupt the pattern of hedges and trackways and diminish the marked contrast between the flat, open landscape to the south and the rising ground to the Hooe ridge to the north.

6.13 As the route crosses the undulating landform of the Weald, it would cut across the grain of the land, disrupting the mosaic of woodlands, hedgerows and shaws which characterise the area. However, the very nature of the landform and vegetation cover would generally contain the scheme in views from the wider landscape.

6.14 Further east, the junction with the Bexhill Northern Approach Road, its lighting and its earthworks, would be a prominent feature, and the viaduct crossing of the Combe Haven valley would be widely visible.

6.15 Of the six two level junctions that are proposed, the position and design of the A21/A2100 junction at Baldslow is the most sensitive. Its scale and location just south of the Battle - Hastings ridge would dominate its immediate urban setting but as a result would avoid serious encroachment into the High Weald Area of Outstanding Natural Beauty to the north. The lighting on the proposed bridge for the A2100 would be visible from the north.

6.16 The Published Scheme would cut through the Ridge, resulting in a deep cutting, which would be visible in views from Westfield approximately 2.5 km to the north. In wider views however, the cutting would be either screened by intervening vegetation and landform or seen within the overall context of the Battle - Hastings Ridge.

Agriculture

6.17 Along the scheme as a whole, the permanent agricultural landtake would total 92 ha. Whilst there would be no loss of Grade 1 land, 32.2 ha of either Grade 2 and 3a (best and most versatile land) would be taken. A total of 31 holdings would be affected, but only 20 are considered as farm businesses. Out of the 20, only one holding would suffer a major impact.

Noise and Air Quality

6.18 The introduction of a new road corridor would inevitably bring significant increases in noise levels to the rural areas, and perceptible increases in the urban fringe areas. The number of residential properties that would experience an increase in noise level of more than 3 dB between the assumed year of opening and the design year would be 1280. Air pollution at adjacent residences would experience an immediate increase upon opening, but levels would be well within air quality standards.

Property

6.19 The scheme would require the demolition of two properties (a pair of semi-detached houses, a grade II Listed building), and would require the acquisition of land from 8 others. A car sales business on Sedlescombe Road and the Beauport Park caravan sales would need relocating. A total of 448 residential properties and 45 commercial properties would lie within 100 metres of the area required for construction of the works, and could expect to be disrupted in some way during construction. Of the 425 residential properties assessed for visual impact, 55 would experience a substantial impact during the first winter after opening. By the fifteenth year after opening this number would reduce to 22.

Rights of Way

6.20 A total of 21 footpath routes and one byway would be physically affected by the scheme. Ten footpaths would be diverted significantly (by more than 100 metres) and one would be extinguished. There are 29.4 km of footpath within the route corridor, the users of 12.65 km would experience either a substantial or moderate impact during the first winter after opening. By the fifteenth year the impact would fall significantly due to the beneficial effects of highway planting.

7 ALTERNATIVE ROUTES CONSIDERED AND DEVELOPMENT OF PUBLISHED SCHEME

7.1 Introduction

7.1.1 A number of alternative routes for a Bexhill and Hastings Western Bypass were considered within the limits of a corridor that could meet the objectives of the scheme. After preliminary consideration of the environmental and cost implications of the schemes, a combination of alternatives were taken to Public Consultation in June 1989.

7.2 Public Consultation (Figure 42)

7.2.1 The route was split into three sections for Public Consultation:

(1) A259 - A269
(2) A269 - Queensway
(3) Queensway - A21.

7.2.2 In section 1 there were three alternative routes - Brown, Blue and Red with two links - Brown to Blue and Blue to Red. In section 2 there were also three alternatives - Blue, Orange and Red, and in section 3, the existing line of Queensway was the only route proposed.

7.2.3 At that time, forecast traffic flows indicated that west of the A269 the routes should be to a wide single carriageway standard and east of the A269 to dual 2 lane carriageway standard. This latter standard would also be acceptable if a link between the bypass and north east Bexhill were constructed. "At grade" roundabouts were considered satisfactory for all junctions, except for those at Castleham on Queensway and the A2100, where grade separation was considered appropriate.

7.3 Route Descriptions

Section 1 - Brown Route

7.3.1 This would commence on the A259 about 220 m south of New Lodge Farm. It would follow the northern edge of Barnhorn Level before swinging to the east and then south-east passing just to the north of High Woods SSSI before meeting the A269 north of The Highlands.

Section 1 - Blue Route

7.3.2 This would commence on the A259 about 400 m south of the Brown Route. It would head north eastward, crossing Barnhorn Level more centrally, before skirting the northern edge of High Woods SSSI and heading east to join the A269 at Lunsford's Cross.

Section 1 - Brown to Blue Route

7.3.3 The link between these routes would leave the Brown Route north of High Woods and swing away to the east to join the Blue Route on its approach to Lunsford's Cross.

Section 1 - Blue to Brown Route

7.3.4 The link between these routes would leave the Blue Route north of High Woods and swing to the south east to join the Brown Route on its approach to the A269.

Section 1 - Red Route

7.3.5 This would leave the A259 at the same point as the Blue Route but would head in a more easterly direction following the southern edge of Barnhorn Level before swinging to the north east to pass south of High Woods SSSI and finally to the east to join the A269 at the same point as the Brown Route.

Section 2 - Blue Route

7.3.6 This would leave Lunsford's Cross and head eastward crossing Watermill Lane north of Cobb's Hill Farm before heading down into the Combe Haven Valley through Hanging Wood. The route would follow the northern edge of the valley before swinging to the north east across the London - Hastings railway line to join Queensway at Mayfield Farm.

Section 2 - Orange Route

7.3.7 This would leave the A269 north of 'The Highlands' and head eastward passing to the north of Preston Hall and following a line just north of the Combe Haven stream along the valley. It would join and follow the line of the Blue Route from the valley.

Section 2 - Red Route

7.3.8 This would follow the line of the Orange Route to the north of Preston Hall before swinging to the south east to join and then follow the line of the dismantled railway. The route would then swing to the north east and cross the Combe Haven valley before joining Queensway at the same location as the Blue Route.

Section 3 - Queensway

7.3.9 This would follow the line of Queensway from Mayfield Farm to just north of Battle Road (B2159) before heading north east to cross the A2100 and then northwards to join the A21 in the area of Moat Lane.

7.4 **Additional Routes Suggested** (Figure 43)

7.4.1 A number of additional routes were suggested during Public Consultation, some amending the routes presented, others combining alternatives and others proposing new or substantially realigned routes. These are described below, and the reasons for their rejection given.

Amended Routes

7.4.2 The amendments that were proposed are shown on Figure 43 as alternatives A - L (inc).

7.4.3 It was considered that Option C, which was intended to avoid the Barnhorn Level (which at that time was considered part of the Pevensey Levels SSSI) would be more visually intrusive and would increase farm severance. The low lying land avoided by the route was however not re-notified under the Wildlife and Countryside Act 1981. This option was rejected. Option E was rejected at an early stage of route investigation, as the existing A259 would have to be improved over a particularly difficult section of road. Options B and D were minor realignments for the Brown and Blue Routes respectively, that could be considered at design stage, depending on which route was chosen.

7.4.4 Option H was rejected at an early stage of route investigation, due to the impact it would have on the landscape. Option J would not be acceptable for landscape, nature conservation and strategic reasons relating to local authority planning policies. Option L would not meet the scheme objective, and was rejected. Option G was a realignment within the ownership of Buckholt Farm and could be considered at detailed design stage if the Blue Route were chosen.

7.4.5 Option A, a new junction location, was considered to have no advantages for trunk road traffic. There were advantages for local roads, but the impact on the landscape and severance would increase. This alternative was rejected. Subsequent to this in October 1991, East Sussex County Council carried out Public Consultation on this Option A comparing it with the Published Scheme proposal at 'The Highlands'. Option A was also rejected at this stage.

7.4.6 Options F and K were proposed to keep the route out of the Combe Haven SSSI. It was considered that Option F (Modified Orange Route), would be more intrusive to properties in Crowhurst and the north of the Combe Haven Valley, although there would be advantages for properties in northern Bexhill and western Hastings. The alternatives would be disruptive to farming in the Combe Haven and would have a very severe impact on the landscape character of the valley by effectively blocking off the tributary valleys to the north. The advantages of avoiding the SSSI were considered to be

countered to some extent by the effect of the drainage measures that would be required to construct the embankments on the edge of the SSSI. These could have an indirect effect, possibly changing groundwater levels. The additional severance for farming could also exacerbate the problem, by causing changes to farming practices. Option F (Modified Orange Route) was considered to have some merit worthy for it to be considered as a solution, and it was considered in more detail prior to the announcement of the Preferred Route. Option K which connected to the Blue Route had similar disadvantages to Option F.

Routes Combining Alternatives

7.4.7 Option M which combined the Brown and Blue Routes in the area of Holmes Farm, was considered not to have any advantages over Public Consultation routes and was rejected.

New or Substantially Realigned Routes

7.4.8 None of the substantially realigned routes (Options N, P, R, S and T) was found to have an overall advantage over the routes shown at Public Consultation and were rejected because of their unacceptable impact on the landscape. In addition, Options P, R and N would be too far north to enable a feasible new link road to north-east Bexhill to be constructed as envisaged by the local authorities, and Option S would not make use of Queensway, which was specifically built to be incorporated in a bypass, and would pass through more of the High Weald Area of Outstanding Natural Beauty.

Breadsell Lane Alternative (Option T)

7.4.9 Option T was proposed as an alternative to Option S but connecting to the Red Route south of Combe Haven.

7.4.10 Option T would pass very close to Lower Wilting Farm, having a severe impact. It would also have a severe effect on Beauport Park, seriously damaging the park's integrity and would be highly visible from the AONB, and in the area of Breadsell Lane would introduce a new road corridor through an undisturbed valley landscape. This alternative had little advantage over the option of following the established road corridor of Queensway, and would, it is predicted, attract much less traffic. Option T was rejected.

7.5 **Choice of Preferred Route** (Figure 42)

Section 1

7.5.1 The Brown Route would have the least impact on property, but would affect the most farms and sever the most land. It could however be accommodated into the landscape by running along the northern

edge of the Barnhorn Level and would have the least impact on nature conservation by passing largely through improved farmland.

7.5.2 The Blue Route would have a severe effect on properties at Whydown Road and at Lunsford's Cross, but would affect the least number of farms and would have created least land severance. It would run centrally through the Barnhorn Level and would therefore be prominent, particularly from houses at Northeye, but would fit well into the landscape from Whydown Road to Peartree Lane. The impact on nature conservation would be greater than the Brown Route; passing through wetter areas of the Barnhorn Level which is the area with the highest nature conservation value, and passing close to High Woods SSSI.

7.5.3 The Red Route would have the highest impact on property by passing close to development on Peartree Lane, but would take the least farm land. The route would be visible in the Barnhorn Level but would be screened in the area south of High Woods. It would however pass through the wettest area of Barnhorn Level and pass close to High Woods SSSI.

7.5.4 The junction with the A269 at 'The Highlands' would have a higher impact on property than a junction at Lunsford's Cross, but here too properties would be affected. The southern junction located in a valley would fit much more readily into the landscape than the northern alternative which would be located on a ridge line.

Summary of Section 1

7.5.5 It was considered that the Red Route should be rejected because it would have a significantly worse impact on property and nature conservation. The choice between the Brown and Blue Routes was finely balanced; Brown would be better for property and nature conservation and Blue better for farm severance and at following the landform, but its impact on properties at Whydown Road would be severe. It was considered that the Brown Route could be integrated into the landscape of Barnhorn Level more easily and that the junction with the A269 at 'The Highlands' was preferable to one at Lunsford's Cross. Overall the Brown Route was preferred.

Section 2

7.5.6 The Blue Route would have the highest impact on property, particularly in the area of the A269 junction where one property would have to be demolished and would take the most farmland and cause the most severance. It would lie in the most intrinsically attractive area and would require the construction of embankments within the Combe Haven SSSI.

7.5.7 The Orange Route would be visually intrusive to properties in north Bexhill and those with views up the valley from western Hastings. It would take less farmland than the Blue Route and severance would be minimised by following land ownership boundaries fairly closely. Between the A269 and Watermill Lane the route would fit well into the landscape in an area already affected by development,

but by passing along the centre of the Combe Haven Valley would be very visible and the construction of embankments would have an effect on nature conservation.

7.5.8 The Modified Orange Route (Option F), would be similar to the Orange Route from the A269 to Watermill Lane. From this point it would be more intrusive to isolated properties on the north side of Combe Haven and in Crowhurst than the other routes. It would have a worse effect on farming than the Orange Route by causing severance to farming units operating from the north. The route would have more severe impact than the Blue Route on the Watermill and Powdermill Valleys, effectively cutting them off. The route would avoid the Combe Haven SSSI, but drainage measures for adjacent embankments could have an effect.

7.5.9 The Red Route would have a similar impact on property to the Orange Route and would have the least impact overall on farmland. It would fit fairly well into the landscape with the exception of the crossing of the Combe Haven SSSI which would be partially on viaduct. This viaduct would minimise the impact on nature conservation.

Summary of Section 2

7.5.10 It was considered that the Red and Orange Routes would have advantages over the Modified Orange and Blue Routes in terms of landscape and farm severance and the junction location for Red, Orange and Modified Orange on the A269 would be better than that for Blue and would not require the demolition of property. The Red Route was considered better for nature conservation than the Blue or the Orange Routes and was less likely to cause permanent widespread damage to the SSSI. The Modified Orange Route would however affect the least area of the SSSI. Overall the Red Route was preferred.

Section 3

7.5.11 No options were proposed for this section of the route, Queensway being used in all cases. The alternative route following Breadsell Lane was considered to have too great an impact on the valley and adjacent AONB, and would add an extra road corridor close to one that satisfied the requirements, was already established and which was built with the intention of being used for the bypass. Queensway was preferred as the route for the bypass.

7.6 Design Changes prior to Preferred Route Announcement

7.6.1 Following the assessment of the alternatives presented at Public Consultation and various amendments and/or alternative suggestions made by others as part of the process, further design work was carried out on the scheme alternatives. This was brought about by the following:

(1) In May 1989, the Department of Transport announced revised National Road Traffic Forecasts (NRTF) which predicted traffic increases greater than previous forecasts. The

information arrived too late for the implications to be incorporated in the schemes shown at Public Consultation.

(2) East Sussex County Council were preparing more detailed proposals for a Bexhill Northern Approach Road (BNAR) to link with the bypass which would require a junction and would have the effect of increasing flows on some parts of the bypass.

7.6.2 The combined effect of the predicted traffic increases arising from the above was to justify provision of a dual carriageway throughout the scheme with grade separated junctions, and the addition of a grade separated junction with the BNAR.

7.6.3 It was however considered that the above design changes did not affect the choice of preferred route, and in the case of the BNAR and its connection, was seen as a reinforcement of the choice of Red Route in Section 2, since any route set further north, would have required a longer link road, and the junction would have been located further out into the centre of the Combe Haven valley, where it would be more exposed.

7.6.4 Other refinements to scheme design were carried out in the light of Public Consultation comments with the above major design alterations in mind. These were:-

(1) The line of the Brown Route in the area of Whydown Road was moved slightly further north for nature conservation and landscape reasons.

(2) The line of the Red Route adjusted at Mayfield Farm to provide a free flowing alignment through the junction.

(3) The side roads that had previously been shown as being stopped up were carried over or under the bypass, or in the case of St Mary's Lane connected to the A269 junction.

7.6.5 The Preferred Route announced in December 1990 was the Brown Route in Section 1 and the Red Route in Section 2 (both modified as indicated above), connecting to an improvement of Queensway.

7.7 **Developments since Preferred Route** (Figure 23 - 32)

7.7.1 At the announcement of Preferred Route the line of the bypass within Baldslow Wood, Beauport Park, was not fixed due to ongoing preliminary design work on the adjacent A259 Hastings Eastern Bypass scheme which included a junction with the A21. The announcement of a Preferred Route for that scheme was made in June 1991, and included with it was a different layout for the A21 junction to that shown at Public Consultation.

7.7.2 The revised junction situated south of the existing A2100 would connect with the A21 and A2100 by link roads and the line of the bypass would head north-eastward from this point to connect directly

with the proposed eastern bypass west of the A21 and south of Claremont School as it passes through Baldslow Wood. It was considered that this junction layout was the best landscape solution, whilst maintaining an uninterrupted through route for bypass traffic with adequate links to adjacent roads.

7.7.3 The junction of the bypass with Napier Road at Castleham was proposed as grade separated with full turning movements at Preferred Route. In 1992, the Department of Transport issued new design standards on the distances that have to be maintained between the slip roads to successive grade separated junctions on dual carriageway trunk roads. The layout as shown previously could not be maintained, and the south facing slip roads were removed and the junction relocated further south with north facing slips only.

7.7.4 Further detailed studies were carried out on the likely impact of the crossing of the Combe Haven Valley on the landscape and nature conservation aspects in the SSSI. Following these studies the crossing was changed from a combined viaduct and embankment crossing to one on viaduct only, across the entire SSSI (705m in total).

7.7.5 The junction arrangements at the western end of the scheme were considered in the light of proposals to upgrade the A259 to dual carriageway between this scheme and the A27 Pevensey Bypass (A259 Pevensey to Bexhill Improvement). the line of the bypass was adjusted to provide a free flow direct connection with this Improvement. The roundabout junction of Consultation was changed to a partial movement 'Y' junction which would allow access between Bexhill and the west. Other movements would be provided for at the nearby B2095 grade separated junction that is proposed as part of the Pevensey to Bexhill Improvement scheme.

7.7.6 The development of proposals for maintaining access across the bypass for landowners, tenants, footpath users and the like, led to the provision of a number of combined farm access overbridge and underpass crossings.

8 CONSULTATIONS

8.1 The societies/bodies/authorities/persons that have been consulted during the preparation of this Environmental Statement are listed below.

Water Quality and Drainage
National Rivers Authority (NRA)

Land Use and Planning
East Sussex County Council Planning Department
Hastings Borough Council Planning Department
Rother District Council Planning Department
Wealden District Council Planning Department
Ministry of Agriculture, Fisheries and Food (MAFF)

Cultural Heritage
English Heritage Inspector of Ancient Monuments
East Sussex County Council Archaeologist
Rother District Council (Listed buildings)
Hastings Borough Council (Listed buildings)
Wealden Iron Research Group
Hastings Area Archaeological Research Group

Nature Conservation
English Nature
Royal Society for the Protection of Birds (RSPB)
East Sussex County Council Ecologist
Sussex Wildlife Trust

Recreation
East Sussex County Council Planning Department
East Sussex County Council Cycling Officer
East Sussex County Council Rights of Way Officer
The Ramblers

Community Facilities
East Sussex County Fire Brigade
Area Health Authority (hospitals and doctors)
Sussex County Constabulary
East Sussex County Council Education Department (schools)
East Sussex County Council Social Services Department (Aged persons retirement homes)

Construction
East Sussex County Council Minerals Officer
East Sussex County Council Highways and Transportation Department

8.2 Public Consultations were held on 16 and 17 June 1989 at Manor Barn, De Le Warr Road, Bexhill and on 23 and 24 June 1989 at The Cinque Ports Hotel, Bohemia Road, Hastings. The alternative routes described in Section 7.3 were presented. Statutory bodies, local authorities and the general public were consulted.

APPENDIX A

ENVIRONMENTAL IMPACT TABLES

APPENDIX A

THE ENVIRONMENTAL IMPACT TABLES

Scope of the Environmental Impact Tables

Effects of Bypass

(i) The tables consider the effects of the Department's Published Scheme on different groups of people and in relation to the policies of local and national government and other interested organisations. Comparisons are made with the "Do Minimum" situation, which represents the existing road network, together with any currently scheduled improvement schemes within the network. The prediction of traffic related effects in the proposed bypass corridor have been made in accordance with the Department's Traffic Appraisal Manual, and utilises forecasts in the assumed design year (2013), which assume high economic growth and are thus conservative. The effects of the Published Scheme are compared with the "Do-Minimum" situation. The construction and opening of the A259 Hastings Eastern Bypass and the Bexhill Northern Approach Road (and its junction with the new road) is assumed in assessing the impact of the bypass.

Environmental Relief

(ii) Relief to the existing A259 corridor, as a result of opening the bypass, has been assessed by comparing the scheme at the assumed year of opening (1998), with the "Do Minimum" situation in the same year.

(iii) The Do-Minimum situation assesses the effects on the properties immediately fronting onto the existing A259 only. Secondary effects on surrounding roads have been ignored for the purposes of the tables although the provision of a bypass would generally afford relief to these roads and properties on them.

(iv) In most cases policies in Table 4 are only summaries of the relevant policy. For a full description of the appropriate policy, reference should be made to the document(s) quoted.

(v) Calculations assume the A259 Bexhill and Hastings Western Bypass will be built simultaneously with the A259 Hastings Eastern Bypass. If this were not the case there would be a significant increase of traffic on the B2093 The Ridge with consequent reductions in amenity.

(vi) The locations referred to in the tables can generally be found on Figures 5, 6 and 13-22 (incl). Schools, hospitals, churches etc are shown on Figures 8 and 9, but some degree of local knowledge is needed to identify particular locations.

(vii) The tables have been prepared in accordance with the Volume 11 of the Design Manual for Roads and Bridges, Section 4, Part 4 issued by the Department of Transport, and current professional practice.

Table A1 - Local People and Their Communities

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
1.1 Residents	1.1.1 Dwellings Demolished	Number	2 (No.s 1 & 2 East Lodge, Beauport Park)		
	1.1.2 Noise	Number of dwellings along the Published Scheme experiencing an increase of :- 3 - 5 dB 5 - 10 dB 10 - 15 dB 15 - 20 dB Number of dwellings along the Published Scheme experiencing a decrease of :- 3 - 5 dB 5 - 10 dB	 839 407 33 1 2 6	Dwellings where the dominant noise source is traffic will be subject to a 1.5dB increase between 1998 and 2013. None	1. The changes in noise are the differences between the forecast for the Published Scheme in the assumed design year and the levels in the assumed opening year without a scheme. 2. The units are abbreviated to dB but are dB L_{A10} 18hr, representing the A weighted decibel which is exceeded for 10% of the measured period of 6am to midnight. (A perceptible change is approximately 3dB) 3. Excludes caravans and mobile homes.
		Number of dwellings along the existing A259 experiencing a decrease of :- 3 - 5 dB 5 - 10 dB	 1308 65	Noise levels at dwellings along the existing A259 will continue to increase as traffic increases.	Decreases compare levels in the assumed year of opening with and without the scheme.

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Residents (continued)	1.1.3 Air Pollution		Along the Published Scheme the level of CO emissions would be below the threshold of the assessment method. In the areas of Hastings where traffic flows are predicted to increase there would be a small increase in CO emissions. Elsewhere the levels are predicted to fall.	Although traffic levels would increase CO emissions would reduce due to the effect of the improvements in vehicle emission control technology and legislation.	1. CO - carbon monoxide 2. The standard used is the US National Ambient Air Quality Standards for 8 hour exposure. The criterion is a concentration of 9 parts per million (ppm) of CO which should not be exceeded more than once a year. The threshold of the assessment is 3ppm. The DMRB Vol 11 Section 3 states that changes in CO concentration most clearly reflect the changes in traffic conditions.
	1.1.4 Severance a) Relief of existing severance b) Imposition of New Severance		Substantial relief of severance along the existing A259 in Bexhill and at Glyne Gap. Moderate along the seafront in Hastings. Generally slight severance for people living in areas severed from the main urban areas by the scheme.	Severance on the existing network will continue to increase as traffic flows increase. None	

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Residents (continued)	L1.5 Visual Impact				
	a) First Winter Open	Number of properties subject to a visual impact of :-		No Change	Assessment takes into account screening from earthworks.
		Substantial	55		
		Moderate	71		
		Slight	118		
		No Change	208		
	b) Summer 15 years After Opening	Number of properties subject to a visual impact of :-		No Change	Assessment takes into account screening from established planting.
		Substantial	24		
		Moderate	25		
		Slight	81		
		No Change	322		
	c) Winter 15 years After Opening	Number of properties subject to a visual impact of :-			
		Substantial	35		
		Moderate	33		
		Slight	119		
		No Change	265		

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Residents (continued)	1.1.6 Disruption During Construction	-	424 dwellings within 100 m of the boundary of construction works could expect some disruption during construction.	None	
1.2 Commercial Properties	1.2.1 Buildings Demolished	Number	1 (car showroom on the A21 Link Road) Also outbuildings at Kiteye Farm.	None	
	1.2.2 Businesses Affected		Caravan sales business at Beauport Park would need relocation. 3 business using Whitworth Road on the Ridge West Industrial Estate would have access to the A2100 only.	-	
	1.2.3 Noise	Number of properties along the Published Scheme experiencing an increase of :- 3 - 5 dB 5 - 10 dB	 63 87	None	Changes compare the assumed year of opening without the scheme with the Published Scheme in the assumed design year.

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Commercial Properties (continued)	1.2.4 Air Pollution	-	As for Residences (see 1.1.3)	As for Residences (see 1.1.3)	As for Residences (see 1.1.3)
	1.2.5 Severance a) Relief from Existing Severance	-	As for Residences (see 1.1.4)	As for Residences (see 1.1.4)	
	b) Imposition of New Severance	-	Slight for properties severed from the urban areas by the bypass.	None	
	1.2.6 Access	-	Premises along the existing A259 would have improved access due to reductions in traffic flows. Links to other areas of commerce including London and the Channel Tunnel would be improved.	Access would become increasingly difficult with increasing traffic flows.	

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Commercial Properties (continued)	1.2.7 Visual Impact a) First Winter Open	Number of properties subject to a visual impact of Substantial or Moderate	1	None	Assessment takes into account screening from earthworks (Perimeter House, Castleham)
	b) Summer 15 years After Opening	Number of properties subject to a visual impact of Substantial or Moderate	None	None	Assessment takes into account screening from established planting.
	1.2.8 Disruption During Construction	-	45 commercial properties within 100 m of the boundary of the construction works could expect some disruption during construction.	None	

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
1.3 Community Facilities	1.3.1 Amenity	-	Users of public footpaths and byways would suffer a reduction in amenity. Users of recreational facilities and open space at High Woods, Bexhill Cemetery, St Mary's Recreation Ground, Ninfield Road Allotments, the dismantled railway at Combe Haven, the recreation ground at Castleham, and Marline Valley Woods would suffer a reduction in amenity. Open space in the area of Beauharrow Road, Baldslow would be lost to the scheme. Equestrians would suffer in the same way as pedestrians.	No improvement for users of facilities from existing conditions brought about by heavy traffic flows.	1. Community facilities include hospitals, schools, post offices, churches, recreation areas, police and fire stations, and rights of way. 2. Amenity is a general term that accounts for the effects of noise, air pollution and visual impact.

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Community Facilities (continued)	1.3.1 Amenity (cont'd)		<u>Bexhill</u> The post offices, schools, churches and fire station along the existing A259 and other roads in Bexhill would benefit from a reduction in traffic flows, thereby reducing noise, air pollution, and improving access. <u>Hastings</u> The hospital, churches, post office, and schools along the existing A259 and Harley Shute Road would benefit in a similar way to those in Bexhill (users of the seafront and promenade would also benefit). Other facilities in Hastings would suffer a slight reduction in amenity due to increased traffic flows.	No improvement for users of facilities from existing conditions brought about by heavy traffic flows. No improvement for users of facilities from existing conditions brought about by heavy traffic flows.	

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Community Facilities (continued)	1.3.2 Severance a) Relief from Existing Severance	-	Along the existing A259 there would be substantial relief of severance for users of facilities in Bexhill due to reductions in traffic flow. In Hastings the relief would be moderate.	No Change	
	b) Imposition of New Severance.	-	Severance between the users and facilities would be slight.	No Change	
	1.3.3 Visual Impact	-	Visual Impact to users of facilities would largely be limited to users of public footpaths and byways, and equestrians. Impact would be significant in Barnhorn Levels, at the dismantled railway and at the A21 Link Road, but slight in the areas of Whydown Road to the A269 and on Queensway.	No Change	Visual Impact would reduce with the establishment of planting.

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Community Facilities (continued)	1.3.4 Landtake a) Area of Land taken from Facility	m^2	St Mary's Recreation Ground - 1,232m^2 Dismantled Railway - 25,948m^2 Marline Valley - 22,667m^2	None	Landtake from the dismantled railway includes severed land.
	b) Exchange Land Proposed	m^2	St Mary's Recreation Ground - 1,255m^2 Dismantled Railway - 26,996m^2 Marline Valley - 25,509m^2 Land South of the Ridge at Baldslow - 22,833m^2	None	
	1.3.5 Diversion of Footpaths	-	21 footpath routes and one Byway Open to All Traffic (BOAT) would be physically affected by the scheme. 17 of these footpath routes and the BOAT would be diverted to cross over or under the bypass. Three footpaths would be truncated and one extinguished.	No Change	
Community Facilities (continued)	1.3.6 Disruption During Construction	-	Slight impact at St Mary's Recreation Ground and Marline Valley and significant impact at dismantled railway due to landtake, noise and air pollution during construction.	-	

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
1.4 Farming	1.4.1 Landtake	ha	Some 126.7 ha of agricultural land would be required for the scheme of which 92.2 ha is permanent landtake and 34.5 ha is temporary landtake. See Land Use Table.		1. Temporary landtake is land that would be returned to agriculture after construction. Some of this land would be regraded. 2. 1ha = 10,000m^2
	1.4.2 Impact on Viability	-	31 holdings would be affected, but only 20 are considered farm businesses. One holding would suffer major impact.	None	

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Farming (continued)	1.4.3 Access	-	Severed farmland would be provided with alternative access via new tracks, connected where necessary with overbridges or underpasses across the bypass. There would be 2 overbridges and 2 underpasses provided for this purpose along the scheme along with five side road crossings that would also allow access.	None	
	1.4.4 Disruption During Construction	-	Access to all severed areas of farmland would be maintained during construction. Water supplies would be maintained and fencing provided to safeguard livestock.	-	Permanent fencing along the boundary of the scheme would be the subject of compensation.

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
1.5 Caravans and Chalets	1.5.1 Landtake	Area of Landtake from Caravan Parks.	Beauport Caravan Park would lose 5.4ha of land to the scheme and 106 caravans would require relocation.	None	
	1.5.2 Noise		Remainder of Beauport Caravan Park would suffer an increase in noise levels of between 3 and 10 dB. The Kloofs Caravan Site, off Whydown Road, would be subject to an increase of 3 - 5 dB. Cobbs Hill Caravan Site, Watermill Lane, subject to increase of 5 - 10 dB. High Beech Country Club would be subject to 3 - 5 dB increase.	Noise levels would increase as traffic on surrounding roads increases.	See 1.1.2 for noise definitions.

Table A2 - Travellers

A259 Bexhill and Hastings Western Bypass

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Traveller Amenity **2.1** **Vehicle Users Amenity**	2.1.1 Driver Stress		Low stress on bypass. Moderate stress relief in Bexhill Reduced stress on existing A259 in Hastings but still rated as High.	High driver stress on the existing A259 increasing as traffic increases.	
	2.1.2 View From the Road		Intermittent views of the surrounding rural landscape with views of the landscaping areas and planting.	Busy townscape and views of the sea through Hastings.	
2.2 **Pedestrians Amenity**	2.2.1 Severance		Severance induced by the scheme would be slight overall with moderate severance for longer footpath diversions. Relief of existing severance would be substantial along the existing A259 in Bexhill and at Glyne Gap and moderate through Hastings.		Footpaths would be diverted over or under the bypass. One footpath (131A) would be extinguished but a longer alternative route would be available.

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
Pedestrians Amenity (continued)	2.2.2 Change in Amenity		Reduction in amenity for 20 footpath routes physically affected by the bypass, due to increased noise, air pollution, visual impact and severance. Improved amenity for pedestrians using footways along the existing A259.	Existing good amenity unchanged. Decreasing amenity for pedestrians using footways along the existing A259 as traffic flows increase.	
2.3 Cyclist Amenity	2.3.1 Amenity		On the bypass 1m hardstrips on the outside of each carriageway would make provision for cyclists together with facilities at junctions. Reductions in traffic flows along the existing A259 through Bexhill and Hastings would improve amenity for cyclists using this road.	Increased traffic would lead to decreasing amenity for cyclists.	Existing cyclist flows of 213 cyclists per day recorded at Glyne Gap (12hr day 1987).
2.4 Equestrians Amenity	2.4.1 Severance		Severance due to the bypass would be slight as side roads used by equestrians would be carried over or under the bypass.	No Change	Livery Stables and Riding Schools are mainly located in north Bexhill and use the minor roads for access to the area north of the town.

Sub-Group	Effect	Units	Published Scheme		Do Minimum	Comments
Equestrian Amenity (continued)	2.4.2 Amenity		Amenity would be reduced by the presence of the bypass through the area used for riding.		No Change	
Traveller Safety **2.5 All Vehicle Travellers' Safety**	2.5.1 Reduction in Casualties		High Growth	Low Growth		These figures indicate the probable reduction in casualties over the whole of the 30 year assessment period if the national average rates and distribution between groups apply to the bypass. They take no account of the safety implications of the detailed design of the scheme.
	Fatal	number	50	42	0	
	Serious	number	653	550	0	
	Slight	number	1718	1450	0	
2.6 Pedestrians	2.6.1 Safety		Safe crossing of the bypass would be facilitated by footpath diversions to overbridges and underpasses. No at grade crossings of the bypass would be allowed. Safety in Bexhill and Hastings would be improved as traffic flows reduce.		Safety levels would fall as traffic flows on the existing roads increase.	

Sub-Group	Effect	Units	Published Scheme	Do Minimum	Comments
2.7 Cyclists	2.7.1 Safety	-	Facilities would be provided on the bypass to allow for safe crossings of the slip roads and junction roundabouts by cyclists. Safety in Bexhill and Hastings would improve as traffic flows reduce.	Safety levels would fall as traffic flows on the existing roads increase.	

Table A3 - The Cultural and Natural Environment

A259 Bexhill and Hastings Western Bypass

Sub-Group	Effects	Units	Published Scheme	Do Minimum	Comments
CULTURAL HERITAGE **3.1 Archaeology**					Field evaluation will be undertaken to verify the nature, extent and quality of survival of remains. Opportunity would be provided for investigations in advance of construction in consultation with English Heritage.
a) Subsurface Features	3.1.1 Landtake	-	Uncertain risk to features located through non-intrusive survey. These are unlikely to be of national importance.	No change	
b) Barnhorn Level	3.1.2 Landtake	-	Moderate risk to subsurface features including palaeo-environmental remains.	No change	
c) 'Kingsle' Site of Building	3.1.3 Landtake	-	Exact location unknown. Low risk to remains of local importance.	No change	
d) Boundary Bank Jack O' Borehams Wood	3.1.4 Landtake	-	High localised impact on feature of county importance.	No change	
e) Site of 17th Century Cottage on Ninfield Road	3.1.5 Landtake	-	Exact location unknown. Low risk to remains of local importance.	No change	
f) Earthworks East of Watermill Lane	3.1.6 Landtake	-	High impact on feature of local and county importance.	No change	

Sub-Group	Effects	Units	Published Scheme	Do Minimum	Comments
3.1 Archaeology (continued)					As above
g) Site of Combe Farm	3.1.7 Landtake	-	Low risk to remains of local importance.	No change	
h) Earthwork Boundary in Combe Haven	3.1.8 Landtake	-	High risk to feature of local importance due to construction of access track across Combe Haven.	No change	
j) Combe Haven Palaeo-environmental Remains	3.1.9 Landtake	-	Localised high impact on deposits where the bridge piers would be constructed.	No change	
k) Other Undetected Archaeological Remains	3.1.10 Landtake	-	Low to moderate risk to other remains of unknown importance.	No change	
3.2 Conservation Areas ***St Leonards on Sea & Hastings***	3.2.1 Setting	-	Decrease in traffic would reduce impact on setting.	Increased traffic would cause deterioration in the setting of these areas.	

Sub-Group	Effects	Units	Published Scheme	Do Minimum	Comments
3.3 Listed and Unlisted (Historic) Buildings *East Lodge, Beauport Park (Grade II)*	3.2.1 Demolition	-	High Impact	None	Detailed building survey has been carried out. Further details would be recorded to an appropriate level in consultation with English Heritage.
Longdown Farm, Preston Hall, Preston Hall Cottage, Upper Wilting Farm (all Grade II)	3.2.2 Setting	-	High Impact	No change	Visual impact would reduce with the establishment of planting. Noise barriers and mounding would also be used along the scheme.
Bynes Farm, Hillcroft Farm (all Grade II)	Setting	-	Moderate Impact	No change	
Cockerels Farm, Mayfield Farm, High House (all Grade II)	Setting	-	Low Impact	No change	
Chetwynd, Preston Lodge, Adams Farm (unlisted historic)	Setting	-	High Impact	No change	
Preston Cottage (unlisted historic)	Setting	-	Moderate Impact	No change	

Sub-Group	Effects	Units	Published Scheme	Do Minimum	Comments
3.4 **Historic Landscape**	3.4.1 Setting	-	High localised impact on historic field pattern, woodland and road network.		

Sub-Group	Effects	Units	Published Scheme	Do Minimum	Comments
NATURE CONSERVATION **3.6** **Sites of Special Scientific Interest (SSSI)** *a) Pevensey Level*	Landtake and Habitat Change	-	Habitat loss of 1.6 ha due to on-line widening of the existing A259.	None	All SSSIs are of national importance for nature conservation. A viaduct across the Combe Haven would have substantially less impact than an embankment.
b) Combe Haven	Landtake and Habitat Change	-	Temporary landtake of 2.1 ha during construction of viaduct consisting of loss of 2 ha of grassland and 0.1 ha of scrub.	None	
		-	Permanent landtake of 0.24 ha for access track and viaduct piers. Two streams would be locally diverted.	None	
c) Marline Valley Woods	Landtake and Habitat Change	-	Direct loss of 0.3 ha from Marline Valley Woods SSSI (including 0.12 ha from local nature reserve).	None	

Sub-Group	Effects	Units	Published Scheme	Do Minimum	Comments
3.7 Ancient Woodland					The nature and conservation value of Ancient Woodland cannot be recreated. Secondary impacts such as windblow of exposed edges would be reduced by management of remaining edges.
a) Jack O' Borehams Wood	Landtake and Habitat Loss	-	Loss of 0.3 ha of northern tip of wood.	None	
b) Kiln Wood	Landtake and Habitat Loss	-	Loss of 0.8 ha of southern edge of wood.	None	
c) Cole Wood	Landtake and Habitat Loss	-	Loss of 0.2 ha of southern tip of wood.	None	
d) Marline Valley Woods	Landtake and Habitat Loss	-	Loss of 0.3 ha of southern edge of SSSI woodland.	None	
3.8 Recent Woodland	3.8.1 Landtake and Habitat Loss	ha	18.1 ha of woodland which is not ancient would be lost along the scheme.	None	Woodland is of variable quality but general habitat for birds, invertebrates and mammals 50 ha of woodland would be created.
3.9 Grassland	3.9.1 Landtake	ha	35.4 ha of semi-natural grassland would be lost to the scheme.	None	Wildflower grassland may provide some replacement habitat.
3.10 Hedges	3.10.1 Habitat Loss	m	Approximately 7585 m of hedgerows would be cleared.	None	The hedges vary in value but many are species rich. They provide habitat for a range of birds, invertebrates and mammals. New hedges would be planted, partly as accommodation works.

Sub-Group	Effects	Units	Published Scheme	Do Minimum	Comments
3.11 Watercourses *a) Rivers, Streams and Ditches*	3.11.1 Loss of Watercourses and Shading due to Culverts.	m	A total of 5645 m of ditches and streams would be lost or culverted. Of these some 365 m would be lost or culverted in areas of national nature conservation value.	None	A total of 2210 m of open ditches would be created along the Published Scheme.
	3.11.2 Water Quality		There could be some reduction in water quality by contamination by road run-off. This would be kept to a minimum by provision of oil interceptors and silt traps prior to the outfall. Risk of accidental pollution from spillages is low and containment measures would be incorporated in the scheme.		
b) Ponds	3.11.3 Habitat Loss	ha	Four ponds totalling 0.24 ha would be lost to the scheme. 16 ponds within 100m of the scheme may experience indirect effects during construction.	None	Nine balancing ponds would be created as part of the Published Scheme and would be designed to incorporate features that would encourage their use as natural habitat.

Sub-Group	Effects	Units	Published Scheme	Do Minimum	Comments
3.12 **Protected Species** 3.12.1 *Badgers*	Sett loss Habitat loss and severance	No ha	At least 14 setts would be directly affected and a further 31 would suffer an indirect impact. Most of the scheme passes through badger territories, resulting in habitat loss and severance. Badger-proof fencing and the provision of tunnels would minimise the risk of road casualties.	Some deaths on existing roads.	Very high density of badgers in this area of county importance. Mitigation measures would be decided in consultation with English Nature. Protected under Protection of Badgers Act 1992.
3.12.2 *Bats*	Roost loss Foraging area loss	No ha	Demolition of properties and mature trees. No known roosts demolished.	None	Bat survey required if site is a suspected roost. All species protected under Wildlife and Countryside Act 1981.
3.12.3 *Dormice*	Habitat Loss	ha	Loss of 1.3 ha of suitable habitat from Highfields Wood, Marline Wood and Shaws near Jack O'Borehams Wood. Disturbance may affect suitability of remaining habitat.	-	Protected under Wildlife and Countryside Act 1981.
3.12.4 *Crested Newts*	Habitat Loss or Pollution		No effect.	-	Protected under Wildlife and Countryside Act 1981.

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
4.1 **Transport - National Policies**					
4.1.1 Paragraph 35 Roads for Prosperity (1989)	Department of Transport (DOT)	To relieve congestion on the most heavily used parts of the highway network before it reaches a level where it imposes unacceptable environmental and economic costs.	The scheme would remove through traffic from roads within Bexhill and Hastings, reducing congestion on the heavily used A259.	Increased congestion on existing roads.	The relief of congestion would improve journey times and aid in the economic growth of the area as well as having environmental benefits in terms of reduced vehicle emissions.
Paragraph 1.5 Trunk Roads, England into the 1990's (1990)	Department of Transport (DOT)				
Paragraph 4.1 Trunk Roads in England 1994 Review	Department of Transport (DOT)				
4.1.2 Paragraph 26 Roads for Prosperity (1989)	DOT	To assist economic growth by reducing transport costs.	The scheme would reduce travel times and fuel consumption, thereby reducing transport costs.	Increased congestion would lead to increased transport costs.	
Paragraph 1.2 Trunk Roads England, Into the 1990s	DOT				
Policy S32 This Common Inheritance	Department of the Environment (DOE)				

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Transport - National Policies (continued)					
4.1.3 Paragraph 26 Roads for Prosperity (1989)	DOT	To improve the environment by removing through traffic from unsuitable roads in towns and villages.	The scheme would remove through traffic from Bexhill and Hastings, improving the environment.	Environmental degradation of Bexhill and Hastings would continue as the volume of traffic increases.	
Paragraph 1.2 Trunk Roads England, Into the 1990s	DOT				
Policy S32 This Common Inheritance	DOE				
4.1.4 Paragraph 26 Roads for Prosperity (1989)	DOT	To enhance road safety.	Traffic and congestion would be reduced , with an inherent reduction in road accidents.	The number of accidents would increase as the volume of traffic and congestion levels increase in urban areas.	See Group 2 - All Vehicle Travellers Safety
Paragraph 1.2 Trunk Roads England, Into the 1990s	DOT				

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Transport - Local Policies					
4.1.5 Policy S6, S22, EA/T1 and EA/T3 County Structure Plan 1991	East Sussex County Council (ESCC)	Improvements to the A259 trunk road to improve the areas accessibility and thereby to realise economic opportunities.	Would form one of a series of improvements to the A259 that would improve access to the Channel Tunnel, London, Gatwick Airport and other areas outside the county.	The Bexhill and Hastings areas would remain remote and economic opportunities would be limited.	
Policy P33 Bexhill Local Plan 1985	Rother District Council (RDC)				
Chapter 1, Para 2.11 and 3.5 North Bexhill Strategic Framework* 1993	ESCC and RDC				* The North Bexhill Strategic Framework 1993 has been formally adopted as supplementary planning guidance by ESCC and RDC.
Policy RT2 Hastings Borough Plan 1993	Hastings Borough Council (HBC)				
Policy TR4 and TR7 Draft Wealden Local Plan 1993**	Wealden District Council (WDC)				** Draft Wealden Local Plan 1993 has been published for Public consultation.
4.1.6 Policy 18 Minerals Local Plan Consultation Draft (1992)	ESCC	To provide an access road from the bypass to Ashdown Brickworks, thereby maintaining the economic viability of the site.	A new access road could be provided to the brickworks from the junction of the bypass with the A269 and St Mary's Lane at the Highlands.	Development of the site would rely on the further use of the existing road network.	

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Transport - Local Policies (continued) 4.1.7 Policy EA/T7 County Structure Plan Policy P34 Bexhill Local Plan Chapter 1, Paras 2.13 and 3.5 North Bexhill Strategic Framework	ESCC RDC ESCC and RDC	The provision of the Bexhill Northern Approach Road (BNAR) in conjunction with the bypass to improve accessibility and to unlock development land.	The scheme includes a two level junction north-west of Worsham Farm with the BNAR.	No link provided. Development would not be fully realised.	
4.1.8 Policy EA/A1 and EA/T6 County Structure Plan Policy RT29 Hastings Borough Plan	ESCC HBC	To improve accessibility within Hastings.	The scheme provides two level junctions with the Hastings Spur Road, the Castleham Industrial Estate, the A21 and the A2100, improving access into Hastings town centre and the Hastings Town Development Area.	No Improvement	

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
4.2 **Countryside Protection Policies**					
4.2.1 Paragraph 44 Roads for Prosperity (1989)	DOT	Protection of the environment.	Throughout the design process, commencing during route location studies, consideration has been given to the environment. Mitigation measures, including route alignment and earthworks to blend the scheme in with its surroundings and planting, have been incorporated to minimise impact.	Increased traffic levels on the A259 would lead to a deterioration of the environment through which this road passes.	The substantially built up nature of the coastline in the Bexhill and Hastings area makes it likely that any major improvements to the A259 in this area would take the form of a bypass running through areas of open countryside to the north of the towns.
Paragraph 8.3 Trunk Roads in England 1994 Review	DOT				
Policy S12(a), S27(c) and EA/EN6 County Structure Plan	ESCC				
Policy P4 Combe Haven Valley District Plan 1981	ESCC				
Policy P9 Bexhill Local Plan	RDC				
Chapter 1, Paras 1.11, 1.12 and 2.17 Chapter 2 and Chapter 8 North Bexhill Strategic Framework	ESCC and RDC				

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Countryside Protection Policies (continued)					
4.2.1 (Cont'd) Policy 7E, 10A and 10G South Wealden Local Plan	WDC				
Policy TR2, EN11 and DC1 Draft Wealden Local Plan	WDC				
4.2.2 Trunk Roads in England 1994 Review	DOT	Protection of SSSIs and other areas of nature conservation importance.	The scheme would have a direct impact on three SSSIs; Pevensey Levels, Combe Haven valley and Marline Valley Woods.	No Impact	Would affect the fringes of the Pevensey Levels and Marline Valley Woods SSSI's and cross the Combe Haven Valley SSSI.
Policy S12, S27, S28, EA/EN1 and EA/EN6 County Structure Plan	ESCC				
Chapter 2 North Bexhill Strategic Framework	ESCC and RDC				
Policy RC46 and RC47 Hastings Borough Plan	HBC				
Policy 10D and 10E South Wealden Local Plan	WDC				
Policy TR2, EN17, EN23 and EN24 Draft Wealden Local Plan	WDC				

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Countryside Protection Policies (continued) 4.2.3 Policy P3 Combe Haven Valley District Plan	ESCC	Protection of Combe Haven SSSI.	Would cross SSSI but would lie within the bypass corridor indicated in the plan.	No Impact	Combe Haven District Plan states that no developments would be permitted within the SSSI with the exception of a proposed bypass within the corridor indicated.
4.2.4 Policy S27 County Structure Plan Policy P2 and P4 Combe Haven Valley District Plan Policy P19 and P20 Bexhill Local Plan Chapter 2 and Chapter 8 North Bexhill Strategic Framework Policy RC44, RC50 and RC51 Hastings Borough Plan Policy EN20 and TR2 Draft Wealden Local Plan	ESCC ESCC RDC ESCC and RDC HBC WDC	Protect trees, woodland and hedgerows.	The scheme would result in the loss of 19.7 ha of woodland and scrub of which 1.6 ha would be ancient woodland. The scheme would provide approximately 50.0 ha of tree and shrub coverage through it's planting proposals. Woodland management would be carried out where woodlands have been severed and a new woodland edge created.	No Impact	

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Countryside Protection Policies (continued)					
4.2.5 Paragraph 8.4 Trunk Roads in England 1994 Review	DOT	Protect the areas of landscape value, particularly the High Weald Area of Outstanding Natural Beauty (AONB).	The route would pass through the edge of the High Weald AONB and cross the Combe Haven valley (of local landscape value). The impact on the AONB would be slight, but the scheme would be visible from some areas in the AONB to the north as it cuts through an area of lightly wooded caravan park and scrubland at Baldslow. The impact on the Combe Haven would be substantial as the scheme would cross the valley on viaduct, affecting views from within the valley and to a lesser extent views along the valley from western Hastings. Landscape measures would be incorporated to reduce the impact of the scheme on the surrounding area.	No Impact	
Policy S12 S27, S28 and EA/EN1 County Structure Plan	ESCC				
Policy RC45 Hastings Borough Plan	HBC				
Policy 10B South Wealden Local Plan	WDC				
Policy EN5 and EN6 Draft Wealden Local Plan	WDC				

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Countryside Protection Policies (continued)					
4.2.6 Policy EA/EN6 County Structure Plan	ESCC	Conservation of landscape quality and character of the area.	The scheme would have a visual impact on the surrounding area but mitigation measures including earthworks to blend the scheme in with it's surroundings and planning would minimise the impact. The visual impact of the Combe Haven viaduct could not be mitigated by planting in the valley, but careful design would reduce impact.	No Impact	The effectiveness of the mitigation measures proposed would increase as the planting becomes established.
Policy P4 and P16 Combe Haven Valley District Plan	ESCC				
Policy RP8 and RP9 Hastings Borough Plan	HBC				
Policy 7E South Wealden Local Plan	WDC				
Policy EN11 and TR2 Draft Wealden Local Plan	WDC				

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
4.3 **Agricultural Policies** 4.3.1 Policy S12 and S28 County Structure Plan Policy P1 Combe Haven Valley District Plan Policy DC2 Draft Wealden Local Plan	ESCC ESCC WDC	Protection of the best and most versatile agricultural land.	31 farm holdings would be affected. There would be a major impact on one. Access to areas severed by the bypass would be provided by the provision of bridges or underpasses. 92.2 ha of agricultural land would be permanently taken for the scheme. 6.3 ha would be of Grade 2 and 25.9 ha of Grade 3a.	No Impact	See Table B - Land Use for details.

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
4.4 **Cultural Heritage Policies**					
4.4.1 Policy S12 and S27 County Structure Plan	ESCC	Identify, record and protect sites of archaeological importance.	Areas of archaeological potential have been identified. Further evaluation is proposed in the form of trial excavations prior to scheme construction.	No Impact	
Policy P30 Bexhill Local Plan	RDC				
Policy RC1 Hastings Borough Plan	HBC				
Policy 10V, 10W and 10X South Wealden Local Plan	WDC				
Policy EN34 and EN35 Draft Wealden Local Plan	WDC				

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Cultural Heritage Policies (continued) 4.4.2 Policy S13, S27 and EA/EN3 County Structure Plan Policy P22 Combe Haven Valley District Plan Chapter 2 Para 1.7 North Bexhill Strategic Framework Policy RC9 Hastings Borough Plan Policy 7E, 10S and 10V South Wealden Local Plan Policy EN34 and TR2 Draft Wealden Local Plan	ESCC ESCC ESCC and RDC HBC WDC WDC	Buildings and features of architectural or historic importance, ancient monuments and their immediate surrounds should be preserved.	The scheme would result in the demolition of one Grade II Listed building and have an adverse affect on the setting of 11 other listed buildings. Mitigation measures in the form of earthworks and planting would reduce the impact to a minimum. Reduced traffic flows through the conservation areas would improve the local environment and reduce pollution based damage to buildings.	The conservation areas of Bexhill and Hastings and other historic buildings would suffer an increased impact on their settings due to increasing traffic flows and congestion. Traffic management and localised improvement schemes may be required to ease congestion.	The appropriate records would be made of the demolished building in conjunction with English Heritage.
4.4.3 Policy EA/EN3 and EA/A1 County Structure Plan Policy RC2, RC24 and RC28 Hastings Borough Plan	ESCC HBC	Enhancement of urban character, particularly Conservation Areas and other areas of high amenity.	Reduced traffic flows would provide opportunities for improving the buildings and townscape of the two towns, particularly along the seafront in Hastings and St Leonards.	Increased volumes of traffic and congestion would have a gradually increasing adverse impact on the character of Bexhill and Hastings.	

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
4.5 Economic and Development Policies 4.5.1 Policy S14, EA/A1 and EA/A2 County Structure Plan	ESCC	To maintain and enhance the roles of Bexhill and Hastings and their town centres.	By removing through traffic from Bexhill and Hastings the urban environment in the town centres would benefit from improved conditions and reduced congestion and would become more attractive for investment.	Continued degradation of the urban fabric.	
4.5.2 Policy S6, EA/E1, EA/E4, EA/A1 and EA/A2 County Structure Plan Chapter 1, Paras 2.10 -2.16 North Bexhill Strategic Framework Policy RE1 and RE3 Hastings Borough Plan	ESCC ESCC and RDC HBC	To provide employment and strengthen the economy.	Accessibility would be improved from all areas of the country including connection to the Channel Tunnel. Construction of the bypass would provide the infrastructure to allow development to progress.	Increased congestion and poor connections to other areas would gradually worsen, and would provide a barrier to economic growth.	The area benefits from Intermediate Assisted Area Status.

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Economic and Development Policies (continued)					
4.5.3 Policy EA/A2, EA/H3, EA/E2 and EA/E3 County Structure Plan Policy P4 Bexhill Local Plan Chapter 1, Paras 3.4, 3.5 and Chapters 5 and 6 North Bexhill Strategic Framework	ESCC RDC ESCC and RDC	To develop land to the north of Bexhill for employment and a new community.	The access and highway capacity required for the developments to be realised in full would be provided*.	New developments may be unacceptable as they would increase congestion on existing roads and access would be limited.	* In conjunction with East Sussex County Council's Bexhill Northern Approach Road.
4.5.4 Policy EA/H1 County Structure Plant Policy RE1, RE5, RH6, RII13, RT31, RM1 and RL17 Hastings Borough Plan Policy P4 Bexhill Local Plan North Bexhill Strategic Framework	ESCC HBC RDC ESCC/RDC	Development allocations for residential, commercial, industrial and community facilities within the scheme corridor.	The scheme would have an indirect impact on these developments in terms of visual and environmental effects. Landscaping measures are proposed to reduce adverse effects.	Increased congestion and decreased accessibility would adversely effect these proposals if no road improvements were made.	

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Economic and Development Policies (continued) 4.5.5 Policy S9 and EA/H2 County Structure Plan	ESCC	To accommodate development in the Bexhill/Hastings/Eastbourne area which could not be provided in the north-west of the county and the western area.	The scheme would provide the necessary access and good road infrastructure to enable the further development of Hastings / North Bexhill.	Increased congestion and reduced accessibility would adversely effect these proposals if no road improvements were made.	

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
4.6 **Recreational Policies** 4.6.1 Policy P19 Combe Haven Valley District Plan Policy RL23 and RL24 Hastings Borough Plan Policy 9C South Wealden Local Plan Policy TR18 Draft Wealden Local Plan	ESCC HBC WDC WDC	The maintenance, improvement and provision of additional public Rights of Way.	21 footpath routes would be physically affected by the scheme. One would be extinguished, all others be redirected to cross over or under the scheme. In the area of the scheme the amenity of these routes would be reduced. The provision of a new footpath between Crowhurst Road and the south and east corner of Marline Wood would be included as part of the scheme.	No Impact	
4.6.2 Policy P18 Combe Haven Valley District Plan Policy P21 Bexhill Local Plan	ESCC RDC	To provide a recreational footpath linking the Combe Haven with Normans Bay.	The footpath would cross the proposed line of the scheme in the Combe Haven where it could pass under the viaduct and between Peartree Lane and St Mary's Lane where it would be diverted via the new Peartree Lane overbridge.	No Impact	

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
Recreational Policies (continued) 4.6.3 Policy P22 Bexhill Local Plan	RDC	To retain the dismantled railway for recreational purposes.	The scheme would require the acquisition of some of the dismantled railway which would reduce the amenity value. Exchange land of equal value would be provided.	No Impact	
4.6.4 Policy RL22 Hastings Borough Plan	HBC	To safeguard additional areas of Public Open Space.	0.23 ha would be taken from a proposed area of Public Open Space east of High Beech.	No Impact	The land required for the scheme lies within the existing boundaries of Queensway.
4.6.5 Policy RL6 and RL7 Hastings Borough Plan	HBC	To improve the range and quality of camping, caravan and chalet facilities within the area and to provide campsites for uniformed organisations.	The scheme would require land from Beauport Caravan Park that would necessitate the relocation of the area allocated as a proposed extension for self catering accommodation and for use as a campsite for uniformed organisations.	No Impact	

Policy	Authority	Interest	Published Scheme	Do Minimum	Comments
4.7 **Other Policies**					
4.7.1 Policy EA/ENS County Structure Plan	ESCC	Development in the Combe Haven catchment and the Marline valley would only be permitted with adequate measures to deal with surface water.	All outfalls would be balanced and provided with pollutant interceptors to National Rivers Authority requirements.	No Impact.	
Policy RU2 Hastings Borough Plan	HBC				
Policy P17 Combe Haven Valley District Plan	ESCC				

Table B - Land Use
Section A - Barnhorn Level

Existing Land Use	Area Required Permanently			Area Required Temporarily During Construction (ha)	Comments
	Area for Carriageway, Footways and other Hard Surface (ha)	Area for Verges, Embankments, Cuttings and other Landscaping (ha)	Total Area (ha)		
Agricultural Land					
Grade 2	0.2	0.8	1.0	0	
3a	2.1	4.5	6.6	3.1	
3b	3.7	11.0	14.7	9.5	
4	0.3	0.7	1.0	0	
5	0.1	1.0	1.1	0	
Not Graded	0	0	0	0	
Woodland					
Ancient	0	0	0	0	
Recent	0.2	0.7	0.9	0	
Other Land					
Non Agricultural	0.2	0.6	0.8	0	Area of existing roads includes road verges and embankments.
Roads	1.8	1.7	3.5	0	
Public Open Space	0	0	0	0	
TOTAL	8.6	21.0	29.6	12.6	

Table B - Land Use (Cont'd)
Section B - The Weald

Existing Land Use	Area Required Permanently			Area Required Temporarily During Construction (ha)	Comments
	Area for Carriageway, Footways and other Hard Surface (ha)	Area for Verges, Embankments, Cuttings and other Landscaping (ha)	Total Area (ha)		
Agricultural Land					
Grade 2	0.7	1.0	1.7	0	
3a	3.0	6.2	9.2	0.3	
3b	4.7	10.3	15.0	0.2	
4	0	0	0	0	
5	0	0	0	0	
Not Graded	0	0.1	0.1	0	
Woodland					
Ancient	0.2	0.8	1.0	0.1	0.1ha of landtake is exchange land for Public Open Space.
Recent	0.5	1.4	1.9	0	
Other Land					
Non Agricultural	0	1.1	1.1	0	Area of existing roads includes road verges and embankments.
Roads	0.3	1.4	1.7	0	
Public Open Space	0.1	0	0.1	0	
TOTAL	9.5	22.3	31.8	0.6	

Table B - Land Use (Cont'd)
Section C - The Combe Haven Valley

Existing Land Use	Area Required Permanently			Area Required Temporarily During Construction (ha)	Comments
	Area for Carriageway, Footways and other Hard Surface (ha)	Area for Verges, Embankments, Cuttings and other Landscaping (ha)	Total Area (ha)		
Agricultural Land					
Grade 2	1.0	2.7	3.7	0.8	
3a	3.1	6.5	9.6	3.0	
3b	5.5	15.6	21.1	16.4	
4	1.2	2.8	4.0	1.1	
5	0.1	0	0.1	0	
Not Graded	0	0.2	0.2	0	
Woodland					2.6ha of landtake is exchange land for Public Open Space.
Ancient	0.1	2.4	2.5	0.1	
Recent	1.3	2.1	3.4	0.2	
Other Land					
Non Agricultural	0.1	0.9	1.0	0.1	Area of existing roads includes road verges and embankments.
Roads	0	0.4	0.4	0	
Public Open Space	0.5	2.1	2.6	0	
TOTAL	12.9	35.7	48.6	21.7	

Table B - Land Use (Cont'd)
Section D - Queensway to the A2100

Existing Land Use	Area Required Permanently			Area Required Temporarily During Construction (ha)	Comments
	Area for Carriageway, Footways and other Hard Surface (ha)	Area for Verges, Embankments, Cuttings and other Landscaping (ha)	Total Area (ha)		
Agricultural Land					
Grade 2	0	0	0	0	
3a	0.1	0.4	0.5	0	
3b	0.7	0.9	1.6	0	
4	0.2	0.7	0.9	0	
5	0	0	0	0	
Not Graded	0	0	0	0	
Woodland					
Ancient	0	0	0	0	
Recent	0.2	6.3	6.5	0	
Other Land					
Non Agricultural	2.8	9.0	11.8	0.1	1. Area of existing roads includes road verges and embankments. 2. 5.8ha of other land taken is exchange land for Public Open Space lost.
Roads	9.3	14.3	23.6	0	
Public Open Space	0.4	3.7	4.1	0.5	
TOTAL	13.7	35.3	49.0	0.6	

Table B - Land Use (Cont'd)
Complete Scheme Total

Existing Land Use	Area Required Permanently			Area Required Temporarily During Construction (ha)	Comments
	Area for Carriageway, Footways and other Hard Surface (ha)	Area for Verges, Embankments, Cuttings and other Landscaping (ha)	Total Area (ha)		
Agricultural Land					
Grade 2	1.9	4.5	6.4	0.8	
3a	8.3	17.6	25.9	6.4	
3b	14.6	37.8	52.4	26.0	
4	1.7	4.2	5.9	1.1	
5	0.2	1.0	1.2	0	
Not Graded	0	0.4	0.4	0	
Woodland					2.7 ha of landtake is exchange land for Public Open Space.
Ancient	0.3	3.2	3.5	0.2	
Recent	3.5	9.2	12.7	0.2	
Other Land					
Non Agricultural	3.1	11.6	14.7	0.2	5.8 ha of other land is exchange land for Public Open Space lost.
Roads	11.4	17.8	29.2	0	
Public Open Space	1.0	5.8	6.8	0.5	
TOTAL	46.0	113.1	159.10	35.4	

Table C - Mitigation

A259 Bexhill and Hastings Western Bypass

Impact	Mitigation Measure	Location, Purpose	Estimated Capital Cost (where separately identifiable)	Forecast Maintenance Requirements and Method	Comments
1 **Traffic Noise / Visual Impact**	Earthmounds/False Cuttings	At various locations throughout the scheme to reduce traffic noise and levels of visual impact.	-	Maintenance of grass/planting from the road verge.	Hardstandings would be provided for maintenance vehicles.
	Noise Fences	At various locations adjacent to the scheme to reduce traffic noise levels at nearby properties.	60,000	Regular maintenance would be required for painting and replacing panels. Carried out from the verges.	
2 **Landtake / Property Demolition**	Provision of Retaining Walls	At various locations, retaining walls would be provided to reduce landtake and property demolition.	2,100,000	No specific maintenance requirements.	
3 **Water courses**	Provision of Balancing Ponds	Nine balancing ponds would be provided to regulate outfall rates thereby prevent the flooding of watercourses and adjacent land. They would also provide permanent replacement aquatic habitats.	200,000	Maintenance required to clear pond of silt and other blockages. Whilst preserving developed wetland species.	

Table C - Mitigation (continued)

Impact	Mitigation Measure	Location, Purpose	Estimated Capital Cost (where separately identifiable)	Forecast Maintenance Requirements and Method	Comments
3 **Water courses** (continued)	Provision of Oil and Petrol Interceptors	At all outfalls to watercourses oil interceptors would be provided to meet the requirements of the NRA for run-off quality.	100,000	Regular cleaning of interceptors.	
4 **Landscape/Nature Conservation**	Planting of Shrubs and Trees	Provision of planting throughout the scheme would provide mitigation against visual impact from property and the surrounding countryside and help blend the scheme into the landscape. This would also provide potential habitat for surrounding wildlife and replace lost woodland.	1,100,000	Maintenance of planting areas from the road verges.	Hardstanding would be provided for maintenance vehicles.
	Shallow Slopes to Embankments	In numerous locations the side slopes to the earthworks have been graded out to blend into the existing landform and to allow them to be returned to agricultural use wherever possible.	-	No specific maintenance requirements.	

Table C - Mitigation (continued)

Impact	Mitigation Measure	Location, Purpose	Estimated Capital Cost (where separately identifiable)	Forecast Maintenance Requirements and Method	Comments
4 **Landscape/Nature Conservation** (continued)	Re-profiling of watercourses	At locations where ditches/stream diversions or new roadside ditches are to be provided. Beds of ditches/streams have been designed to encourage diversity of plants and wildlife.	-	Cleaning of ditches occasionally to be maintain the drainage function.	
	Provision of viaduct.	Across Combe Haven Valley S.S.S.I.,total length 705m, height above ground approx. 10 m. To minimise impact of scheme on S.S.S.I. by keeping landtake to a minimum reducing the severance effect an embankment would have on the S.S.S.I. and maintaining light levels to enable vegetation to re-establish.	3,300,000 (additional cost of providing a viaduct, rather than embankment)	Regular maintenance of carriageway and superstructure from deck. Occasional access required from valley floor,for which an access track would be provided under the viaduct.	
	Revised horizontal alignment.	In Barnhorn Level to reduce impact on protected species.	-	N/A	
5 **Cultural Heritage**	Archaeological investigation prior to construction,including trial trenching and the detailed recording of the Listed building to be demolished.	Areas of archaeological interest directly affected by the scheme.	55,000 (approximate, could vary greatly, depending on findings)	N/A	Studies would be carried out to an appropriate level of detail in association with English Heritage and East Sussex County Council's County Archaeologist.

Table C - Mitigation (continued)

Impact	Mitigation Measure	Location, Purpose	Estimated Capital Cost (where separately identifiable)	Forecast Maintenance Requirements and Method	Comments
Cultural Heritage (continued)	Retaining Walls	Adjacent to Beauport House Farm to reduce the impact on the setting of this Listed building.	35,000	No specific maintenance requirements.	
6 **Surplus Spoil**	Adjustments to earthworks.	Throughout the scheme, regrading of side slopes and mounding for landscaping would be proposed and the acquisition of land on the south side of the Combe Haven valley for the disposal of surplus spoil. This would provide an earthworks balance so that large quantities of surplus spoil would not be transported on existing roads to other tip sites.	-	N/A	Land would be returned to agriculture wherever possible. Disposal sites at Combe Haven would be returned for use as part of the proposed Pebsham Country Park.
7 **Public Rights of Way**	Provision of overbridges/ underpasses.	Wherever possible, footpaths would be diverted to use either side road or access overbridges and underpasses crossing the scheme. No at-grade crossings would be proposed.	-	N/A	

APPENDIX B

EXPLANATION OF THE MORE TECHNICAL ASPECTS OF TRAFFIC NOISE AND AIR QUALITY ASSESSMENTS

EXPLANATION OF THE MORE TECHNICAL ASPECTS OF TRAFFIC NOISE AND AIR QUALITY ASSESSMENTS

Traffic Noise

Unit of Measurement

The unit of noise used is the dB(A) or decibel (A weighting) which takes account of the frequency receptivity of the human ear. It should be noted that the decibel scale is not linear and that a doubling of traffic flow represents a 3 dB(A) increase in noise which is perceptible. A 10 dB(A) increase, resulting from an increase in traffic to ten times the original flow, is needed before a subjective doubling of noise level is noticed. An indication of typical sound levels on the dB(A) scale is shown on the following page.

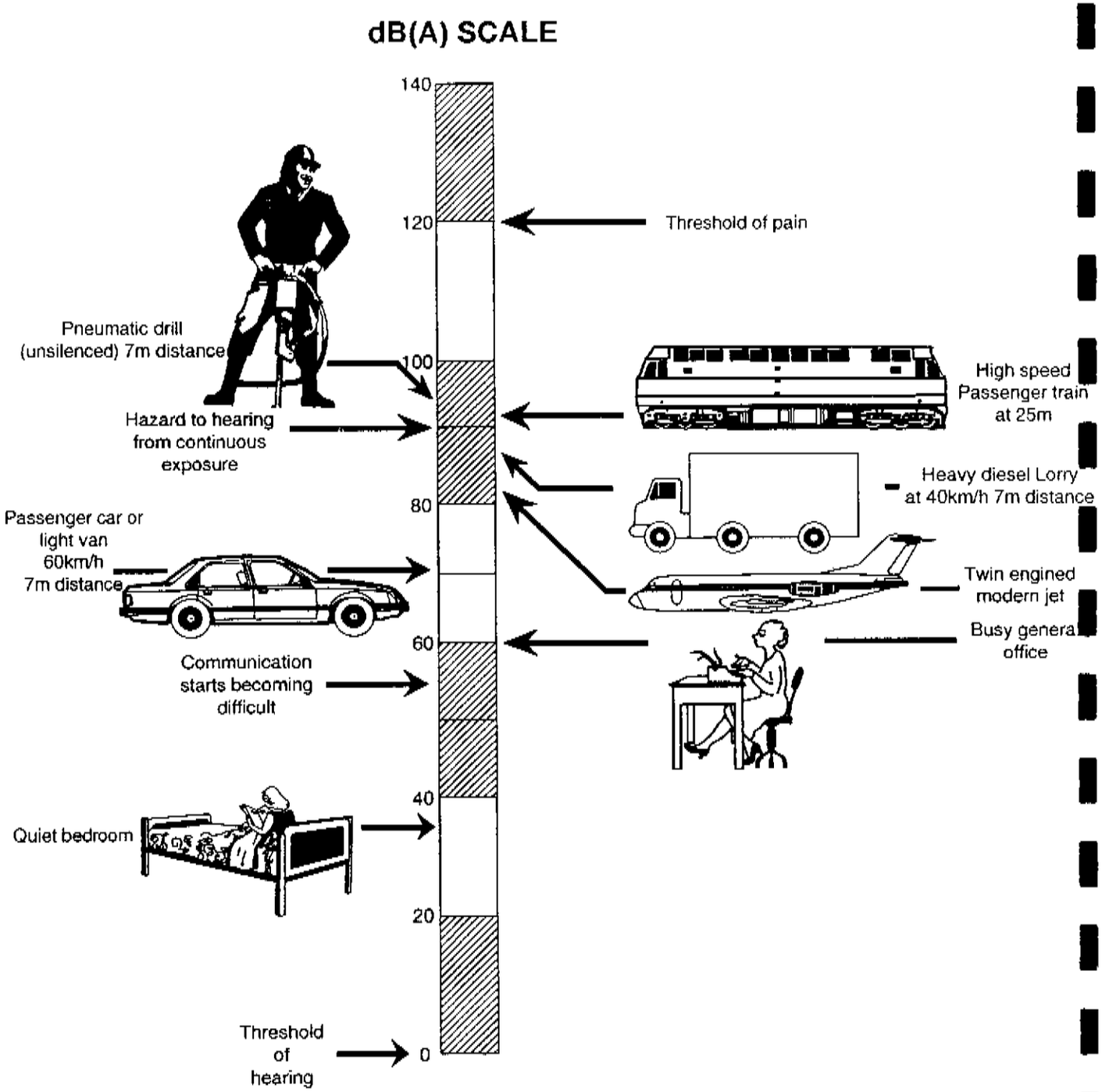
The L_{A10} Index

The scale adopted by the Department to assess traffic noise is L_{A10} (18-hour) dB which is the arithmetic mean of the noise levels exceeded for 10% of the time in each of the 18 hours between 6am and midnight. This is expressed in dB L_{A10} (18 hour) units. A good correlation has been shown to exist between this index and residents' dissatisfaction with existing traffic noise over a wide range of exposures. Any noise level, or change in level, described in this Statement is expressed in dB as shorthand for the above statistical noise unit. Figure 1 shows the levels of some common sounds on this scale.

Impact Assessment Method

The impact of traffic noise from the bypass on dwellings and other noise sensitive sites, is assessed by comparing changes between forecast noise levels just before the opening of the bypass and those in the design year. Traffic noise is calculated in accordance with the Department of Transport memorandum *Calculation of Road Traffic Noise* (1988) at sample locations representative of housing and community areas using the forecast traffic flows for each case (August average). In remote areas, where traffic noise cannot be reliably calculated or other noise sources predominate, the assessment may be based on measurements of ambient levels. The noise increases and decreases are presented as numbers of dwellings within bands 3 - 5 dB, 5 - 10 dB, 10 - 15 dB etc in the Environmental Impact Tables (see Appendix A).

Noise nuisance impact on properties, expressed as percentage changes in people 'bothered very much or quite a lot' was assessed in accordance with DMRB Volume 11. Results of the assessment are presented in Volume 2, Report 11.


dB(A) SCALE
140
120
100
80
60
40
20
0
Threshold of pain
Pneumatic drill (unsilenced) 7m distance
Hazard to hearing from continuous exposure
High speed Passenger train at 25m
Heavy diesel Lorry at 40km/h 7m distance
Passenger car or light van 60km/h 7m distance
Twin engined modern jet
Busy general office
Communication starts becoming difficult
Quiet bedroom
Threshold of hearing

Air Quality

Use of Indicators

The effects of air pollution on an area near a highway are complex, and for highway scheme appraisal three components are used as indicators of the level of vehicle pollution and of the need, or otherwise, for a more detailed assessment. These are Carbon Monoxide (CO), Hydrocarbons (HC) and Nitrogen Dioxide (NO_2).

Localised Assessment

An assessment of the indicator levels at selected properties within 200 metres of the route was carried out to determine whether the following air quality standards would be exceeded in the current year (1994) and the assumed design year with and without the scheme:

(i) Carbon Monoxide (CO)

An annual maximum 8 hour average concentration of 9 ppm (parts per million). This is based on the US National Ambient Air Quality Standard.

(ii) Nitrogen Dioxide (NO_2)

A 98th percentile of 1 hour concentration of 105 ppb (parts per billion). This is based on the European Community Standard in Directive 85/203/EEC.

Forecast hydrocarbon concentrations cannot readily be assessed with respect to air quality standards, they are calculated for completeness only.

Should the above standards be exceeded in the scheme design year, a more detailed assessment would be required.

Overall Impact Assessment

Changes in the overall quantity of emissions from traffic on the road network were assessed in the assumed year of opening of both the western and eastern bypasses, it not being possible to separate the effects between the two schemes. These were expressed as total emissions in tonnes/year for Carbon Monoxide, Hydrocarbons, Oxides of Nitrogen and Carbon Dioxide.

APPENDIX C

SCHEDULE OF MITIGATION MEASURES

APPENDIX C

SCHEDULE OF MITIGATION MEASURES

The description and purpose of all proposed mitigation measures is set out in the following table, which is to be read in conjunction with Figures 20 to 29.

SECTION A - BARNHORN LEVELS

Mitigation Reference

No	Feature	Description
Figure 20	(Sheet 1)	
1/1	P	Stand of dense tree and shrub cover in corner of field, linked into existing hedgerow. Designed to break up road and traffic in views from the north.
1/2	P+M+R	An area of isolated farm land. 2 m high false cutting to screen traffic on link road. Back slope graded out to edge of main carriageway verge. Stands of dense tree and shrub cover to further screen traffic on the link and disguise cut slope and bridge abutment.
1/3	P	Stand of dense tree and shrub cover in field corner, linked into existing hedgerow. Designed to break up the road and traffic in views from the north.
1/4	P+M+R	An area of isolated farm land. 2 m high false cutting to screen traffic on link road. Backslope graded out to edge of existing A259. Stands of dense tree and shrub cover to further screen traffic on the link and disguise cut slope and bridge abutments.
1/5	P	Dense tree and shrub cover to disguise cut slope and bridge abutments.
1/6	P+R	Embankment regraded to shallow gradient to create illusion that link road is sitting at ground level. Stand of dense tree and shrub cover to disguise cut slope and bridge abutment. Remainder of regraded land returned to landowner for agricultural use.
1/7	P	Stand of dense tree and shrub cover in field corner linked into existing hedgerow. Designed to break up views of road and traffic from the north.

1/8	P+R	Embankment regraded to shallow gradient down towards Old East Stream. Shrub cover with intermittent trees to create an area of scrub.
1/9	P	Shrub cover with intermittent trees extending beyond highway embankment and around new pond. Designed to break up the road and traffic in views from the south across Barnhorn Level and enhance the nature conservation value of the new pond.
1/10	P+M+R	2 m high false cutting. Backslope graded out to gradients of 1:20. Returned to the landowner for agricultural use. Shrub cover with intermittent tree planted over false cutting. Designed to screen traffic in views from the south across Barnhorn Level.
Figure 21	(Sheet 2)	
2/1	P+M+R	As 1/10 above.
2/2	P	Dense tree and shrub cover. Designed to screen traffic on the road and in the lay-by in views from the north and west and from footpath 9a.
2/3	P+R	Extensive cut slope graded back to gradients of 1:6 - 1:7 and returned to landowner for continued agricultural use. Existing field pattern reinstated using dense tree and shrub cover with intermittent trees. Stands of dense tree and shrub cover located in field corners and adjacent to accommodation bridge to break-up views of road and traffic and bridge abutments.
2/4	B	Footpath and farm access bridge for various landowners and diversion of Footpath 9a with associated tree and shrub planting to bridge abutment.
2/5	P+R	Dense tree and shrub cover over earthworks to disguise bridge abutment. Approach embankment to bridge graded out and returned to landowner for agricultural use.
2/6	P	Dense tree and shrub cover in field corner and linked into existing hedgerow. Designed to break up the road and traffic in views from the south.
2/7	P	Dense tree and shrub cover to disguise embankment.
2/8	B	Farm access and footpath underpass for landowner and diversion of several rights of way.
2/9	P+R	Embankment partly regraded down to balancing pond. Shrub cover with intermittent trees to create an area of scrub associated with the pond. Designed

		to break up road and traffic in views from south and east and enhance the nature conservation value of the pond.
2/10	P	Shrub cover with intermittent trees. Designed to breakup road and traffic in views from the east.
2/11	P	Shrub cover with intermittent trees. Designed to breakup road and traffic in views from the east.
2/12	W	The remnant of Highfield Wood to the north of the route would be managed to prevent further tree loss through windblow. Woodland edge to be planted with dense shrub cover.
2/13	W	A 25m wide bank of the remnant woodland to the south of the route would be managed to prevent further tree loss.
2/14	P	Dense tree and shrub planting to disguise cut slope and bridge abutment.
2/15	P	Dense tree and shrub planting to disguise cut slope and bridge abutment.

SECTION B - THE WEALD

No	**Feature**	**Description**
Figure 22	(Sheet 3)	
3/1	P	Dense tree and shrub planting to disguise cut slope and bridge abutment.
3/2	P	Dense tree and shrub planting to disguise cut slope and bridge abutment.
3/3	P	Dense shrub cover to soften engineered cut slope.
3/4	P	Dense shrub cover to soften engineered cut slope.
3/5	P	Dense tree and shrub cover to tie in with existing woodland copse adjacent to road.
3/6	B	Footpath and farm access bridge for landowner, Eastbourne Water Company and diversion of footpath 18b.
3/7	P	Dense tree and shrub cover to disguise cut slope and bridge abutments.

3/8	P	Dense tree and shrub cover to tie in with existing woodland copse 50m south of the road, and disguise bridge abutment.
3/9	W	Remnant of woodland copse to be managed to prevent further tree loss through windblow. Woodland edge planted with dense shrub cover.
3/10	P+M	4 m high mound would screen traffic in views from properties in Bexhill Road. The screening would be further enhanced by dense tree and shrub cover.
3/11	W	Northern tip of Jack O'Borehams Wood would be lost, 25 m deep band of remaining woodland to be managed to prevent further tree loss through windblow.
Figure 23	(Sheet 4)	
4/1	P	Dense tree and shrub planting to disguise the embankment and bridge abutment. Old road to be broken out and included within planted area.
4/2	W+P	Southern edge of Kiln Wood would be lost. 25 m deep band of remaining woodland to be managed to prevent further tree loss through windblow. Dense tree and shrub planting on cut slope.
4/3	P	Dense shrub cover to soften engineered cut slope.
4/4	P	Dense tree and shrub planting in field corners linking into existing hedgerows.
4/5	N	3 m high noise barrier to protect property on St Mary's Lane to the north of bypass.
4/6	N	2 m high noise barrier to protect property to the south of bypass.
4/7	P	Dense tree and shrub cover to tie in with existing vegetation and disguise highway embankment.
4/8	P	Dense tree and shrub cover to screen adjacent properties.
4/9	P	Dense shrub cover with intermittent trees to soften highway cutting.
4/10	P	Dense tree and shrub planting to tie in with existing woodland surrounding St Marys Recreation Ground.

4/11	P+M+N	2 m high mound, with dense tree and shrub planting to screen the westbound off slip road in the view from properties on A269 Ninfield Road and reduce noise impact.
4/12	P+W	Dense conifer tree cover to tie in with remnant conifer plantation. The plantation is to be managed to prevent further tree loss through windblow.
4/13	P	Occasional stands of dense shrubs with intermittent trees. Designed to soften the appearance of the highway cutting.
4/14	P	Dense shrub cover with intermittent trees to tie in with existing field pattern.

SECTION C COMBE HAVEN

No	**Feature**	**Description**
Figure 24	(Sheet 5)	
5/1	P	Dense tree and shrub planting to disguise highway embankment and bridge abutments. Planting would tie into existing hedgerow.
5/2	P+N+M	3 m high mound overplanted with dense tree and shrub cover - to reduce visual and noise impact on the garden of Preston Cottage.
5/3	N+M	2 m barrier on 3 m mound followed by 4.5 m mound to reduce noise and visual impact on Chetwynd and Preston Lodge.
5/4	P	Dense shrub cover with intermittent trees planted on mound.
5/5	R+P	Extensive cut slope graded back to gradients of 1:6-1:7 and returned to landowner for continued agricultural use. Existing field pattern reinstated with dense shrub cover with intermittent trees.
5/6	P	Dense tree and shrub cover to disguise highway embankment and tie in with existing woodland.
5/7	W+P	A 25 m deep band along the southern edge of Cole Wood to be managed to prevent further tree loss through windblow. Dense tree and shrub cover planted on earthworks between woodland edge and road.
5/8	B	Underpass to take Byway Open to All Traffic under bypass.

5/9	P+M	Screen mound 5-6 m high overplanted with dense tree and shrub cover.
Figure 25	(Sheet 6)	
6/1	P+M+R	Integration of scheme into the landscape and visual screening, by the provision and a 2 m high false cutting - rising to a maximum height of 6 m at the junction, before reducing to 4 m. The backslopes would be graded out to a shallow gradient and where sufficiently shallow (1:6-1:7), would be returned to the landowner for agricultural use. Additional screen planting of dense trees and shrubs is proposed to link into existing woodland.
6/2	P+M+R	Integration of the scheme into the landscape and visual screening, by the provision of a false cutting varying in height between 5-7 m. The backslope would be graded out and the whole area planted with dense tree and shrub cover which would link in with existing woodland.
6/3	P	Dense shrub cover with intermittent trees to soften highway embankment and screen traffic on the main line in views over the top of adjacent false cuttings.
6/4	P	Dense shrub cover with intermittent trees to soften highway cutting and link in with existing vegetation alongside the dismantled railway line.
6/5	B	Pedestrian and farm livestock underpass for landowner and Footpath 31a.
6/6	P+M+R	Integration of the scheme into the landscape and visual screening by the provision of a false cutting ranging in height from 2 m to 4 m in height. The backslope would be graded out, to reflect the existing contours and character of the valley side. Most of the land would be returned to the landowner for agricultural use. Dense tree and shrub cover and dense shrub cover with intermittent trees is also proposed to further screen the traffic on the road and link into existing vegetation.
Figure 26	(Sheet 7)	
7/1	P+M+R	As 6/6 above.
7/2	P	Dense shrub cover with intermittent trees to disguise earthworks and provide screening of traffic.
7/3	P+R	Cut slope rounded off to soften the appearance of earthworks and planted with dense tree and shrub cover to blend the scheme into the valley side.

7/4	P	Dense tree and shrub planting on highway embankment tying into woodland on former railway bridge abutment.
7/5	P+R	Embankment to be graded out, returned to landowner for agricultural use. Dense shrub cover with intermittent trees planted at the back of the verge to link in with existing hedgerow and disguise appearance of bridge abutment and remaining embankment.
7/6	P+R	Embankment to be graded out, and where gradients are sufficiently shallow, to be returned to landowner for agricultural use. Land not returned to landowner would be planted with dense tree and shrub cover.
7/7	P	Dense tree and shrub cover linking into existing hedgerows.
7/8	R	Area for surplus spoil disposal to be sympathetically contoured to reflect existing landscape character of the valley side and returned to landowner for agricultural use.

SECTION D - QUEENSWAY - A21

No	**Feature**	**Description**
Figure 27	(Sheet 8)	
8/1	P	Dense tree and shrub cover on cut slope.
8/2	P	Dense shrub cover with intermittent trees to soften earthworks.
8/3	N	2 m barrier on top of retaining wall to screen Hollyhocks and Upper Wilting Farm cottages.
8/4	N	3 m barrier to screen properties to northwest of bypass.
8/5	P	Dense shrub cover with intermittent trees to soften appearance of engineering earthworks and link in with existing woodland.
8/6	P+R+M+N	Existing cutting to be re-graded to include a 3 m high mound to screen new residential development at Mayfield Farm. In addition dense tree and shrub cover is proposed.
8/7	P+R	Embankment to be graded out and planted with dense tree and shrub cover.

Figure 28	(Sheet 9)	
9/1	P+R	Dense tree and shrub cover surrounding junction to soften appearance of cut slope and to link into existing vegetation. Some minor re-grading of earthworks.
9/2	P+N+M	3 m high mound and dense tree and shrub cover to provide visual and noise screen.
9/3	P	Dense tree and shrub cover planted to highway boundary.
9/4	P	Dense shrub cover with intermittent tree.
9/5	N	Noise barrier on top of retaining wall to be provided not exceeding 2 m above garden level.
9/6	P	Dense tree and shrub cover planted to highway boundary.
9/7	N	2 m noise barrier continuing over Battle Road bridge to screen properties to south.
Figure 29	(Sheet 10)	
10/1	P+N+M	3 m high mound planted with dense tree and shrub cover to screen road from new housing development. Would provide some noise screen benefit to nearest new houses.
10/2	N	3 m noise barrier to screen properties in Beauport Gardens.
10/3	P	Area behind Beauport Home Farm. Dense tree and shrub cover planted over embankment.
10/4	P+R	Dense tree cover on re-graded area.
10/5	P	Dense tree and shrub cover planted over highway cutting to disguise appearance of earthworks, tie into adjacent Baldslow Wood and replace woodland lost to the scheme.
10/6	P+R	Embankment graded out and planted with dense tree and shrub cover.
10/7	P	Dense shrub cover with intermittent trees.

Document Ref 10059/RC/045/A
September 1994

APPENDIX D

NON-TECHNICAL SUMMARY BROCHURE

Document Ref 10059/RC/045/A
September 1994

APPENDIX E

DRAFT ORDER PUBLICATION BROCHURE

HIGHWAYS AGENCY

TOLLGATE HOUSE

ENVIRONMENT & LANDSCAPE
Environmental Statement

A259 BEXHILL & HASTINGS WESTERN BYPASS – ENVIRONMENTAL STATEMENT VOL 1: TEXT 09/94

ENVIRONMENTAL EFFECT

What about the environment

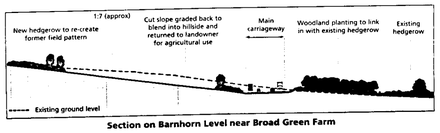
Throughout the scheme extensive measures are proposed to help absorb the bypass into the surrounding landscape, including false cuttings (as shown on the sections) and mounds to screen the road in sensitive views. Where appropriate, earthworks would be graded out to be more in keeping with the surrounding landform and the regraded land returned to agricultural use.

Large scale planting of native trees and shrubs is also proposed, which would reflect both the existing pattern and the character of the surrounding vegetation.

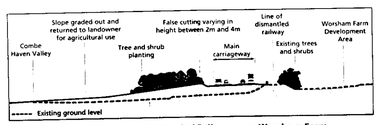
An environmental assessment has been carried out and the results are contained in the Environmental Statement which has been published in accordance with EC Directive 85/337 as applied by Section 105A of the Highways Act 1980. A summary of the main environmental effects and mitigation is shown in the table below.

Environmental effects

Effect of scheme	Mitigation proposed
Landscape	
The bypass would have a severe impact on the landscape character of Barnhorn Level but it would be screened in views from the east and west.	The position of the bypass within Barnhorn Level together with extensive moulding and regrading of earthworks, with the land returned to agriculture, would help integrate the bypass into the landscape.
To the north of Bexhill the bypass would cut across the grain of the landscape with a severe, but local impact on the landscape. The landform and surrounding vegetation would largely screen the bypass from wider views.	The regrading of earthworks with the land returned to agriculture, combined with planting, would minimise the impact of the bypass.
The viaduct crossing the Combe Haven would have a severe impact on the landscape character and would be visible in most views in the valley.	The bypass would follow the landform of the valley sides.
The bypass would cut through a prominent wooded ridge on the northern edge of Hastings.	By following the line of Queensway, the bypass would make use of the existing road corridor. The junction with the A21 would be located within the development area south of the ridge and outside the AONB.
Cultural heritage	
One grade II listed building (East Lodge at Beauport Park) would be demolished. No other buildings or known sites of archaeological significance would be affected.	Further survey work would be carried out prior to construction. This would include East Lodge.

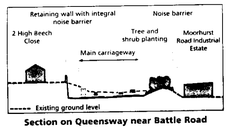


Section on Barnhorn Level near Broad Green Farm

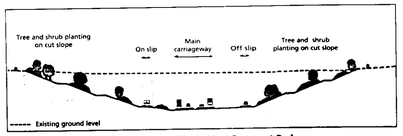


Section on line of Dismantled Railway near Worsham Farm

Effect of scheme	Mitigation proposed
Nature conservation	
There would be a temporary high local impact on the Combe Haven SSSI during construction of the viaduct. There would be some permanent effects on vegetation within the shadow area of the viaduct.	Constructing a high viaduct, instead of an embankment would itself reduce the impact on the SSSI. Special measures would be taken to keep damage during construction to a minimum and to provide restoration as far as possible.
The bypass would take a small amount of land from the Pevensey Levels SSSI and from the Marline Valley Woods SSSI and local Nature Reserve near to Cattleham. It would pass close to High Woods SSSI.	
Elsewhere, the bypass would take areas of woodland (including some classed as Ancient), grassland and wet ditches of nature conservation interest and would cut through a large number of hedges.	The proposed planting and development of wetland habitats in ditches and in the areas of storage ponds would help replace lost habitats.
Agriculture	
Thirty one agricultural holdings would be affected and 127 hectares (314 acres) of agricultural land would be taken of which 35 hectares (86 acres) would be made available for return to agriculture after regrading.	Where fields would be severed, alternative access tracks would be provided or, where appropriate, farm crossings provided either under or over the bypass. Severed water supplies and land drainage could be reprovided as accommodation works.
Property	
The route would pass close to a number of residential properties and with noise and visual impacts. East Lodge at Beauport Park (a pair of semi-detached houses), would be demolished.	The visual and noise impacts would be reduced by measures such as earth mounds, noise barriers and planting.
Plots would be lost from the Beauport Park 'mobile' holiday home site.	Holiday homes could be relocated.



Section on Queensway near Battle Road



Section North of A2100 at Beauport Park

Effect of scheme	Mitigation proposed
Public rights of way	
Twenty footpaths would be physically affected, one of which would be extinguished.	Bridges would be provided for footpaths over or under the bypass, close to their present line, or the footpath diverted to the nearest side road or farm access bridge.
Water quality	
Water from the road would discharge into storage ponds from which it would drain at a controlled rate into a nearby ditch or stream.	Measures would be taken to avoid pollution by run off from road surfaces, to protect water quality.
Air quality	
Air pollution problems would be reduced along the existing road and there would not be a significant pollution effect from the bypass on properties nearby.	
Road traffic noise	
There would be a reduction in traffic noise for properties alongside the existing A259 but an increase in noise for properties near to the bypass.	Where practicable, noise barriers and earth mounds would be provided to help reduce noise to nearby properties. Some properties could qualify for noise insulation.
Effects during construction	
The construction works are expected to last about 2 years. There would be some delays to traffic where the bypass crosses existing roads.	Access would be maintained and temporary diversions provided where necessary.
Noise, dust and local air pollution would arise from the works. The noisiest operations would be earthmoving and the construction of bridge foundations.	Limits on noise levels and times of working would be placed on the contractor carrying out the works.

Alternatives considered

A large number of options were considered both prior to and as a result of Public Consultation.

New Lodge Farm to A269

* alternatives running down the centre or along the east side of Barnhorn Level (these included the Section 1 Red Route and Blue Route of Public Consultation)
* three other crossing points of the A269 near Lunsford's Cross, near Thorne Farm, and near Hollis Street Farm

For the section of the bypass between New Lodge Farm and the A269 the published scheme (similar to the Brown Route of Public Consultation) was chosen because it was considered to have the least impact on people, property and nature conservation and the best fit to the landscape.

A269 to Queensway

* a route crossing the A269 near Hollis Street Farm to follow a line of electricity pylons to near Lower Wilting Farm and connect to Queensway at Mayfield Farm
* a route crossing the A269 near Thorne Farm and swinging eastwards into the Watermill Stream valley before continuing to join Queensway at Mayfield Farm
* a route crossing the A269 at Lunsford's Cross and heading generally east between Cole Wood and Park Wood, along the northern edge of the Combe Haven valley, within the SSSI, to join Queensway at Mayfield Farm (the Section 2 Blue Route of Public Consultation)
* a route running along the floor of the Combe Haven valley (the Section 2 Orange Route of Public Consultation) together with a modification which kept mostly to the north of and outside the SSSI. Both these routes joined Queensway at Mayfield Farm

For the section of the bypass between the A269 and Queensway the published scheme (the Red Route of Public Consultation) was chosen because, overall, it was considered to have the least impact on people, property, farming and the landscape and to be the least damaging, in the long term, to Combe Haven SSSI. It would also have the shortest connection to East Sussex County Council's proposed Bexhill Northern Approach Road.

Queensway

* alternative routes lying to the northwest of Queensway in the Breadsell Lane valley area, and crossing the A21 north of the published scheme

These routes were rejected because of their impact on the landscape compared to using Queensway. Queensway was built with the intention that it should form part of the bypass.

Link to Glyne Gap

* a link from the bypass to the present A259 at Glyne Gap.

This would not be in accordance with the County Council's strategy for link roads and improvements to the local highway network associated with the bypass proposals.

Detailed information

Copies of the draft Orders, and their accompanying plans, the Statement explaining the proposals and the Environmental Statement, may be inspected free of charge during normal opening hours from 23 September 1994 until 23 December 1994 at:

The Highways Agency
Room 12/05
St Christopher House
Southwark Street
LONDON SE1 0TE

The Highways Agency
South East Construction
Programme Division
Federated House
London Road
DORKING, Surrey

East Sussex County Council,
Highways and Transportation
Sackville House
Brooks Close
LEWES, East Sussex

Hastings Borough Council
Technical Services Department
36 / 37 Wellington Square
HASTINGS, East Sussex

Rother District Council
Town Hall
BEXHILL-ON-SEA, East Sussex

Post Office Stores
Hastings Road
Crowhurst
BATTLE, East Sussex

Hollington Library
Battle Road
ST LEONARDS, East Sussex

Sidley Post Office
Ninfield Road
Sidley
BEXHILL-ON-SEA, East Sussex

Copies of the Environmental Statement may be purchased from
The Highways Agency
Dorking office at a cost of:
Volume 1 - Environmental Statement £98 + VAT;
Volume 2 - 15 Technical Reports £172 + VAT. (Reports can be purchased separately)

The HIGHWAYS AGENCY is an Executive Agency of the Department of Transport

Statutory procedures

The Secretary of State has published six draft Orders under the Highways Act 1980 setting out the legal provisions required for the scheme. These draft Orders include details of alterations to existing roads, public rights of way and private accesses affected by the new road.

A draft Compulsory Purchase Order for all the land required for the scheme will be published shortly.

Your comments

If you wish to support, comment on, object to the draft Order proposals, put forward alternative proposals, or comment on the Environmental Statement you should write, not later than 23 December 1994, to:

The Highways Agency
South East Construction
Programme Division
Federated House
London Road
DORKING
Surrey RH4 1SZ.

What happens next

Depending on the nature and number of objections received to the draft Orders a public inquiry may be held before an independent Inspector nominated by the Lord Chancellor.

If a public inquiry is held, all those who have responded will be notified individually at least six weeks beforehand, and notices will also appear in the local press.

All comments received will be made available to the Inspector who may decide to make them public. Publicity will be given to alternative proposals received.

THE DEPARTMENT OF TRANSPORT

ENVIRONMENTAL EFFECT

HIGHWAYS AGENCY

BYPASS PROPOSAL

A259 TRUNK ROAD

Bexhill and Hastings Western Bypass

Explanation of the Scheme and Non-Technical Summary of the Environmental Statement

September 1994

Introduction

The Secretary of State for Transport has published his proposals for a bypass of Bexhill and western Hastings as part of improvements to the A259 south coast trunk road. The scheme has been developed from the Preferred Route announced in December 1990.

This brochure explains the proposals and summarises the Environmental Statement in non-technical language.

Why a bypass is needed

The A259 is the major east-west route in the Bexhill and Hastings area, and is the only direct link between the towns. It is a single carriageway for the majority of its length, with two short sections of dual carriageway: the Bexhill Old Town Bypass; and a short section along the sea front in Hastings.

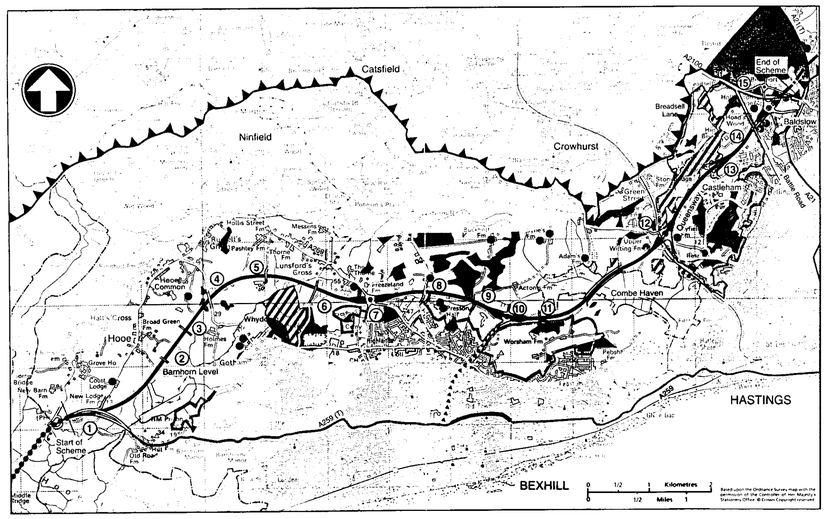
For the majority of its length in this area the A259 passes through urban or suburban surroundings with 30mph or 40mph speed limits. Most of the development alongside the road is residential with direct access to the road, but the road also passes through busy retail and commercial areas. Along the sea front in Hastings the road separates the promenade, beach and pier from the guest houses, hotels, shops and leisure facilities.

There are many junctions on the A259 in Bexhill and Hastings which contribute to the congestion and delay to traffic that occurs during peak periods. The delays can be considerable at Glyne Gap and at the traffic signal controlled junctions nearby.

The expected growth of traffic will cause increasing congestion, which will spread throughout the local road network causing inconvenience and delay both to road users and pedestrians.

The proposed bypass would:

- improve the free flow and safety of traffic;
- reduce delays and hence transport costs;
- improve access to Bexhill and Hastings from the north and west;
- provide opportunities for commercial and industrial growth to help revive the economy of the area, and;
- improve conditions for local residents of Bexhill and Hastings.



The published scheme

The published scheme shown on the map is about 14.7 km long (9.1 miles). It would be a dual carriageway. The section between the junctions at Castleham and the A21/A2100 would have an extra lane in each direction, for local traffic.

There would be no private access onto the new road for reasons of safety and access would be restricted to the junctions shown on the plans. Public rights of way would be diverted or taken over or under the bypass for similar reasons. Lighting would be restricted to those roads already lit and to roundabouts and their approaches.

The scheme would connect directly with the proposed Pevensey to Bexhill Improvement to the west and the proposed Hastings Eastern Bypass to the east.

In association with this scheme, East Sussex County Council are separately promoting a link between the bypass and Bexhill, known as the Bexhill Northern Approach Road.

KEY

IMPROVEMENT PROPOSALS

- Published scheme
- (2) Locations referred to on plans and in text opposite
- Junctions, side roads & other crossings
- Existing A259/A21

ADJOINING SCHEMES

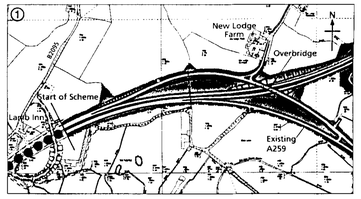
- Pevensey to Bexhill Improvement
- Hastings Eastern Bypass
- Bexhill Northern Approach Road
- Viaduct

DESIGNATED AREAS

- Site of Special Scientific Interest (SSSI)
- Southern boundary of the High Weald Area of Outstanding Natural Beauty (AONB)
- Boundary of development area
- Significant woodland
- Listed building

LAND USE

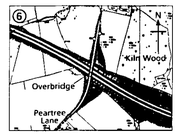
- Urban area
- Rural area



The western end of the bypass would connect directly with the proposed Pevensey to Bexhill Improvement. A two-level 'Y' junction would provide access between Bexhill and the west only. Other movements could be made via the proposed two level junction for the B2095.

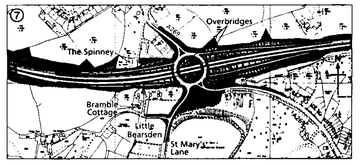
Combined farm access and public footpath crossings of the bypass would be provided at (2) via an overbridge and at (3) via an underpass.

Whydown Road would follow it's existing line on a shallow embankment and would be taken over the bypass on a bridge

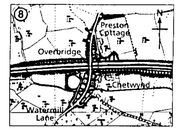


Peartree Lane would be diverted to the west of its existing line on a shallow embankment and taken over the bypass on a bridge.

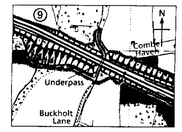
(5) A bridge over the bypass would be provided for access to Sweet Willow pumping station, for farm use, and for a public footpath crossing.



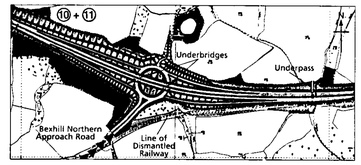
The A269 would be connected to the bypass by a two-level junction. A roundabout would be constructed on the A269 at about existing ground level and the bypass would be underneath. Slip roads would connect the bypass to the roundabout. St Mary's Lane would be severed and the section south of the bypass diverted to join the new roundabout.



Watermill Lane would be diverted to the west of its existing line on an embankment about 4 metres high and taken over the bypass on a bridge.

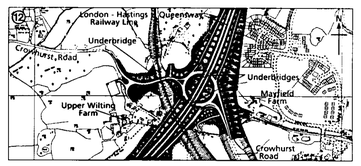


Buckholt Lane would cross under the bypass in an underpass and would remain on its present alignment.



The Bexhill Northern Approach Road would connect to the bypass at a two-level junction. The roundabout would be at about existing ground level and the bypass would go over the top. Slip roads would connect the bypass to the roundabout.

(11) An underpass would be provided for a public footpath and livestock.

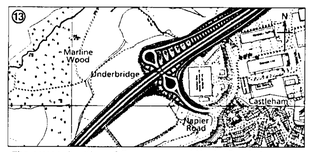


Queensway would connect to the bypass at a two-level junction near **Mayfield Farm. Crowhurst Road would be** diverted over the railway to connect into a roundabout which would be constructed just west of Queensway. The bypass would go over the roundabout but would lie below the top of the existing Queensway cutting. Slip roads would connect the bypass to the roundabout.

KEY

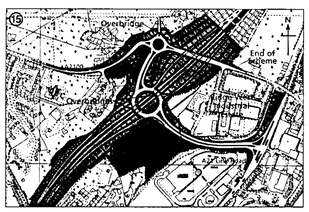
- (2) Locations shown on main plan opposite
- Published scheme
- Junctions, side roads & other crossings
- Land within the highway boundary

0 1/2 Kilometre
0 1/2 Mile



The present junction of Queensway and Napier Road at **Castleham** would be altered to provide a two-level junction with slip roads to and from the northeast only. The connection from Napier road to the northwest side of the bypass would be via an underbridge.

Battle Road would remain on its present alignment. The existing bridge carrying Queensway over Battle Road would be demolished and replaced by a wider one at about the same level, to take the bypass.



A two-level junction would be provided at **Baldslow** with links to the **A21** and **A2100**. These link roads would connect to a roundabout over the bypass, at about existing ground level, and slip roads would connect the roundabout to the bypass.

The A2100 would be diverted to the north of its present line and cross the bypass on a bridge. The present connection between Junction Road and the A21 would be severed.

What about the environment

All three schemes have been carefully designed to keep the adverse impact on the natural and built environment to a minimum and they all include extensive mitigation measures.

A separate environmental assessment has been carried out for each scheme. The results are contained in the respective Environmental Statements which have been published for each scheme in accordance with EC Directive 85/337, as applied by Section 105A of the Highways Act 1980.

The environmental assessment of each scheme takes into account additional impacts which arise from implementing all three schemes. For example, increased traffic attracted to the new route from other less suitable routes to the north.

A Non-Technical Summary of each individual Environmental Statement is available free of charge.

Copies of the Environmental Statements may be purchased from the Highways Agency Dorking at a cost of:

A259 Pevensey to Bexhill Improvement
Volume 1 - Environmental Statement £105 + VAT
Volume 2 - 6 Technical Reports £66 + VAT
(Reports can be purchased separately)

A259 Bexhill and Hastings Western Bypass
Volume 1 - Environmental Statement £98 + VAT
Volume 2 - 15 Technical Reports £172 + VAT
(Reports can be purchased separately)

A259 Hastings Eastern Bypass
Volume 1 - Environmental Statement £70 + VAT
Volume 2 - 12 Technical Reports £115 + VAT
(Reports can be purchased separately)

Statutory procedures

The Secretary of State has published eleven draft Orders (two for the Pevensey to Bexhill Improvement, six for the Bexhill and Hastings Western Bypass, and three for the Hastings Eastern Bypass) under the Highways Act 1980.

These draft Orders seek the legal powers to :

* fix the routes of the bypasses;
* provide slip roads at junctions;
* alter existing roads, public rights of way and private accesses affected by the schemes, and;
* transfer responsibility for sections of the present A259 trunk road, from the Secretary of State for Transport as the Highway Authority, to the Local Highway Authority.

Draft Compulsory Purchase Orders for all the land required for the schemes will be published shortly.

Detailed information

Copies of the draft Orders, and their accompanying plans, the Statements explaining the proposals and the Environmental Statements, may be inspected free of charge during normal office hours from 23 September to 23 December 1994 at:

The Highways Agency
Room 12/05
St Christopher House
Southwark Street
LONDON SE1 0TE

The Highways Agency
South East Construction
Programme Division
Federated House
London Road
DORKING, Surrey

East Sussex County Council
Highways and Transportation
Sackville House
Brooks Close
LEWES, East Sussex

Wealden District Council
Council Offices
Pine Grove
CROWBOROUGH, East Sussex
(Pevensey to Bexhill Improvement and Bexhill and Hastings Western Bypass only)

Rother District Council
Town Hall
BEXHILL-ON-SEA, East Sussex

Hastings Borough Council
Technical Services Department
36 / 37 Wellington Square
HASTINGS, East Sussex
(Bexhill and Hastings Western Bypass and Hastings Eastern Bypass only)

Pevensey Bay Library
Wallsend House
Richmond Road
PEVENSEY BAY, East Sussex
(Pevensey to Bexhill Improvement only)

Post Office Stores
Hastings Road
Crowhurst
BATTLE, East Sussex
(Bexhill and Hastings Western Bypass only)

Hollington Library
Battle Road
St LEONARDS, East Sussex
(Bexhill and Hastings Western Bypass only)

Sidley Post Office
Ninfield Road
Sidley
BEXHILL-ON-SEA, East Sussex
(Bexhill and Hastings Western Bypass only)

West Hill Post Office
Main Road
WESTFIELD, East Sussex
(Hastings Eastern Bypass only)

Your comments

If you wish to support, comment on, object to the draft Order proposals, or comment on the Environmental Statements you should write, not later than 23 December 1994, to:

The Highways Agency
South East Construction
Programme Division
Federated House
London Road
DORKING
Surrey RH4 1SZ

What happens next

Depending on the nature and number of objections received to the draft Orders a public inquiry may be held before an independent Inspector nominated by the Lord Chancellor.

If a public inquiry is held, all those who have responded will be notified individually at least six weeks beforehand, and notices will also appear in the local press.

All comments received will be made available to the Inspector who may decide to make them public. Publicity will be given to alternative proposals received.

Exhibitions to explain the Highways Agency's proposals will be held at:

Manor Barn
De La Warr Road
Old Town, Bexhill

on

Thursday	6 October 1994	4.00 pm	- 9.00 pm
Friday	7 October 1994	10.00 am	- 9.00 pm
Saturday	8 October 1994	9.30 am	- 3.30 pm

The Beauport Park Hotel
Battle Road, Hastings

on

Friday	14 October 1994	10.00 am	- 9.00 pm
Saturday	15 October 1994	9.30 am	- 3.30 pm

Westfield Community Centre
Workhouse Lane, Westfield

on

Friday	21 October 1994	10.00 am	- 9.00 pm
Saturday	22 October 1994	9.30 am	- 3.30 pm

Admission to the Exhibitions is free

The HIGHWAYS AGENCY is an Executive Agency of the Department of Transport

THE DEPARTMENT OF TRANSPORT

HIGHWAYS AGENCY

TRUNK ROAD IMPROVEMENT SCHEMES

DRAFT ORDER PUBLICATION

A259 TRUNK ROAD

Pevensey to Bexhill Improvement
Bexhill and Hastings Western Bypass
Hastings Eastern Bypass

Summary of Proposals

September 1994

Introduction

The Secretary of State for Transport has published his proposals for three schemes to improve the A259 between Pevensey, to the west of Bexhill, and Guestling Thorn, to the east of Hastings. This brochure outlines the proposals and gives details of where more information about the individual schemes can be obtained. You are also invited to attend the exhibitions where details of the schemes will be on display and representatives of the Highways Agency and its Consulting Engineers will be present to answer questions you may have. Information about the exhibitions is listed on the back of this brochure.

Purpose of the schemes

The proposed schemes would:

* improve the free flow and safety of traffic;
* reduce delays and hence transport costs;
* improve access to Bexhill and Hastings;
* provide opportunities for commercial and industrial growth to help revive the economy of the area, and;
* improve conditions for residents and holiday makers in Bexhill and Hastings.

What is proposed?

1. **A259 Pevensey to Bexhill Improvement**
(length 4km (2.5m), cost £7.4M*)

   This scheme would improve the present single carriageway A259 to dual carriageway between the end of Pevensey Bypass and the Lamb Inn by the addition of a new carriageway generally to the north of the existing road.

2. **A259 Bexhill and Hastings Western Bypass**
(length 14.7km (9.1m), cost £57.2M*)

   This scheme would provide a dual carriageway bypass of Bexhill and the western part of Hastings between the end of the Pevensey to Bexhill Improvement near the Lamb Inn, and the A21 and A2100, at Baldslow.

3. **A259 Hastings Eastern Bypass**
(length 6.2km (3.9m), cost £16.3M*)

   This scheme would provide a mostly single carriageway bypass of eastern Hastings between the end of the Bexhill and Hastings Western Bypass, and the present A259 just south of Guestling Thorn. The scheme has been designed so that it can be upgraded to a dual carriageway at a later date, if needed, with the minimum of disturbance and without acquiring more land.

The plan opposite shows the proposed routes of the three schemes, the junctions, and indicates some of the major influences on the choice of routes. It also indicates improvement schemes to be promoted by East Sussex County Council to improve access to the centres of Bexhill and Hastings.

* All costs are for construction works and land, excluding VAT.