

# Appendix 4

## MAJOR ROAD SCHEMES - SIMPLIFIED NATA ASSESSMENTS (DEVELOPMENT FUNDED)

All major road schemes listed in the 1998 County Structure Plan (not formally adopted) have been appraised on a consistent basis to aid comparison. For the purposes of the assessments the cost base is 1994 and all scheme opening years are assumed to be 2002.

The A280 Angmering, A259 Bognor Regis, A272 Haywards Heath and C37 Titnore Lane schemes are all development led schemes to be constructed during the life of the LTP. Assessments of these schemes have, therefore, been made and summary tables completed. We have based these on the work of our consultants Mott MacDonald (other procedures defined in their report 55376/01/A of December 1999) and subsequent amendments of May 2000. These are simplified assessments, as agreed with the Government Office for the South East, as they do not form bids for government funding.

### Guidance Used:

New Approach to Appraisal (NATA)

Criteria Assessed: - Environmental Impact - Economy (regeneration only) - Accessibility - Integration

Project Appraisal Report (PAR)

Criteria Assessed: - Safety - Economy (except regeneration) - COBA

The PAR method was used to assess those criteria listed above due to its simplified assessment procedures; a technical note on the PAR process is available.

PROPOSAL NAME: A280 ANGMERING BYPASS		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
OPTION DESCRIPTION: A single carriageway bypass from the A259 to the A27/A280 junction passing to the east of the village. Traffic, environmental and safety problems by through traffic passing through the village, a conservation area. Bypass to the west of Angmering was ruled out due to cost and alignment difficulties. No solution can be provided by other modes.							
OTHER OPTIONS:							
OBJECTIVES		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
ENVIRONMENT	Noise	The scheme will reduce noise levels in the centre of Angmering but introduce it to an otherwise quiet rural area. The number of properties affected will significantly decrease.		Further studies required		Further studies required	
	CO <sub>2</sub> : No significant change	Local air quality	NO <sub>2</sub> and PM10 levels increase slightly but do not exceed NAOs. Fewer properties will be exposed.	Further studies required		Further studies required	
	Landscape	Some impact on the natural beauty of the surrounding area although the urban landscape particularly in and around the Angmering Conservation Area would be improved. The tranquillity around Ecclesdon Manor would be particularly badly affected.		Not applicable		Slight adverse	
	Biodiversity	There are no specific issues affecting biodiversity associated with this scheme		Not applicable		Neutral	
	Heritage	The setting of Ecclesdon Manor (Grade II* listed building) would be adversely affected as the scheme passes through the southwestern corner of the grounds. The setting of 12 Grade II listed buildings within Angmering would improve as a result of the reduction in through traffic. The setting and condition of Angmering Conservation Area would also benefit from a reduction in through traffic.		Not applicable		Slight beneficial	
	Water	A stream will have to be diverted for a short length into a culvert under the new road. The stream will be less visible from the village as a result.		Not applicable		Slight adverse	
SAFETY	-	The scheme will significantly reduce accident numbers		281-316 accidents saved		PVB £9.6M-£12.6M %PVC 226-298	
ECONOMY	Journey times & Vehicle op costs	The scheme will reduce journey times and marginally reduce operating costs		Main road journey time savings: 2.1 minutes		PVB £13.1M-£18.2M %PVC 309-429	
	Cost	The scheme will add to total maintenance requirements		Not applicable		PVC £4.2M	
ACCESSIBILITY	Journey time reliability	This scheme is likely to improve journey time reliability		Stress on main road link Before 50%; After 40%		Neutral Neutral rel to PVC	
	Regeneration	The future development of the Roundstone Area of Change (AOC3) is dependent on the scheme. The scheme is part developer funded. The scheme is closely associated with the A259 Rustington Bypass and the A27 Patching Junction improvement		Serves regeneration priority area? Development depends on scheme? Yes Yes		Yes Yes	
INTEGRATION	Pedestrians and others	Removal of through traffic from the village and village traffic calming will greatly increase amenity and safety along the existing A280		Not applicable		Slight beneficial	
	Access to public transport	Some improvements to both bus and rail services are expected both as a direct result of this development and other associated schemes		Not applicable		Slight beneficial	
INTEGRATION	Community severance	The removal of through traffic from the village will reduce severance		Not applicable		Moderate beneficial	
	-	Scheme identified in 1998 West Sussex Structure Plan and associated plans		Not applicable		Neutral	

Version of May 2000 Cost benefit analysis: PVB £22.7M-£30.8M PVC £4.2M NPV £18.4M-£26.6M BCR 5.4-7.3

N.B. COSTS ARE DISCOUNTED TO 1994 TO ALLOW COMPARISON WITH ALL OTHER WSCC APPROVED SCHEMES

**PROPOSAL NAME:** A259 BOGNOR REGIS RELIEF ROAD

A relief road to the north of the town. Exact details and alignments remain to be confirmed.

**OPTION DESCRIPTION:** Problems within Bognor Regis caused by through traffic. Economic regeneration requires major development and infrastructure package.**OTHER OPTIONS:** A dual carriageway bypass has also been considered but a single carriageway relief road is now considered more appropriate. No other option contributes as strongly to regeneration objectives.

OBJECTIVES		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
ENVIRONMENT	Noise	There is likely to be a decrease in the number of properties experiencing excessive noise within the Bognor urban area, however, the higher speeds and traffic flows generated by the bypass will generate high noise levels in previously quiet urban fringe land. The new development will come up to the south of the relief road sections	Further studies required	Further studies required	Further studies required	Further studies required	Further studies required
	CO <sub>2</sub> : No significant change	There will be some improvement on air quality within Bognor Regis as a result of this scheme and significantly fewer properties will be affected. There is concern, however, that the new road will attract additional traffic onto the A259 corridor. No exceedance of NAOQS with or without scheme	Further studies required	Further studies required	Further studies required	Further studies required	Further studies required
SAFETY	Landscape	Some encroachment into scenic countryside will occur as a result of the scheme	Not applicable	Not applicable	Moderate adverse	Moderate adverse	Moderate adverse
	Biodiversity	Detailed scheme proposals are required before an assessment can be made	Not applicable	Not applicable	Further studies required	Further studies required	Further studies required
	Heritage	Detailed scheme proposals are required before an assessment can be made	Not applicable	Not applicable	Further studies required	Further studies required	Further studies required
	Water	Detailed scheme proposals are required before assessment can be made	Not applicable	Not applicable	Further studies required	Further studies required	Further studies required
	-	Detailed scheme proposals are required before assessment can be made	51-8 accidents saved	51-8 accidents saved	PVB £1.7M-0.3M %PVC 22-4	PVB £1.7M-0.3M %PVC 22-4	PVB £1.7M-0.3M %PVC 22-4
ECONOMY	Journey times & Vehicle op costs	Some improvement in journey times for through traffic will occur as a result of the scheme	Main road journey time savings: 0.6 minutes	Main road journey time savings: 0.6 minutes	PVB £11.7M-15.8M %PVC 148-200	PVB £11.7M-15.8M %PVC 148-200	PVB £11.7M-15.8M %PVC 148-200
	Cost	The additional carriageway KM will add to maintenance costs and additional public transport costs will be incurred	Not applicable	Not applicable	PVC - £7.9M	PVC - £7.9M	PVC - £7.9M
ACCESSIBILITY	Journey time reliability	This scheme is likely to improve journey time reliability for through traffic using the A259 corridor	Stress on main road link: Before 140%; After 84%	Stress on main road link: Before 140%; After 84%	Moderate Slight rel to PVC	Moderate Slight rel to PVC	Moderate Slight rel to PVC
	Regeneration	The scheme affects a regeneration priority area and is directly linked to a major residential development of 1050 houses	Serves regeneration priority area?	Serves regeneration priority area?	Yes Yes	Yes Yes	Yes Yes
	Pedestrians and others	The development brief includes pedestrian and cycle (area wide) networks and facilities	Not applicable	Not applicable	Moderate beneficial	Moderate beneficial	Moderate beneficial
	Access to public transport	A significant number of public transport improvements are planned as part of this scheme including bus priority, enhanced service frequencies for bus and rail and improved infrastructure and interchange facilities	Not applicable	Not applicable	Moderate beneficial	Moderate beneficial	Moderate beneficial
INTEGRATION	Community severance	The reduction in through traffic in the centre of Bognor Regis will lead to a reduction in severance within the town	Not applicable	Not applicable	Further studies required	Further studies required	Further studies required
	-	Scheme identified in 1998 (not formally adopted) West Sussex Structure Plan and associated Local Plans.	Not applicable	Not applicable	Neutral	Neutral	Neutral

Version of May 2000 Cost benefit analysis: PVB £13.5M-£16.1M PVC £7.9M NPV £5.6M-£8.2M BCR 1.7-2.0

N.B. COSTS ARE DISCOUNTED TO 1994 TO ALLOW COMPARISON WITH ALL OTHER WSCC APPROVED SCHEMES

PROPOSAL NAME: A272 HAYWARDS HEATH RELIEF ROAD		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
OPTION DESCRIPTION: A single carriageway relief road to the south and west of the town.		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
PROBLEMS: Environment, congestion and safety problems on the A272 through Haywards Heath, need for access onto highway network for major development.		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
OTHER OPTIONS: Various alignments have been tested. Preferred route satisfies development objectives in approved local plan.		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
OBJECTIVES		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
ENVIRONMENT	Noise	Noise levels within Haywards Heath will reduce due to the reduction in traffic flow but will increase in a previously quiet rural area. There will, however, be significantly fewer properties within 100 m of the centre line	Further studies required	Further studies required	Further studies required	Further studies required	Further studies required
CO2 : No significant change	Local air quality	N02 levels increase further above NAQS. PM10 levels slightly increase but do not exceed NAQS. Fewer properties are exposed.	Further studies required	Further studies required	Further studies required	Further studies required	Further studies required
	Landscape	This scheme will encroach upon a scenic and undulating landscape. The effect on tranquillity will be marginal because the area is on the urban fringe. Many aspects of the landscape are substitutable although mature woodland is largely irreplaceable	Not applicable	Not applicable	Large adverse	Large adverse	Large adverse
BIODIVERSITY	Biodiversity	Infringement onto rare SNCL land will occur	Not applicable	Not applicable	Large adverse	Large adverse	Large adverse
	Heritage	The scheme will bypass the centre of Haywards Heath which will improve the survival and context of village green No. 76. Archaeological mitigation measures are in hand to reduce the impact on the Roman Road.	Not applicable	Not applicable	Neutral	Neutral	Neutral
SAFETY	Water	There are a large number of ponds, streams and watercourses especially to the west of the proposed road, which could be adversely affected	Not applicable	Not applicable	Slight adverse	Slight adverse	Slight adverse
	-	The scheme will reduce accident numbers	69-66 accidents saved	69-66 accidents saved	PVB £2.4M-£2.6M %PVC 52-58	PVB £2.4M-£2.6M %PVC 52-58	PVB £2.4M-£2.6M %PVC 52-58
ECONOMY	Journey times & Vehicle op costs	The scheme will cause a small reduction in journey time but an increase in operating costs due to higher journey distances	Main road journey time savings: 0.6 minutes	Main road journey time savings: 0.6 minutes	PVB £4.9M-£8.4M %PVC 109-185	PVB £4.9M-£8.4M %PVC 109-185	PVB £4.9M-£8.4M %PVC 109-185
	Cost	The scheme will add to total maintenance requirements	Not applicable	Not applicable	PVC £4.5M	PVC £4.5M	PVC £4.5M
ACCESSIBILITY	Journey time reliability	This scheme will significantly improve journey time reliability	Stress on main road link: Before 144%; after 86%	Stress on main road link: Before 144%; after 86%	Moderate Low rel to PVC	Moderate Low rel to PVC	Moderate Low rel to PVC
	Regeneration	The scheme will allow the implementation of Local and Structure Plan Policy for new housing allocations in the Haywards Heath area	Serves regeneration priority area?	Serves regeneration priority area?	Yes Yes	Yes Yes	Moderate beneficial
INTEGRATION	Pedestrians and others	The reduction in through traffic within Haywards Heath may benefit pedestrians and cyclists. Significant improvements are planned both to pedestrian and cycle movement within the proposed development and in terms of access to the town and proposed new local facilities	Not applicable	Not applicable	Moderate beneficial	Moderate beneficial	Moderate beneficial
	Access to public transport	Additional public transport will be provided to serve the new development and connections to some destinations will be improved	Not applicable	Not applicable	Slight beneficial	Slight beneficial	Slight beneficial
INTEGRATION	Community severance	A reduction in through traffic on the existing A272 through Haywards Heath will lead to a significant reduction in community severance	Not applicable	Not applicable	Slight beneficial	Slight beneficial	Slight beneficial
	-	Scheme identified in 1998 West Sussex Structure Plan and associated Local Plans.	Not applicable	Not applicable	Neutral	Neutral	Neutral

Version of May 2000 Cost benefit analysis: PVB £7.3M-£11.1M PVC £4.5M NPV £2.8M-£6.5M BCR 1.6-2.4

N.B. COSTS ARE DISCOUNTED TO 1994 TO ALLOW COMPARISON WITH ALL OTHER WSCC APPROVED SCHEMES

**PROPOSAL NAME:** C37 Titnore Lane Improvement  
**OPTION DESCRIPTION:** An online scheme to widen and realign the central section of Titnore Lane.  
**PROBLEMS:** Increase in traffic flows due to the A27 Patching Junction Improvement and existing accident history and the need to provide access to a major development at West Durrington.  
**OTHER OPTIONS:** Additional links between A27 and A259 have been considered. Part of a multi-modal package.

OBJECTIVES		QUALITATIVE IMPACTS		QUALITATIVE MEASURE		ASSESSMENT	
ENVIRONMENT	Noise	This is an online scheme which is unlikely to result in significant changes in noise levels.		Further studies required		Further studies required	
	Local air quality	Moderate increase in NO2 levels and slight increase in PM10 levels. There is no exceedance of NAQS.		Further studies required		Further studies required	
CO2 : No significant change	Landscape	Ancient woodland, covered by TPO, would be affected. Tranquillity of the area would be affected by increased traffic flows		Not applicable		Moderate adverse	
	Biodiversity	Infringement of a SNCI and area of ancient woodland.		Not applicable		Moderate adverse	
	Heritage	The scheme would impact upon 1 listed building 'The Cottage' and post medieval linear earthworks		Not applicable		Slight adverse	
	Water	The scheme will not significantly affect water		Not applicable		Neutral	
SAFETY	-	The scheme will significantly reduce accident numbers		111-124 accidents saved		PVB £3.8M - £5.0M %PVC 406-533	
ECONOMY	Journey times & Vehicle op costs	The scheme will reduce journey times but will not affect operating costs		Main road journey time savings: 1.3 minutes		PVB £3.9M - £5.5M %PVC 419-590	
	Cost	This scheme is not expected to add to total maintenance costs		Not applicable		PVC £0.9M	
	Journey time reliability	This scheme will not affect journey time reliability		Stress on main road link Before 28%; After 23%		Neutral Neutral rel to PVC	
ACCESSIBILITY	Regeneration	The main objective is to upgrade Titnore Lane to such a condition that it will provide the principle access to the proposed West Durrington development in the Worthing Borough Council Local Plan		Serves regeneration priority area? Development depends on scheme?		Yes Yes	
	Pedestrians and others	Improvements to existing pedestrian and cycle networks are planned as part of the scheme		Not applicable		Slight beneficial	
	Access to public transport	Some significant public transport improvements are planned as part of this scheme including enhanced bus services and frequencies, bus priority measures and improvements at Goring Station		Not applicable		Moderate beneficial	
INTEGRATION	Community severance	There are no significant severance issues associated with this scheme		Not applicable		Neutral	
	-	Scheme identified in 1998 West Sussex Structure Plan and associated Local Plans		Not applicable		Neutral	

Version of May 2000

Cost benefit analysis: PVB £7.7M - £10.4M PVC £0.9M NPV £6.7M-£9.5M

BCR 8.3 - 11.2

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