Bunbury to Augusta Road — Busselton Bypass

Main Roads Western Australia

Report and recommendations of the
Environmental Protection Authority

Environmental Protection Authority
Perth, Western Australia
Bulletin 770
March 1995

THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's report.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding environmental conditions which might apply to any approval.

APPEALS

If you disagree with any of the contents of the assessment report or recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of $10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
12th Floor, Dumas House
2 Havelock Street
WEST PERTH WA 6005

CLOSING DATE

Your appeal (with the $10 fee) must reach the Minister's office no later than 5.00 pm on 30 March 1995.

Environmental Impact Assessment (EIA)
Process Timelines in weeks

Date	Timeline commences from receipt of full details of proposal by proponent	Time (weeks)
17/6/94	Proponent Document Released for Public Comment	
15/7/94	Public Comment Period Closed	4
5/9/94	Issues Raised During Public Comment Period Summarised by EPA and Forwarded to the Proponent	9
28/10/94	Proponent response to the issues raised received	6
17/3/95	EPA reported to the Minister for the Environment	20

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Summary and recommendations

Main Roads Western Australia propose to construct a major road bypassing the urban areas of Busselton. The general route, including feeder roads, was selected by the Main Roads Western Australia in the late 1970s. The route was subsequently gazetted in the Shire of Busselton Town Planning Scheme in 1982. The proposed roads cross a number of watercourses (*e.g.* the Vasse River), floodplains, a lake gazetted for protection by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992, and wetlands including palusplain and sumplands. The proposed bypass road alignment ran next to the Broadwater wetland suite which has conservation values identified by the System One Report and by waterbird surveys coordinated by the Royal Australasian Ornithologists Union. A significant section of the bypass road followed an old railway line route containing locally significant vegetation.

The proposal was referred to the Environmental Protection Authority under Section 38 of the *Environmental Protection Act* 1986 and the level of assessment was set at Consultative Environmental Review.

During preparation of the Consultative Environmental Review document Main Roads Western Australia undertook a community consultation programme. Following submissions received from the community, the alignment of the Busselton Bypass road was moved southward away from significant conservation areas of the Broadwater wetland suite and a 2.5 kilometre section of the railway reserve.

The proponent's commitments address many of the environmental issues associated with the realigned proposal. The Environmental Protection Authority has concluded that the proposal is environmentally acceptable and could proceed subject to Recommendation 1 of this report, reproduced in summary form below. Recommendation 2 considers which commitments should be audited under the *Environmental Protection Act* 1986 to ensure the project is implemented in an environmentally acceptable manner. Other commitments made by Main Roads Western Australia would be self audited, or audited by other agencies. The full recommendations of the Environmental Protection Authority are provided in the main text of this report. The recommendations of the Environmental Protection Authority have also been drafted into Recommended Environmental Conditions (refer to Section 7) for consideration by the Minister for the Environment in his negotiations with decision-making authorities for the proposal.

Recom-mendation Number	Summary of EPA recommendation
1	The proponent should prepare an Environmental Management Programme to address; • impacts on wetlands (*i.e.* determination of the area of wetlands and their functions which would be affected and preparation of a strategy for replacement of wetland functions which may be lost); • management of wetlands in the road reserve; • design criteria for crossing wetlands and watercourses to protect wetland functions, and management strategies to ensure the criteria achieve their objectives; • management of the impacts of construction on water quality; • design and management of stormwater retention basins; and • timing of planting of tall dense vegetation to reduce waterbird road kills.
2	The implementation of the recommendations and a schedule of commitments made by the proponent shall be audited under the *Environmental Protection Act* 1986.

1. Introduction and background

Main Roads Western Australia proposes to construct a Bypass road around the urban areas of Busselton. Currently, all major roads servicing the region converge on Busselton and pass through the centre of the town as Bussell Highway (see Figure 1). The Shire of Busselton and Main Roads Western Australia consider that the Bypass road is needed to relieve traffic congestion in the town and to service development south of Busselton.

A route for the Bypass road was selected by Main Roads in the late 1970s and a reserve for the road was established through the Shire's Town Planning Scheme in 1982.

In September 1992, Main Roads referred a proposal to construct the road along the selected alignment to the Environmental Protection Authority for assessment. The level of assessment was set at Consultative Environmental Review because of the potential for significant impacts on the Broadwater wetland suite which has been recommended for conservation of its natural values in Recommendation 1.2 of the System One report (Environmental Protection Authority, 1973).

2. Summary description of the proposal

The Bypass road would be constructed south of the Busselton urban areas starting east of the town from a point on Bussell Highway near the intersection with Vasse Highway to about two kilometres south of the intersection of the Bussell Highway with Caves Road (near the Vasse town site) (Figure 1).

The proponent's Consultative Environmental Review document (Halpern Glick Maunsell, 1994) presented a number of options for link roads to the Busselton Bypass as well as two options for the Bypass alignment near the Broadwater wetland suite. The preferred alignment was shifted southward of the Broadwater wetland suite following submissions received during the community consultation process undertaken during preparation of the Consultative Environmental Review document.

3. Method of assessment

The environmental impact assessment process for this proposal followed the *Environmental impact assessment administrative procedures 1993* for a Consultative Environmental Review (See Appendix 1). In undertaking this assessment the following approach was taken:

- Identification of significant environmental issues;
- setting of objectives of assessment for each issue;
- assessment of the potential for impact; and
- formulation of recommendations to manage identified impacts.

Limitation

This evaluation has been undertaken using information currently available. The information has been provided by the proponent through preparation of the Environmental Review document (in response to guidelines issued by the Department of Environmental Protection), by Department of Environmental Protection officers utilising their own expertise and reference material, by utilising expertise and information from other State Government agencies and submissions made through the public review period.

The Environmental Protection Authority recognises that further studies and research may affect the conclusions. Accordingly, the Environmental Protection Authority considers that if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the Environmental Protection Authority.

Figure 1.

4. Results of the assessment — identification of significant environmental issues

The significant environmental issues associated with this proposal were identified at the Guideline setting phase of the assessment, through public submissions, and through the assessment stage by the Environmental Protection Authority. At the close of the public comment period 57 submissions had been received — forty four (44) submissions from private individuals, five (5) from State Government agencies and eight (8) from community organisations.

The public raised many issues both before and during the public submissions period. The summarised list of issues raised through the public review phase and the proponent's response to those issues are included in Appendix 2.

Many of the issues raised are related to health, lifestyle and amenity or town planning issues. Such issues are not within the Environmental Protection Authority's area of expertise and responsibility and are therefore not included within this assessment of environmental significance. These other issues should be addressed by the proponent and planning agencies through their own processes. The Environmental Protection Authority's assessment deals with the significant environmental issues associated with this proposal.

The environmental issues requiring detailed consideration were the effects of construction and operation of the Busselton Bypass on:

- the Broadwater wetland suite (System One recommendation 1.2);
- lakes gazetted for protection by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 and other wetlands;
- the crossing of watercourses; and
- the loss of vegetation along the railway reserve.

Construction and operational issues (dust and noise control, and dieback and fire management) are dealt with by Main Roads Western Australia through standard management practices and are covered by Commitments 7.2.1 - 7.2.9 (Halpern Glick Maunsell, 1994; p. 47).

5. Results of the assessment — consideration of environmental issues

5.1 Broadwater wetland suite

Environmental objectives

To ensure the conservation values of the Broadwater wetland suite, including its values for waterbird breeding and feeding, are protected.

To ensure wetland functions are retained or enhanced.

5.1.1 Issue description

The Broadwater wetland suite is part of a larger wetland system which links to the Vasse-Wonnerup system, and has several watercourses flowing into it. The Water Authority of Western Australia has mapped wetlands in this area at a scale of 1:25,000 based on information gathered between 1991 and 1993 (Water Authority of Western Australia, unpublished data). This information is reproduced in Figure 2.

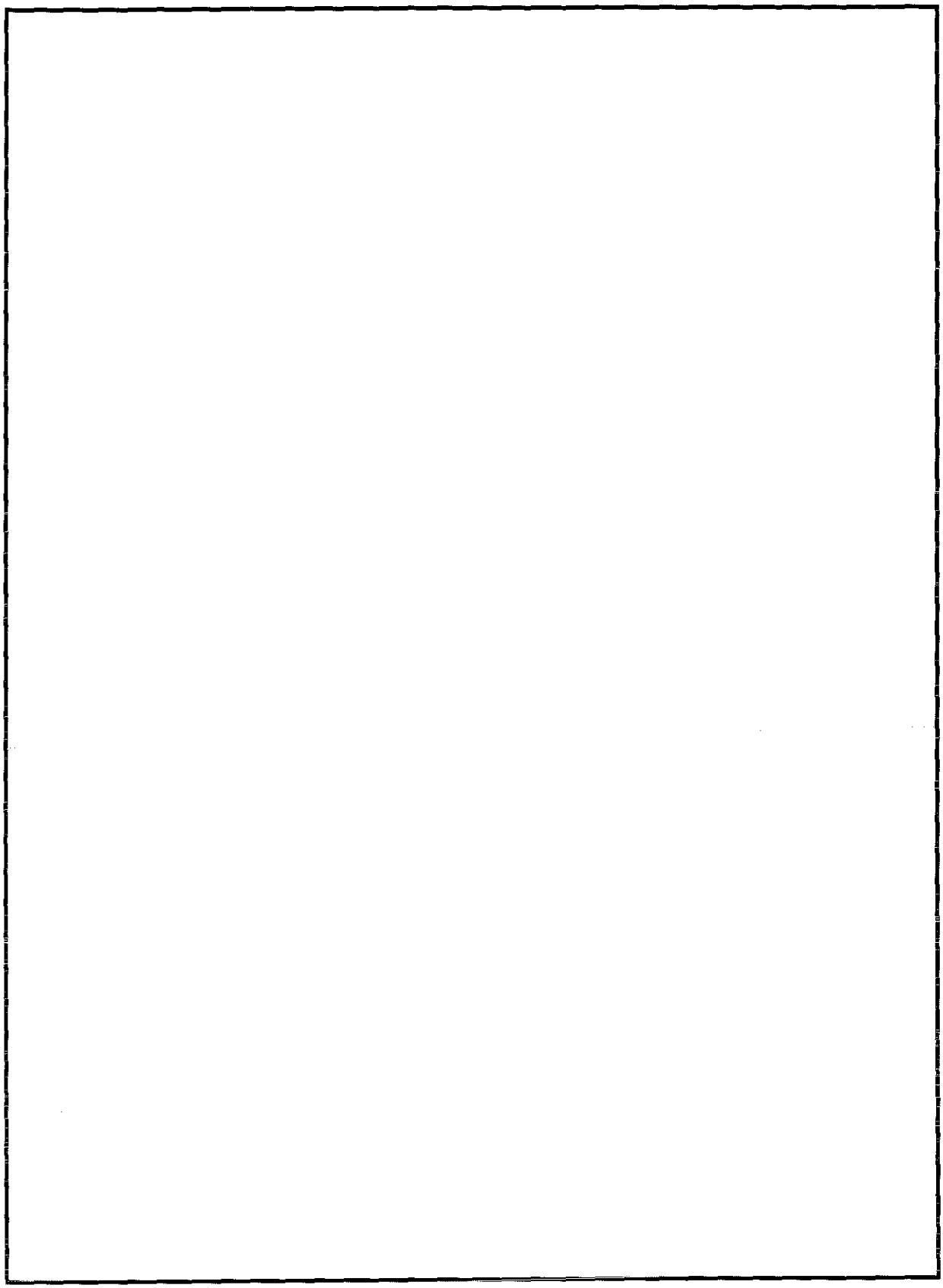


Figure 2 The Broadwater wetlands showing wetland types, location of proposed roads and lakes gazetted by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992

The System One report described the importance of the Broadwater wetland suite, but recognised that the boundaries of the Broadwater wetland suite were ill defined (Environmental Protection Authority, 1973). The intent of the Environmental Protection Authority System One recommendations are essentially that Government assist in the management, protection and improvement of appropriate wetland habitats of the Broadwater wetland suite, particularly on private land. Water Authority of Western Australia mapping clarifies the extent of the wetland, but is not designed to identify appropriate wetland habitats which should be managed, protected or improved (Water Authority of Western Australia, unpublished data).

The Busselton Bypass road does not cross any lakes gazetted for protection by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 and is located more than 100 metres from the Broadwater Nature Reserve, a C class reserve vested in the National Parks and Nature Conservation Authority. However, as noted in Section 5.2, Fairway Drive which would be upgraded as a link road to the Busselton Bypass road, does affect a lake gazetted for protection by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992.

5.1.2 Potential impacts of proposal

The most likely impacts of the road on the Broadwater wetland suite are:

- direct impacts on Broadwater wetland suite fringes (loss of wetland area through filling, loss of vegetation);
- indirect ongoing impacts — for example, disruption to wildlife and road kills; and
- direct ongoing impacts through off-road drainage and disruption to surface drainage patterns.

5.1.3 Assessment of impacts

Where a proposal directly affects a wetland, the Environmental Protection Authority normally requires that:

- the wetland function is retained within the development; or
- a wetland is constructed or rehabilitated to fulfil equivalent natural and human use functions.

Direct impacts — the Bypass road

The Busselton Bypass road would pass at least 100 metres to the south of the most significant portions of the Broadwater wetland suite (*i.e.* the Broadwater Nature Reserve, the portion nominated in the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 and most of the significant remnant vegetation).

However, the road would cross some of the fringe wetland area (such as the sumpland shown in Figure 2 which is west and to the south of Broadwater Nature Reserve) and watercourses which flow into the wetland suite. During the detailed design phase, Main Roads Western Australia would need to determine the area of wetland to be filled for road construction within the fringe wetland area and the natural and human use functions of those areas. The Environmental Protection Authority has published a guide for the community in determining human use and natural values and functions (Environmental Protection Authority, 1993 Bulletin 686). Replacement of wetland areas and functions would then need to be planned in accordance with guidelines agreed to by the Minister for the Environment on advice of the Department of Environmental Protection.

Watercourses associated with the Broadwater wetland suite are discussed in Section 5.3.

Indirect ongoing impacts

One of the indirect ongoing effects of the Busselton Bypass road upon fauna in wetland habitats would be traffic noise. Several submissions from the public raised this issue, claiming that

evidence from overseas indicated that traffic noise could have a significant impact on the breeding behaviour of certain species of waterbirds. One submission stated that a significant Black Swan breeding area is located in the Broadwater Nature Reserve close to the proposed Bypass route.

In response, Main Roads indicated that shifting the Bypass alignment further south would reduce these possible impacts. The revised alignment is more than 100 metres from stands of *Melaleucas* which are believed to provide significant breeding habitat for waterbirds.

Based on existing situations such as the Cormorant breeding colony located within metres of Leach Highway (which has three lanes of traffic in each direction) and the breeding of Swans in metropolitan wetlands such as Herdsman Lake which are located near heavy traffic, the Department of Environmental Protection has advised it considers that the noise and traffic impacts of the Busselton Bypass road on waterbird breeding are not expected to be significant.

Concerns about impacts on fauna, such as feeding areas being separated from the Broadwater Nature Reserve by the road, are expected to be addressed adequately by Main Roads Western Australia through commitments 7.1.4 (assessment and management of Ringtail Possums), 7.1.10 (review of road fencing in consultation with CALM to reduce potential road kills), 7.1.14 (construction of fauna tunnels), and the proposal to plant a tall dense buffer of vegetation within the road reserve to force birds to fly at a higher elevation (Halpern Glick Maunsell, 1994; p. 38). The timing of planting of the proposed tall dense buffer of vegetation is not described, however, it is critical to the effectiveness of this management strategy because the tall vegetation needs to be established before traffic starts using the Bypass road.

Direct ongoing impacts

The most significant direct on-going effect of the Busselton Bypass road would come from pollutants in the stormwater run off. Main Roads Western Australia has made a commitment to design the Bypass road so that most of the stormwater flows into infiltration swales adjacent to the road and not to any existing wetlands (Halpern Glick Maunsell, 1994; p. 32). Consequently, kerbing will be minimised, but would be located where required to channel stormwater away from natural wetlands to treatment basins. The treatment basins would also be designed to include wetland functions and habitats. For example, where Fairway Drive crosses the New River, kerbing on the road will be used to direct stormwater into a new nutrient retention basin (Halpern Glick Maunsell, 1994; pp. 32-33).

5.2 Impacts on other wetlands

Environmental objective

To ensure wetland functions are retained or enhanced.

5.2.1 Issue description

As described in Section 5.1, the Broadwater wetland suite is part of a larger wetland system (see Figure 2) which includes a lake gazetted for protection by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. The road also traverses palusplain wetland (near the western end of the proposed Bypass road). These wetlands have natural (hydrological, faunal habitat, fringing vegetation) and human use functions which should be retained or enhanced.

5.2.2 Potential impacts of proposal

The most significant environmental impacts requiring mitigation or management are:

- loss of wetland area and natural and human use values through filling to build Fairway Drive;

- the impact of stormwater on water quality in the New River and downstream receiving water bodies; and
- loss of wetland fringing vegetation.

The impacts from the Busselton Bypass road on the Broadwater wetland suite fringe has been considered in Section 5.1.

5.2.3 Assessment of impacts

The Environmental Protection Authority's normal requirements (as identified in 5.1.2 above) would apply to the palusplain wetland near the western end of the proposed Bypass road.

Direct impacts — Fairway Drive

Fairway Drive currently crosses New River via an old railway embankment. Three culverts laid next to each other allow water to move through the wetland system. This section of the New River is gazetted for protection by the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. To build Fairway Drive to the required specifications, the embankment would have to be widened resulting in some filling of the designated lake area and loss of some fringing wetland vegetation (approximately 3.6 hectares (Halpern Glick Maunsell, 1994; p. 34)). Main Roads propose to construct and rehabilitate an equivalent area of wetland and fringing vegetation to replace the area of the New River wetland which it proposes to fill (Halpern Glick Maunsell, 1994; p. 33). These new wetlands are to have increased wetland functions for both natural and human use.

Main Roads have also made a commitment to replace the existing culverts with a series of culverts to provide better movement of water than currently exists (Commitment 7.1.15). It is understood that water may currently back-up in the western portion of the New River and subsequently flow over Fairway Drive to the east. The connectivity of the New River between east and west of Fairway Drive will therefore be improved.

5.3 Impact on watercourses

Environmental objective

To ensure the hydrology and water quality of wetlands and watercourses are not affected such that riverine vegetation and wetland functions (particularly drainage) are protected or enhanced.

5.3.1 Issue description

From east to west the Busselton Bypass road would cross the Vasse River, two drains which flow to the ocean, a drain which flows into the Broadwater wetland suite and a creek with it's associated floodplain which also flows into the Broadwater wetland suite. Section 5.1 addresses issues concerning the creek and associated floodplain which flows into the Broadwater wetland suite and Section 5.2 addresses the environmental issues associated with the widening of Fairway Drive.

5.3.2 Possible impacts of proposal

The most significant environmental impacts requiring consideration are:

- the impact of stormwater on water quality in the watercourses and downstream receiving water bodies;
- alterations to flow regimes;
- loss of fringing wetland vegetation; and
- construction impacts.

5.3.3 Assessment of impacts

Main Roads will provide kerbing on the road either side of these watercourses to direct stormwater into special nutrient retention basins so that no direct drainage into any watercourse occurs (Halpern Glick Maunsell, 1994; pp. 31-32).

Halpern Glick Maunsell (1994) state that bridges are likely to be constructed to cross the Vasse River and the Vasse Diversion Drain (Halpern Glick Maunsell, 1994; p. 31). Bridges are less likely to disrupt water flow than culverts.

Should bridges not be constructed for either the Vasse River or the drains, the design of culverts or other structures should not alter existing hydrology unless that change can be demonstrated to be of nett benefit to the watercourse and any down stream receiving waterbody.

Loss of wetland vegetation is expected to be minimal and post construction rehabilitation of the road verge is proposed (see commitments 7.2.1 and 7.3.1).

The timing and method of construction can affect water quality, particularly turbidity. For example construction when the floodplain is dry would have little impact, alternatively turbidity impacts could be reduced by constructing bunds and filling inside of the bunds. Detailed environmental management programmes are proposed to deal with these issues during construction.

5.4 Loss of vegetation along the railway reserve

Environmental objective

To ensure regionally significant vegetation is protected.

5.4.1 Issue description

The railway between Busselton and Augusta was opened in the mid 1920s but closed around 30 years later. The line fell into disrepair and the reserve began to become revegetated with a mixture of natives and exotic species. Substantial stands of trees exist at present.

The original option for the Busselton Bypass road would have followed the old railway reserve from a location about one kilometre west of where Red Gum Way would intersect the Bypass road to where the Bypass road joins the Bussell Highway west near Vasse town site. The preferred option has been modified so that less of the old railway reserve will be used; resulting in less loss of vegetation. The Bypass is now proposed to be constructed south of the railway reserve where the Bypass is adjacent to the Broadwater Nature Reserve (see Figure 1). This will reduce the length of railway reserve used for the Busselton Bypass road from about 3.5 kilometres to about 1.5 kilometres.

5.4.2 Possible impacts of proposal

It is estimated that about five hectares of bushland will be lost on the railway reserve as a result of the Busselton Bypass road (Halpern Glick Maunsell, 1994; p. 34).

5.4.3 Assessment of impacts

This bushland, while having local significance, is well represented in conservation reserves and does not constitute bushland of regional significance.

6. Conclusion and recommendations

The Environmental Protection Authority concludes that the proposal by Main Roads Western Australia to construct a Bypass road south of the Busselton urban area is environmentally acceptable, subject to the proponent's commitments identified below and the Environmental Protection Authority's recommended environmental conditions (see Appendix 4). The recommended environmental conditions are based on the recommendations below.

In reaching this conclusion, the Environmental Protection Authority identified the main environmental issues requiring detailed consideration as:

- impacts on the Broadwater wetland suite (System One recommendation 1.2);
- impact on other wetlands;
- impacts on watercourses; and
- loss of vegetation along the railway reserve.

The Environmental Protection Authority makes the following recommendations.

Recommendation 1

The Environmental Protection Authority recommends that the proponent should determine the full extent of the impacts of the Busselton Bypass road by preparing an Environmental Management Programme to the requirements of the Department of Environmental Protection which addresses:

- Impacts on wetlands by:
  - identifying the area and functions of wetland(s) which would be lost through construction of the Bypass and feeder roads (*e.g.* Fairway Drive and fringe wetlands of the Broadwater wetland suite affected by the Bypass road);
  - proposing guidelines to be implemented for the replacement of wetland functions which would be lost due to the construction of the Bypass or feeder roads, and the timing of this replacement; and
  - describing on-going management and monitoring measures to protect or enhance wetlands impacted by the proposal.
- Impacts on watercourses by:
  - establishing design criteria for wetland crossings (including rivers, creeks, drains floodplains and sumplands) to ensure that the crossings do not adversely affect existing drainage patterns and wetland functions, and describing proposed management and monitoring to check that the criteria achieved the objective;
- Management of water quality by:
  - defining the potential construction impacts on water quality and proposed management measures;
  - detailing the design and on-going management of stormwater detention basins; and
- Timing of planting the tall dense buffer of vegetation to persuade waterbirds to fly over the Bypass in order to reduce road kills.

Recommendation 2

The Environmental Protection Authority considers that while the proponent should be required to implement all the commitments, the following commitments should form an attachment to the Minister for the Environment's statement that a proposal may be implemented and compliance of these commitments should be individually audited by the Department of Environmental Protection.

New No	No in CER	Commitment
	7.1 Pre-construction	
1	7.1.1	Road design and landscaping will aim to reduce the visual impact of the Bypass on the local environment. This objective will be addressed during the detailed design phase of the Bypass through the preparation of a Rehabilitation and Landscaping Plan which will also detail the management of topsoil to control the spread of weeds within the road reserve. The Plan will be prepared to the satisfaction of the Department of Environmental Protection.
2	7.1.3	A Dieback Hygiene Management Plan to prevent the spread of dieback during the construction of the Bypass, will be prepared to the satisfaction of CALM.
3	7.1.4	A study to determine the presence and impact of the Bypass on Western Ringtail Possum populations will be carried out. If appropriate, Main Roads will prepare a Management Plan to reduce impacts to the satisfaction of CALM.
4	7.1.6	The Community Consultation Programme will be continued during the detailed design phase of the Bypass to consider improvements to the Bypass design.
5	7.1.7	The Bypass will be designed such that a L_{10} (18 hour) traffic noise level of 63dB(A) is predicted not to be exceeded at any residence adjacent to the Bypass by the inclusion of appropriate noise attenuation features to the satisfaction of the Department of Environmental Protection.
6	7.1.10	A review will be undertaken of fencing along the road reserve during the detailed design phase to ensure adequate control is provided for movements of pedestrians and cyclists, of stock where the adjacent land is used for grazing and to reduce potential road kills of fauna. This review will be undertaken in consultation with CALM, the Shire of Busselton and affected landowners to the satisfaction of the Department of Environmental Protection.
7	7.1.14	The need for the construction of fauna tunnels in the vicinity of the Broadwater will be considered during the detailed design phase. If required by CALM fauna tunnels will be incorporated into the design and built to the satisfaction of CALM.
8	7.1.15	The widening of Fairway Drive will be designed to require the least amount of widening as possible of the existing embankment across the New River and to maintain or improve the existing east-west surface water flow. Drainage from Fairway Drive will not directly enter the New River and will be directed to a retention basin/s designed, landscaped and vegetated to maintain and supplement the existing environment to the satisfaction of the Department of Environmental Protection.
9	7.1.18	A Fire Management Plan will be prepared to the satisfaction of CALM.

New No	No in CER	Commitment
	7.2 During Construction	
10	7.2.1	Vegetation clearing during road construction will aim at retaining as much vegetation as possible within the road reserve and to protect vegetation from damage by construction equipment to the satisfaction of the Department of Environmental Protection.
11	7.2.2	Prevention of the spread of dieback will be achieved through the implementation of the Dieback Hygiene Management Plan.
12	7.2.4	The Rehabilitation and Landscaping Plan will be implemented.
13	7.2.5	The impact of noise and vibration will be minimised during construction, and obligations under the Noise Abatement Act 1972 - 1981 and the Noise Abatement (Neighbourhood Nuisance) Regulations 1979 will be monitored to the satisfaction of the Department of Environmental Protection.
14	7.2.6	The impact of dust on adjacent properties during road construction will be controlled to the satisfaction of the Department of Environmental Protection.
15	7.2.7	The Fire Management Plan will be implemented.
16	7.2.9	Suitable signs will be erected by Main Roads warning motorists of likely fauna crossings prior to the opening of the Bypass to traffic.
	7.3 Post Construction	
17	7.3.1	The rehabilitation of the road verges and median will be monitored and remedial action initiated where necessary.
18	7.3.2	Remedial action will be taken where any scour and erosion occurs in line with Main Roads maintenance procedures.
19		Swale drains and nutrient retention basins will be maintained to ensure that sediment loading and weed growth is cleared and nutrient retention capacity sustained.

The Environmental Protection Authority understands it is the responsibility of Main Roads Project Manager to ensure that the commitments detailed below are complied with throughout this project, as suggested in the Consultative Environmental Review document.

The following table lists commitments which will not be audited and the reasons why.

Commitment No(s)	Intent	Reasons for not auditing
7.1.2	Maintain wetland hydrology	Superseded by Recommendation 1.
7.1.5	Protect Aboriginal sites	Relates to other legislation.
7.1.8 & 7.19	Construct dual use path	Can be managed by Shire of Busselton.

Com-mitment No(s)	Intent	Reasons for not auditing
7.1.11 to 7.1.13	Maintain access to severed properties, local traffic management & farm management.	Can be managed by Shire of Busselton.
7.1.16 & 7.1.17	Compensation/purchase of & for land.	Relates to other legislation; can be managed by planning process.
7.2.3	Protect Aboriginal sites.	Relates to other legislation.
7.2.8	Maintain access to severed properties.	Can be managed by Shire of Busselton.
7.3.3	Monitor surface flows & ponding.	Superseded by Recommendation 1.

7. Recommended environmental conditions

Based on the assessment of this proposal and recommendations in this report, the Environmental Protection Authority considers that the following Recommended Environmental Conditions are appropriate.

1 Proponent Commitments
The proponent has made a number of environmental management commitments in order to protect the environment.

1-1 In implementing the proposal, the proponent shall fulfil the environmental management commitments made in the Consultative Environmental Review and ancillary documentation and in response to issues raised following public review; provided that the commitments are not inconsistent with the conditions or procedures contained in this statement.

A schedule of environmental management commitments which will be audited by the Department of Environmental Protection is included in Environmental Protection Authority Bulletin 770 as Appendix 2 (copy attached).

2 Implementation
Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

2-1 Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3 Proponent
These conditions legally apply to the nominated proponent.

3-1 No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the

Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

4 Wetlands

4-1 The proponent shall design and construct the road to protect the conservation values of the Broadwater Nature Reserve and other wetlands.

4-2 To achieve the objective of condition 4-1, prior to commencement of road works and in consultation with the Department of Conservation and Land Management and the Department of Environmental Protection, the proponent shall prepare an Environmental Management Programme to the requirements of the Minister for the Environment on advice of the Department of Environmental Protection.

This programme shall include, but not be limited to:

(1) identification of the area and functions of wetland(s) which would be lost through construction of the Busselton Bypass and feeder roads (*e.g.* Fairway Drive and fringe wetlands of the Broadwater wetland suite affected by the Bypass road);

(2) guidelines to be implemented for the replacement of wetland functions lost due to the construction of the Busselton Bypass or feeder roads, and the timing of this replacement;

(3) on-going management and monitoring measures to protect or enhance wetlands impacted by the proposal;

(4) establishment of design criteria for wetland crossings (including rivers, creeks, drains, floodplains and sumplands) to ensure that the crossings do not adversely affect existing drainage patterns and wetland functions, and describing proposed management and monitoring to check that the criteria achieve the objective;

(5) potential construction impacts on water quality and proposed management measures;

(6) the design and on-going management of stormwater retention basins; and

(7) timing of planting the tall dense buffer of vegetation to reduce road kills of waterbird.

4-3 The proponent shall implement the Environmental Management Programme required by condition 4-2.

5 Time Limit on Approval

The environmental approval for the proposal is limited.

5-1 If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the project has been substantially commenced.

Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period, to the Minister for the Environment by way of a request for a change in the condition under Section 46 of the Environmental Protection

Act. (On expiration of the five year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority.)

6 Compliance Auditing

To help determine environmental performance, periodic reports on progress in implementation of the proposal are required.

6-1 The proponent shall submit periodic Progress and Compliance Reports, in accordance with an audit programme prepared by the Department of Environmental Protection in consultation with the proponent.

Procedure

1 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.

2 Where compliance with any condition is in dispute, the matter will be determined by the Minister for the Environment.

Note

The attention of the proponent is drawn to Section 47 (1) of the Environmental Protection Act which states:

> "A proponent on whom a statement has been served under section 45 (5) and who does not ensure that any implementation of the proposal to which the statement relates is carried out in accordance with any conditions and procedures set out in the statement commits an offence."

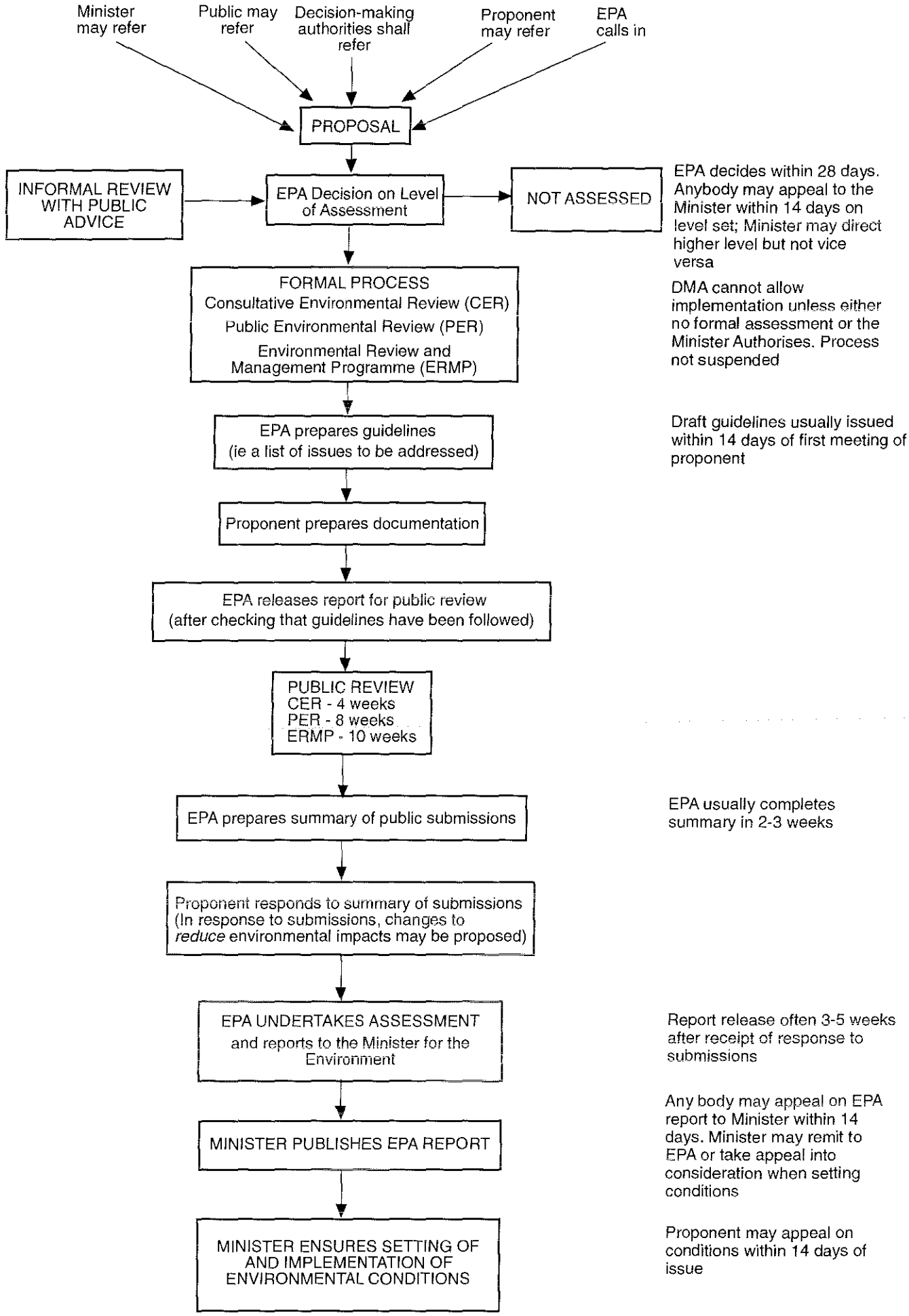
8 References

Environmental Protection Authority (1976). *Conservation Reserves for Western Australia ("Red Book") - Systems 1, 2, 3, 5.* Department of Conservation and Environment, Perth Western Australia.

Halpern Glick Maunsell (1994). *Bunbury - Augusta Road Busselton Bypass.* Main Roads Western Australia, Perth, Western Australia.

Appendix 1

Flow chart summary of environmental impact assessment administrative procedures


Minister may refer
Public may refer
Decision-making authorities shall refer
Proponent may refer
EPA calls in
PROPOSAL
INFORMAL REVIEW WITH PUBLIC ADVICE
EPA Decision on Level of Assessment
NOT ASSESSED
EPA decides within 28 days. Anybody may appeal to the Minister within 14 days on level set; Minister may direct higher level but not vice versa
FORMAL PROCESS
Consultative Environmental Review (CER)
Public Environmental Review (PER)
Environmental Review and Management Programme (ERMP)
DMA cannot allow implementation unless either no formal assessment or the Minister Authorises. Process not suspended
EPA prepares guidelines (ie a list of issues to be addressed)
Draft guidelines usually issued within 14 days of first meeting of proponent
Proponent prepares documentation
EPA releases report for public review (after checking that guidelines have been followed)
PUBLIC REVIEW
CER - 4 weeks
PER - 8 weeks
ERMP - 10 weeks
EPA prepares summary of public submissions
EPA usually completes summary in 2-3 weeks
Proponent responds to summary of submissions (In response to submissions, changes to *reduce* environmental impacts may be proposed)
EPA UNDERTAKES ASSESSMENT and reports to the Minister for the Environment
Report release often 3-5 weeks after receipt of response to submissions
MINISTER PUBLISHES EPA REPORT
Any body may appeal on EPA report to Minister within 14 days. Minister may remit to EPA or take appeal into consideration when setting conditions
MINISTER ENSURES SETTING OF AND IMPLEMENTATION OF ENVIRONMENTAL CONDITIONS
Proponent may appeal on conditions within 14 days of issue

Appendix 2

Summary of public submissions and the proponent's response

Bunbury - Augusta Road

Busselton Bypass

Consultative Environmental Review

Assessment Number 755

A list of concerns and questions has been compiled from submissions received during the period of public comment. The Environmental Protection Authority would appreciate responses to these concerns / questions as soon as possible. This list and the responses from the Main Roads Western Australia will be reproduced in the Authority's report on the project to the Hon Minister for the Environment.

1. Assessment of alternatives

1A Bypass alternatives

1.1 The Guidelines for preparation of the Consultative Environmental Review state clearly that the Main Roads Western Australia should assess alternative alignments for the Busselton Bypass. The movement of the Broadwater route 100 metres south is neither and alternative route, nor an alternative alignment.

The alignment which should be used should go to the south of the Sir Stewart Bovell Park, follow the proposed route to Queen Elizabeth Avenue, then south on this road to Rendezvous Road (using the northern portion of the rubbish tip to avoid many houses) and link to the Bussell Highway south of Vasse.

The Bypass is planned as a major local arterial road for Busselton with an interim function as a bypass for through traffic until there is a warrant for a dedicated road for through traffic located outside the developed area of the town. The requirement to provide for this dual function, the level of existing and proposed development and environmental constraints, precluded any major change to the alignment. For this reason it was determined that a route study was unnecessary and the scope of the Study limited to an assessment of constructing a road on the current route.

It should be understood that carrying out a full route study when there are obviously no viable alternatives is not only a pointless exercise but also one that would involve considerable cost and cause unnecessary distress to landowners in the area.

Main Roads requested clarification on the requirements for the assessment of alternative alignments from the EPA prior to the commencement of the Study. The EPA advised Main Roads that it "recognises that the current assessment is not a full route study but rather the environmental assessment of a historical alignment for the bypass."

Section 3.4 of the CER covers the issue of alternative Bypass routes and specifically details why Rendezvous Road is not an acceptable route option.

1.2 The fact that the proposed Bypass Route is in the Shire of Busselton Town Planning Scheme is not a satisfactory reason for not looking at other alternatives. The public consultation and review period for the Town Planning Scheme does not provide an adequate forum for the public to discuss an issue such as this. Furthermore, it was more than 10 years ago that the Town Planning Scheme was drawn up, surely we can do better now. There were no public meetings associated with discussing the Bypass road, no effort to visit and speak to or contact farmers, few people in the district knew where the road was going to go until 1993.

The idea of channelling a highway through residential areas is 1960s thinking. Many other countries have rejected the idea that new highways can solve traffic problems.

Refer to response to 1.1. Section 3.0 of the CER and more specifically Sections 3.2 and 3.3 quite clearly detail the need for the Bypass.

Busselton Town Planning Scheme No. 5 was subject to public input prior to its adoption in 1982. Of 172 public submission received by the Shire of Busselton regarding the Town Planning Scheme when it was made available to comment, 29 were in regard to the Busselton Bypass alignment.

1.3 It is disappointing that the proponents gave little attention to alternative routes, such as Rendezvous Road, and instead discussed only slight variations on a single route to run on or alongside the Railway Reserve through the Broadwater Area. The proponents conclusions that other routes were unacceptable were not supported by the evidence required for informed public comment. A detailed study of alternative routes is needed before the degradation of the conservation value of an important wetland can be allowed.

As for response to 1.1.

1.4 In response to the statement that Rendezvous Road is completely unsuited as an alternative route it should be noted that:

- the route is not significantly longer for travellers to Dunsborough and Yallingup;
- the cost of upgrading the road is not significantly more expensive than the construction of a new road;
- Rendezvous Road is already being used by many Margaret River residents as a Bypass for Busselton;
- the loss of vegetation would be minimal compared to the loss of vegetation around the Broadwater; and
- there may never need to be a need to upgrade to a dual carriageway.

The additional travel for Dunsborough / Yallingup traffic (about 3km) is significant and would discourage use of the Bypass in favour of the existing Highway through Busselton.

No costing for the upgrading of Rendezvous Road has been done as other factors were sufficient to determine its unsuitability.

The fact that Rendezvous Road is currently being used by some Margaret River traffic as a partial defacto bypass of Busselton is accepted, but the impacts of this are minor compared to those that would result from its use as part of the Bypass route.

The Bypass alignment was moved to the south to avoid the clearing of vegetation adjacent to the Broadwater.

Planning of the Bypass as a dual carriageway, with construction of a single carriageway initially will provide for future growth in traffic demand whilst maintaining a high level of service to the motoring public. Traffic predictions carried out as part of the Study confirmed the future requirement for a dual carriageway.

1.5 It is stated that this proposal is only an interim solution and that a major Bypass will be constructed further to the south at some time in the future. Why then choose such a controversial route and why not examine the alternatives in order to provide a long term solution? Who actually wants the Bypass in this location? It seems that there is substantial opposition to it within Busselton.

As an additional east-west road to relieve pressure on the Bussell Highway, it is expected that the road will only remove 1000 vpd out of the existing 14,000. The amount of traffic that will use the road as anything but a Bypass is questionable. Much of the Dunsborough - Yallingup traffic is approaching Busselton to shop, reach the hospital, schools, doctors and dentists. This traffic will not go the further 1.8 km out of their way.

An alternative route should be developed which has a longer term view to service the Margaret River area well south of Busselton.

The response to the issue of alternative routes is covered by the response to 1.1.

There is clearly a requirement for the Bypass for use by both local and through traffic as an alternative to the increasingly congested Bussell Highway through the town. No definite traffic figures can be given at this stage however based on reasonable assumptions usage of the Bypass is expected to be in the order of 2400 to 2900 vehicles per day when the Bypass is opened and is expected to increase substantially with the development of land adjacent to the Bypass and the growth of the Margaret River and Dunsborough/ Yallingup areas. About two thirds of this traffic is expected to be local.

The justification for the construction of an arterial road on the Town Planning Scheme Bypass route is detailed Section 3.0 of the CER.

1B Option C1

1.6 To be completely safe the Bypass should go to the southern end of the Sir Stewart Bovell playing fields. It is not satisfactory to resolve issues like this at the design stage, people want to know what measures are in place for the safety of their children.

The movement of the Bypass alignment to the south side of Stewart Bovell Park and its extension to join up with the Ludlow Deviation involves major changes to current plans for the main road system in the Busselton area. These changes would impact on a number of landowners not currently affected and significantly increase the cost of constructing the Bypass. The suggested alteration to the alignment can not be justified.

Adequate pedestrian facilities can be provided on the current alignment, however the provision of a pedestrian underpass or overpass in the vicinity of the Causeway Road intersection to service Sir Stewart Bovell Park is unlikely to be warranted in the short to medium term. An opportunity exists to provide for a dual use path under the proposed Vasse River bridge which could, if properly linked to the local dual use path network, provide for the free movement of pedestrians and cyclists wishing to access the Stewart Bovell Park. The feasibility of this opportunity will be fully investigated in consultation with the Busselton Shire Council.

The CER and the Proponents Commitments provide conceptual details for the management and resolution of impacts predicted to arise as a result of the Bypass. At this stage there is no firm timetable for construction of the Bypass, and it is therefore possible that the specifics of these impacts may change prior to its construction. The Proponents Commitments provide the basis and mechanism for developing appropriate management measures to address these impacts at a time closer to construction.

1C Options Q1 and Q2

1.7 Option Q1 impacts on a property which was purchased on the basis of the Bypass alignment which is in the Town Planning Scheme and the South Busselton Structure Plan. This property owner already has an approval for subdivision and wishes to proceed. Option Q1 will also impact on the Walsh Road abattoir, which provides a higher rate of employment than the concrete batching plant which will be affected by Option Q2. Section 5.2.2 of the CER concludes that modification of Option Q1 will need to be considered during the implementation phase of the first stage of the Bypass, leaving land owners with no rational basis for decision making in the interim.

Option Q2 would help spread the north - south traffic load more evenly than Option Q1 because of the left turn onto the Bypass. This would reduce the impact on the high amenity residential areas of Fairway Drive. In contrast, Option Q2 encourages drivers past the light industrial areas of Strelley Street. Additionally, the structure planning for the area affected by Option Q2 is not yet completed and this Option can more easily be incorporated. Similarly the zoning of land affected by Q2 is Rural which is cheaper than land zoned Special Rural which is affected by Option Q1. Under Option Q2 the abattoir can still continue to operate and buildings of the concrete batching plant and transport business do not appear to be affected. Nonetheless, these lots are likely to face increased pressure for development for residential purposes. Although the privately owned airstrip will be impacted, it is understood that the owner seeks to develop this land for residential purposes also.

If Option Q1 is still decided to be the preferred route, then it is recommended that it be altered to have two 200 metre radius curves which avoid Lot 3 (design speed 80 kph with limited super elevation).

Main Roads has commenced consultation with the Busselton Shire Council to resolve the issue of Queen Elizabeth Avenue as quickly as possible and remove the current uncertainty affecting the future development of affected properties.

1.8 Fairway Drive will need lights at Bussell Highway, or people will use Melaleuca Drive to get to the lights at Queen Elizabeth Avenue intersection with the Bussell Highway.

Refer to Section 6.7.6 and Commitment 7.1.12 of CER

1D Options R1 and L1

1.9 Redgum Way was created as part of the Dunbarton Estate subdivision and designed as a link between the Bypass and Rendezvous Road. If Redgum Way is cul-de-sac'd, then the traffic that would have used this road to now access the Bypass using Beltonia Way and Paperbark Way. Existing transport operations would then go through the Dunbarton estate to access the Bypass. There is doubt about the need to connect the Dunbarton Estate the Bypass at all, since Queen Elizabeth Avenue and another access road to the west from a new development will provide access. Therefore, no access should be available through Dunbarton Estate.

Refer to commitment 7.1.12 of the CER.

1.10 The Redgum Way link to the Bypass alignment and Rendezvous Road should be maintained because it is the most direct access, it affects the least number of land owners, and is consistent with zoning and planning which has been put in place over the last 10 years. Relocation of the link will not solve, but shift the problem. However, traffic calming measures should be put on Redgum Way to slow vehicle speed.

Refer to Section 5.2.5 and Commitment 7.1.12 of the CER.

1E Options V1 and V2

1.11 The claim in the Consultative Environmental Review that *Option V1 would be more compatible with the development of this link than Option V2* does not stand up to analysis, on transport needs alone. It makes no sense to deviate the Bypass 100 metres or more to the north at Vasse when most of the traffic will be heading south along the Bussell Highway towards Margaret River and Augusta. Scrutiny of the Figures in the Consultative Environmental Review also shows that the smaller percentage of traffic destined for Dunsborough will be minimally, if at all, disadvantaged if the Bypass links with the Bussell Highway to the south, rather than in the centre of Vasse. The only road users likely to be disadvantaged by Option V2 are those living in West Busselton and Siesta Park. They would presumably prefer to keep using the Bussell Highway from Busselton.

The statement made in the CER refers to the expected ultimate development of the main road system which will most likely see the Bypass extended to the west to provide a strong arterial link between Busselton and the Dunsborough area, and a more southerly road constructed for traffic bypassing Busselton with an orientation toward Margaret River. Refer to Section 3.3 of the CER.

1.12 Although the arterial road should not be built near the Broadwater, option V2 is preferred to Option V1 as less vegetation would be removed and less of the railway reserve would be developed.

As discussed at Section 5.2.6 of the CER Main Roads preferred Option is V1 having considered all relevant factors including vegetation loss and the impact on other possible uses for the railway reserve.

1.13 While acknowledging the aims of the proposed southerly realignment, there is limited documented arguments supporting the proposed shift south. The new alignment is not required in the vicinity of Lots 181, 182 and 183 to achieve the stated objective of vegetation protection. The vegetation referred to is a band approximately 10 metres wide adjacent to the northern boundary of the existing reserve. Since this reserve is 80 metres wide, scope exists to retain the alignment within this reserve without the need to remove the remnant vegetation. In addition the southern alignment proposal will require the relocation of a three phase power line at significant cost which will be borne by the community.

Vegetation protection in the vicinity of the Broadwater was one of the reasons for the southerly realignment. This applies mainly to the vegetation in the vicinity of the old railway bridge. The other important consideration was to separate the Bypass from the main body of the Broadwater as much as possible without leaving an area which would be attractive for future residential development. The proposed alignment in the vicinity of Lots 181, 182 and 183 provides for a consistent separation from the main body of the Broadwater.

1.14 Option V2 is preferred as the loss of vegetation in the Railway Reserve would include approximately 3,100 trees, of these 80 old growth trees are in excess of 3 metres in girth. These older trees have hollows which are a habitat for wildlife.

As discussed at Section 5.2.6 of the CER Main Roads preferred option is V1 having considered all relevant factors including the loss of vegetation in the railway reserve.

The only section of the railway reserve requiring significant clearing is at Vasse. The central part of the reserve through this section appears to have been cleared in the past to accommodate the railway line and does not contain any large trees. As much as practical roadworks will be contained within this area of the reserve and clearing of large trees is expected to be minimal. Refer to Commitment 7.2.1 of the CER.

2. Broadwater Wetland Suite

2.1 Bridging of Fairway Drive should be undertaken as it will have the least disruptive to water flow patterns and fauna movement and along the waterways.

As noted at Commitment 7.1.15 of the CER, the design of the crossing will maintain or improve the existing east-west surface water flow. It is envisaged that culverts larger than those that currently exist will be adequate for the Fairway Drive crossing of the New River. These culverts would also be sufficiently large to allow small fauna to pass beneath the road.

2.2 Commitments 7.1.10 and 7.1.14 which are measures to address impacts on fauna in the vicinity of the Broadway Nature Reserve should also apply to Fairway Drive.

There is no requirement to fence Fairway Drive to control the movement of fauna as it is expected that residential development will eventually exist on both sides of this road, with the exception of the New River crossing.

2.3 Section 6.3.1 states that the New River in part forms the main inflow-outflow between the Broadwater and the Vasse diversion Drain. It needs to be clarified that water only flows eastwards from the Broadwater to the Vasse Diversion Drain via a weir and floodgates. Any flow westwards would indicate a malfunction of the system which has now been installed to remove flood levels from the compensation basin and to eliminate diversion drain water and tidal salt water intrusion from the drain into the Broadwater. The floodgates at Carter Street act as a one way valve, when the Vasse Diversion Drain is high then gates are forced closed.

Adequate bridging must be applied to the New River area (Fairway Drive). Due to the complexities of management of the Broadwater flood levels, and restrictions of water flow from west to east must be avoided. The only westward outlet is into the Buayanyup Drain. The efficiency of that floodgate outlet is limited due to its high elevation which enables it to function only during excessive flood levels. The conservation, residential and agricultural uses in this area are affected by this compensating function of the Broadwater Wetland Suite.

Proposals for any construction across Fairway Drive must show provision for maximum flood water outflow when drain and tidal movements permit the floodgates to function. Unimpeded flow from the Broadwater is essential to the good health of the wetlands. Flushing of this system is essential to combat the insidious rise of salinity levels within the wetlands and the increasing effects of silting.

It is accepted that Section 6.3.1 of the CER is incorrect in relation to the flow of water between the Broadwater and the Vasse Diversion Drain.

As noted at Commitment 7.1.15 of the CER, the design of the Fairway Drive crossing will maintain or improve on the existing east-west surface water flow. Discussions will be held with WAWA during the project design phase to ensure that the design of the Fairway Drive crossing is in keeping with WAWA's management objectives for the Broadwater.

2.4 By moving the alignment of the Bypass 100 metres south it will have significant environmental impacts on an important wetland;

which supplies the greatest volume of water to the Broadwater Wetland Suite (contrary to statements in the Consultative Environmental Review and the concept plan this creek from the southern catchment of the Broadwater Wetland Suite carries all of the inflow into the Broadwater. Water does not enter the system from the Vasse Diversion Drain). This wetland should be bridged, not filled;
will destroy a large stand of peppermint and redgum trees;
as the creek and surrounding pools are shallow they provide a feeding ground for a great number of wading birds (*e.g.* Ibis, Grey and White Heron, Yellow Billed Spoonbill, Snipe, many species of ducks, Swans and even a pair of Osprey that nest nearby), and Long Necked Tortoise; and
as the creek is spring fed, it rarely dries up and is a watering hole for kangaroos which heavily populate the Broadwater area.

As detailed at Commitment 7.1.2 of the CER, where the Bypass crosses the north-south drainage line feeding the Broadwater the road will be designed to maintain the existing surface water flow into the Broadwater.

The movement of the alignment of the Bypass 100m south of its original alignment in the vicinity of the old railway bridge was specifically designed to avoid the clearing of vegetation adjacent to the Broadwater. Refer Section 5.2.6 of the CER.

Revegetation associated with construction of the Bypass will in the long term improve the habitat value of these wetlands for water fowl and reptiles.

Main Roads recognises that the creek and pools provide an important feeding habitat for birds.

Investigations carried out as part of the Study did not indicate that the creek feeding the Broadwater is spring fed.

2.5 The Consultative Environmental Review states (page 3) that proximity of the Bypass will affect the conservation value of the Broadwater Nature Reserve. The proponent's proposed resolution of this issue, to move the route 100 metres south, is certainly a move in the right direction; however, is the scale of the move enough? It is not good enough and certainly not acceptable to the general public for the Main Roads Western Australia to adopt a she'll be right, trust us attitude. Many road planning mistakes have been made in the past and will be common in the future unless great care is taken in the planning process. The Main Roads Western Australia needs to cite and provide relevant information to the public on road development elsewhere, where threats to sensitive wetland areas have been minimised by careful road planning.

As stated in Section 5.2.6 of the CER it was not considered appropriate to locate the Bypass any further south since this would create a parcel of privately owned land between the Bypass and the Broadwater Nature Reserve of sufficient size to be attractive for residential development.

The Environmental Commitments detailed in Section 7.0 of the CER and the process prescribed under the Environmental Protection Act will ensure that the environmental management measures detailed in the CER will be complied with during the design, construction and operation of the Bypass. This process has been followed in a number of recent road projects that impact on wetlands e.g. Main Roads extension of the Kwinana Freeway between Forest and Thomas Roads.

2.6 The proposed Bypass route will have unacceptable impacts upon the Broadwater Nature Reserve which has been ranked 20th out of 197 Reserves for importance to waterbird breeding. The notion that moving the alignment slightly south will protect the wetland environment is false. Western Australia's largest breeding colony of Black Swans is very close to the proposed alignment. Besides the disturbance to the breeding waterbirds and pollution from the roadway, the road will also alter the hydrology of the area and increase the risk of fire.

The Broadwater Nature Reserve is a likely to rank higher than attributed in the Consultative Environmental Review. Local species counts indicate the number of species in the Broadwater environs is greater than 130; of these 65 are waterfowl with 25 nesting throughout the entire Broadwater Wetlands Suite.

It is surprising that only 8 species of birds are known to breed in the Nature Reserve, when at least 20 species breed on adjoining properties. This highlights the lack of a study on fauna behaviour by the proponents.

A road too close to the Broadwater Wetlands would be in breech of the Japan Australia Migratory Bird Agreement (JAMBA) to which Australia is a signatory. One of the major impacts of this road will be the increased fire risk, which could destroy the nesting resources and the old growth paperbark areas.

Main Roads believes that the southern movement of the Bypass alignment will significantly reduce the potential for impacts on the Broadwater as noted in Section 6.2.2.1 of the CER.

The effects of road runoff entering wetlands and watercourses is discussed in Section 6.3.2.2 of the CER, while the management of runoff is detailed at Commitments 7.1.2 and 7.1.15.

Section 6.4.2.2 of the CER discusses investigations into the impact of the Bypass on the local groundwater hydrology, and concludes that the construction of the road formation will not alter the existing groundwater movement.

Section 6.2.2.2 of the CER, discusses the potential for increased fire risk to the Broadwater as a result of the Bypass.

The ranking of the Broadwater Nature Reserve is based on the Southwest Waterbird Survey independently conducted by the Royal Australian Ornithologists Union between 1981 and 1985. This survey concluded that 8 species of birds are known to breed in the Broadwater

The construction of the Bypass south of the Broadwater is not considered to be in breach of the Japan Australia Migratory Bird Agreement.

2.7 The proposed Bypass dissects a few properties especially south west of the Broadwater Nature Reserve. The creation of small lots with inappropriate zoning or access is undesirable. The land purchased by Main Roads as a buffer to the Broadwater Nature Reserve would be most appropriately vested in the National Parks and Nature Conservation Authority and managed as part of the Broadwater.

The Bypass does not dissect any properties south west of the Broadwater Nature Reserve. Where the Bypass alignment deviates south of the old railway, all the land between the Bypass and the railway reserve is required.

Main Roads will be not be purchasing land specifically to provide a buffer for the Broadwater.

2.8 The Consultative Environmental Review claims that there is no scientific evidence to suggest that the Bypass is too close to the wetlands. Whilst this may be the case in Australia, there is ample research from overseas (see Effects of human disturbance in Eider Ducklings in Estuarine Habitat in Scotland by V E Keller, University of Aberdeen, Department of Zoology, 24.10.90 and Human Disturbance of Trumpeter Swans Breeding Behaviour by P Henson and T Gant, Department of Fisheries and Wildlife, University of Minnesota). This research finds that disturbance from people or vehicles in a wetland conservation area can, if constant, cause birds to leave the nest frequently enough to destroy the breeding potential.

Gant and Hanson noted that"...swan behaviour was not seriously affected by normal or even excessive vehicle traffic on the Copper River Highway as long as vehicles did not stop." , and go on to say "Swans were more sensitive to the noise and presence of stopped vehicles, pedestrians and researchers."

Disturbance to waterfowl can be expected to be greatest during road construction when intermittent related activities will occur over about a twelve month period. The frequency of vehicles stopping on the Busselton Bypass once operational is expected to be low and therefore the disturbance to waterfowl during this stage should be minimal.

3. Vegetation and fauna

3.1 The Consultative Environmental Review (page 38) makes statements about dieback which are completely inadequate. The Consultative Environmental Review states that, *No testing for dieback was undertaken .... and testing is no longer considered to give conclusive results about the absence of dieback*. This statement is nonsense as ultimately testing is the only possible way of obtaining conclusive results. The Consultative Environmental Review states that susceptible species *occur throughout the Study area*. If this is true the area is readily assessable for dieback. Examination of the vegetation description shows this statement is simply not true, and consequently the statement that, *No dieback was observed ... and consequently the Study area should be treated as dieback free* is not a reasonable basis for appropriate dieback management. Why wasn't a proper dieback survey carried out to allow effective management?

Commitment 7.2 states that Main Roads will prepare a Dieback Hygiene Plan to the satisfaction of CALM prior to the construction of the Bypass. This Plan will include a detailed assessment, appropriate sampling and laboratory analysis to assess the dieback status of vegetation along the Bypass route.

3.2 Commitment 7.1.4 should specify a commitment to funding site surveys for Ringtail possums and relocation if deemed appropriate following these surveys.

The cost of a site survey for Western Ringtail possums and any relocation costs will be met by Main Roads.

3.3 Clearing should be undertaken for one carriageway only in the initial stage, significant vegetation including *Eucalyptus patens* and *E. gomphocephala*, should be avoided by innovative design and the median strip should not be cleared unless necessary for roadworks such as cut and fill.

Clearing for the construction of each carriageway will be conducted only when necessary.

Vegetation clearing will be kept to the minimum necessary to satisfy construction and safety requirements. Refer to Commitment 7.2.1 of the CER.

The requirement to minimise clearing will be considered in the detailed design of the Bypass.

3.4 Predator proof fences should be used in the construction of the Bypass in order to protect kangaroos where they are known to cross the proposed alignment near the Broadwater Nature Reserve and further west. Fencing should be of a standard similar to that used by the Department of Conservation and Land Management at Twin Swamp, Ellen Brook and Thompsons Lake Nature Reserves.

Fences will only be effective in protecting kangaroos from predators if the land on which they occur is fenced entirely. Predator proof fences along the road reserve only will not protect kangaroos from predation. As noted at Commitment 7.1.10 of the CER, a review of the road reserve fencing will be conducted during the detailed design phase of the project.

3.5 In relation to the proposal to put high species of trees to force birds to fly higher to avoid road kills, of both birds and people, does this mean that Main Roads Western Australia will plant established trees, or will there be a period of several years while the trees are growing, in which animals are regularly killed. Also these management techniques will be of no value to the many water fowl who nest and raise young on the southern side of the Bypass - the young cannot fly, yet need safe access to the wetlands. How many tunnels and persuasion fences are budgeted for? These fences will be needed for the massive kangaroo population which dwells in the wetlands and travel south each day. Therefore fences will be needed on both sides. Perhaps this section should also have a lower speed limit because of this fact.

Direct seeding and tubestock seedlings will be used in the revegetation of the road reserve, and it is accepted that these will take several years to become effective. If possible Main Roads will conduct plantings prior to the commencement of road construction.

As detailed at Proponents Commitment 7.1.10 a review of the road reserve fencing will be conducted during the detailed design phase of the project.

Speed limits will be set which are compatible with the speed environment. To do otherwise would only frustrate the majority of drivers and be difficult to enforce. It is not expected that the potential for collisions with kangaroos will have a significant affect on the speed environment of the road. Kangaroo warning signs can be erected to increase driver awareness and this has been effective in other areas.

3.6 There appears to be little attempt to protect the numerous families of ducks which move from their nesting sites in the south to the wetlands in the north. If underpasses are developed, how many will there be? How will they be developed? Where will they be located and who will decide the location? How will the birds and their young be made to use the underpasses?

As noted at Sections 6.5.2.2, 7.1.10 and 7.1.14 of the CER, the requirement for fencing, signage and fauna movement tunnels will be assessed during the design phase of the project in consultation with CALM.

4. Heritage Issues

4.1 Bikewest in co-operation with the Shire of Augusta - Margaret River, has been preparing plans to turn the disused railway reserve between Busselton and Augusta into a long distance cycling and recreational trail. The first section of this trail between Margaret River and Cowaramup has already been completed. Use of the railway reserve for the purposes of the Busselton Bypass road would render that section of the reserve useless as a recreational trail, by severing the trail making it discontinuous. The bypass road would certainly eliminate the peaceful and tranquil setting that the reserve currently provides for cyclists and hikers. It is likely that this portion of the railway reserve could otherwise become the most popular part of the trail, due to its proximity to the population of Busselton. The Consultative Environmental Review document fails to adequately address the short and long term recreational use of the disused railway reserve, viewing this land as an easy and cheap route for the road.

During the CER process a wide variety of environmental and social issues were given consideration. The other potential uses for the railway reserve were considered in evaluating options for the section of the Bypass utilising the railway reserve. Refer to Section 5.2.6 of the CER.

The proposed realignment of the Bypass route in the vicinity of the Broadwater avoids the old railway bridge and the railway formation for two thirds of the total length affected by the original proposal. The only section now affected is at the Vasse end where the reserve is wide enough to accommodate the road as well as a trail.

Commitment 7.1.8 of the CER provides for a continuous dual use path along the length of Bypass.

It should be noted that the rail reserve has already been severed by the Dunbarton Estate subdivision which has been developed over a 2 km section of the reserve.

4.2 The Consultative Environmental Review states (page 6) that *No management is required as no (European Heritage) sites will be impacted.* This is not correct. Apart from oblique references in the Consultative Environmental Review to the Busselton to Augusta railway reserve, it is nowhere identified for what it undoubtedly is - an extensive and important European Heritage site. The reserve's major heritage values have been identified and recognised by the National Trust of Australia (WA), particularly through the Trust's 1985 report *Proposal for a Walking Trail along former Busselton - Augusta Railway.* A copy of this report was made available to the consultants during the public consultation period and was also discussed with Main Roads Western Australia senior officers prior to the Consultative Environmental Review document being prepared.

Apart from containing remnant vegetation which is regionally important, the reserve contains magnificent timber railway bridges (all or mainly Karri) and the raised track. Because of its flatness and disused railway sidings the reserve is ideal for conversion into a walking and cycling trail, able to cater for visitors as well as locals. Threatened losses to the public, through use of the railway reserve for the Bypass include:

a major reduction in the integrity of the historic reserve;
clearance of some 4.5 hectares of remnant vegetation;
destruction of the raised track and any wooden railway bridges near Vasse;
severance of the township of Vasse;
downgrading of the linear module proposed for the South West Eco-museum;
unnecessary affliction (through noise, fumes, dust etc.) of pedestrians and cyclists using the railway reserve once the trail has been completed northwards from Cowaramup, in the Augusta-Margaret River Shire, to Busselton; and
likely loss of the opportunity for the railway track to be restored, mainly for tourism purposes, along the reserve.

Main Roads gave consideration to a wide variety of social and environmental issues during the preparation of the CER and it's determination of the preferred alignment. Consideration was given to the heritage value of the rail reserve.

Impacts on the old railway bridge were avoided by the southerly realignment (V1) of the Bypass as detailed at Section 6.2.2.1 of the CER. No other existing or historic bridges will be impacted by the Bypass.

Provision will be made within the road reserve for a continuous dual use path as stated at Commitment 7.1.8 of the CER.

The vegetation within the reserve although locally significant is regionally well represented. Furthermore as detailed at Commitment 7.2.1 of the CER, vegetation clearing will be kept to the minimum.

The Busselton Bypass will improve the access to the facilities in Busselton for residents in Vasse. Option V2 which would have removed through traffic from the centre of Vasse, was strongly opposed by the Vasse Primary School.

There are currently no plans for the reinstatement of any form of rail service on the old railway alignment between Busselton and Margaret River. The return of rail on this route is made less probable by the fact that the rail reserve has already been severed by the Dunbarton Estate subdivision which was developed over a 2 km section of the reserve.

4.3 It is unclear what, if any, discussions have been held with the local Aboriginal Community representatives during the public consultation process. The Bibelmen Mia Aboriginal Community, the main Aboriginal community in the Busselton area, appears not to have been consulted.

As stated at Section 6.7.2 of the CER, an Ethnographic and Archaeological Survey of the project area was conducted as part of the study process. This survey included discussions with representatives of local Nyungar community groups.

4.4 The Railway Reserve should not be used for any purpose other than passive recreation, as it should be kept available for the return of railway. The McPharlane Report concluded that the return of rail from Capel to Busselton was viable 4 years ago. Hence the reserve should be left intact all the way through to the Bussell Highway so that it can provide a link to Bunbury and Perth, as railways become viable again over the next 20 years.

There are currently no plans for the reinstatement of any form of rail service on the old railway alignment between Busselton and Margaret River. The return of rail on this route is made less probable by the fact that the rail reserve has already been severed by the Dunbarton Estate subdivision which was developed over a 2 km section of the reserve.

The Busselton Bypass will not affect the reinstatement of rail between Busselton and Capel.

Discussions with Westrail indicate that the reinstatement of a rail service on this line is not viable and is very unlikely to occur in the foreseeable future.

6. Impacts on private properties

6.1 Lot 29 is situated parallel to, and north of, the Busselton Bypass, generally between chainages 3100 and 4100. The current alignment plans indicate only partial acquisition of Lot 29 and would leave impractical residues in private ownership. The whole of this Lot should be purchased by Main Roads Western Australia.

Commitment 7.1.18 of the CER, states that where requested by the owners of severed properties or small holdings Main Roads will consider the purchase of all or part of the property.

6.2 Owners of land on the southern side of Walshs Road should be protected by lessening the impacts by the use of buffers and appropriate fencing and provision of adequate compensation.

A number of owners have complained about the Bypass near Walshs Road. These owners were told that the Bypass would be located in a certain place (Sheet 5 Main Roads Plan 7922301 - 305), and bought and developed their properties accordingly. At the time of subdivision, land was given up to enable Walshs Road to be built and were told that this would provide access for all lots onto the Bypass. This alteration to the Bypass will require more land to be given up, including extending the road reserve from 60 metres to 80 metres. In addition, the land sizes will be further reduced because of the need to provide access at the other side of the blocks. These reductions will leave property owners with insufficient land to be able to maintain their livelihoods in this area. Some houses will become only 10 to 20 metres from the Bypass and this will severely impact upon the amenity of these residents. The Shire of Busselton requires these properties to be 50 metres from the front carriageway.

It is difficult to determine at this stage whether landowners were misinformed about the Bypass in the past, however it should be noted that many of the current owners purchased their properties after the Bypass was formally included on the Busselton Town Planning Scheme in 1982. The complaint that landowners were misinformed was recently the subject of an investigation by the Parliamentary Commissioner for Administrative Investigations who concluded that he did not have reason to pursue the complaint any further.

An option for reducing the impact on the residents of Walsh Road by moving the road further away, was fully investigated but could not be justified. Refer to Section 5.2.3 of the CER.

Impacts on adjacent properties will be fully considered in assessing compensation for land required for the Bypass. Refer Commitment 7.1.16 of the CER.

The impact on properties adjacent to Walsh Road will be further reduced by appropriate landscaping to provide a visual screen and noise amelioration measures if maximum allowable noise levels are exceeded (Refer CER Commitment 7.1.7). New boundary fences will also be provided which are at least equivalent to existing fences as part of the land acquisition process.

The Bypass reserve width along Walsh Road has been kept at the original width of 60m so as not to increase the impact on adjacent properties.

6.3 The proposed Tourpark which is intended to be a habitat adjunct to the Broadwater Nature Reserve will be significantly affected by this proposal. Two lots south of the Railway Reserve will be severed from the rest of the property which is intended to be made into the Tourpark. Much of the land north of this reserve is subject to annual water inundation greatly reducing the suitable habitat available for animal species requiring dry land. The land which is currently a railway reserve should be added to the Tourpark if the 100 metre southerly deviation is constructed. In addition, the only freshwater available to the park is on these southern lots. It is essential that an uninterrupted supply of this water is available to the property to the north. The effects of road runoff, noise and fire risks upon these properties must be minimised by the Main Roads Western Australia.

The southerly realignment of the Bypass in the vicinity of the Broadwater will reduce the impact on the proposed Broadwater Wildlife Tour Park as noted at Section 6.7.1 of the CER, although at this time the Tour Park proposal has no formal standing and was preceded by the plan for the Bypass.

It should be noted that the proposed Tour Park area is currently severed by the railway reserve and would be affected by the reserves use as a walk trail, road or railway. Of these possible uses, it is accepted that the Bypass road represents the biggest constraint to use of the area south of the railway as part of the Tour Park.

Existing surface water flows at the drainage line feeding the Broadwater will be maintained throughout the construction and operation of the Bypass. Existing flooding and inundation problems of privately owned land are beyond the control of Main Roads.

Main Roads does not own the railway reserve but would have no objection to the sale of that part of the railway reserve not required for the Bypass if it was to be used for conservation purposes.

As detailed at Proponent's Commitment 7.1.13 Main Roads will provide alternative farm management facilities where existing facilities are cut off by the Bypass.

Pollution from road runoff entering wetlands and watercourses is discussed in Section 6.3.2.2 of the CER, while the management of runoff is detailed at Commitments 7.1.2 and 7.1.15.

Proponent's Commitment 7.1.7 states that the Bypass will be designed such that a L_{10} (18 hour) traffic noise level of 63dB(A) will not be predicted to be exceeded at any residence adjacent to the Bypass by the inclusion of appropriate noise attenuation features.

As noted at Section 6.2.2.2 of the CER, fire could potentially start through the careless actions of road users within the road reserve and spread to the Broadwater Nature Reserve. The fire risk will be minimised by maintaining an access track alongside the road reserve fence which will act as a fire break. The increased separation between the Bypass and the Nature Reserve will further reduce the potential for fire to spread from the road. The road reserve will also be fenced to restrict unauthorised private access to the Broadwater.

6.4 Residents of Glen View Drive Vasse have expressed deep concern over the proposed upgrading of Glenview Drive into the major access link road for traffic utilising the Bypass Dunsborough / Yallingup. Increasing the daily traffic from less than 50 vehicles per day to hundreds and at times thousands, will destroy the lifestyle of people in this vicinity. There will be increased noise from these vehicles. What are the proposed noise reduction methods intended for the Vasse North link road. As the likelihood of extending the Bypass to Dunsborough is approximately 10 to 15 years away, a T junction at Vasse would be perfectly adequate until the extensions are commenced. It seems that a Bypass further south would be of greater benefit in the long term whilst also meeting the requirements which are proposed for this road.

The proposed connection of Glenview Drive to provide the north - south connection between the Bypass and Caves Road is as shown on Busselton Town Planning Scheme No.5 which was formally adopted in 1982. Glenview Drive was developed in accordance with the TPS as part of the subdivision which created the adjacent rural residential lots. Allowance was made for its future upgrading by creation of a wider reserve and minimal direct access.

A number of noise attenuation measures have been effective in reducing traffic noise at properties adjacent to main roads in Australia and overseas. These measures include the construction of noise walls, double glazing and road surface type.

Not connecting Glenview Drive to the Bypass is unacceptable because it results in significant extra travel for Dunsborough/ Yallingup traffic in the short to medium term. This route needs to be as direct as possible to encourage traffic to use it instead of the existing Highway as a means of accessing Busselton. It is also unacceptable in the longer term when the Bypass is extended west to create the Busselton Dunsborough arterial link, as the T junction at Vasse would become an undesirable four way intersection.

For justification of the need to construct a road on the current Bypass route refer to Section 3.0 of the CER.

7. Community impacts

7.1 Town bypass roads divert visitor traffic away from towns resulting in considerable losses of passing tourist trade. Rather than developing a town bypass for both heavy haulage and visitor traffic, an alternative route should be developed for heavy haulage traffic / vehicles only, allowing visitor traffic to continue to travel through the town. While the use of a round-about is preferable to a right hand turn into the town, as originally planned, it still does not avoid the problems raised above. An important factor is the signage used to ensure people are directed into the town. An entry statement for the town should be clearly visible from the place where the driver decision is made.

The view that the removal of through traffic from the Busselton townsite will result in a considerable loss of tourist based trade is not supported. Studies on the impact of Bypasses on towns in Australia, and overseas (See for example - Mackie, A. M., "Effect of Bypasses on Town Development and Land Use", Planning and Transportation Research, Summer Annual Meeting, Volume P239, London, England, 1982. and Wright, J, "Traffic in Towns", Discussion Paper No.5, Extract from Vic Roads Discussion Papers, Victoria, undated.) have shown that the impact of a Bypass on a town is directly related to the function of that town. Busselton is a tourist destination in itself and will remain so once the Bypass is open to traffic. By diverting through traffic away from the town, the Bypass is expected to have a positive effect by improving road safety and amenity for both tourists and local people.

Signage indicating access to the Busselton town centre from the Bypass will be provided by Main Roads as part of the Bypass project. The development of an entry statement for the town is the responsibility of the Busselton Shire Council.

7.2 A high speed thoroughfare on the Railway Reserve route will have a dividing effect between the township and the settlements of Dunbarton and Glen Eagles. The same applies to facilities such as the districts main sporting complex, the golf club and the future airport. Further southbound expansion of residential areas would be inhibited by a dividing highway.

It must be recognised that the Bypass is largely planned as a major local arterial road for the benefit of local traffic and will substantially increase the overall accessibility for the residents of Busselton. It is accepted that the Bypass may marginally reduce accessibility in some cases.

It is not expected that the Bypass will hinder the residential expansion of the town to the south. Subdivisions are already being planned on the south side of the Bypass and these will be facilitated by construction of the Bypass.

7.3 Consideration should be given to situating the dual use path on the northern section of the Bypass and through the disused Railway Reserve in the western sections. The bulk of the residential population will be located to the north of the Bypass. Consequently, residents would have easy access to the path if situated on the northern section of the Bypass. The alternative location suggested would also reduce cross over expenses.

As detailed at Commitment 7.1.8 of the CER, provision will be made within the Bypass road reserve for a dual use path to be constructed by the Shire of Busselton. The location of the dual use path will be determined during the Bypass design phase, although the south side is currently preferred as this will have minimal impact on the Broadwater.

7.4 The hazards created by this road for the community will be great if it goes ahead in the proposed location. Having this proposed Bypass in such the close proximity to schools is of extreme concern.

The Consultative Environmental Review also neglects to comment about the health impacts of having the road so close to two primary schools (the Vasse Primary School and the Cornerstone Christian Community School. Up to a third of Australia's children are at risk of mental impairment as a consequence of exposure to lead in the environment. It is difficult and costly to move the schools but simple to move the Bypass alignment.

Apart from the Cornerstone Christian School, the Bypass will be more distant from the schools in Busselton and Vasse than the existing Bussell Highway. The Cornerstone Christian School was developed with full knowledge of the proposed location of the Bypass. Vegetation developed within the Bypass reserve will reduce the impact of the Bypass on the Cornerstone Christian School.

8. Traffic management / design

8.1 The arrangement for the intersection of Chapman Hill Road, Strelley Street and the Busselton Bypass should be left on - right off turn offset, as it will have less impact on private land, give a higher exposure to the current and proposed industrial area and provide a more direct link to the Central Business District.

The arrangement of side road connections in the vicinity of Chapman Hill / Strelley Street will be resolved in consultation with the Busselton Shire Council.

8.2 The speed zone in the Causeway Road, Sir Stewart Bovell Park, Vasse Highway area of the Busselton Bypass should be 70 kph. This speed environment should be created by a roundabout, lighting, signage and marking, including when the dual carriageway is designed and constructed. The roundabout should be moved east to achieve a better psychological geometry so as to not actively discourage tourist traffic from entering the Busselton Central Business District. Tourist signage should be developed as an actual component of the Busselton Bypass and not as an afterthought.

The issues of speed zoning and tourist signage will be addressed during the design phase.

The roundabout is much larger than a normal roundabout used for local roads in urban areas. The size of the roundabout and associated landscaping will ensure that the layout of the roundabout will not be obvious to drivers as they approach the roundabout from the north. The perception that the proposed roundabout geometry will discourage tourist traffic from entering the Busselton town centre is therefore not supported.

8.3 A pedestrian underpass or overpass in the vicinity of the Busselton Bypass Causeway Road roundabout should be inherent in the design of the road. A dual use pathway should be combined with and redesigned to form a trail on a route to be identified within road, rail or other reserves with the intention that it is attractive to recreational walkers, cyclists and tourists; and that at grade crossings, design incorporates lighting, marking, handrails and signing.

As stated in the response to 1.6, the provision of a pedestrian underpass or overpass in the vicinity of the Causeway Road intersection is unlikely to be warranted in the short to medium term. An opportunity exists to provide for a dual use path under the proposed Vasse River bridge which could be linked to the local dual use path network to provide for the free movement of pedestrians and cyclists wishing to cross the Bypass. The feasibility of this opportunity will be fully investigated in consultation with the Busselton Shire Council. Refer to Section 6.7.4 and Commitment 7.1.8 of the CER.

8.4 Traffic calming measures along Queen Elizabeth Avenue should be included in the design to act as a discouragement to through traffic and to mitigate against the effects of same. Main Roads Western Australia should commit to assisting the Shire of Busselton with the cost of these works that have arisen purely as a result of the revised Busselton Bypass proposals.

Traffic calming measures in the form of roundabouts were proposed along Queen Elizabeth prior to the commencement of the Study and their requirement is not related to the Bypass. The funding of these improvements is quite clearly Busselton Shire Councils responsibility however Main Roads is prepared to provide technical advice if this is required.

8.5 The road will restrict safe access to Busselton's two largest educational institutions and two primary schools, from the major population growth areas in the south. Indications of underpasses seem unrealistic in view of the height of the water table in this area, and pumps are fallible. An overpass will be required for year round safe access.

Refer to Section 6.7.4 and Commitment 7.1.8 of the CER.

8.6 The upgrading of Fairway Drive will cause problems for school children, pedestrians and cyclists as a significant increase in traffic is expected. It would be preferable to leave Queen Elizabeth Avenue connected to the proposed Bypass, which would negate the need to use Fairway Drive as an access. Traffic lights are already in place at Queen Elizabeth Avenue and the bridge on this road has recently been upgraded. The main problem of this road is associated with the schools access.

Queen Elizabeth Avenue is to be connected to the Bypass, however the Fairway Drive link is still required. Refer to Section 5.2.4 of the CER.

9. Other matters

9.1 No commitments have been made by the Main Roads Western Australia to ensure that they meet the Water Authority of Western Australia's requirements to seek approval for crossings of Authority controlled water courses and facilities. It is requested that the following clauses are inserted into the Proponents Commitments section.

Pre-construction: Design of bridging or culvert structures at the Vasse River Diversion Drain, Vasse River Diversion Sub A Drain and Buayanyup Drain (future extension of Bypass west of Vasse) is to be approved through the Water Authority of Western Australia.

Construction: Construction in the vicinity of Queen Elizabeth Avenue shall be carried out in a manner to ensure no damage or disruption to the Water Authority underground sewerage pressure main. The existing main is of fibro asbestos construction and will potentially require replacement over the affected length. A future main is proposed at this crossing, and if construction of the main has not been carried out by the time of works being commenced on the Bypass, provisional sleaving should be provided to avoid future disruption to the road.

Consultation with WAWA and other service utilities and compliance with relevant Statutory requirements is part of Main Roads standard practice and will be undertaken during the investigation and design stage. It should also be noted that the CER is primarily being prepared to address environmental issues. There is therefore no requirement nor is it appropriate for conditions to be applied by the EPA to cover WAWA's requirements.

9.2 No commitment is made to indicate the source of water for dust suppression. Should groundwater be used for this purpose, a licence for groundwater extraction will be required. Such licence must be obtained from the Water Authority through the Water Resources Section, South West Region.

As for response to 9.1.

9.3 Commitment 6.7.5 Land acquisition does not adequately imply the need for Licensing of construction of new groundwater facilities where required to compensate landowners. Any such facility must be licensed through the Water Authority of Western Australia Water Resources Section, South West Region.

As for response to 9.1.

9.4 The document refers to several current and proposed land use zonings as defined in the Town Planning Scheme. The plan refers to Figure 6.2. This plan depicts the proposed land use zonings in the new District Town Planning Scheme which is yet to be formally assessed for advertising. There is no reference to the current Town Planning Scheme No 5 where the bulk of the land in question is zoned Rural. Figure 6.2 is therefore incorrect and may mislead property owners into thinking that their land is zoned for a higher use. This may cause problems especially in terms of compensation calculations.

As there is currently no timetable for the construction of the Bypass the proposed Busselton Town Planning Scheme was considered to be more appropriate in providing details of future landuse adjacent to the Bypass than the current TPS No.5. Main Roads acknowledges that the status of the draft TPS 1993 as shown at Figure 6.2 should have been clearly indicated in the CER.

9.5 A number of submitters indicated that they had provided detailed submissions to the consultants over the past year, but they had received no response, nor had their submissions even been acknowledged.

Submissions that were forwarded to Main Roads in Bunbury were in most cases acknowledged in writing. This was not the case in submissions to the consultants, Halpern Glick Maunsell, and Main Road recognises that these submissions should have been acknowledged also. In future Main Roads will ensure that all submissions will be acknowledged. Individual issues that were raised in these submissions were not answered directly, although they were considered in the preparation in the CER, while the response to these issues are included in the completed CER.

Table: Summary table indicating source and number of submissions received.

Sector of the community	Number of submissions
General public	44
Community groups	8
State and Local Government	5
TOTAL	67

PROPONENT'S COMMITMENTS

BUNBURY TO AUGUSTA ROAD - BUSSELTON BYPASS (755)

MAIN ROADS WESTERN AUSTRALIA

Pre-construction

1. Road design and landscaping will aim to reduce the visual impact of the Bypass on the local environment. This objective will be addressed during the detailed design phase of the Bypass through the preparation of a Rehabilitation and Landscaping Plan which will also detail the management of topsoil to control the spread of weeds within the road reserve. The Plan will be prepared to the satisfaction of the Department of Environmental Protection.

2. A Dieback Hygiene Management Plan to prevent the spread of dieback during the construction of the Bypass, will be prepared to the satisfaction of CALM.

3. A study to determine the presence and impact of the Bypass on Western Ringtail Possum populations will be carried out. If appropriate, Main Roads will prepare a Management Plan to reduce impacts to the satisfaction of CALM.

4. The Community Consultation Programme will be continued during the detailed design phase of the Bypass to consider improvements to the Bypass design.

5. The Bypass will be designed such that a L_{10} (18 hour) traffic noise level of 63dB(A) is predicted not to exceed at any residence adjacent to the Bypass by the inclusion of appropriate noise attenuation features to the satisfaction of the Department of Environmental Protection.

6. A review will be undertaken of fencing along the road reserve during the detailed design phase to ensure adequate control is provided for movements of pedestrians and cyclists, of stock where the adjacent land is used for grazing and to reduce potential road kills of fauna. This review will be undertaken in consultation with CALM, the Shire of Busselton and affected landowners to the satisfaction of the Department of Environmental Protection.

7. The need for the construction of fauna tunnels in the vicinity of the Broadwater will be considered during the detailed design phase. If required by CALM fauna tunnels will be incorporated into the design and built to the satisfaction of CALM.

8. The widening of Fairway Drive will be designed to require the least amount of widening as possible of the existing embankment across the New River and to maintain or improve the existing east-west surface water flow. Drainage from Fairway Drive will not directly enter the New River and will be directed to a retention basin/s designed, landscaped and vegetated to maintain and supplement the existing environment to the satisfaction of the Department of Environmental Protection.

9. A Fire Management Plan will be prepared to the satisfaction of CALM.

Construction

10. Vegetation clearing during road construction will aim at retaining as much vegetation as possible within the road reserve and to protect vegetation from damage by construction equipment to the satisfaction of the Department of Environmental Protection.

11. Prevention of the spread of dieback will be achieved through the implementation of the Dieback Hygiene Management Plan.

12. The Rehabilitation and Landscaping Plan will be implemented.

13. The impact of noise and vibration will be minimised during construction, and obligations under the Noise Abatement Act 1972 - 1981 and the Noise Abatement (Neighbourhood Nuisance) Regulations 1979 will be monitored to the satisfaction of the Department of Environmental Protection.

14. The impact of dust on adjacent properties during road construction will be controlled to the satisfaction of the Department of Environmental Protection.

15. The Fire Management Plan will be implemented.

16. Suitable signs will be erected by Main Roads warning motorists of likely fauna crossings prior to the opening of the Bypass to traffic.

Post-construction

17. The rehabilitation of the road verges and median will be monitored and remedial action initiated where necessary.

18. Remedial action will be taken where any scour and erosion occurs in line with Main Roads maintenance procedures.

19. Swale drains and nutrient retention basins will be maintained to ensure that sediment loading and weed growth is cleared and nutrient retention capacity sustained.