

Proposed Kwinana Freeway Extension  
(Thomas Road to MRS Boundary)

State Planning Commission

Report and Recommendations  
of the  
Environmental Protection Authority

Environmental Protection Authority  
Perth, Western Australia  
Bulletin 365 December 1988

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ISSN 1030 - 0120

ISBN 0 7309 1901 3

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# 1. Summary and Recommendations

The State Planning Commission (SPC) has proposed an amendment to the Metropolitan Region Scheme (MRS) to create the reserve for the Kwinana Freeway extension from Thomas Road in the Town of Kwinana, to the southern boundary of the Metropolitan Region, to the north-east of Mandurah.

To assist in determining the alignment of the freeway reserve, a Highway Location Report was prepared by the Main Roads Department (MRD) for the SPC. All the information and reasoning that led the SPC to adopt the preferred alignment is outlined in the Planning and Highway Location Report. The report examines the planning, social, engineering, traffic and certain environmental aspects of the alternative routes. The SPC and MRD consulted with the Environmental Protection Authority (EPA) regarding the extension of the freeway reserve and, in view of the anticipated environmental impacts, the Authority called for a Public Environmental Report (PER) for the proposal. The PER examines the environmental impacts of the alternative routes in more detail.

The two reports were released jointly for public comment for a period of 90 days, concluding on 7 August, 1987. Since that time liaison between SPC and the EPA and further studies on a variety of issues have been occurring. The EPA has assessed the proposal based on the information provided in the PER and the submissions received, and the additional information obtained through liaison with the SPC.

The principal environmental issues arising from the proposal relate to the protection of wetlands and other areas of conservation value, and noise.

## Recommendation 1

The Environmental Protection Authority concludes that the alignment of the proposed freeway reserve is environmentally acceptable and recommends that its inclusion in the Metropolitan Region Scheme could proceed subject to the commitments made by the proponent and the Authority's recommendations in this Assessment Report.

## Recommendation 2

The Environmental Protection Authority recommends that as a high priority, and prior to the construction of the freeway, the State Planning Commission should implement the Beeliar-Serpentine Metropolitan Park concept in such a way that will allow the freeway extension to be integrated with the surrounding Park.

## Recommendation 3

The Environmental Protection Authority recommends that, prior to construction of the freeway, the Main Roads Department should submit details of the detailed route alignment, construction, rehabilitation and on-going management programmes for the route in areas adjacent to wetlands and other areas of conservation value, to the Authority. Implementation should not proceed unless the Authority has found these to be environmentally acceptable. The environmental objective in designing the route and the programmes should be to ensure that the impacts of construction on wetlands and other areas of conservation value are minimised, and that the functions of any wetland areas that are destroyed are re-established elsewhere.

## Recommendation 4

The Environmental Protection Authority recommends that the State Planning Commission prepare a policy which addresses land use adjacent to major highways and roads, relating particularly to traffic noise. Preparation of this policy should be a high priority and should be undertaken in conjunction with the Main Roads Department, the Environmental Protection Authority, and the Department of Transport.

## 2. Proposal

The proposal entails defining a controlled access highway reservation for the Perth - Bunbury (Kwinana Freeway) route from Thomas Road in the Town of Kwinana, to the southern boundary of the Metropolitan Region, to the north-east of Mandurah and including this reservation in the MRS.

The proposed freeway reserve extension can be broadly divided into three sections. These are:

- north of Mortimer Road (the Northern Section);
- between Mortimer Road and Stakehill Road (the Central Section); and
- south of Stakehill Road (the Southern Section).

The SPC has contended that the Northern and Southern Sections of the route are pre-determined due to a number of constraints, these being:

### **The Northern Section -**

- the starting point at Thomas Road is fixed by the existing MRS alignment north of Thomas Road;
- to the west of the route there is an existing development along Johnson Road;
- to the east there is a series of wetlands; and
- a State Energy Commission of Western Australia 330kV transmission line.

### **The Southern Section -**

- a minimum clearance requirement from the Explosives Depot at Baldivis which fixes the western limit of the freeway;
- the Serpentine River and associated wetlands form an eastern boundary; and
- land has been set aside for the freeway as part of existing and proposed subdivision in the Shire of Mandurah.

The Authority recognises that these constraints preclude any realistic alternatives for the alignment of the Northern and Southern sections of the freeway reserve. While this is not desirable, there are no over-riding environmental considerations which would render the proposed alignment of the Northern and Southern sections of the freeway reserve unacceptable. Therefore, the Authority is prepared to accept these sections of the overall reserve and in so doing, acknowledges that, to a degree, options for the alignment of the Central section will also be constrained.

The PER puts forward a number of options for the Central Section. These are outlined in Figure 1. Some of these options were developed by the MRD, some resulted from suggestions by local residents and one was suggested by Rockingham Shire Council. The SPC examined all options and following consideration of planning, engineering, environmental and economic constraints, adopted a preferred option.

Following preliminary consideration of the various route options for the Central Section, the EPA concluded that none of the proposed routes is environmentally unacceptable. Although some may have less environmental impact than others, the Authority recognises that factors other than environmental issues need to be taken into consideration when choosing a freeway alignment. The planning process, taking into consideration all the constraints, identified a preferred option and the EPA has therefore concentrated on the environmental management issues arising from the preferred route.

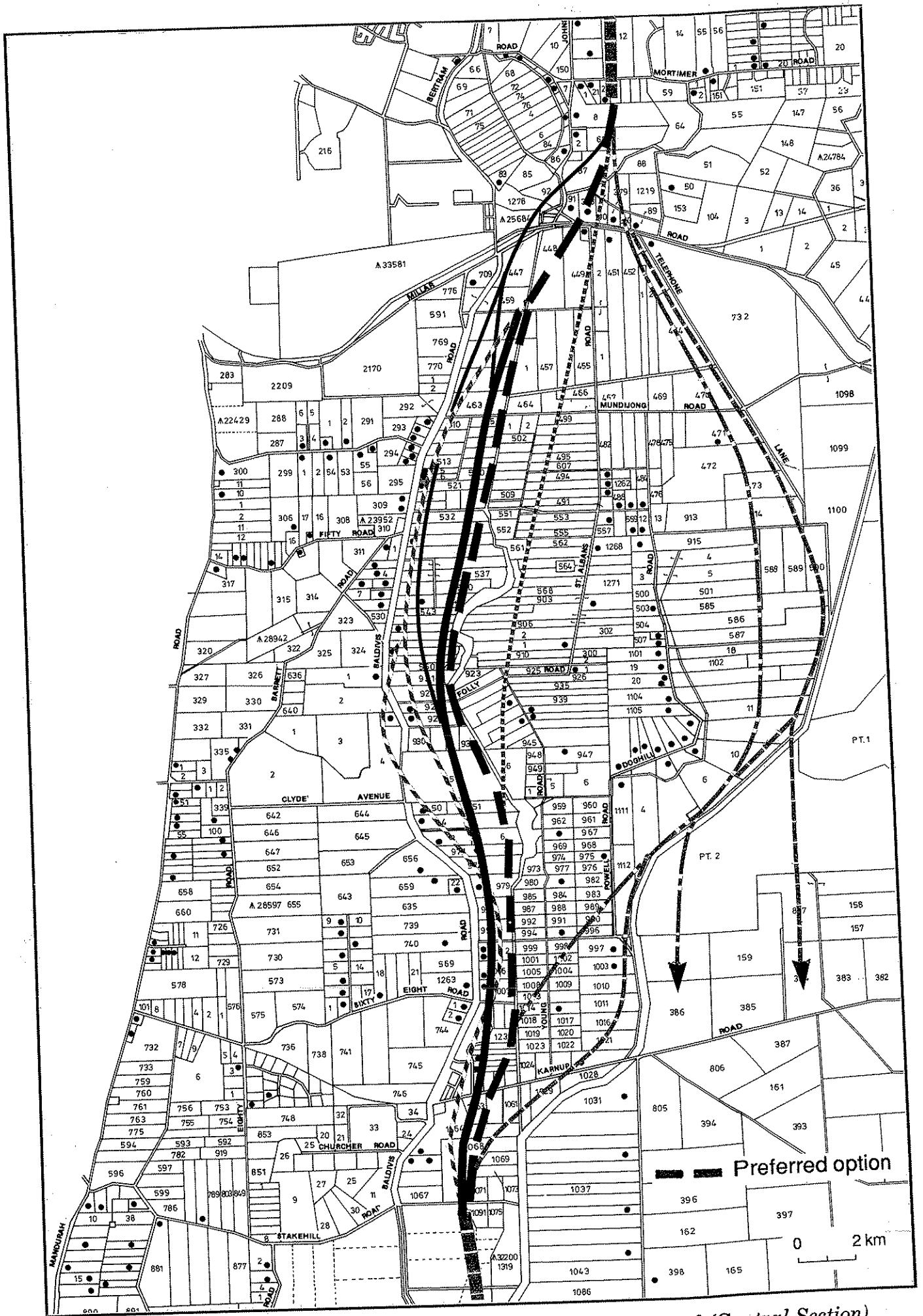


Figure 1 Routes investigated between Mortimer Road and Stakehill Road (Central Section)

### **3. Summary of Public Submissions**

Submissions on the proposed freeway reservation were made either directly to the EPA, or to the SPC through the Metropolitan Region Scheme amendment process. The SPC forwarded to the EPA copies of all submissions that discussed environmental matters. In total, eight submissions raising environmental issues were received.

The following issues were raised in submissions received:

- the effects of the proposed freeway on wetlands;
- the reservation of the land between the proposed freeway and the Peel Drainage Reserve for Parks and Recreation under the MRS;
- the severance effects of the proposed route;
- potential noise impacts from the proposed freeway;
- visual impact of the road;
- concern at the extent of environmental assessment of the affected area; and
- the possibility of spillages of hazardous chemicals reaching the waterways, and the consequent need for appropriate management measures (including drainage design) to be instituted.

The Authority has taken these issues into account during its assessment of the proposal.

### **4. Environmental Assessment and Management**

The PER submits that alignment options for the Central Section of the route were constrained by various environmental factors. These factors are outlined below:

#### **4.1 Areas of Potential Conservation Value**

These areas include wetlands, waterways and sections of significant vegetation. The PER briefly considers these issues for each of the alignment options and identifies areas of conflict. Following assessment of the PER and submissions, the EPA decided that further information on the affected wetlands, and the potential effects of the proposed route on the wetlands, was required to undertake its assessment of the proposal.

As many of the wetlands in Western Australia have been altered irreversibly by development of land for agricultural, pastoral and urban uses, there has been increasing recognition of the value of remaining wetlands. Disturbance of sensitive environments, particularly biologically productive areas such as wetlands, should be avoided where viable alternatives exist.

The wetlands identified which may be affected by the proposed freeway reserve are:

- wetland south of Mortimer Road;
- wetlands south of Millar Road;
- Folly Pool;
- Maramanup Pool;
- wetlands south of Stakehill Road; and
- Guarnarnup Pool.

The EPA asked the SPC to provide further information on these wetlands and the potential impact of the proposal on them. The Commission provided this information to the EPA in September 1988 following further study of the wetland areas. This information is included in Appendix 1 of this report.



The SPC indicates (see Appendix 1) that the juxtaposition of the wetlands and the freeway creates an opportunity to mitigate present and future impacts by the provision of an open space system encompassing both the freeway and the Serpentine wetlands. The November 1987 report "Planning for the Future of the Perth Metropolitan Region" recommended the progressive establishment of a continuous regional open space system for conserving the flora and fauna environments of the region (the Beeliar-Serpentine Metropolitan Park).

The Commission has stated that the comprehensive studies required to develop the regional open space system will be carried out at a later date. The EPA supports this concept and believes that to ensure the protection of the remaining wetlands in the area, high priority should be given to the necessary studies and the implementation of the regional open space concept. The SPC's advice indicates that since 1983, 350 hectares of densely vegetated buffer zone and wetland vegetation has been cleared from Guarnarnup Pool. It is therefore extremely important to ensure that the remaining wetlands in the area are protected.

The Authority accepts that the Beeliar-Serpentine Metropolitan Park would provide an appropriate opportunity to secure the protection of the remaining wetland areas. Accordingly, the Authority has made the following recommendation:

### **Recommendation 2**

***The Environmental Protection Authority recommends that as a high priority, and prior to the construction of the freeway, the State Planning Commission should implement the Beeliar-Serpentine Metropolitan Park concept in such a way that will allow the freeway extension to be integrated with the surrounding Park.***

Having considered the additional information provided by the SPC on the affected wetlands, the EPA is satisfied that, in selecting the preferred alignment option, the Commission has attempted to minimise the impacts of the route given the existing constraints. Additionally, the SPC submits that, as construction is unlikely for 15-20 years, design, rehabilitation and management needs cannot be assessed in detail at this time. In accepting this contention, the Authority believes that, during the design phase, and in developing rehabilitation and management programmes for the route, the objective should be to ensure that there is no net loss of wetlands. That is, the aim should be to minimise impacts on the wetlands and any unavoidable loss of wetland should be compensated by replacement of comparable wetland area and functions. On this basis, the Authority makes the following recommendation:

### **Recommendation 3**

***The Environmental Protection Authority recommends that, prior to construction of the freeway, the Main Roads Department should submit details of the detailed route alignment, construction, rehabilitation and ongoing management programmes for the route in areas adjacent to wetlands and other areas of conservation value, to the Authority. Implementation should not proceed unless the Authority has found these to be environmentally acceptable. The environmental objective in designing the route and the programmes should be to ensure the impacts of construction on wetlands and other areas of conservation value are minimised, and that the functions of any wetland areas that are destroyed are re-established elsewhere.***

## **4.2 Noise**

The PER assesses the noise impact of the proposed freeway on existing residences in the affected area. The current landuse fringing the preferred route is predominantly rural. Future developments in the area will be varied but are expected to include residential, industrial and special rural. It is therefore difficult to assess the noise impact of the proposed route on the surrounding environment, as land use will change in the future. The PER therefore assessed only the noise impact on existing residences and it was concluded that this would be slight.

The criteria used for the assessment of noise impact are drawn from the MRD's "Interim Statement on Traffic Noise Policy and Practice, November 1985." This policy states in part that "Traffic noise predictions shall be carried out for all new road proposals. Where the land adjacent to the road reserve is proposed to be urban the level of traffic noise that is considered to be of significant effect is where the L10 (18 hour) is equal to or exceeds 68 dB(A)." (Note: L10 (18 hour) is a standard measure of traffic noise).

However, the EPA considers that a noise design standard of 68 dB(A) L10 (18 hour) merits review, particularly in rural and semi-rural areas. Australian research suggests that the relationship between the L10 (18 hour) level and the proportion of the affected population that will actually be highly annoyed by traffic noise is as follows:

$$\% \text{ Highly Annoyed} = 1.19 (\text{L10 18 hour level}) - 56.8 *$$

Satisfying every member of the community would require the adoption of very stringent standards that might not be practicable. Thus, an appropriate criterion relating to the proportion of the affected population that would remain annoyed needs to be established. The National Acoustics Laboratories suggests this should be about 10%. For an L10 (18 hour) level of 68 dB(A) the above relationship indicates 24% of people will be highly annoyed. To satisfy the 10% criterion, the above relationship indicates a noise level of 56 dB(A) L10 (18 hour) would have to be achieved.

The Authority believes that the noise implications of the proposed route, including those arising from the adoption of the lower noise level standard, should be considered in an overall land use planning context. That is, land use should be planned to achieve acceptable noise levels in any residential areas adjoining the proposed freeway.

The SPC has indicated its belief that, if consideration is to be given to reducing traffic noise levels adjacent to major roads to below 68 dB(A), such should occur through a policy review and not within the route selection process for the Kwinana Freeway extension. The EPA agrees that, in this case, noise impact need not be a determinant of route selection as there are few existing residences affected by the proposed freeway. However, it should be a determinant of future development in the area affected by the route. The Authority therefore believes that a policy addressing land use adjacent to major highways and roads, relating particularly to traffic noise, should be developed. The SPC should be responsible for the development of this policy in consultation with MRD, EPA and Department of Transport. The Authority therefore recommends as follows:

#### **Recommendation 4**

***The Environmental Protection Authority recommends that the State Planning Commission prepare a policy which addresses land use adjacent to major highways and roads, relating particularly to traffic noise. Preparation of this policy should be a high priority and should be undertaken in conjunction with the Main Roads Department, Environmental Protection Authority, and the Department of Transport.***

#### **4.3 Visual Impact of the Proposed Road**

The PER examines the extent to which the alternative route options would blend into the landscape based on the prevailing landform and vegetation. Most of the route options would be visually prominent, although the alignments closer to Baldivis Road would have less visual impact. The Authority regards the visual impact of the preferred route as environmentally acceptable, although it is not the least prominent of the options considered.

\*Source: Brown A.L., 1978: "Traffic Noise Annoyance Along Urban Roadways: Report on a Survey in Brisbane, Sydney and Melbourne" Australian Road Research Board Internal Report No. AIR 206-6.

#### **4.4 Aboriginal Sites**

An examination of the route for aboriginal cultural material has been carried out by the Main Roads Department.

#### **4.5 Fog**

There has been some public concern about the possibility of fog interfering with visibility on the freeway. This problem was investigated with the assistance of the Bureau of Meteorology, and although it was acknowledged that fog may occasionally occur along the route, it was not regarded as a factor which should influence the location of the road.

#### **4.6 Severance**

The PER states that the severance aspects of the proposed routes were carefully considered within the route selection process. All route options resulted in farm severance. The preferred route was favoured by the local public although it does cause some farm severance problems. This is an issue to be addressed through the planning process.

### **5. Public Transport**

The Authority believes that there are significant environmental benefits to be derived from an effective public transport system and, in addition, that it would be desirable if decisions regarding the regional (and inter-regional) road network also addressed future public transportation needs.

The Kwinana Freeway extension would be part of a major inter-regional link between Perth and Bunbury via Mandurah and as such, the Authority sees merit in addressing public transport requirements in conjunction with the present proposal.

The Authority acknowledges the recent upgrading of the passenger rail service to Bunbury and recognises that this may adequately cater for mass transport needs between the Perth and Bunbury regions. Nevertheless, a rapid mass transport system linking the south-western metropolitan area via Mandurah to Bunbury may be a desirable service in the future. Accordingly, it could be appropriate for the present planning initiative relating to extension of the Kwinana Freeway to also examine the provision for such a service.

While the Authority sees public transport as an important issue, the Authority recognises that it is essentially a planning matter rather than an environmental issue. Therefore, the Authority has not made any recommendation relating to public transport but sees it as desirable that the relevant planning authorities should address the issues raised here.

### **6. Conclusions**

The Environmental Protection Authority has assessed the State Planning Commission's proposal to create a reserve for the Kwinana Freeway extension from Thomas Road in the Town of Kwinana, to the southern boundary of the Metropolitan Region, to the north-east of Mandurah. The Authority concludes that the proposal is environmentally acceptable subject to the commitments made by the proponent (see Appendix 2) and the recommendations in this report. The Authority therefore recommends:

#### **Recommendation 1**

***The Environmental Protection Authority concludes that the alignment of the proposed freeway reserve is environmentally acceptable and recommends that its inclusion in the Metropolitan Region Scheme could proceed subject to the commitments made by the proponent and the Authority's recommendations in this Assessment Report.***

APPENDIX A

State Planning Commission's response to the Environmental Protection Authority's request for additional information.



**STATE PLANNING COMMISSION**

GOVERNMENT OF WESTERN AUSTRALIA

YOUR REF: 809-2-1-15  
 OUR REF:  
 ENQUIRIES: Mr P Woodward:jd

22 ST. GEORGES TERRACE,  
 PERTH, WESTERN AUSTRALIA 6000  
 TEL: (09) 425 7333  
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September 2, 1988

Chairman  
 Environmental Protection Authority  
 1 Mount Street  
 PERTH WA 6000

ENVIRONMENTAL PROTECTION AUTHORITY	
16 SEP 1988	
File No. 55/73	Initials G.H.S

**PROPOSED MRS AMENDMENT 645/33  
 KWINANA FREEWAY EXTENSION  
 THOMAS ROAD TO MRS BOUNDARY**

I refer to your letter of February 24, 1988 and request that further consideration be given to a number of matters. These are addressed in the order in which they were raised.

The Commission's response is based on advice received from MRD. Sections 2 and 3, relating to Wetlands and Rare Flora and Fauna respectively, incorporate comments arising from officer to officer discussions between Mr Charlie Nicholson from your Authority and the MRD Landscape Architect, Ms Gabby Corbett.

**1. NOISE**

The Main Roads Department's policy is to provide noise attenuation measures if the level of noise outside residences would otherwise exceed 68 dB(A).

If it was found necessary to contain traffic noise above 56 dB(A) within the freeway reserve then an additional width of approximately 200m either side of the presently proposed 100m reservation would be required. The exact distance would depend upon factors such as the amount of traffic using the freeway at the time and the road surface materials. However, 200m may be taken as a conceptual distance.

It is neither socially nor economically acceptable to have a freeway reservation 500m wide, and consideration of a 56 dB(A) noise limit would have considerable land-use planning as well as road planning implications.

*Correspondence.*

020942 ✓

Land use planning adjacent to this section of Kwinana Freeway has been assessed and the route chosen to minimise the overall impact. There are only 13 houses including three houses in the Amarillo subdivision at the south-end of the freeway, which would be subject to noise levels in excess of 56 dB(A), and all currently planned future urban areas are outside the limit of measurable noise levels from the future freeway. In addition, zoning adjacent to the freeway reserve is either rural or special use (explosives depot), and is expected to remain so. (See attached figures 1 and 2 which are copies of Plans 8 and 9 in the Planning and Highway Location Report).

Adoption of a noise limit of 56 dB(A) would have a very significant effect on the development of future urban land adjacent to distributor roads as land within about 100m of most of these roads would be affected by noise levels of 56 dB(A) or more. The use of 56 dB(A) would thus appear to have major policy implications for any future urban area to which it was applied. It would severely limit the area available for urban residential use, and there is serious doubt that society would be willing to meet the high costs associated with planning for such a low noise level.

Both the Commission and MRD, therefore, are of the opinion that if further consideration is to be given to reducing traffic noise levels adjacent to major roads below the presently accepted 68 dB(A), it must be done as a policy review and not within the context of route planning for the Kwinana Freeway.

## **2. WETLANDS**

Both the Commission and the Main Roads Department accept that increasing recognition must be given to conserving existing wetlands whilst balancing competing environmental demands. The need to retain existing houses and businesses, minimise the severance of adjacent farmland, and reduce the known impacts on adjacent wetlands, must all be considered. An assessment of some of the wetlands shown in Figure 3 follows:

### **2.1 Wetland at Mortimer Road**

A preliminary assessment of the possible impact of the freeway on the wetlands in the vicinity of Mortimer Road was carried out in 1982 in consultation with MRD staff and Dr J Arnold of EPA. These wetlands are part of the extensive Bassendean system of sandplain and low dunes with occasional swamps.

As a result of this inspection the alignment was moved further west to clear the wetland north of Mortimer Road. It was not reasonable to completely avoid the wetland south of Mortimer Road, as an existing farmhouse and chicken farm would have to be demolished.

It is recognised that there will be some loss of buffer zone and wetland vegetation and associated faunal habitats at the western end of this wetland. These impacts cannot be mitigated at this particular location. The flow of water through the wetland is in a south easterly direction, and will be maintained after road construction by culverting or other appropriate methods.

## **2.2 Serpentine River System Wetlands**

The wetland south of Millar Road, Folly Pool, Maramanup Pool, and the wetland south of Stakehill Road, are all part of the Serpentine River System which is a flat plain with fine textured, poorly drained soils. It is likely that all these wetlands are connected, and that at the regional scale the whole system could be considered one wetland.

The Serpentine System is relatively small, and has been extensively cleared for farming. The drainage system, which consisted of the Serpentine River and associated river pools and wetlands, has been extensively altered to provide flood mitigation for the farmers.

Construction of the freeway will cause the loss of some Eucalyptus Rudis south of Millar Road. The understorey has already been removed by grazing. There will be no loss of vegetation at Folly and Maramanup Pools.

A preliminary assessment of the wetland south of Stakehill Road was carried out by Mr Bill Carr of DCE and Mr Loudon and Ms Corbett of MRD. After inspection the alignment was moved to as far to the west of the wetland as possible based on a Department of Mines minimum 500 metres safety clearance requirement. Construction of this explosives depot, which includes private residences and a road system, represents a substantial capital investment, conservatively estimated at \$5m. It is not considered practicable to relocate it.

The predicted impacts of the alignment in this area are loss of buffer zone and wetland heath vegetation and subsequent loss of faunal habitat, and a reduction of the wetland area through filling. To put these impacts in context, of a total wetland area of 102 ha, only 13 ha, part of which is already cleared, will be affected by the Freeway.

## **2.3 Beenyup Pool**

The location of Beenyup Pool is unclear on the System 6 maps. On the basis of soil type it is more likely to be part of the Herdsman than the Serpentine system. It is unlikely that the freeway will have any impact on Beenyup Pool which is approximately 400 metres from the proposed alignment with a substantial woodland and buffer between.

## 2.4 Guarnarnup Pool

Guarnarnup Pool is part of the Herdsman System, which consists of an extensive system of peaty swamps associated with the Bassendean and Karrakatta systems. The freeway reserve is located in the adjacent Jarrah Banksia woodland, and does not impinge on this wetland system, except for a small area of less than 3 ha, which has already been cleared. To put this impact on the wetland system in context, an assessment of aerial photography shows that approximately 350 ha of densely vegetated buffer zone and wetland vegetation has been cleared from this wetland since 1983.

## 2.5 Drainage Impacts

South of Millar Road the effect of road embankments on the soil surface drainage are likely to be a localised lowering of the water table on the downstream side, and a localised raising of the water table on the upstream side, which may lead to some increased ponding in winter months. Maintenance of groundwater flow, at a level suitable for sustaining the Serpentine wetlands to the east, will be determined by monitoring at a time closer to construction, and by the incorporation of suitable drainage solutions into the road design.

The Main Roads Department's design principles for surface drainage are:

- (a) to minimise interruptions to the surface flow,
- (b) to keep the road base dry, and
- (c) to return surface runoff to the groundwater.

Details of drainage requirements would depend partly on the type of construction material used (sand or clay) and the type of pollutants likely in the surface runoff. Sedimentation basins lined with limestone could be used to filter pollutants if considered necessary.

## 2.6 Summary

The impact of the Freeway alignment on wetlands in the Baldivis area is not considered significant in a regional sense, and it would be more appropriate for localised impacts to be considered closer to the time of construction. As construction is unlikely for 15-20 years this would allow land use changes and up-to-date information regarding flora and fauna to be incorporated into effective design, rehabilitation and management plans for affected areas.



### **3. RARE AND ENDANGERED SPECIES AND AREAS WORTHY OF PRESERVATION**

During route selection the need to carry out a rare flora and fauna survey was considered to be unnecessary because of the general degradation of the area. Most of the vegetation has been cleared, or at least the understory grazed. The largest area of uncleared land is Banksia-Jarraah woodland adjacent to Guarnarnup Pool. This is likely to remain in private ownership until 3-5 years prior to construction and because of increased human activity, the likelihood of retaining this vegetation seems low. If rare flora were to be found on this section of the freeway, its preservation in a long narrow strip surrounded by cleared land and roadworks would be extremely difficult.

It is recognised that there will be some impacts on wetlands, and that some of these impacts cannot be mitigated. It is also recognised that in years to come these wetlands will be of increasing value, both as a conservation and a regional resource. The location of the wetlands in relation to the freeway, however, is seen not as a constraint, but as an opportunity to mitigate present and future impacts by the provision of an open space system comprising the freeway and the Serpentine Wetlands system.

The November 1987 report of the review group "Planning for the Future of the Perth Metropolitan Region" recommended the progressive establishment of a continuous regional open space system for conserving the flora and fauna environments of the region.

The Commission is taking all possible steps within the limits of available resources to achieve this objective. It considers, however, that the freeway alignment should be established first, and that the more comprehensive studies required to develop a management plan for the Serpentine wetlands be carried out at a later date.

### **CONCLUSIONS**

I regret the considerable amount of time which has elapsed in preparing this response to the concerns raised in your 24 February 1988 letter.

As a result of public submissions on the gazetted alignment a number of modifications also had to be assessed. It was the need to complete this work together with consideration of the policy issues raised in your letter that has led to the considerable delay.

The modifications, which are essentially quite minor and do not alter any of the environmental issues involved, will be referred to the Commission for adoption in September, but details can be supplied to you in the interim if required.

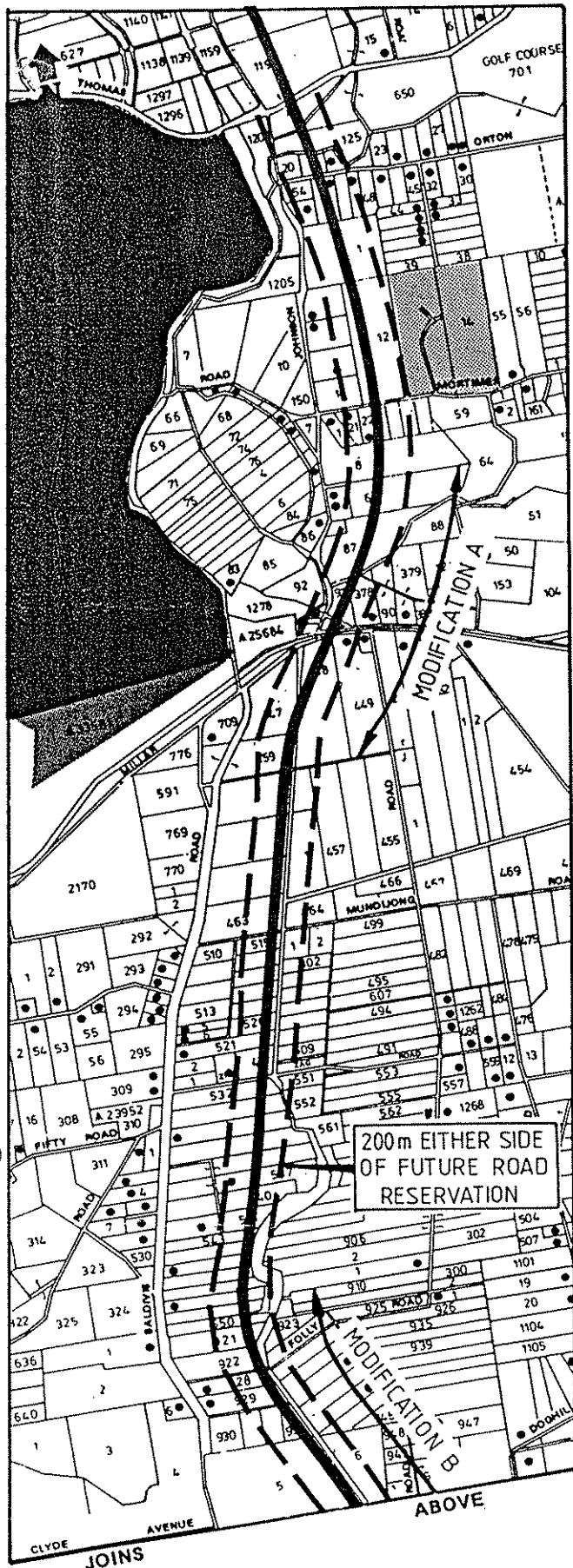
Due to the 15 months that has elapsed since gazettal of the amendment and associated PER for public submissions the Commission is now anxious to complete the statutory processes as quickly as possible notwithstanding that it will be mid 1989 before Parliament can ratify the amendment. Your authority's cooperation in giving high priority to the preparation of your assessment report will therefore be appreciated.

Officers of the Commission and MRD are, of course, available to address the Environmental Protection Authority on this matter, and I will leave it to you to make the necessary arrangements if required.




Yours faithfully

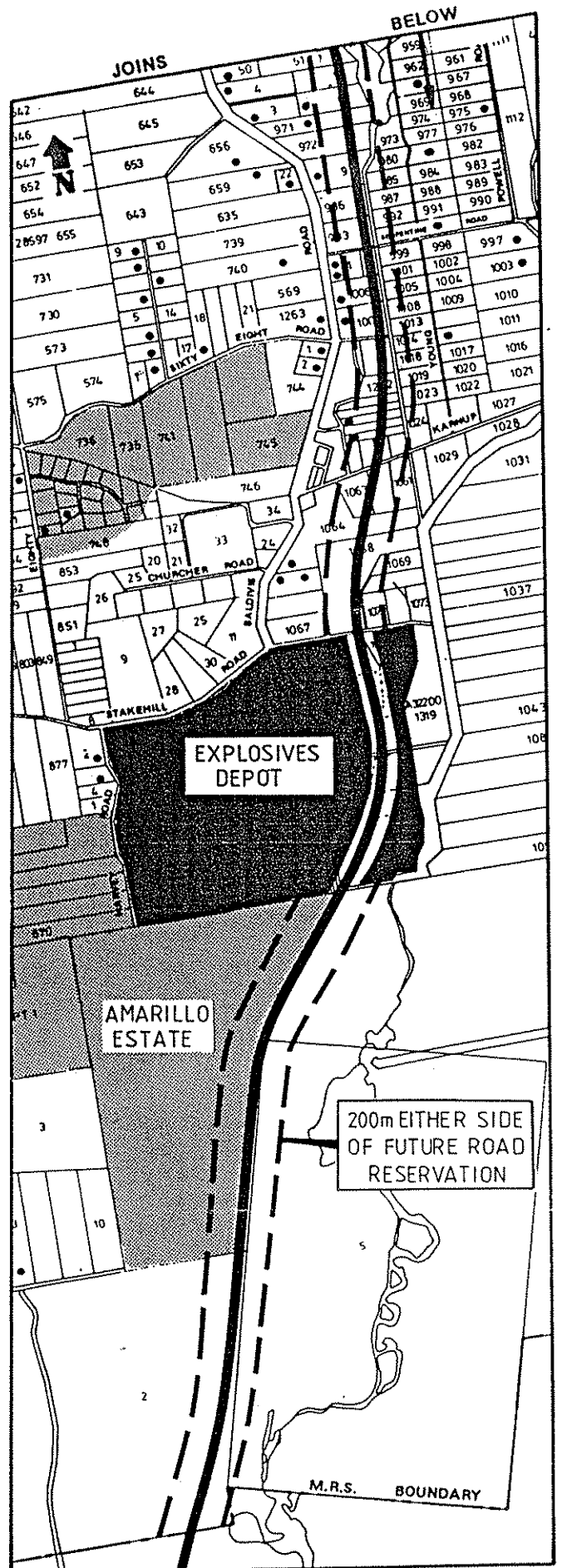


*for* W A MCKENZIE  
CHAIRMAN




EXISTING ZONES AND DEVELOPMENT

-  URBAN, INDUSTRIAL AND SPECIAL USES
-  URBAN DEFERRED
-  SPECIAL RURAL



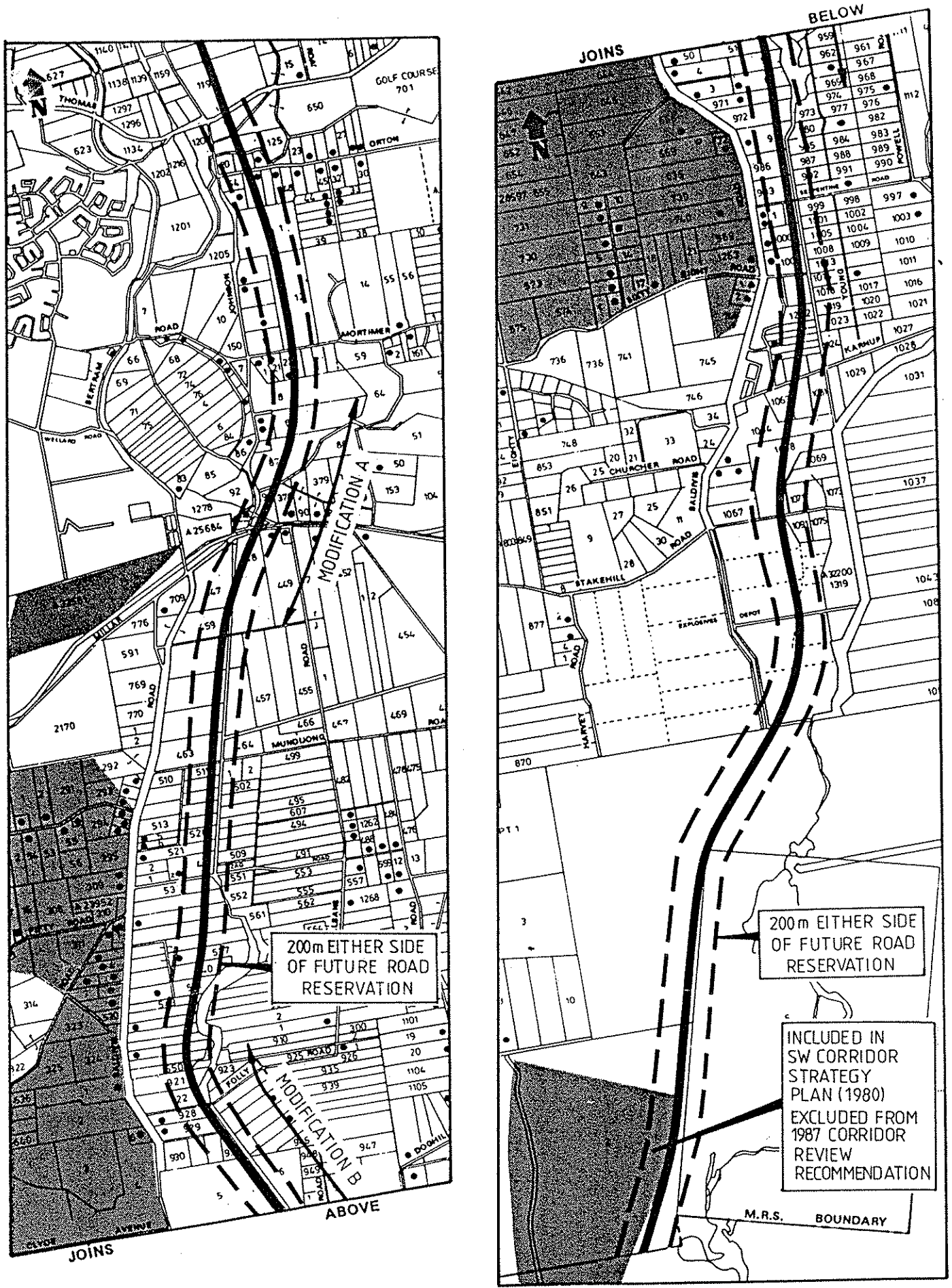
LEGEND

-  HOUSES



NOTE: ALL ROUTES OTHER THAN GREEN DASHED ROUTE HAVE BEEN DELETED FROM THIS PLAN  
PERTH - BUNBURY (KWINANA FREEWAY) ROUTE

FIG. 1



**FUTURE ZONING**

- PROPOSED URBAN, INDUSTRIAL AND SPECIAL USES IN S.P.C. STRATEGY PLAN

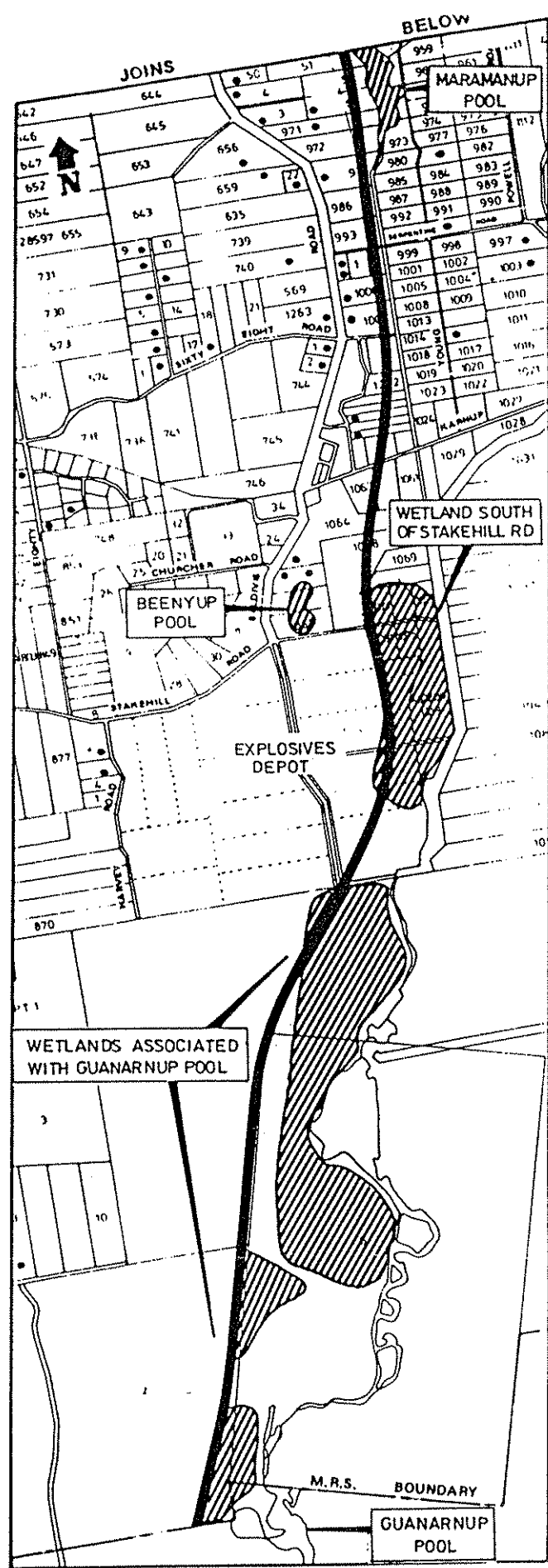
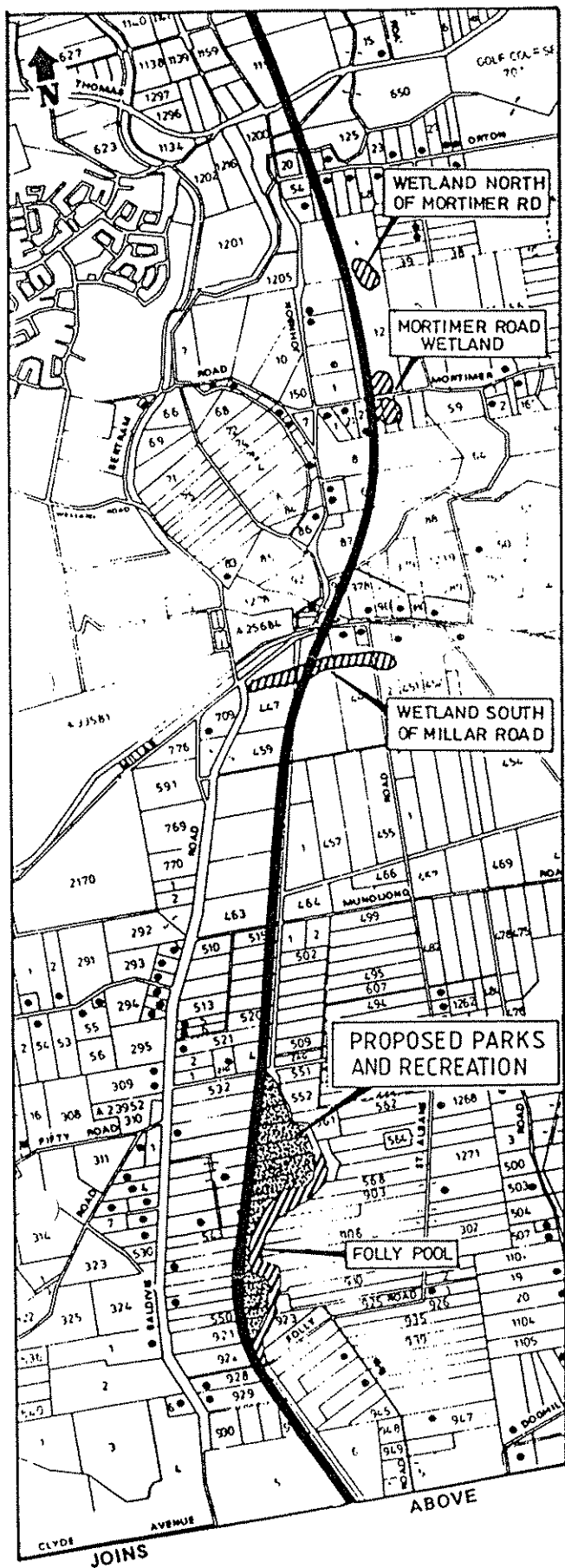
**LEGEND**

- HOUSES



NOTE: ALL ROUTES OTHER THAN GREEN DASHED ROUTE HAVE BEEN DELETED FROM THIS PLAN  
 PERTH - BUNBURY (KWINANA FREEWAY) ROUTE

FIG. 2



-  WETLANDS
-  PROPOSED PARKS AND RECREATION

**LEGEND**

-  HOUSES



**WETLAND AREAS**

PERTH - BUNBURY (KWINANA FREEWAY) ROUTE

FIG 3

APPENDIX B

List of environmental commitments

## APPENDIX B

### LIST OF ENVIRONMENTAL COMMITMENTS

- (i) An environmental assessment procedure will be part of the planning, design, construction and post construction phases of the project.
- (ii) The alignment of the Folly Road interchange will be assessed for its impact on Folly Pool.
- (iii) An aboriginal site survey will be undertaken during the public submission period of the MRS amendment.
- (iv) Landscaping schemes will be consistent with the indigenous flora of the region.
- (v) Land negotiations will be undertaken in accordance with accepted procedures.
- (vi) Consideration may be given to the acquiring of land adjacent to the Peel Main Drain to enhance the amenity of the wetland area.
- (vii) Disintegration with the landscape will be ameliorated by the 'softening' of the batter slopes and the landscaping of the project.
- (viii) Drainage from the freeway will be assessed for its impact on the Peel Main Drain and Folly Pool.
- (ix) An environmental assessment for the project shall include an assessment of the environmental effect of obtaining material from quarries and borrow pits. This assessment will be carried out at a time closer to the construction of the freeway.
- (x) The environmental assessment will also consider the conservation potential of Folly Pool and its associated wetlands. Consideration will be given to the incorporation of severed lots into the Folly Pool Reserve.