

Land use strategy for Bold Park and environs

City of Perth

**Report and recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
Perth, Western Australia
Bulletin 744
June 1994**

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 5.00pm on 14 July 1994

Environmental Impact Assessment (EIA) Process Timelines in weeks

Date	Timeline commences from receipt of full details of proposal by proponent	Time (weeks)
30/8/93	Proponent Document Released for Public Comment	8
25/10/93	Public Comment Period Closed	
26/11/93	Issues Raised During Public Comment Period Summarised by EPA and Forwarded to the Proponent	5
30/4/94	Proponent response to the issues raised received	22
30/6/94	EPA reported to the Minister for the Environment	8

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3. List of individuals and organisations who forwarded a submission during public review of the Public Environmental Review document.
4. Letter from the Perth City Council dated 18 October 1993.
5. List of species of regionally significant flora found in the study area.

Summary and recommendations

This report affirms the position adopted by the Environmental Protection Authority's 1983 System Six report in recommending that the bushland areas known as the Swanbourne Beach and Rifle Range (M46) and Bold Park (M47) should form a Regional Park for their conservation, recreation and educational values and their proximity to Perth. Over recent years there has been numerous proposed land uses in these areas which could affect the above values. The Environmental Protection Authority requested the City of Perth undertake a Public Environmental Review to investigate the environmental effects upon City of Perth controlled portions of the M46 and M47 areas (see Figure 1) which may arise from known proposals, and to propose a mechanism for ensuring the protection of the values of these areas.

The proposed developments considered in this Public Environmental Review include:

- urban development in the Perth City Council endowment land area known as Mount Claremont Bushland;
- realignment of Rochdale Road between Stephenson Avenue and West Coast Highway;
- land uses in degraded sites within the study area;
- potential residential development at Lot 1 Stephenson Avenue (Knightsbridge land); and
- construction of Stephenson Highway (Western Suburbs Route).

In addition, options for the on-going management of the study area have been considered.

The Public Environmental Review document consolidated and extended the information detailing the existing physical (soils and topography, hydrology, climate), biological (vegetation and flora, fauna), and social (landscape, land use, recreation, educational and scientific, archaeological and ethnographical, noise and community expectations) environments of the M46 and M47 areas within the City of Perth municipal boundaries.

Five hundred and twenty seven (527) individual written public submissions were received by the Environmental Protection Authority. Public submissions clearly indicated that Bold Park and the surrounding System Six areas are well known and valued for their integrity and size, the quality and uniqueness of the flora and fauna, the high degree of naturalness and the location of these areas in the central coastal Perth metropolitan area. The overwhelming opinion expressed in public submissions is that the integrity of the entire study area should be maintained to conserve the identified values. The view expressed, almost unanimously, seeks a mechanism for protecting the study area, rehabilitating the sites which are currently degraded and putting in place a management plan to ensure that the natural, education, recreation and scientific values are retained or enhanced. To achieve this objective, the most common mechanism cited was, for State Government to convert the area to a Class A reserve under the Land Act for the purpose of a Regional Park and to vest the reserve in the National Parks and Nature Conservation Authority to be managed by the Department of Conservation and Land Management and interested members of the public.

The Environmental Protection Authority assessed the various proposals and has made recommendations on the acceptability of proposals which are the responsibility of the Perth City Council. In addition, the Environmental Protection Authority has set environment objectives to assist authorities responsible for planning other land uses within the study area to make such proposals environmentally acceptable. The following table provides a summary of the Environmental Protection Authority's recommendations for these proposals. 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 (see Section 9), for consideration by the Minister for the Environment in his negotiations with the decision making authorities for this proposal (the Minister for Planning and the Minister for Transport).

Number	Recommendation
1	Residential development in the Mount Claremont Bushland north or west of the Christchurch Grammar Playing Fields is environmentally unacceptable.
2	Low density residential development south of Fortview Road would be environmentally acceptable subject to implementation of an approved Environmental Management Programme.
3	The realignment of Rochdale Road through the Mount Claremont Bushland as outlined in the Public Environmental Review is environmentally unacceptable.
4	Changes to the intersection of Rochdale Road and Stephenson Avenue may be possible subject to meeting environmental objectives and a detailed proposal being referred to the Environmental Protection Authority for assessment.
5	Land use developments indicated in the 'Preferred Structure Plan' are acceptable subject to no further clearance of local indigenous vegetation, and the development and implementation of the Environmental Management Programme required by recommendation 10.
6	The Metropolitan Region Scheme alignment for the Western Suburbs Route (Stephenson Highway) is environmentally unacceptable because of significant impacts on the System Six recommendation area M47.
7	The Road Reserve Review alignment option for the Western Suburbs Route (Stephenson Highway) outlined in the Public Environmental Review document is environmentally unacceptable because of significant impacts on the M47 area.
8	Any future proposed routes for a Western Suburbs Highway through the study area should meet the environmental objectives defined in the text on page 28 and a detailed proposal be referred to the Environmental Protection Authority.
9	The M46 and M47 areas be made a Regional Park and the Town Planning Scheme's for the City of Perth and City of Nedlands, and the Metropolitan Region Scheme be amended accordingly.
10	An Environmental Management Programme should be prepared for the Regional Park and implementation commenced, prior to any development within the study area.
11	The proposed Structure Plan (Figure 6) is acceptable subject to the above recommendations as reflected in the Environmental Protection Authority's Recommended Environmental Conditions.

1. Introduction and background

In recent years there has been substantial debate over land uses in various parts of Bold Park and the adjacent bushland, and the Swanbourne Beach and Rifle Range areas. A number of competing land use demands have arisen, such as the construction of major regional roads, residential developments and additional educational facilities. In 1983 the Environmental Protection Authority's System Six report recommended that these bushland areas known as the Swanbourne Beach and Rifle Range (M46) and Bold Park (M47) should form a Regional Park for their conservation, recreation and education values and their proximity to Perth (Environmental Protection Authority, 1983b).

The Environmental Protection Authority has previously expressed concern about the potential for proposals to adversely affect the conservation, recreation and education values of these areas (Environmental Protection Authority, 1988 Bulletin 322). Specific proposals that have arisen which may affect these areas include,

- realignment of West Coast Highway;
- urban development in the Perth City Council endowment land area;
- realignment of Rochdale Road;
- residential development at Lot 1 Stephenson Avenue (Knightsbridge land);
- construction of Stephenson Highway (Western Suburbs Route); and
- extension of Underwood Avenue to West Coast Highway.

In addition, the Environmental Protection Authority has also identified that the protection of the conservation, recreation and education values of these areas will require a management structure with appropriate technical knowledge and adequate funding (Environmental Protection Authority, 1988 Bulletin 322).

The Environmental Protection Authority considered that the range of development pressures potentially affecting the study area could not be considered in isolation from each other, and that an integrated planning process was needed to provide for the long term management of this area (Environmental Protection Authority, 1988 Bulletin 322).

Whilst the Environmental Protection Authority expressed a preference for the management of the M46 and M47 areas to be undertaken with a regional perspective, the Environmental Protection Authority agreed to assess the realignment of West Coast Highway, south City Beach as a first stage, because of the community concern for safety in the area (Environmental Protection Authority, 1992 Bulletin 655). Since this project is the subject of a separate environmental assessment it will not be discussed further in this report.

Because of the overall values of the M46 and M47 areas as identified in the System Six Report and reiterated in the Environmental Protection Authority's assessment of the proposed urban development in the Knightsbridge Estate (Lot 1 Stephenson Avenue), the Environmental Protection Authority determined that it could not support all of the proposals identified above because their cumulative impact would be considerable and environmentally unacceptable (Environmental Protection Authority, 1988 Bulletin 322). Therefore, the Environmental Protection Authority requested the City of Perth to undertake a Public Environmental Review in order to consider the individual and cumulative impacts arising from these proposed developments and to define the overall planning and management proposed for the M46 and M47 areas.

In the 1992 Public Environmental Review for the West Coast Highway realignment, Perth City Council made a commitment to prepare a second stage Public Environmental Review for the overall land use planning and management of the areas contained within the System Six recommendations M46 and M47 (Dames & Moore, 1992).

The Environmental Protection Authority sought to involve other land management agencies with responsibility for management of adjoining lands within the M46 and M47 areas to undertake a single comprehensive study of long term management of these recommended

conservation areas. However, the City of Nedlands (local government authority responsible for Lot 1 Stephenson Avenue and portions of Rochdale Road) declined and the Commonwealth Department of Defence (responsible for managing the Rifle Range area and a portion of the Swanbourne Beach coastal strip) is currently preparing its own management plan.

The current Public Environmental Review was commissioned by Perth City Council for the areas recommended by the System Six areas M46 and M47 within the City of Perth. The objective of the Public Environmental Review is to identify and address all of the issues which could potentially affect this land and to provide a broad structure plan for the future of these areas of bushland (Mitchell McCotter and Ecoscape, 1993). The study area includes all of those parts of M46 and M47 that lie within the City of Perth as indicated in Figure 1.

The Public Environmental Review study process involved significant public input, including the establishment of a community advisory group. The Public Environmental Review document was released to the public through the Environmental Protection Authority on 30 August 1993 for an 8 week review period (ending on 25 October 1993), to enable further public input.

2. Summary description of proposal

The Public Environmental Review for Bold Park and its environs represents the City of Perth's initiative to complete the regional assessment of proposed and known potential developments within its administrative boundaries at Bold Park and its environs (Mitchell McCotter and Ecoscape, 1993). The Public Environmental Review document provides a detailed collation of the existing information available describing the physical, biological and social environments and the existing ownership, planning and management within the study area.

This Public Environmental Review is unlike most which are assessed by the Environmental Protection Authority. Most frequently, a single development proposal is given consideration for its environmental impacts. However, because of the Environmental Protection Authority's stated concern that the range of development pressure potentially affecting the study area could not be considered in isolation from each other, the City of Perth determined that an integrated planning process was needed to provide for the long term management of the study area (Mitchell McCotter and Ecoscape, 1993).

In this context, the Public Environmental Review undertook a study of the area's values, considered these within the context of regional planning issues, proposed a range of land uses for the study area and made recommendations on the future management of the study area.

The Public Environmental Review investigated and described the potential environmental impacts arising from the following developments:

- urban development in the Perth City Council endowment land area known as Mount Claremont Bushland (see Figure 2);
- realignment of Rochdale Road between Stephenson Avenue and West Coast Highway (see Figure 3);
- land uses in degraded sites within the study area (see Figure 4);
- potential residential development at Lot 1 Stephenson Avenue (Knightsbridge land) (refer to Figure 1); and
- construction of Stephenson Highway (Western Suburbs Route) (see Figure 5).

In addition, options for the on-going management of the study area have been considered.

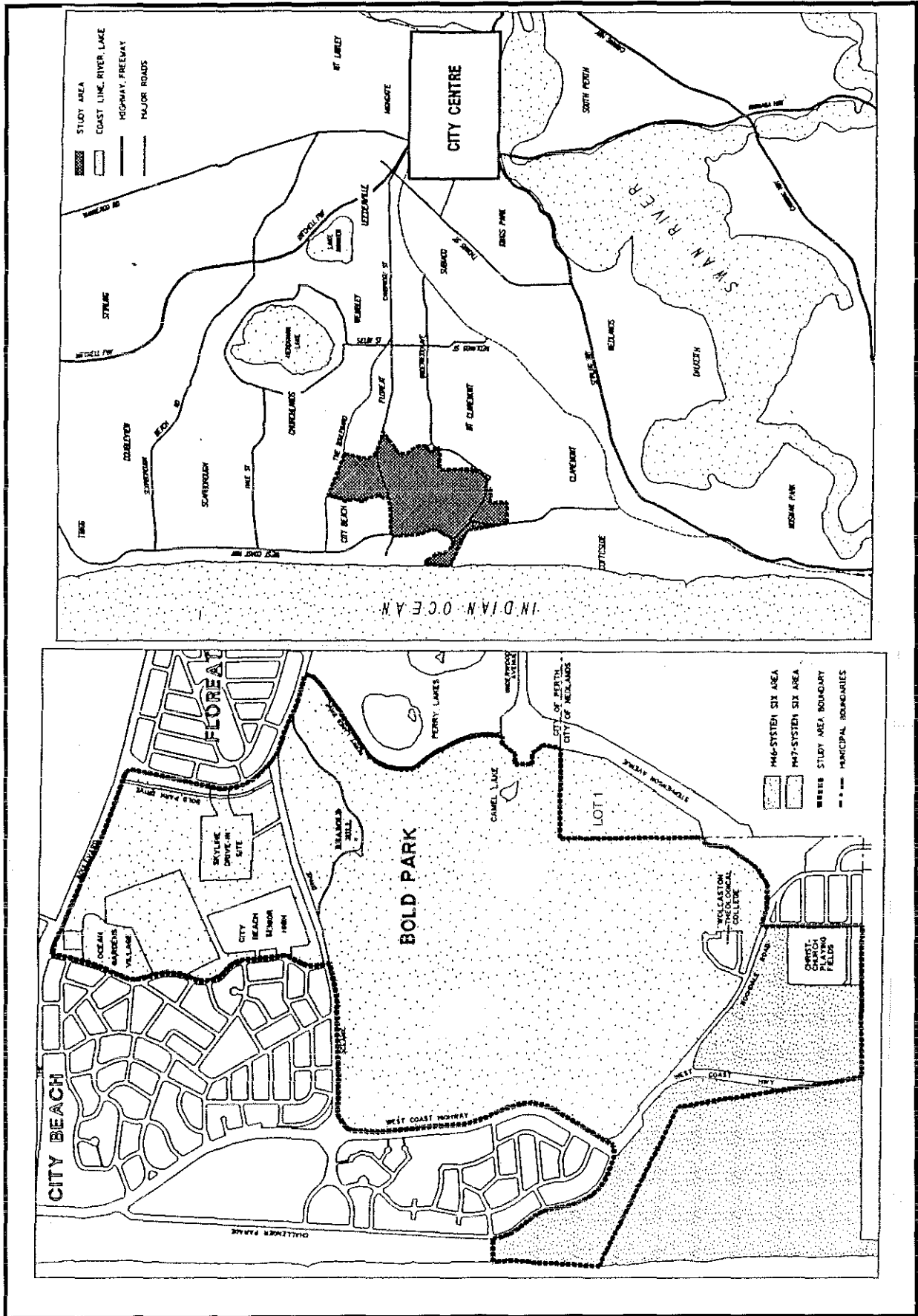


Figure 1. Study area

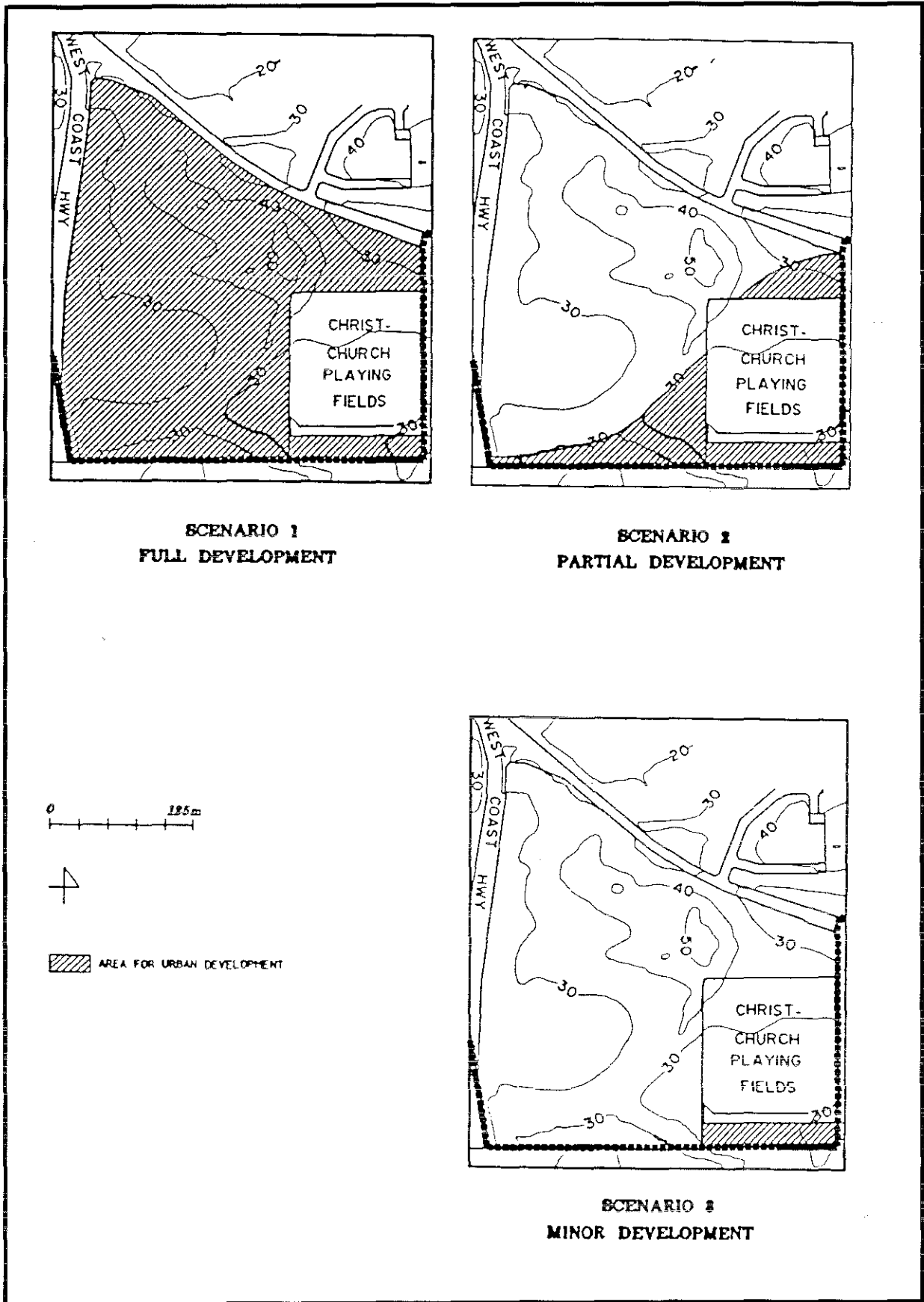


Figure 2. Options for residential development at Mount Claremont bushland.

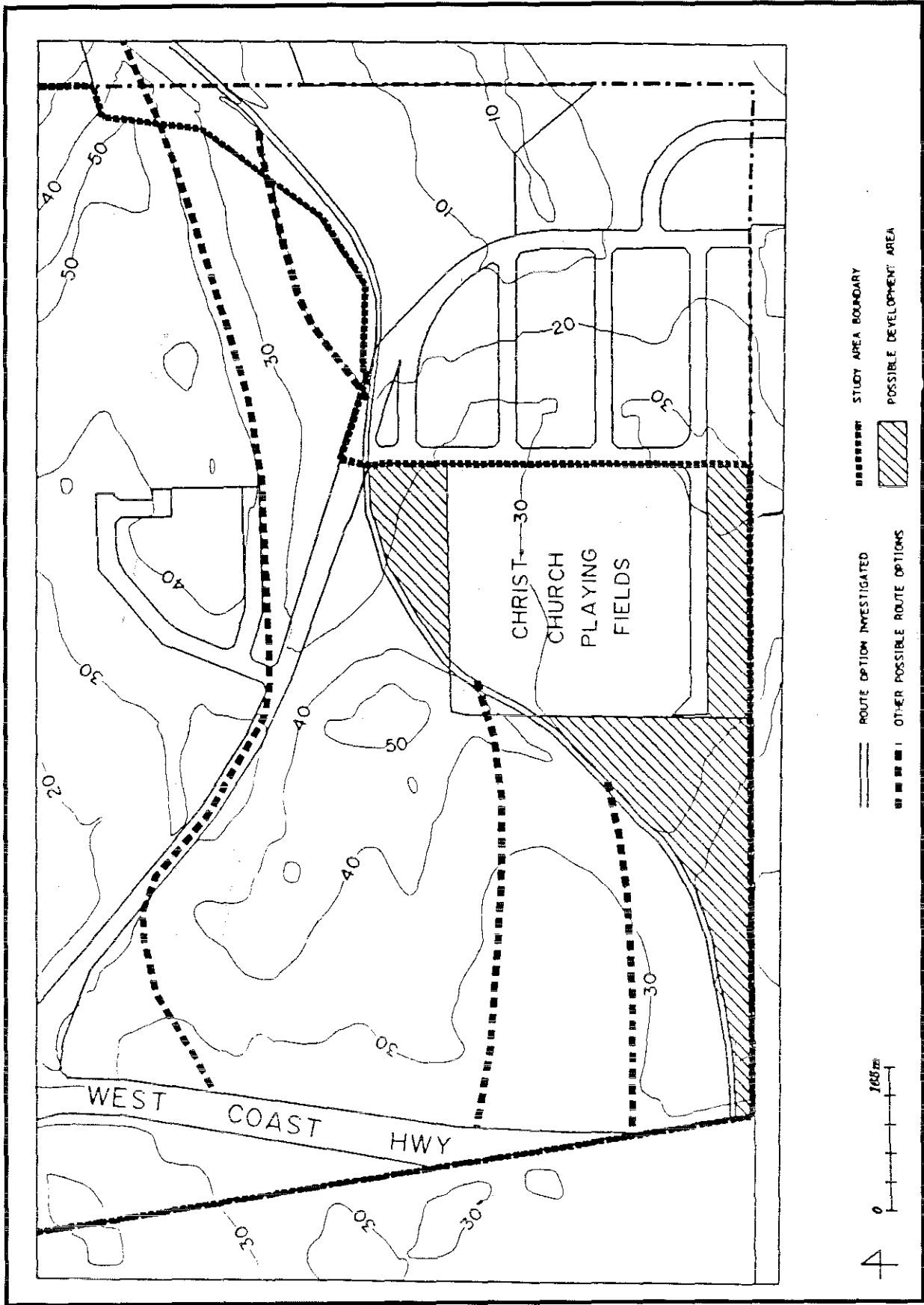


Figure 3. Options presented for the realignment of Rochdale Road.

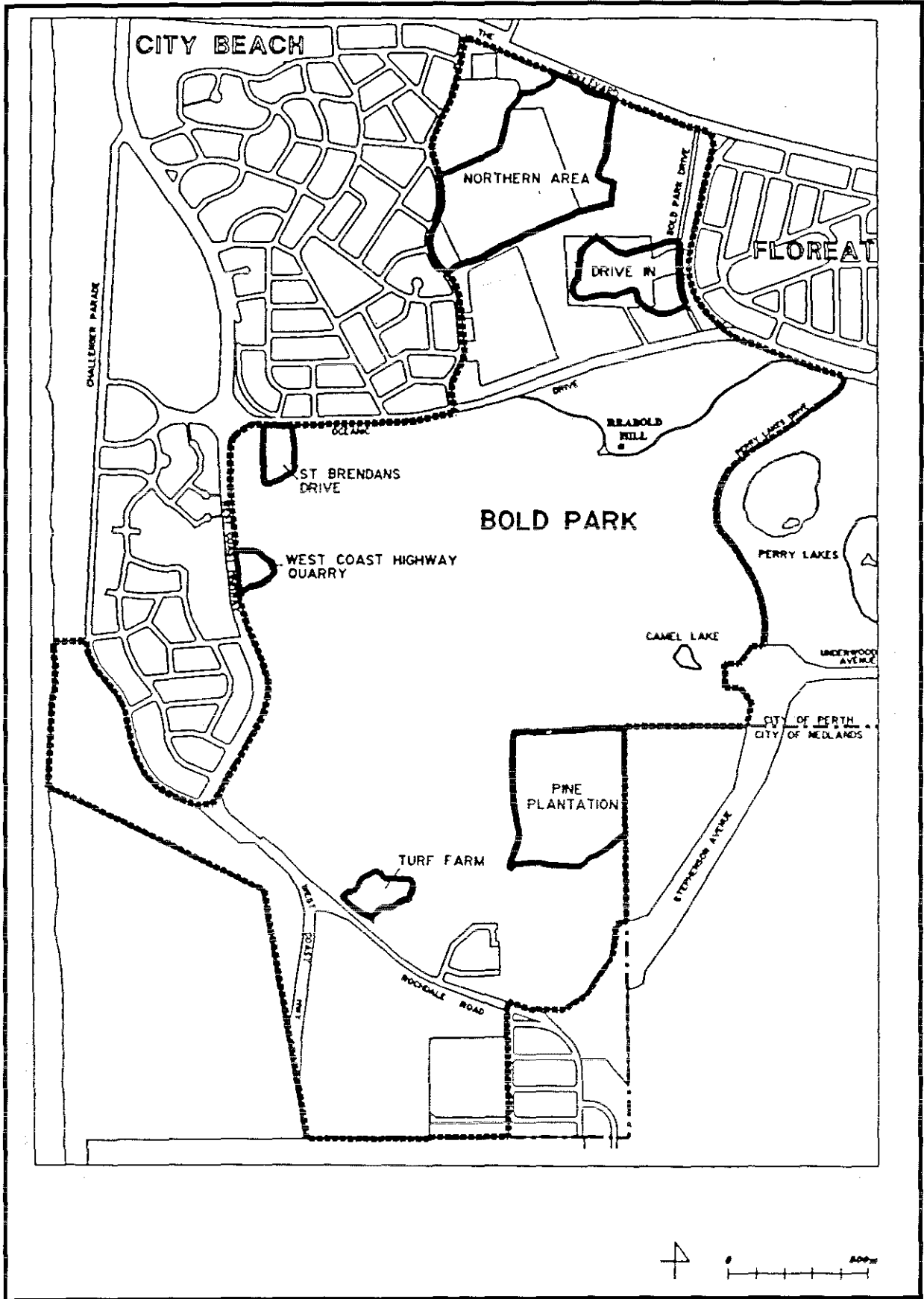


Figure 4. Degraded sites within the study area.

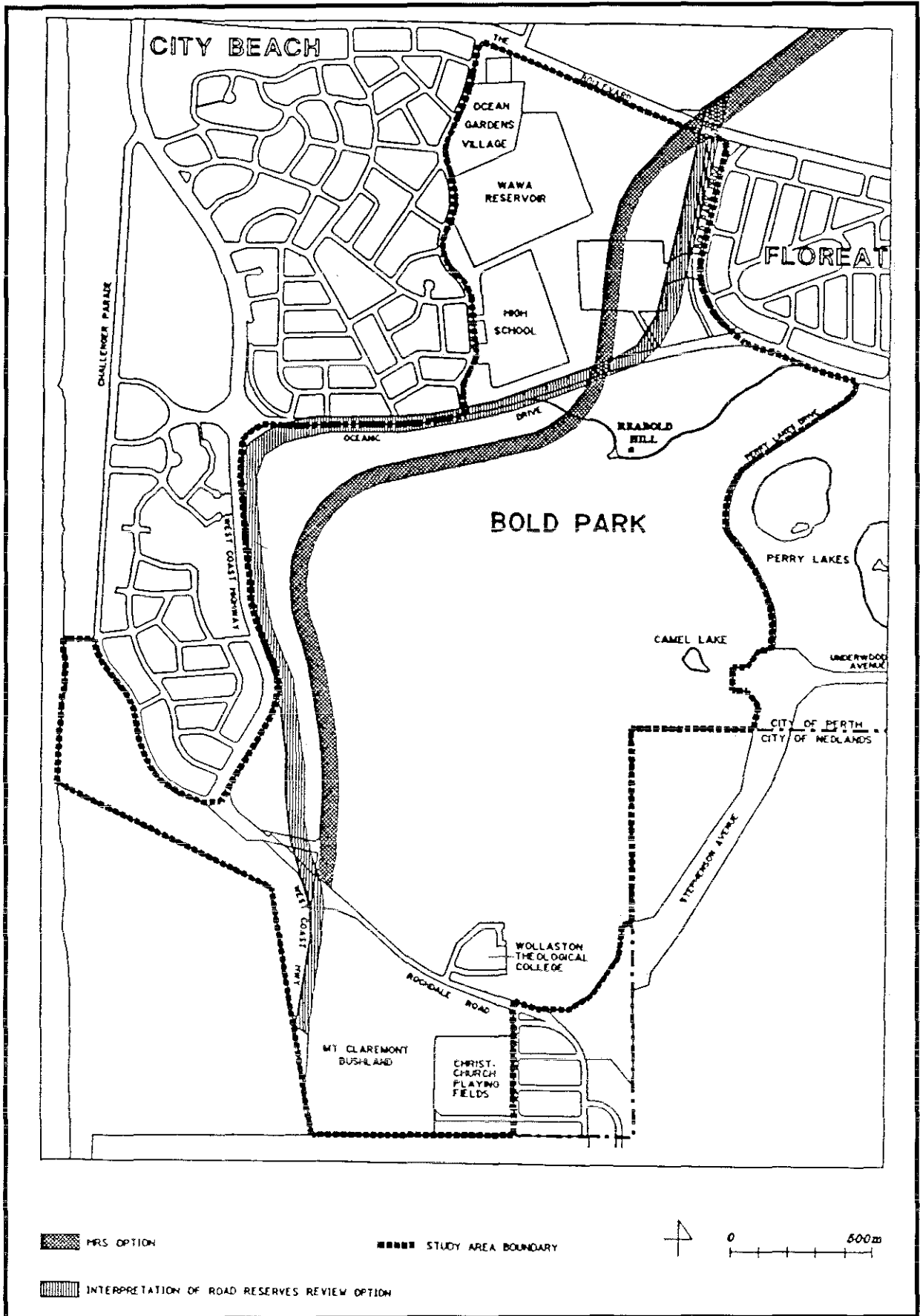


Figure 5. Stephenson Highway (Western Suburbs Route) options.

2.1 Other proposals known to the Environmental Protection Authority

2.1.1 Extension of Underwood Avenue to West Coast Highway

The westward extension of Underwood Avenue to West Coast Highway was not considered within the current Public Environmental Review because of the 1991 City of Perth resolution to extend Bold Park to Rochdale Road (see Mitchell McCotter and Ecoscape (1993); page 4.2) which excludes this potential development. In addition, the State Planning Commission does not support the construction of this road because of the potential impacts upon the areas nominated for conservation in the System Six report (Environmental Protection Authority, 1988 Bulletin 322). As a consequence this proposal has not been further considered.

2.1.2 Urban development within the City of Perth Endowment Land in M47

A substantial portion of the area proposed for conservation by the System Six report recommendation M47 is zoned for urban development in the Metropolitan Region Scheme or the City of Perth Town Planning Scheme. However, the Perth City Council has resolved to vary the boundaries of Bold Park over time; see section 4.1.2 of Mitchell McCotter and Ecoscape (1993). All of the urban zoned land between West Coast Highway, Oceanic Drive, Rochdale Road north, Stephenson Avenue and Perry Lakes Drive is now identified as a portion of Bold Park by the City of Perth and is held for the purposes of Parks and Recreation. The holding of this land for Parks and Recreational uses is generally consistent with the System Six recommendation M47.

Accordingly, the consultants Mitchell McCotter and Ecoscape (1993) have not considered the potential residential development of land within the area bounded by Rochdale Road north to Oceanic Drive (central Bold Park area). The Environmental Protection Authority has previously stated that residential development in this area would have adverse impacts and that this land should not be substantially developed: some environmentally degraded areas (such as the Turf Farm) could be considered for activities or uses compatible with the values of the surrounding bushland and in accordance with the objectives of a Regional Park (Environmental Protection Authority, 1988 Bulletin 322). The Environmental Protection Authority considers that no information has been presented which requires it to review this position. As a consequence this proposal has not been further considered.

2.1.3 Residential development at Lot 1 Stephenson Avenue (Knightsbridge Estate)

Whilst Lot 1 Stephenson Avenue is not within the City of Perth's administrative boundary, it is contiguous with the study area and is within the System Six M47 recommendation. The consultants considered that there may be significant impacts upon the study area arising from urban development at this site (Mitchell McCotter and Ecoscape, 1993). The location of Lot 1 can be seen in Figure 1.

The Environmental Protection Authority has previously assessed two proposals for urban development at this location (Environmental Protection Authority, 1988 Bulletin 322, Environmental Protection Authority, 1989 Bulletin 362). On both occasions the Environmental Protection Authority recommended to the State Government that the proposals should not proceed on the grounds that they would be environmentally unacceptable.

Subsequently, in December 1993, the State Government purchased this land for addition to Bold Park for management as part of a Regional Park. The addition of the Knightsbridge land to Bold Park would provide significant benefits to the flora, fauna, landscape and recreational values of the overall M47 area. Given the State Government's intention to manage this land as a part of Bold Park, the residential development of this Lot has not been considered further in this report.

2.2 Commitments

At the time of public release, Perth City Council (the proponents) had not expressed an opinion regarding any of the proposed land uses or the structure plans presented in the Public Environmental Review document. However, on 15 November 1993, the elected Council resolved that 'the preferred Structure Plan 6.4, as proposed by Mitchell McCotter in the Draft PER, be accepted' (see Appendix 4).

In the response to public submissions, the State Government appointed Commissioners of the City of Perth have indicated that they are reviewing the Council position on land use within Bold Park and its environs, however, no statement has yet been provided.

3. Environmental impact assessment method

The environmental impact assessment for this project followed the *Environmental impact assessment administrative procedures 1993*, as shown in the flow chart in Appendix 1. The summary of submissions and the proponents response to those submissions appears in Appendix 2, and a list of submitters appears as Appendix 3. The proponent has not made any commitments in regard to this proposal.

In addition to the requirements of the administrative procedures, Department of Environmental Protection officers undertook the following activities: meetings with the proponent and their consultants to discuss the requirements for the Public Environmental Review and the progress of studies; meetings with officers of the Department of Planning and Urban Development to discuss the possibility of an amendment to the Metropolitan Region Scheme for this area; and meetings with officers of the Department of Planning and Urban Development, the City of Nedlands, the City of Perth and Main Roads Western Australia to discuss issues relating to transport planning matters in the area.

Limitation

This evaluation has been undertaken using information currently available. The information has been provided by the proponent through preparation of the Public 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 by contributions from Environmental Protection Authority members.

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.

4. Public submissions

The consultants sought to involve interested members of the public throughout the environmental impact assessment process (see Chapter 8 Mitchell McCotter and Ecoscape (1993)). A community advisory group was formed, which met seven times throughout the study period. The group's views are summarised in Section 8.2 of the Public Environmental Review document.

Other opportunities were offered for members of the public to provide submissions to the study team following advertisements in the local press. In addition, a public workshop to examine

how the community valued the study area and to express what the participants believed were appropriate land uses.

Finally, a public exhibition of the three structure plan options was held in a local library for a four day period. Forms were provided to enable the public to indicate their preferred structure plan and to provide other comments (Mitchell McCotter and Ecoscape, 1993).

The completed Public Environmental Review document was available for public comment through the Environmental Protection Authority's environmental impact assessment process between August 30 and October 25 1993. During this period 527 individual written submissions were received by the Environmental Protection Authority. Individual written submissions were received from the following sectors of the community:

- 509 submissions from the general public;
- 14 submissions from groups and organisations; and
- 4 submissions from Local and State government authorities.

A further 22 form submissions of one type were received.

There were several very substantial submissions from the public. The response from the community and the considerable detail provided were appreciated by the Environmental Protection Authority.

The submissions from individual members of the public and community groups almost uniformly expressed the desire to retain the entire study area in its natural state, with rehabilitation of degraded areas and for management to involve the specialist expertise of the Department of Conservation and Land Management. Very few dissenting views were provided to the Environmental Protection Authority; these views are also noted in the summary of public submissions. The major issues raised in submissions from the public were categorised as follows:

- Human use values;
- natural values generally;
- natural values: Mount Claremont Bushland;
- current environmental management issues;
- method of analysis;
- System Six recommendations;
- structure plans;
- area north of Oceanic Drive;
- area south of Fortview Road;
- Mount Claremont Bushland and Rochdale Road realignment;
- Stephenson Highway (Western Suburbs Route);
- vesting and long term management;
- Public Environmental Review process; and
- other issues.

Public submissions during the preparation of the Public Environmental Review document and during its review phase through the Environmental Protection Authority consistently emphasised the need for preservation and conservation of the study area. Most submissions clearly indicated that Bold Park and the surrounding System Six areas are well known and valued for their integrity and size, the quality and uniqueness of the flora and fauna and the high degree of naturalness (see Appendix 2 of this report and chapter 8 of Mitchell McCotter and Ecoscape, 1993). Public submissions indicated that these values are of particular importance because of the lack of any comparable area in the central coastal Perth metropolitan area.

Indeed, the overwhelming opinion expressed in public submissions is that the integrity of the entire study area should be maintained to conserve the identified values. Clearly the public wish to see the study area retained for conservation as shown in Structure Plan 6.1 of Mitchell McCotter and Ecoscape (1993). The majority view expressed seeks a mechanism for protecting the study area, rehabilitating the sites which are currently degraded and putting in place a

management plan to ensure that the natural, educational, recreation and scientific values are retained or enhanced. To achieve this objective the most common mechanism cited in public submissions was for the State Government to convert the area to a Class A reserve under the Land Act for the purpose of a Regional Park and to vest the reserve in the National Parks and Nature Conservation Authority to be managed by the Department of Conservation and Land Management and interested members of the public.

The Environmental Protection Authority's summarised list of issues raised through the public review phase and the proponent's response to those issues are included in Appendix 2.

The Environmental Protection Authority has included consideration of the submissions received on environmental matters and the response from the proponent within its assessment of this proposal.

5. Overall assessment

5.1 Existing policy framework

In 1983, following extensive public consultation, the Environmental Protection Authority released its System Six report to State Government on a comprehensive set of proposals for reserves representing the major communities of natural wildlife and flora types in the hinterland area of Perth, which represents the most intensively used part of the State (Environmental Protection Authority, 1983a; Environmental Protection Authority, 1983b). Part II of the System Six Report made recommendations for the conservation of the areas known as the Swanbourne Beach and Rifle Range and Bold Park and its adjacent bushland (Recommendations M46 and M47 respectively).

On 19th March 1984, State Cabinet accepted in principle the general recommendations contained in Part I of the System Six Report and approved of the progressive implementation, as far as possible, of the detailed area recommendations contained in Part II.

The System Six Report, established through the Conservation Through Reserves Committee studies, has formed the principle focus for the Environmental Protection Authority's conservation efforts on the Swan Coastal Plain. The aim of the System Six studies was to identify representative areas which should be kept mainly natural for the conservation of flora, fauna and landscape. The Environmental Protection Authority considers that these areas should be properly managed and given security of tenure commensurate with their conservation value and that the integrity of such areas should be maintained.

The System Six report identified that the Swanbourne Beach and Rifle Range (M46) and Bold Park (M47) have considerable local and regional significance for conservation, representing natural values of flora, fauna, ecosystems, landscape and as a location of importance for education, scientific and recreational purposes (Environmental Protection Authority, 1983b). In addition, due to its size and relatively natural condition and because of the connections to geographically separated areas of bushland, the area of the whole is substantially greater than the sum of its parts (Mitchell McCotter and Ecoscape, 1993). There are options for seasons, refuges to escape and repopulate after fire, drought, disease or adversity due to introduced plants, predators and competitors (Wykes, 1993, personal communication).

5.2 Technical information

In determining the acceptability of the potential developments, the Environmental Protection Authority has given consideration to the likely impacts on the highly valued components of the study area, which are described below.

5.2.1 Vegetation and flora

Mitchell McCotter and Ecoscape (1993) have classified the vegetation associations of the study area into eight major groups, with floristic variations increasing the number of native community types to 24. Species richness varies throughout the area ranging from 8 to 42 species per 100 square metres. The level of invasion by exotic species was variable, though the study area average was recorded as 24 %.

The total number of species recorded in the study area so far is 361 species (228 native and 133 exotic) (Mitchell McCotter and Ecoscape, 1993). Eighteen species of flora have been identified as regionally significant, including four species which are listed as Priority Species (see Appendix 5). Maintenance of these significant species within the study area is fundamental to ensuring their continuance. For this reason proposals within this area should be judged against the potential impacts upon these species.

“The diversity of vegetation is comparable with regionally distant areas such as Yanchep and Yalgorup National Parks” (Mitchell McCotter and Ecoscape, 1993 page 2.12) (see Table 1 below). However, it is particularly important to note that neither of these National Parks provide representative examples of some of the communities present at Bold Park and environs. Yanchep National Park does not contain near coastal heath communities or *Acacia* shrublands whereas, Yalgorup National Park lacks freshwater wetlands and *Acacia* shrubland (Keighery, Harvey and Keighery, 1990).

Recent study by Griffin (1993) has shown that there is considerable diversity in the vegetation of the Quindalup Dunes. This report identified that some portions of this vegetation complex were not adequately represented in the conservation estate, especially the area south of Lancelin. The Mount Claremont Bushland (that area between Rochdale Road and West Coast Highway) contains Quindalup Dune vegetation associations which are in very good condition (Griffin, 1993 personal communication). This area represents the northern limit of *Agonis flexuosa*, is one of the major occurrences of *Acacia rostellifera* shrubland in the metropolitan area; a community which is very important for several wren species. In addition, the *Allocasuarina lehmanniana* shrubland adjacent to Rochdale Road north is not present elsewhere in the study area. In particular, Griffin (1993) recommended that this area (Mount Claremont Bushland) should be added to Bold Park and managed for the Conservation of Flora and Fauna. This recommendation is consistent with the recommendations of Mitchell McCotter and Ecoscape (1993).

Semenuik, Cresswell and Wurm (1989) have also reported the diversity of vegetation formations which are associated with the varied geomorphology and geological features within Quindalup Dunes. The Quindalup Dunes are the most recently formed of the Swan Coastal Plain dune systems. Much of this dune system is under pressure for housing and coastal development and is poorly represented in conservation reserves.

Table 1. Comparative data on flora

Site	Area (hectares)	Number of native species	Number of introduced species
Study area	500	228	133
Yanchep National Park	2,799	405	105
Yalgorup National Park	11,545	295	55

Based upon Keighery, Harvey and Keighery (1990), who indicate that Yalgorup is under sampled and the number of species could be expected to be double that shown. Reproduced from Mitchell McCotter and Ecoscape (1993).

5.2.2 Fauna

Whilst only one native marsupial appears to still exist within the study area (the common Brushtailed Possum - *Trichosurus vulpecula*), it is likely that two bat species are present (How and Dell, 1990). Moreover, the study area is well known for its rich diversity and large populations of birds and reptiles (How and Dell, 1990). Recent studies by the Western Australian Museum have indicated that there is also "rich and diverse ground arthropod assemblage, which contains some particularly interesting and significant species" (Western Australian Museum, 1993).

The Public Environmental Review document by Mitchell McCotter and Ecoscape (1993) indicates that the study area is regionally significant as a fauna conservation area. Table 2 shows the known occurrence of fauna at several sites including the study area. It is apparent from this data that local reserves such as Kings Park and Trigg Dunes do not contain comparable fauna diversity. On a regional scale the study area is also significant as it contains many species only found in much larger less disturbed sites which are distant from the inner metropolitan area.

The Mount Claremont Bushland area contains the only known location where the three species of Fairy Wren and the Scrubwren persist (Western Australian Museum, 1993; Wykes, 1990). These birds are obligate insectivores and are known to be particularly vulnerable to the combined effects of fires, weed invasion, predation by feral animals, habitat fragmentation and human disturbance (Mitchell McCotter and Ecoscape, 1993).

Honeyeaters are also of special interest in the study area. Up to 148 honeyeaters have been netted in a single morning in the M46 area during early summer (Van Delft, 1988). The resident honeyeaters feed on various *Banksia* species and in the *Dryandra sessilis* thickets when in flower (How and Dell, 1990).

How and Dell (1990) have recorded the richest lizard assemblage within the urban area on a plant rich Quindalup heath land area of Bold Park. Similar Quindalup Dune vegetation associations occur within the Mount Claremont Bushland. Since the lizards and the wrens are all obligate arthropod insect feeders, "it suggests that a particularly important arthropod assemblage exists that supports this array of invertebrate specialists" (Western Australian Museum, 1993).

This fact coupled with its location on the junction of the Spearwood and Quindalup Dune systems and their rich heath lands, makes the Mount Claremont Bushland of very high conservation value (Western Australian Museum, 1993).

Table 2 Known fauna occurrence - comparative assessment

Location	Study Area	Kings Park	Trigg Dunes	Yanchep National Park	Yalgorup National Park
Size (hectares)	490	400	98	2,799	11,545
Reptiles	29	18	>10	35	19(30)*
Amphibians	3	3	0	6	8
Birds	72	48	>30	85	70
Native mammals	2	1	0	15	10
Introduced mammals	6	3	4	5	7
Special interest species	Wrens Raptors Honeyeaters		Wrens	Waterbirds Raptors	

Note: * Limited surveying in Yalgorup has recorded 19 species, however up to 30 species may occur in the area. Reproduced from Mitchell McCotter and Ecoscape (1993).

5.2.3 Landscape

Mitchell McCotter and Ecoscape (1993) have undertaken a visual resource analysis of the study area. Many public submissions criticised the methodology and conclusions drawn (see Appendix 2). The general reaction from the public submissions is that the method used understated the landscape values of the area.

The study area serves to punctuate suburbs to the north and south, it is a large remnant of natural vegetation and topography within the predominantly developed inner metropolitan area, and there is significant local topographical variation (Mitchell McCotter and Ecoscape, 1993). Reabold Hill is one of the highest points in the metropolitan area and provides panoramic views of the coast, the islands, the central business district and the Darling Range. Internally, particularly within the central area, the feeling of being in suburbia is diminished (see public submissions in Appendix 2).

5.2.4 Recreation

The Public Environmental Review document provides a review of the recreational uses of the study area (Mitchell McCotter and Ecoscape, 1993). The conclusion drawn by the consultants is that the area provides for a particular type of recreation experience which is related to its natural bush setting. Much of the area requires some form of physical exertion such as walking, running or horse riding, and hence visitation rates are lower than Kings Park for example (Mitchell McCotter and Ecoscape, 1993). Nonetheless, surveys have indicated that people are willing to travel considerable distance to use the area (Mitchell McCotter and Ecoscape, 1993).

5.2.5 Education and scientific

A number of groups use the study area for educational and scientific purposes. For instance, the Western Australia Museum has been carrying out surveys of the fauna of the study area for a number of years, the Department of Conservation and Land Management, the Wildflower Society, the Local Plant Group, the Tree Society, the Naturalists Club and the Royal Australian Ornithological Union all conduct activities in the area. A community based bird banding project has been carried out in the Mount Claremont Bushland since 1989 (Wykes, 1993).

The central portion of Bold Park is also used for educational purposes by the Western Australia Museum for programmes involving teachers, school students, the disabled and the general public (Mitchell McCotter and Ecoscape, 1993). The City Beach Senior High School and the City Beach Primary School also conduct classes in the area and advise that other schools also use the facilities for teaching ecological studies (Nolan, 1993, personal communication).

In summary, the area provides a major education and scientific resource because of its size, diversity of flora and fauna, lack of disturbance, central location and easy accessibility (Mitchell McCotter and Ecoscape, 1993).

5.2.6 Archaeology and ethnography

One area of aboriginal significance has been identified in the area. The site was recorded as a camp site and plant source and is located in the south east of the central Bold Park area (Mitchell McCotter and Ecoscape, 1993). However, given the relatively undisturbed nature of the study area, other sites may be found upon closer inspection (Mitchell McCotter and Ecoscape, 1993).

5.3 Summary

The values of the study area which should be conserved have previously been identified by the Environmental Protection Authority in the System Six report (Environmental Protection Authority, 1983b). The Environmental Protection Authority has reaffirmed these values in its

assessment of the proposed Knightsbridge subdivision (Environmental Protection Authority, 1988 Bulletin 322) and the realignment of West Coast Highway, south City Beach (Environmental Protection Authority, 1992 Bulletin 655). The current Public Environmental Review document has provided much information to support the System Six recommendations M46 and M47, and indeed provided additional evidence to indicate the particularly special values of the study area.

The regional values of the Bold Park area have been determined by the Environmental Protection Authority as: the size of the M47 area, being comparable to Kings Park, is one of the largest remaining bushland remnants in the urban area of the coastal plain; the natural vegetation of the area is of comparatively high quality and includes areas of species at extremes of their known ecological range; the fauna, as with the vegetation, exhibit considerable diversity with bird and reptile species being particularly well represented; recreational use is based on regional rather than just local patrons; and because of the above, and the areas' location in the metropolitan area, its educational value is also rated highly (Environmental Protection Authority, 1988 Bulletin 322; Environmental Protection Authority, 1992 Bulletin 655).

Additional information is provided in the current Public Environmental Review identifying the flora, fauna, recreation, landscape, educational and scientific values of the Mount Claremont Bushland and the area north of Oceanic Drive. These areas also have significant regional conservation importance for each of the above values and uses.

In addition, the entire study area provides good linkages between the northern, central, southern and coastal sections and to other bushland areas including the coast and remnant vegetation within the Commonwealth land (Army facilities and Rifle Range) to the west; the Perry Lakes area, Wembley Golf Course and ultimately to Herdsman Lake to the north; and Cottesloe Golf Course and Lake Claremont to the south. These linkages provide corridors for fauna to move between these areas, particularly when seeking refuge from disturbance events.

Finally, the residential areas which are adjacent to the study area enjoy particularly high amenity due to proximity and views of the bushland areas. Residential areas along Oceanic Drive and Elphin Street are also relatively quiet and may be significantly impacted by noise from highway proposals.

6. Evaluation of specific proposals

6.1 Urban development in Mount Claremont bushland

The Mount Claremont Bushland is bounded by the West Coast Highway, Rochdale Road north, the Christchurch Grammar School playing fields and McClemans Road. This land is owned by the Perth City Council as part of its endowment land and is zoned for urban development in both the City of Perth Town Planning Scheme and the Metropolitan Region Scheme. The current Public Environmental Review considered a range of potential residential development options in the Mount Claremont Bushland. Possible development scenarios are shown in Figure 2.

Given the very high conservation values of the Mount Claremont Bushland (which are described in the Public Environmental Review), the consultants concluded that the only area which should be available for residential development is the area south of Fortview Road (south of the Christchurch Playing Fields) (Mitchell McCotter and Ecoscape, 1993). Whilst the Perth City Council has not formally come to any position about the conclusions reached in the Public Environmental Review document, its response to the summary of submissions indicates that Council considers that the Mount Claremont Bushland should be available for residential

development (see Appendix 2). The Environmental Protection Authority has therefore considered the potential for residential development throughout the Mount Claremont Bushland area.

6.1.1 Evaluation framework

Existing policy framework

The Mount Claremont Bushland was recommended for conservation in the System Six report (M46) (Environmental Protection Authority, 1983a). In 1976 the Environmental Protection Authority assessed the proposal to extend West Coast Highway south to Servetus Street and recommended to State Government that it would be environmentally acceptable to construct the highway on its present alignment (Environmental Protection Authority, 1976 Bulletin 14). The subsequent extension of West Coast Highway separated the Mount Claremont Bushland from the coastal portions of the M46 area.

In its 1988 report on the Knightsbridge proposal the Environmental Protection Authority concluded that '*its development (Mount Claremont Bushland) may be acceptable if carried out in an environmentally sensitive manner*' (Environmental Protection Authority, 1988 Bulletin 322). At that time the Environmental Protection Authority concluded that the area has some conservation value, but that the vegetation associations it contains are generally well represented elsewhere in M47 or other reserves (Environmental Protection Authority, 1988 Bulletin 322). In addition, the Environmental Protection Authority suggested that the Mount Claremont Bushland may have limited long term viability due to its physical isolation, smaller size and because of the degrading edge effects from adjoining roads and development.

Technical information

Subsequent to the Environmental Protection Authority's previous recommendations concerning this site further scientific surveys have been carried out. A project known as the Perth Wildlife Watch (Bird Banding Project) has been completed, though some participants are continuing research on the avifauna of the dune heaths and *Acacia* shrublands of the area. This study has shown that the Mount Claremont bushland contains a unique assemblage of small territorial insectivorous birds (Wykes, 1991). In addition, honeyeaters are attracted to the extensive areas of *Calothalmus quadrifidus* which are associated with the dune heaths (Mitchell McCotter and Ecoscape, 1993).

The site supports three species of fairy wren, the Splendid Fairy-wren, Variegated Fairy-wren and the White-winged Fairy-wren. The Mount Claremont Bushland is the only area in Perth in which all three species occur together (Mitchell McCotter and Ecoscape, 1993). The area is also an important habitat for the White-browed Scrub-wren, which is sparse within Bold Park. This assemblage of small insectivorous birds is also known to be especially vulnerable to the combined effects of wildfires, weed invasion, predation by feral species, habitat fragmentation and human disturbance (Mitchell McCotter and Ecoscape, 1993). Indeed such small ground-dwelling species have disappeared from Kings Park, probably as a result of these influences (Recher, 1993).

Griffin (1993) has also recommended that this location be conserved for its Quindalup Dune vegetation which is in good biological condition, but is otherwise poorly represented in secure conservation reserves.

Potential significant impacts arising from the development in Mount Claremont Bushland include:

Impacts upon important vegetation communities	Severe threat to <i>Allocasuarina lehmanniana</i> community. Loss of important <i>Acacia rostellifera</i> shrubland. Contamination of Wembley wax (<i>Chamelaucium uncinatum</i>) gene pool. The population in the central portion of the study area has already been contaminated. Increased weed invasion / fire potential will lead to high quality areas having reduced values.
Loss of regionally significant flora	Tuart (<i>Eucalyptus gomphocephala</i>). Wembley wax (<i>Chamelaucium uncinatum</i>).
Significant fauna values which may be impacted	Highly significant area for fauna. Unique assemblage of small territorial insectivorous birds. Including 3 species of fairy wren. This is the only location in Perth where these three occur together. Honeyeaters are attracted to the extensive areas of <i>Calothalmus quadrifidus</i> which are associated with the dune heaths. Indications are that the reptile and insect fauna are likely to be highly numerate and diverse. Substantial increase in indirect impacts from human interference; fire, weeds, trampling, predation by domestic animals.
Education & scientific values	This area is regularly used for educational and scientific programmes, residential development would preclude some activities.
Landscape value	Loss of some of the dune form. Visual intrusion of the urban form.

Clearly the degree of impact is dependent upon the extent of residential development which may be proposed. The consultants have concluded that full residential development in this area would destroy significant flora, fauna, education and scientific values, many of which are not well represented elsewhere in the metropolitan region (Mitchell McCotter and Ecoscape, 1993). The partial development option would also have significant direct and indirect impacts resulting from urban development.

In contrast, Mitchell McCotter and Ecoscape (1993) concluded that development south of Fortview Road would not have significant impacts upon the values of the study area because the Tuart woodland in this area is degraded and the area available for residential development has only a very small connection to the bushland. Furthermore, the zoning in the City of Perth Town Planning Scheme would enable the creation of only a few lots in this area.

Comments from key government agencies

On the basis of studies by How and Dell (1990), the Western Australia Museum has indicated that the Mount Claremont Bushland would probably contain a rich array of reptiles in the Quindalup Dune heaths, as well as the obligate insectivore avifauna (Western Australian Museum, 1993). The Western Australia Museum has indicated that this area is likely to support a particularly important arthropod assemblage to support this array of invertebrate specialists (Western Australian Museum, 1993).

This fact, coupled with its location on the junction of the Spearwood and Quindalup Dune systems and their rich heath lands, makes the Mount Claremont Bushland of very high conservation value (Western Australian Museum, 1993).

Public submissions

Nearly all submitters commenting on this area indicated agreement with the consultants conclusions regarding the sites conservation values and that residential development as suggested in the 'full and partial development scenarios' would be environmentally unacceptable. In contrast however, most of these submitters disagreed with the consultants view that there would be no significant impacts arising from development south of Fortview Road. Public submissions generally considered that the Tuart trees south of Fortview Road were significant by virtue of their age (estimated to be over 200 years old).

Wykes, (1993, personal communication) also suggested that residential development south of Fortview Road could lead to the contamination of the gene pool of the Wembley wax (*Chamelaucium uncinatum*), which has been maintained in isolation in the Mount Claremont Bushland. It was suggested however, that this area would provide a good site for a bushland education and interpretive centre for the park (Wykes, 1993, personal communication).

6.1.2 Evaluation

Urban development west and north of the Christchurch Grammar Playing Fields

Whilst the Environmental Protection Authority (1988 Bulletin 322) indicated that residential development of the Mount Claremont Bushland may be acceptable if carried out in an environmentally sensitive manner, subsequent scientific evidence shows this area to have very high conservation value, such that it should be conserved. Indeed it can be concluded that the maintenance of these conservation values, despite its smaller size (37 hectares owned by the City of Perth) than the main area of Bold Park (approx 300 hectares), is achieved through isolation from urban development and minimal public use.

The substantial amount of scientific evidence, referred to above, indicates the very high conservation values of the Mount Claremont Bushland. The Environmental Protection Authority has concluded that the weight of evidence is clearly in favour of conservation of this area, as previously recommended in the System Six report. Urban development north or west of the Christchurch Grammar Playing fields would have significant and unmanageable impacts on the existing flora, fauna, recreation, education and scientific values of the Mount Claremont bushland; in a similar way to the impacts upon the M47 area which would have resulted from the Knightsbridge subdivision (Environmental Protection Authority, 1988 Bulletin 322).

Recommendation 1

The Environmental Protection Authority concludes that residential development either west or north of the Christchurch Grammar Playing Fields would degrade an area of very high conservation value through direct or significant indirect impacts which would be environmentally unacceptable and recommends that this development should not proceed.

(See Recommended Environmental Condition 4)

Residential development south of the Christchurch Grammar Playing Fields and Fortview Road

The area south of Fortview Road was not included in the area of recommendation M46 and the values of this area are considerably less than those of the general body of the Mount Claremont Bushland (Mitchell McCotter and Ecoscape, 1993). The Tuart trees in this area are mature and of value in the landscape, but the understorey is substantially cleared. The City of Perth Town Planning Scheme zones this area for low density residential development, such that few housing lots would be available. This factor should assist in minimising indirect impacts upon the high conservation values of the Mount Claremont Bushland.

Therefore, the Environmental Protection Authority has concluded that it would be environmentally acceptable to enable the area south of the Christchurch Playing Fields to be used for low density residential development, saving as many Tuarts as possible (recognising that these trees may present a hazard in residential areas). However, the indirect impacts of any development in this area would need to be minimised through appropriate environmental management. In particular it will be necessary to protect the gene pool of the Wembley Wax (*Chamelaucium uncinatum*) which has been isolated from hybridisation with common horticultural forms.

Recommendation 2

The Environmental Protection Authority has concluded that residential development south of the Christchurch Grammar Playing Fields would be environmentally acceptable but recommends that, prior to the finalisation of subdivision approval for the area, the City of Perth prepare an environmental management programme detailing how the flora, fauna, landscape, recreation and scientific values of the greater area of Mount Claremont Bushland will be conserved, to the requirements of the Minister for the Environment on advice from the Department of Conservation and Land Management and the Environmental Protection Authority. The Environmental Management Programme shall provide details of, but not be limited to:

- **management of recreational use of the bushland, including rationalisation of paths and tracks within the bushland;**
- **fire and weed management and disease control;**
- **control of rubbish dumping and other impacts from any adjacent residential development;**
- **ecological restoration, such as bush regeneration, habitat reconstruction;**
- **protection of the gene pool of the Wembley Wax (*Chamelaucium uncinatum*) from hybridisation with commercial strains of Geraldton Wax (*Chamelaucium uncinatum*);**
- **maintenance of Tuart (*Eucalyptus gomphocephala*) in the area south of the Christchurch Grammar playing fields;**
- **public involvement in the Environmental Management Programme; and**
- **monitoring programmes.**

(See Recommended Environmental Condition 4)

6.2 Realignment of Rochdale Road

The City of Nedlands has requested that the City of Perth provide a more direct route for traffic emanating from the city which uses Hay Street and Underwood Avenue and proceeds south on West Coast Highway (City of Nedlands, 1993). At present there is substantial use of the southern residential portion of Rochdale Road by this traffic, instead of the northern portion of Rochdale Road which links Stephenson Avenue with West Coast Highway (Mitchell McCotter and Ecoscape, 1993).

The only option considered in detail in the Public Environmental Review document is the option shown furthest south through the northern end of the Christchurch Grammar Playing Fields and meeting West Coast Highway near the Cottesloe Golf Course (see Figure 3) (Mitchell McCotter and Ecoscape, 1993).

In the Perth City Council's response to public submissions (Appendix 2), it is clear that only minor alignment changes are considered necessary to the northern portion of Rochdale Road.

6.2.1 Evaluation framework

Existing policy framework

As indicated in Section 5.3.1, the Environmental Protection Authority's previous recommendations concerning the Mount Claremont Bushland area indicated that residential development may be environmentally acceptable (Environmental Protection Authority, 1988 Bulletin 322). It could be inferred from this recommendation that it would also be acceptable to realign Rochdale Road through the Mount Claremont Bushland.

Technical information

The environmental values of the Mount Claremont Bushland are described in Section 5.3.1 above. The consultants Mitchell McCotter and Ecoscape (1993) have indicated that there may be benefits resulting from a more southerly realignment of Rochdale Road through the Mount Claremont Bushland, by virtue of being able to link the remaining portion of the bushland with the central Bold Park area through rehabilitation of the old alignment.

However, the impacts upon regionally significant species such as the Wembley Wax (*Chamelaucium uncinatum*) and Tuart (*Eucalyptus gomphocephala*) and important fauna habitats such as the *Acacia rostellifera* shrublands and the dune heath supporting large areas of *Calothalmus quadrifidus* would result in significant degradation of the environmental and scientific values of the area. Realignment of Rochdale Road through the Mount Claremont Bushland would also cut off the current linkages that exist between this area and the Cottesloe Golf Course.

The consultants did not include the realignment of Rochdale Road in their preferred structure plan.

Comments from key government agencies

As indicated above the City of Nedlands has been requesting that the realignment of Rochdale Road occur as a priority to lessen the impact upon residents in the southern portion of Rochdale Road (City of Nedlands, 1993).

Public submissions

Many submissions indicated that diversion of traffic from the residential area is needed. However, opinion was divided as to whether local area traffic management devices would be sufficient. The current arrangement of the intersection of Stephenson Avenue with Rochdale Road, which promotes the use of the southern (residential) portion of Rochdale Road was identified as a problem.

Realignment of Rochdale Road through Mount Claremont Bushland, as described by the Public Environmental Review document, was generally thought to be unacceptable because of the impacts upon the environmental, recreation, education and scientific values of the Mount Claremont Bushland.

In their response to submissions, the Perth City Council has indicated that only minor deviations to the existing alignment of Rochdale Road are thought to be required, however, the final location will need to consider traffic safety as well as other considerations.

6.2.2 Evaluation

Realignment option evaluated in the Public Environmental Review document

Mitchell McCotter and Ecoscape (1993) have not fully investigated the potential for a realignment of Rochdale Road, suggesting that it was beyond the scope of the current Public

Environmental Review. However, given the level of detail provided in the Public Environmental Review on the values of the M46 and M47 areas, the Environmental Protection Authority considers that it should define environmental objectives to assist the transport planning studies which will need to be conducted by the State Planning Commission, the Main Roads Western Australia, the City of Perth and the City of Nedlands to resolve traffic problems in this location.

In the same way that the Public Environmental Review document found that residential development in this area would cause significant and unacceptable environmental degradation, realignment of Rochdale Road through the Mount Claremont Bushland as discussed by the consultants would cause equivalent damage; especially if associated with residential development south of the new alignment.

Additionally, as indicated in Section 5.3.2, it can be concluded that the maintenance of the conservation values of the Mount Claremont Bushland is achieved through isolation from urban development and minimal public use. Rejoining the area with the central portion of Bold Park would lead to increased public use which could degrade the very high environmental values of this area.

Therefore, the Environmental Protection Authority has concluded that the realignment of Rochdale Road as evaluated in the Public Environmental Review document would be environmentally unacceptable.

Recommendation 3

The Environmental Protection Authority has concluded that the realignment of Rochdale Road through the Mount Claremont Bushland, as discussed in the Public Environmental Review document, would be environmentally unacceptable and recommends that it not be considered further.

(See Recommended Environmental Condition 5)

Other options for the realignment of Rochdale Road

As indicated by the City of Perth's response to public submissions, the actual requirements for realigning Rochdale Road appear to require only minor modification rather than the significant realignment discussed above. The Environmental Protection Authority understands that the modifications required would be similar to the northern most option proposed on Figure 3.

In this general locality there are significant environmental, recreational, educational ethnographic and scientific values as described in the Public Environmental Review document (Mitchell McCotter and Ecoscape, 1993) and in previous Environmental Protection Authority reports (Environmental Protection Authority, 1983b, Environmental Protection Authority, 1988 Bulletin 322).

However, there are some areas of degraded vegetation adjacent to the intersection of Rochdale Road and Stephenson Avenue and it would appear that there may be some potential to reorganise the intersection, including minor adjustments to the road layout, without causing significant environmental impacts upon the values of Bold Park and Mount Claremont Bushland.

In order to assist government agencies in the conduct of transport planning studies relating to the requirement for a road through this area, the Environmental Protection Authority considers that it should define environmental objectives. Environmental objectives for this proposal are contained in the following recommendation:

Recommendation 4

The Environmental Protection Authority recommends that in considering a realignment of Rochdale Road, the City of Perth in liaison with State

government agencies responsible for transport and planning, including the State Planning Commission and Main Roads Western Australia, should give due regard to the following environmental objectives for the area known as Bold Park and the Mount Claremont Bushland:

- The alignment should maximise the use of existing road pavement areas and those areas which are already disturbed.
- Any encroachment into Bold Park should be limited by restricting the alignment to within the existing Metropolitan Region Scheme road reserve.
- Encroachment into the Mount Claremont Bushland, beyond areas which are already disturbed, should be avoided.
- The destruction of regionally significant species of vegetation (as listed in Appendix 5) should be avoided.
- Any ethnographic sites within the Bold Park area should be protected.

In due course, if the realignment of Rochdale Road is considered necessary, any proposal should be referred to the Environmental Protection Authority for assessment.

(See Recommended Environmental Condition 5)

6.3 Land uses in degraded sites within the study area

There are a number of sites within the study area which are currently cleared of natural vegetation as a result of previous land uses. These areas (shown on Figure 4) include the former Skyline Drive-in, the Water Authority of Western Australia reservoir and a former quarry site, all of which are between Oceanic Drive and The Boulevard. In the central portion of Bold Park, between Oceanic Drive and Rochdale Road north, degraded areas include the Council turf farm, a pine plantation, a quarry site along West Coast Highway and some clearing for a residential subdivision known as St Brendan's Drive. The Public Environmental Review considered each of these areas for a variety of land use options including rehabilitation.

6.3.1 Evaluation framework

Existing policy framework

The System Six report excluded the areas of City Beach High School and St Brendan's Drive from its recommendations for the M47 area. However, since the City of Perth had discontinued the St Brendan's Drive subdivision, the Environmental Protection Authority recommended that it should be managed as part of Bold Park (Environmental Protection Authority, 1988 Bulletin 322).

The central area of Bold Park, between Oceanic Drive and Rochdale Road north, contains other degraded sites. The Environmental Protection Authority has also previously made recommendations about these sites in its report on the proposed subdivision of Knightsbridge Estate (Environmental Protection Authority, 1988 Bulletin 322). In that report the Environmental Protection Authority recommended *inter alia* that, environmentally degraded locations within the central area (such as the turf farm) could be considered for activities or uses which are compatible with and sympathetic to the values of the surrounding bushland and in accordance with the objectives of the Regional Park.

The area north of Oceanic Drive is generally reserved for Parks and Recreation in the Metropolitan Region Scheme (excepting the Ocean Gardens Village, the City Beach High School and the Western Suburbs Route road reserve).

Technical information

The degraded areas present a threat to the environmental values of the greater study area, predominantly from weed encroachment and fire control (Mitchell McCotter and Ecoscape, 1993). Residential development of these areas could present further degrading pressures upon the conservation values of the bushland areas; such as weed invasion, fires, disease spread and predation by domesticated animals, additional track formation, dumping of rubbish including garden prunings (Mitchell McCotter and Ecoscape, 1993).

Public submissions

The majority of public submissions wanted degraded areas to be rehabilitated to form part of the bushland and to remove threats from potential development, as well as reducing the existing threats from weeds and fires. Residential development was clearly not acceptable to the majority of submitters. However, a possible park education centre located near the old Skyline Drive-in was seen as beneficial.

One submission noted that the Public Environmental Review document describes *Banksia* woodland between the Bold Park Swimming Pool and the Water Authority of Western Australia reservoir as degraded, but commented that this area contains important food resources for birds which nest in the adjacent Tuart - Jarrah complex.

Another submission indicated that the Pine Plantation area may provide a food resource for the White-Tailed Black Cockatoo. It was suggested therefore, that prior to any decisions for rehabilitation of this area, its importance to that species should be confirmed.

6.3.2 Evaluation

Land uses which are consistent with the overall management requirements of the area, such as entry points, a park management and education centre, have previously been accepted as appropriate uses by the Environmental Protection Authority (Environmental Protection Authority, 1983). No information has been presented for the Environmental Protection Authority to review that position.

Whilst general residential development would be likely to cause significant additional threats to the areas adjoining the degraded sites, institutional uses (such as the retirement village) may be acceptable since they tend to be managed by a single authority and impacts upon adjacent areas can be more easily controlled. Other uses such as continuing recreational uses would also be appropriate. However, such uses should be restricted to areas which are already cleared of vegetation and should be consistent with the management requirements of the adjoining natural areas. In particular, the already cleared and grassed area of the old quarry south of The Boulevard may be suitable for such uses. However, particular attention needs to be given to the limestone hill near The Boulevard, which supports one of the few remaining populations of Fremantle mallee (*Eucalyptus foecunda*) in the metropolitan region.

Similarly, the Water Authority of Western Australia reservoir site is significantly degraded and is in need of appropriate management. Uses in this area are under the control of the Water Authority of Western Australia and have not been considered in the Public Environmental Review document. However, the consultants concluded that the vegetation to the south of the Water Authority of Western Australia reservoir was important and should be protected from direct or indirect development impacts (Mitchell McCotter and Ecoscape, 1993).

The Public Environmental Review document suggests that the Drive-in area should be rehabilitated and the adjoining cleared land to the east could form a Park Management and Education Centre (Mitchell McCotter and Ecoscape, 1993). Given that the Drive-in is situated between areas of important limestone heath vegetation which contains regionally significant species of flora, this would appear to be the most appropriate scenario. However, the cleared area to the east of this location may actually become separated from the park as a result of future construction of the Western Suburbs Route (if an option based upon the Road Reserves Review

recommendations is considered further). Hence this may not be an appropriate location for a park management and education centre as it would be surrounded by significant roads. In contrast, Perry House which is located next to the central portion of Bold Park, already provides accommodation for the Wildflower Society of Western Australia. This area may provide a better location for such facilities as it would not require the crossing of a major road to gain access to the largest portion of Bold Park.

The future of areas such as the turf farm, the quarry on West Coast Highway, the area around Camel Lake and the Pine Plantation should all be considered within the context of a management plan for the entire area and uses should be in context with the Regional Park values of the bushland.

Land uses in currently degraded portions of the study area which are proposed in the Public Environmental Review document are generally consistent with the Environmental Protection Authority's previously stated position. To ensure that any developments which may be proposed in these degraded areas are compatible with environmental management of the park, the Environmental Protection Authority considers that it should define environmental objectives for such proposals. Environmental objectives for these degraded areas are contained in the following recommendation:

Recommendation 5

The Environmental Protection Authority recommends that the developments indicated in the 'Preferred Structure Plan' (Figure 6) should meet the following environmental objectives:

- **Vegetation associations and habitats should be reconstructed to link the Limestone Heaths and *Eucalyptus gomphocephala* and *Eucalyptus decipiens* woodlands which are to the north and south of the old Skyline Drive-in.**
- **Any potential development in the area between Oceanic Drive and The Boulevard should not result in the further clearance of vegetation, and should ensure that such developments do not lead to additional impacts upon the adjacent bushland ecosystems.**
- **The destruction of regionally significant species of vegetation (as listed in Appendix 5) should be avoided.**
- **Use of areas known as the turf farm, the quarry on West Coast Highway, the pine plantation, Camel Lake and St Brendan's Drive should be compatible with and sympathetic to the environmental values of the surrounding bushland and determined in accordance with an Environmental Management Programme for the entire study area.**

(See Recommended Environmental Condition 6)

6.4 Construction of Stephenson Highway (Western Suburbs Route)

The Road Reserves Review Committee concluded that a regional road linking Fremantle and the South West Corridor with the North West Corridor is essential to the development of the regional centres of Joondalup, Stirling, Fremantle and Rockingham (Road Reserves Review Committee, 1991). A highway standard road was proposed to pass through the western suburbs potentially impacting upon the M46 and M47 areas.

Two route options were identified in the Public Environmental Review. One option using the existing Metropolitan Region Scheme Reserve alignment and another based upon the recommendations of the Road Reserves Review Committee (Road Reserves Review Committee, 1991). The optional route alignments are shown in Figure 5.

6.4.1 Evaluation framework

Existing policy framework

The Environmental Protection Authority has previously considered the potential for impacts upon the M47 area which may arise from the implementation of the alignment reserved for 'Other Major Highway' in the Metropolitan Region Scheme (Environmental Protection Authority, 1988 Bulletin 322). In that report to State Government the Environmental Protection Authority concluded that '*any proposal to construct the Western Suburbs Highway on the alignment currently reserved in the Metropolitan Region Scheme would be likely to have a significant and adverse impact on the present environmental, recreational and educational values of the M47 area*' (Environmental Protection Authority, 1988 Bulletin 322).

The Road Reserves Review Committee final report in 1991 recommended that the road reserve for the proposed Western Suburbs Route which crosses Bold Park (M47) between Rochdale Road and Oceanic Drive, should be deleted from the Metropolitan Region Scheme (Road Reserves Review Committee, 1991). In addition, Main Roads Western Australia has advised that it supports the recommendation of the Road Reserves Review Committee (Main Roads Western Australia, 1993). According to Mitchell McCotter and Ecoscape (1993), the Perth City Council in its submission to the Road Reserves Review expressed total opposition to the Western Suburbs Highway Metropolitan Region Scheme reserve from West Coast Highway to Empire Avenue.

The Environmental Protection Authority (1988 Bulletin 322) also recommended that detailed studies required to determine road requirements for future north / south vehicular access in the locality of the M47 area should be undertaken by the State Planning Commission, Perth City Council and Main Roads Western Australia as soon as possible. These studies have not yet occurred. Indeed, decisions on the implementation of the Western Suburbs Highway are beyond the jurisdiction of the Perth City Council.

Technical information

Whilst the alignment of the route suggested by the Road Reserves Review recommendations is not finalised, it provides a concept which can be assessed for environmental impacts. The alignment proposed by the Road Reserves Review (1991) is based on the following '*an alternative route which utilises existing sections of West Coast Highway and Oceanic Drive, and Bold Park Drive widened to four lanes, would provide adequate capacity. Minor realignments to Oceanic Drive and West Coast Highway may be desirable to emphasise the continuity of this route*'.

Mitchell McCotter and Ecoscape (1993) have identified the following impacts arising from their interpretation of this proposed alignment.

Regionally significant flora and vegetation associations	<p>Tuart (<i>Eucalyptus gomphocephala</i>) at the corner of Oceanic Drive and West Coast Highway.</p> <p>Tuart - Jarrah woodland in the northern area (between Oceanic Drive and The Boulevard) decreased by 30 %. This is the only area of this community in the study area.</p> <p>Small populations of <i>Acacia xanthina</i> and <i>Chamelaucium uncinatum</i> would be destroyed.</p>
Fauna	<p>Tuart - Jarrah woodland likely to be important to maintaining biological diversity in the northern area. Fauna use of this community has not been surveyed and such fauna may not exist elsewhere in the study area.</p> <p>Indirect effects include increased weed invasion and fires along the route.</p>

Recreational value	Horse riding trails affected in the area around Bold Park Drive will be impacted. Other recreational uses such as walking may be affected particularly in the northern area. Imposes a significant break between northern and central areas.
Landscape value	Filling of areas south of Oceanic Drive will cause intrusion into views from within the central area of Bold Park. Major impact on residents of Elphin Street.
Noise	Oceanic Drive residents would suffer significant increase (beyond Main Roads criteria of acceptable - unless attenuation measures are adopted).

Public submissions

There were several substantial submissions which were directed particularly at this issue. A community group known as the Western Suburbs Highway Action Group has been formed to enable community involvement during consideration of the proposals for this major highway. This group supports the Public Environmental Review in its opposition to any highway constructed through Bold Park. The submission from this group identifies that the Tuart - Jarrah woodland in the northern area (which could be decreased by 30 %) is the only area of this community in the study area. Furthermore, the submission identifies that the Tuart - Jarrah woodland contains mature trees which are likely to be important to maintaining biological diversity in the northern area, especially since they may provide nesting sites for birds which feed in the nearby *Banksia* woodlands.

A further group of residents which have made substantial comment on the proposals include residents from Elphin Street. This group of residents will be significantly impacted by the alignment proposed by the Road Reserve Review in terms of visual amenity and noise.

Several submissions referred to an alternative route which utilises Hale Road as the link between West Coast Highway and Pearson Street and on to the Mitchell Freeway. The submitters noted that the Stirling City Council has recently widened portions of Hale Road to two lanes in a divided carriageway formation and have suggested that this could form a better link between the northern western and southern western corridors.

6.4.2 Evaluation

Potential highway routes linking the Mitchell Freeway to Fremantle along the coastal suburbs will cause much public discussion because of expected significant social and environmental impacts. The two options would have different degrees of impacts upon the values of the study area.

Metropolitan Region Scheme alignment

Given the above policy background, and the technical information presented in the Public Environmental Review document by Mitchell McCotter and Ecoscape (1993), the Environmental Protection Authority has concluded again that the Western Suburbs Highway alignment which is reserved in the Metropolitan Region Scheme would cause significant and unacceptable environmental impacts.

Recommendation 6

The Environmental Protection Authority has concluded that the proposed alignment for the Western Suburbs Route (Stephenson Highway) which is reserved in the Metropolitan Region Scheme would have a significant and

adverse impact on the M47 area which would be environmentally unacceptable and recommends that the existing Metropolitan Region Scheme 'Other Major Highway' Reserve, for this proposed road, should be generally removed from the M47 area.

Road Reserves Review alignment evaluated in the Public Environmental Review document

Given the level of detail provided in the Public Environmental Review on the values of the M47 area, the Environmental Protection Authority considers that it should define environmental objectives for the consideration of those agencies involved in the conduct of transport planning studies (Department of Planning and Urban Development, Main Roads Western Australia and the Department of Transport). The following evaluation is based upon assessment of the Road Reserves Review option which has been interpreted by the consultants Mitchell McCotter and Ecoscape (1993), with the adjustment arising from the Environmental Protection Authority's previous assessment of the realignment of West Coast Highway between Challenger Parade and Helston Avenue (Environmental Protection Authority, 1992 Bulletin 655).

The interpretation provided by the consultants appears to involve a duplication of the existing West Coast Highway through the central portion of Bold Park. In this area, West Coast Highway is already a dual carriageway with two lanes in each direction. Further encroachment into the M47 area in this location will result in the destruction of *Banksia* woodlands and some populations of the Wembley wax (*Chamelaucium uncinatum*). Destruction of regionally significant stands of Tuart (*Eucalyptus gomphocephala*) at the corner of West Coast Highway and Oceanic Drive will also occur. This latter species is important in terms of its associated fauna and is of limited occurrence elsewhere in the inner Metropolitan area. The stands of Tuart in this location are particularly good (Mitchell McCotter and Ecoscape, 1993).

In addition, it appears that this alignment, as interpreted by the consultants, may lead to further encroachment into Bold Park at some later stage, causing even greater impacts on the regional values of Bold Park in this area, because of the tight corner imposed by their interpretation (similar encroachment has been required by the realignment of West Coast Highway for safety reasons). Hence, to avoid these significant impacts it may be prudent to consider the intersection of any proposed major highway with the West Coast Highway in this location to use a T-intersection with the West Coast Highway as the continuing road.

In the area north of Oceanic Drive, this alignment will cause the loss of 30 % of the Tuart (*Eucalyptus gomphocephala*) - Jarrah (*Eucalyptus marginata*) woodland (Mitchell McCotter and Ecoscape, 1993). The area adjacent to The Boulevard and Bold Park Drive is the only location of this community in the study area. This community is likely to provide nesting sites for birds using the nearby *Banksia* woodlands as feeding sites.

Some regionally significant species may also be lost from the northern area, including Tuarts (*Eucalyptus gomphocephala*), and *Acacia xanthina*. This level of impact assumes the alignment through the northern area sweeps around from Oceanic Drive east of the limestone heath vegetation association as indicated on Figure 5.

Construction of the highway may require incursions into Bold Park along the edges of West Coast Highway and Oceanic Drive. Whilst there are some degraded areas along these roadsides, further intrusions should be avoided to protect the integrity of these highly valued areas. Incursions into the edges of the bushland will reduce its size and enable penetration of weeds into new areas. Other environmental impacts arising from 'edge effects' and fragmentation can be expected (Saunders, Hobbs and Margules, 1991). Maximum use of the existing pavement areas and minimisation of encroachment beyond areas which are already degraded would reduce environmental impacts in these areas.

The road will form a major barrier to fauna movement between the northern and central areas of Bold Park and a substantial amount of habitat could be lost. Recreational uses would be impacted, but it is likely that the bridle trails could be re-instated if the managing authority considered this appropriate.

Landscape values would be impacted, particularly the views from Reabold Hill and adjacent to Oceanic Drive. Bushland views which exist for residents of Elphin Street would be severely impacted.

Noise impacts would be substantial for residences along Oceanic Drive. Mitchell McCotter and Ecoscape (1993) indicate that noise levels at these residences would exceed Main Roads Western Australia's noise criteria. These impacts may be managed to acceptable levels by the use of noise barriers and alternative road surfaces.

The interpretation of the Road Reserve Review alignment which is presented in the Public Environmental Review document will cause some significant environmental impacts which will not be able to be adequately managed.

Recommendation 7

The Environmental Protection Authority has concluded that the alignment for the Western Suburbs Route (Road Reserves Review Option shown in Figure 5) duplicating the West Coast Highway would have significant and adverse impacts on the M47 area which would be environmentally unacceptable and recommends that this alignment should not proceed.

Future alignment proposals

The Environmental Protection Authority is aware that other variations of the Road Reserve Review alignment option have been put forward, but have not been assessed. Given the potential for significant environmental and social impacts, it is considered important that environmental values are included as early as possible in the transport planning studies for this road.

The planning and construction of a major highway in this area will also require extensive community consultation as it may cause significant social and environmental impacts. Accordingly, any proposal for this highway should be referred to the Environmental Protection Authority for detailed consideration.

In order to assist government agencies in the conduct of transport planning studies relating to the possible future requirement for a road through this area, the Environmental Protection Authority considers that it should define environmental objectives. Environmental objectives for this proposal are contained in the following recommendation:

Recommendation 8

The Environmental Protection Authority recommends that in considering an alignment for the Western Suburbs Highway, State Government agencies responsible for transport planning, including the State Planning Commission and Main Roads Western Australia should give due regard to the following environmental objectives for the area known as Bold Park:

- **The alignment should maximise the use of existing road pavement areas and those areas which are already disturbed.**
- **The destruction of regionally significant species of vegetation (as listed in Appendix 5) should be avoided.**
- **Noise levels for residences along the alignment should be managed to meet the noise criteria of 63 dB(A) L₁₀ (18 hour).**

In due course, if the Western Suburbs Highway is considered necessary, any proposal should be referred to the Environmental Protection Authority for assessment.

6.5 Options for the on-going management of the study area

The Public Environmental Review addressed four potential options for a management structure to carry out the on-going management of the study area (see Chapter 7 Mitchell McCotter and Ecoscape (1993)). The four options are; continued management by the Perth City Council, management as a Regional Park, a management structure based on the Kings Park model, or management as a Crown land reserve. The consultants presented a preferred option and the rationale for this choice (see Chapter 7 Mitchell McCotter and Ecoscape (1993)).

A number of key management issues were also discussed, recognising that the preparation and implementation of management plans for the study area is vital to ensure that its conservation, landscape and recreational values are maintained and enhanced (Mitchell McCotter and Ecoscape, 1993). Weed and fire control were identified as the key management issues requiring urgent attention throughout the study area.

6.5.1 Objective

Environmental management of the study area is one of the most critical requirements to ensure the maintenance of its considerable environmental, recreational, educational and scientific values in the long term. To direct this management a coordinating structure is required as well as an environmental management programme.

6.5.2 Evaluation framework

Existing policy framework

In 1983 the Environmental Protection Authority recommended that the areas which are considered in this Public Environmental Review should be managed as a Regional Park (Environmental Protection Authority, 1983). However, the Perth Metropolitan Region - Metroplan did not identify Bold Park or its surrounding bushland areas as one of the proposed fourteen Regional Parks (Department of Planning and Urban Development, 1990).

Mitchell McCotter and Ecoscape (1993) indicated that, at the time of the release of the Public Environmental Review document, the City of Perth wished to retain ownership of the area. However, environmental management of the relatively large area would be a substantial drain on Council resources. With the approaching division of the Perth City Council into four smaller local municipalities, the difficulty of resourcing appropriate environmental management of this area would become even more of a problem without State Government assistance.

Public submissions

A very large proportion of public submissions addressed this issue. Submissions sought to find a mechanism which would provide the security of tenure which the public desires for this area. Most commonly the public sought to have the area declared an A Class Crown reserve under the Lands Act to be vested in the National Parks and Nature Conservation Authority and managed by the Department of Conservation and Land Management.

The public submissions also sought to have a role for community groups to be involved in management planning similar to that provided at Star Swamp and Trigg Beach for instance.

6.5.3 Evaluation

Much of the area under consideration has very significant flora and fauna values which will require the expert assistance of the State Government's wildlife management agency; the Department of Conservation and Land Management. This approach is consistent with the proposed management mechanism described in Part 1 of the System Six report (Environmental Protection Authority, 1983).

The strong community desire for A Class reservation and management by the Department of Conservation and Land Management is noted. However, for this option to be realised the City of Perth would have to relinquish ownership of the land; either by State Government purchase or ceding by the Perth City Council. The benefit of A Class reservation under the Land Act is that it would provide high security of tenure.

The consultants for this Public Environmental Review have determined that a Regional Park would be an appropriate mechanism to protect the values of this area through controls in the City of Perth Town Planning Scheme and the Metropolitan Region Scheme. The consultants have proposed a Regional Park model because it would enable the Perth City Council to retain ownership of the land and would provide access to additional resources to assist in management and to provide an opportunity for community involvement in management of the study area (Mitchell McCotter and Ecoscape, 1993). This mechanism would require rezoning of the Council owned land in their Town Planning Scheme and in the Metropolitan Region Scheme. State Government would be required to agree with this approach and direct the State Planning Commission to amend the Metropolitan Region Scheme accordingly.

The Environmental Protection Authority considers that a Regional Park model as proposed in the Public Environmental Review document would be consistent with the recommendations it made to government in the System Six report. In order to ensure that the security of tenure for the conservation areas of the study area, the City of Perth should amend its Town Planning Scheme to reflect the outcomes of this Public Environmental Review. In addition, the Perth City Council should liaise with the State Planning Commission to seek amendment to the Metropolitan Region Scheme to reserve as Parks and Recreation all lands within the study area which are currently zoned urban, excepting the area south of the Christchurch Grammar playing fields which may be used for low density residential uses.

Recommendation 9

The Environmental Protection Authority recommends that prior to any development within the System Six M46 and M47 areas which has been considered in this report, the State Planning Commission and the Perth City Council should initiate the necessary amendments to the Metropolitan Region Scheme and Town Planning Schemes respectively, to reflect the above recommendations and establish the area as a Regional Park. In addition, the Environmental Protection Authority recommends that the Nedlands City Council should amend its Town Planning Scheme to reflect the above recommendations in regard to Lot 1 Stephenson Avenue.

(See Recommended Environmental Condition 3)

The consultants have also recognised that the preparation and implementation of management plans for the study area is vital to ensure that its conservation, landscape and recreational values are maintained and enhanced (Mitchell McCotter and Ecoscape, 1993). It is important that an environmental management programme is developed as soon as possible to protect the existing environmental values of the study area, to coordinate rehabilitation of degraded areas and to guide future uses which may occur within areas which are currently degraded. In order to achieve these objectives the Environmental Protection Authority recommends that as a priority the City of Perth, or its successor, prepare an Environmental Management Programme with the assistance of the Department of Conservation and Land Management, the City of Nedlands and the Department of Planning and Urban Development.

Recommendation 10

The Environmental Protection Authority recommends that prior to any development within the System Six M46 and M47 areas controlled by the City of Perth, the City of Perth should prepare and commence implementation of an

Environmental Management Programme for these areas. The Environmental Management Programme shall provide details of, but not be limited to:

- **management of recreational use of the bushland, including rationalisation of paths and tracks within the bushland;**
- **control of rubbish dumping and other impacts from any adjacent development;**
- **fire and weed management (including removal of non-local native species) and disease control;**
- **ecological restoration, such as bush regeneration and habitat reconstruction;**
- **public involvement in the Environmental Management Programme; and**
- **monitoring programmes.**

(See Recommended Environmental Condition 2)

7. Discussion and synthesis

The Public Environmental Review document (prepared by Mitchell McCotter and Ecoscape, 1993) identifies the environmental issues in detail. This environmental impact statement provides a finer detail reference to the values which were identified in the Environmental Protection Authority's System Six report. By studying the area at this finer resolution, the consultants have provided much information to support the System Six recommendations M46 and M47, and indeed provide additional evidence to indicate the particularly special values of the study area.

The major environmental issues related to this proposal which have been identified through the environmental impact assessment process include the following issues (section references are to (Mitchell McCotter and Ecoscape, 1993)).

- The study area is one of the largest areas of natural bush in the inner metropolitan area and contains a variety of landforms resulting in diverse vegetation types, a species rich flora and associated fauna habitats (section 2.2.3).
- Bold Park and its surrounding bushland areas are regionally significant because of the number of vegetation associations and floristic variations within these associations, the diversity of the flora and the presence of flora of special significance (section 2.2.3).
- Bold Park and Mount Claremont Bushland are known to be rich (a large number of species and large numbers of individuals) in reptile and bird fauna (section 2.2.2). In addition, it can be deduced that the area is rich in invertebrates because of the large numbers and diversity of insectivorous fauna in the area (three species of Fairy-wren the Scrub-wren and lizards which are all obligate arthropod feeders) (Western Australian Museum, 1993).
- Views within the bushland areas are often contained, noise from motor vehicle activity is attenuated by topographic features, and particularly in the central 'Bold Park area' distance from roads gives a feeling of being in a natural bushland rather than a suburban area (page 2.16 and 2.3.6).
- The area provides recreation opportunities used by many residing outside of the City of Perth (section 2.3.3).
- The study area acts as a major education and scientific resource, despite not having the facilities found at Kings Park. Major advantages in this regard are its size, diversity of flora and fauna, lack of disturbance, central location and easy accessibility (section 2.3.4).

- There are potential development pressures which could threaten the integrity of these identified values. The development pressures discussed in the Public Environmental Review document include:
 - urban development in the Mount Claremont Bushland area;
 - realignment of Rochdale Road;
 - land uses within a number of degraded sites within the study area;
 - residential development at Lot 1 Stephenson Avenue (Knightsbridge Estate); and
 - construction of Stephenson Highway (Western Suburbs Route).
- The Environmental Protection Authority has in the past identified the following additional issues as potentially detrimental to the integrity of these System Six areas:
 - the realignment of West Coast Highway at south City Beach;
 - potential residential development in the central portion of Bold Park; and
 - the westward extension of Underwood Avenue to West Coast Highway.
- In addition, the issue of ownership and management needs to be addressed such that the Environmental Protection Authority's recommendation for management of this area as a Regional Park should be implemented and an Environmental Management Programme for the entire Regional Park area be prepared and implemented.

8. Conclusions

Following consideration of the issues detailed in the Public Environmental Review, additional information presented in the public submissions and the proponent's response to public submissions and other information available to the Environmental Protection Authority, the Environmental Protection Authority concludes that the proposed low density residential development south of the Christchurch Grammar Playing Fields, the proposed land uses displayed in Structure Plan 6.4 (Figure 6) and the proposed management of the study area as a Regional Park are environmentally acceptable subject to the recommendations made in this report. This includes protecting areas of regional flora, fauna, landscape, education, scientific and recreational value from direct or indirect impacts arising from new developments and implementing an approved Environmental Management Programme.

Recommendation 11

The Environmental Protection Authority has concluded that the proposed Structure Plan 6.4 is environmentally acceptable. In reaching this conclusion, the Environmental Protection Authority has identified the main environmental issues as:

- **Conservation of the flora, fauna, landscape, scientific, education and recreation values of the study area;**
- **protection of the above values in the development of the proposals defined in the proposed Structure Plan 6.4 (Figure 6) through preparation and implementation of an approved Environmental Management Programme; and**
- **the implementation of a management structure and function consistent with the Regional Parks concept described in the System Six report.**

Accordingly, the Environmental Protection Authority recommends that the proposal proceed subject to the above recommendations which are reflected in the Environmental Protection Authority's recommended environmental conditions (Recommended Environmental Conditions are listed in Section 9).

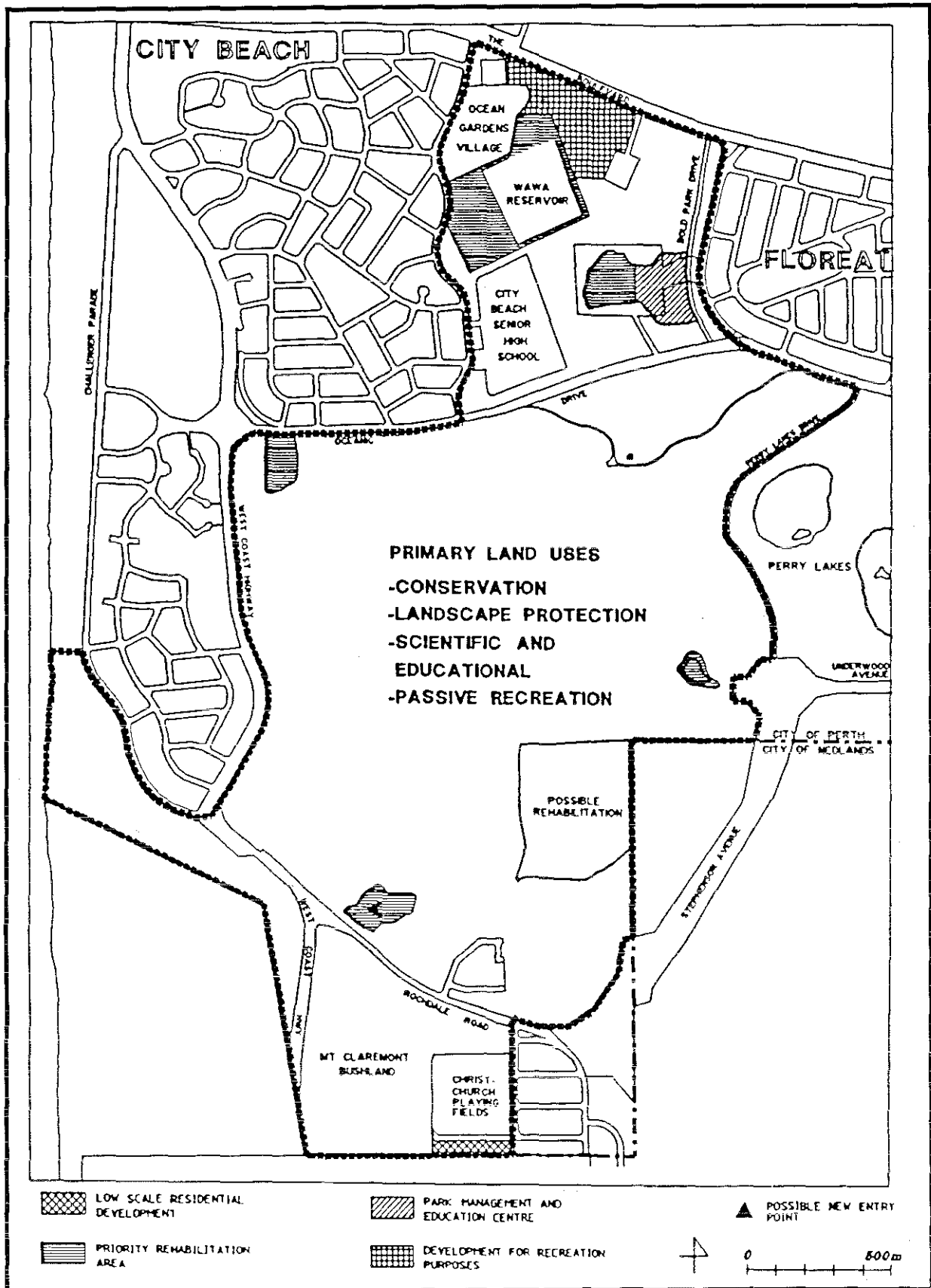


Figure 6. Land use structure plan 6.4 (from Mitchell McCotter and Ecoscape 1993).

The Environmental Protection Authority has established an implementation and auditing system which requires the proponent to advise the Environmental Protection Authority on how it would meet the requirements of the environmental conditions for the project. The proponent would be required to develop a Progress and Compliance report for this project as a section of the recommended audit programs.

The Environmental Protection Authority's experience is that it is common for details of a proposal to alter through the detailed design and construction phase. In many cases alterations are not environmentally significant or have a positive effect on the environmental performance of the project. The Environmental Protection Authority believes that such non-substantial changes, and especially those which improve environmental performance and protection, should be provided for.

The Environmental Protection Authority believes that any approval for the proposal based on this assessment should be limited to five years. Accordingly, 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.

9. Recommended environmental conditions

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

LAND USE STRATEGY FOR BOLD PARK AND ENVIRONS (635)

1 Implementation

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

- 1-1 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.

2 Environmental Management

- 2-1 The proponent shall conserve and enhance the flora, fauna, landscape, scientific, education and recreation values of those portions of System Six recommendation areas M46 and M47 and associated bushland within the City of Perth as defined in Figure 1.
- 2-2 To achieve the objectives of condition 2-1, prior to any development within those portions of System Six recommendation areas M46 and M47 and associated bushland within the City of Perth and with the benefit of public involvement, the proponent shall prepare an Environmental Management Programme for these areas, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management and the Environmental Protection Authority.

This Environmental Management Programme shall include, but not be limited to:

- (1) management of recreational use of the bushland, including rationalisation of paths and tracks;

- (2) fire and weed management and disease control;
- (3) control of rubbish dumping and other impacts from any adjacent residential development;
- (4) ecological restoration, such as bush regeneration and habitat reconstruction;
- (5) protection of regionally significant flora detailed in Appendix 5;
- (6) protection of fauna habitats;
- (6) public involvement; and
- (7) monitoring programmes.

2-3 The proponent shall make available for public review the Environmental Management Programme required by condition 2-2, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

2-4 Prior to any development, the proponent shall commence implementation of the Environmental Management Programme required by condition 2-2, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management and the Environmental Protection Authority.

3 Zoning of Land

3-1 The proponent shall ensure that the System Six recommendation areas M46 and M47 and associated bushland are given appropriate zonings to secure their conservation and recreation values through the planning processes.

3-2 To achieve the objective of condition 3-1, prior to any development within those portions of System Six recommendation areas M46 and M47 and associated bushland within the City of Perth, the proponent shall initiate amendments to the City of Perth Town Planning Scheme to reflect the conservation and recreational values of these areas, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management, the Department of Planning and Urban Development and the Environmental Protection Authority.

3-3 To achieve the objective of condition 3-1, prior to any development within the area of System Six recommendation areas M46 and M47 and relevant bushland areas, the proponent shall liaise with the State Planning Commission and the Nedlands City Council, to initiate an appropriate amendment to the Metropolitan Region Scheme.

4 Residential Development

4-1 The proponent shall not permit residential development in the area of the Mount Claremont bushland to the south of Bold Park, except in the area immediately south of the Christchurch Grammar playing fields as indicated on Figure 6.

4-2 To protect the flora, fauna and scientific values of the Mount Claremont bushland area to the south of Bold Park, the proponent shall only permit residential development in the area immediately south of the Christchurch Grammar playing fields (as indicated on Figure 6), which the proponent shall manage to ensure that off site impacts of the residential development are minimised.

4-3 To achieve the objective of condition 4-2, prior to preliminary approval of subdivision and with the benefit of public involvement, the proponent shall prepare an Environmental Management Programme for the Mount Claremont bushland area to the south of Bold Park, detailing how the flora, fauna, landscape, recreation and scientific values of the Mount Claremont bushland will be conserved, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management and the Environmental Protection Authority.

This Environmental Management Programme shall include, but not be limited to:

- (1) management of recreational use of the bushland, including rationalisation of paths and tracks within the bushland;
- (2) fire and weed management and disease control;
- (3) control of rubbish dumping and other impacts from any adjacent residential development;
- (4) ecological restoration, such as bush regeneration, habitat reconstruction;
- (5) protection of the gene pool of the Wembley Wax (*Chamelaucium uncinatum*) from hybridisation with commercial strains of Geraldton Wax (*Chamelaucium uncinatum*);
- (6) maintenance of Tuart (*Eucalyptus gomphocephala*) in the area south of the Christchurch Grammar playing fields which may eventually be developed for low density residential housing;
- (7) public involvement in the Environmental Management Programme; and
- (8) monitoring programmes.

4-4 Prior to preliminary subdivision approval, the proponent shall commence implementation of the Environmental Management Programme required by condition 4-3, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management and the Environmental Protection Authority.

5 Realignment of Rochdale Road

5-1 The proponent shall not permit the realignment of Rochdale Road through the area of the Mount Claremont bushland to the south of Bold Park, as shown on Figure 3 as the 'route option investigated'.

5-2 The proponent shall design any realignment of Rochdale Road to protect the flora, fauna, scientific, education, recreation, ethnographic and landscape values of the System Six recommendation areas M46 and M47.

5-3 The proponent shall ensure that any proposed realignment of Rochdale Road meets the following requirements:

- (1) maximisation of the use of existing road pavement areas;
- (2) avoidance of System Six recommendation areas M46 and M47;
- (3) minimisation of destruction of regionally significant species of vegetation (as listed in Appendix 5);
- (4) protection of ethnographic sites; and
- (5) referral to the Environmental Protection Authority.

6 Land Use in Degraded Areas

6-1 The proponent shall ensure that land uses in the degraded sites, defined in Figure 4, within those portions of System Six recommendation areas M46 and M47 and associated bushland, are compatible with environmental management of Bold Park and the associated bushland.

6-2 The proponent shall design any potential development for the area between Oceanic Drive and The Boulevard in the site known as the old quarry, such that no further clearance of indigenous vegetation occurs and to avoid any additional impacts upon the adjacent bushland ecosystems to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

6-3 Prior to any development in the degraded areas shown in Figure 4, the proponent shall prepare an Environmental Management Programme for any development proposals in these areas to achieve the objectives of condition 6-1, to the requirements of the Minister

for the Environment on advice of the Department of Conservation and Land Management and the Environmental Protection Authority.

This Environmental Management Programme shall address, but not be limited to:

- (1) reconstruction of vegetation associations and habitats to link the Limestone Heaths and *Eucalyptus gomphocephala* and *Eucalyptus decipiens* woodlands which are to the north and south of the old Skyline Drive-in;
- (2) management of any potential development for the area between Oceanic Drive and The Boulevard in the site known as the old quarry, to minimise impacts upon adjacent bushland;
- (3) the protection of regionally significant species of vegetation (as listed in Appendix 5);
- (4) use of areas known as 'the turf farm', 'the quarry' on West Coast Highway, 'the pine plantation', Camel Lake and St Brendan's Drive.

6-4 Prior to any development, the proponent shall commence implementation of the Environmental Management Programme required by condition 6-3, to the requirements of the Minister for the Environment on advice of the Department of Conservation and Land Management and the Environmental Protection Authority.

7 Proponent

These conditions legally apply to the nominated proponent.

7-1 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.

8 Time Limit on Approval

The environmental approval for the proposal is limited.

8-1 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.)

9 Compliance Auditing

In order to ensure that environmental conditions and commitments are met, an audit system is required.

9-1 To help verify environmental performance, the proponent shall prepare periodic Progress and Compliance Reports, in consultation with the Environmental Protection Authority.

Procedure

The Environmental Protection Authority is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the

proponent shall meet the requirements of either the Minister for the Environment or any other government agency.

If the Environmental Protection Authority, other government agency or proponent is in dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.

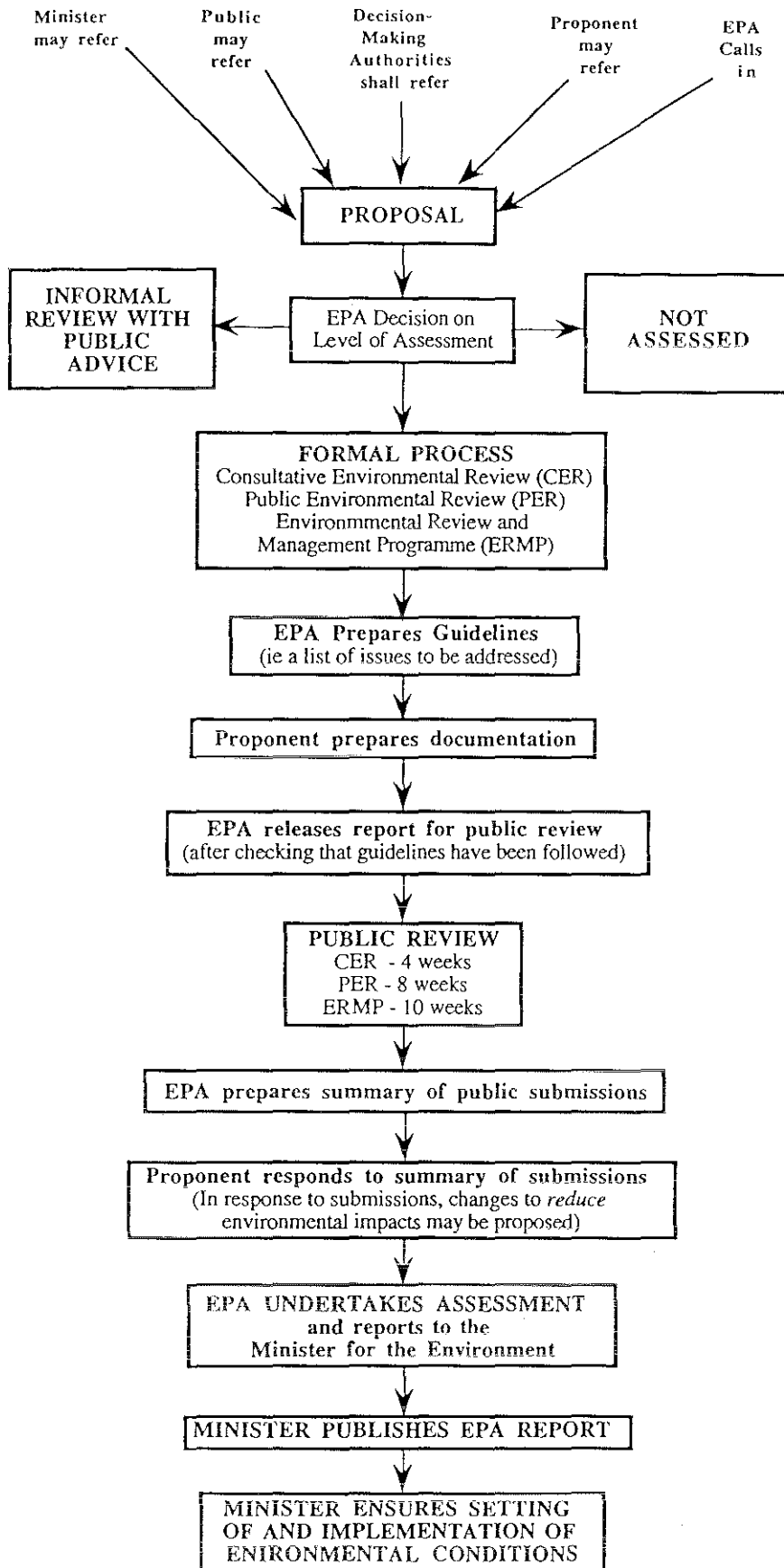
10. References

- City of Nedlands (1993). Comments on the Public Environmental Review prepared by Mitchell McCotter and Ecoscape on 'Bold Park and Environs'. Letter to the Environmental Protection Authority.
- Dames & Moore (1992). Proposed realignment of the West Coast Highway, City Beach. Public Environmental Review. City of Perth, Western Australia.
- Department of Planning and Urban Development (1990). Metroplan. A planning strategy for the Perth Metropolitan Region. Government of Western Australia.
- Environmental Protection Authority (1976). West Coast Highway study. Report of the Environmental Protection Authority to the Minister for Conservation and the Environment. [Bulletin 14]. Environmental Protection Authority, Western Australia.
- Environmental Protection Authority (1983a). Conservation Reserves for Western Australia as recommended by the Environmental Protection Authority - 1983. The Darling System - System Six. Part I: General Principles and Recommendations. Report 13. Department of Conservation and Environment, Western Australia.
- Environmental Protection Authority (1983b). Conservation Reserves for Western Australia as recommended by the Environmental Protection Authority - 1983. The Darling System - System Six. Part II: Recommendations for Specific Localities. Report 13. Department of Conservation and Environment, Western Australia.
- Environmental Protection Authority (1988). Proposed Knightsbridge Subdivision, Stephenson Avenue, City Beach. Bond Corporation. Report and Recommendations of the Environmental Protection Authority. Bulletin 322. Environmental Protection Authority, Western Australia.
- Environmental Protection Authority (1992). Proposed realignment of West Coast Highway at south City Beach. City of Perth. Report and Recommendations of the Environmental Protection Authority. Bulletin 655. Environmental Protection Authority, Western Australia.
- Griffin, E.A. (1993). Comments on the Public Environmental Review prepared by Mitchell McCotter and Ecoscape on 'Bold Park and Environs'. Letter to the Environmental Protection Authority.
- Griffin, E.A. (1993). Flora of the Quindalup Dunes between Swan and Irwin Rivers, Western Australia. Unpublished Report to Coastal Planning Branch, Department of Planning and Urban Development and the Heritage Council of W.A.
- Keighery, G.J., Harvey, J. & Keighery, B.J. (1990). Vegetation and flora of Bold Park, Perth. *The Western Australian Naturalist* 18: (4/5), 100 - 122.
- Main Roads Western Australia (1993). Comments on the Public Environmental Review prepared by Mitchell McCotter and Ecoscape on 'Bold Park and Environs'. Letter to the Environmental Protection Authority.
- Mitchell McCotter & Ecoscape (1993). Bold Park and Environs Public Environmental Review. Perth City Council. Western Australia.

- Nolan, C. (1993). City Beach Senior High School comments on the Public Environmental Review prepared by Mitchell McCotter and Ecoscape on 'Bold Park and Environs'. Letter to the Environmental Protection Authority.
- Recher, H.F. (1993). Ground-dwelling and ground-foraging birds: the next round of extinction? *Biolinks* 4, 6 - 7.
- Road Reserves Review Committee (1991). Road Reserves Review Perth Metropolitan Region. Report R8 Final Report. Department of Planning and Urban Development, Department of Transport, Main Roads Department and Transperth. Perth, Western Australia.
- Saunders, D.A., Hobbs, R.J. & Margules, C.R. (1991). Biological consequences of ecosystem fragmentation: A review. *Conservation Biology* 5: (1), 18 - 32.
- Semenuik, V., Cresswell, I.D. & Wurm, P.A.S. (1989). The Quindalup Dunes: The regional system, physical framework and vegetation habitats. *Journal of the Royal Society of Western Australia* 71: (2 & 3), 23 - 47.
- Western Australian Museum (1993). Comments on the Public Environmental Review prepared by Mitchell McCotter and Ecoscape on 'Bold Park and Environs'. Letter to the Environmental Protection Authority.
- Van Delft, R (1988). *Birding sites around Perth*. University of Western Australia Press, Nedlands, Western Australia.
- Wykes, B. (1991). Perth Wildlife Watch Project 134. Final Report. World Wide Fund for Nature.
- Wykes, B. (1993). 'Comments on the Public Environmental Review prepared by Mitchell McCotter and Ecoscape on 'Bold Park and Environs'. Letter to the Environmental Protection Authority.

Appendix 1

Administrative procedures followed for the Environmental Impact Assessment process of this proposal.



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

DMA cannot allow implementation unless either no formal assessment or the Minister Authorises. Process not suspended

Draft guidelines usually issued within 14 days of first meeting with proponent

EPA usually completes summary in 2-3 weeks

Report release often 3-5 weeks after receipt of response to submissions

Anybody may appeal on EPA report to Minister within 14 days. Minister may remit to EPA or take appeal into consideration when setting conditions

Proponent may appeal on conditions within 14 days of issue

Appendix 2

Summary of submissions received by the Environmental Protection Authority during the public comment period and the response to those submissions from the Perth City Council.

CITY OF PERTH

BOLD PARK PER - QUESTIONS & ANSWERS ON SUBMISSIONS

1. Human Use Values

Q1.1 Bold Park is smaller than originally proposed in 1925 and no further reduction in size should be allowed. The Park as it currently exists gives a good feeling of 'being in the bush' and due to the size and undulating nature there is no sense of being in suburbia.

A1.1 It should be recognised however that in past years Council has extended the area of the bushland to be retained for conservation. As per figure 4.1 indicating the boundaries of Bold Park as recognised throughout the years the bushland boundary has increased the area size by more than three times the original Metropolitan Region Scheme allocation.

The last expansion was in 1991 when Council acceded to requests to forego land set aside for subdivision as far south as Rochdale Road. It is proposed that no further intrusions would be made into the area now more commonly recognised as Bold Park which is the area bounded by West Coast Highway, Rochdale Road, Stevenson Avenue, Perry Lakes Drive and Oceanic Drive.

Q1.2 Because of its size, Bold Park has the advantage of providing a refuge from noise, pollution and the usual built up vistas of city development. It is sad and frustrating to think that such an area of land has still not attained any meaningful and secure classification with the view to permanently protecting such a valuable asset.

A1.2 The purpose of this PER is to guide future land use management decisions in order to protect and enhance conservation and recreation values of the study area. The objectives of the PER are clearly defined in Chapter 1.2.

Q1.3 Bold Park's area, shape and lack of dissecting roads allow people to experience a relative 'wilderness experience'. This 'wilderness experience' will be lost if any areas are excised or roads allowed to be routed through and they will reduce the ability of the area to be ecologically self-sustaining.

- A1.3 It is not proposed that any areas be excised from Bold Park as such and in fact the size of the bushland conservation area has been agreed to be extended at various times by Council.

Council will endeavour to continue to work with the Department of Planning and Urban Development, the Main Roads Department and the Environmental Protection Authority to ensure a balance between road safety and environmental considerations. However, it must be pointed out that the Council's planning powers are subordinate to those of the State Government.

- Q1.4 The Australian bush is attractive to tourists and should be preserved to encourage growth in this export industry.

- A1.4 Survey work carried out by Mitchell McCotter as part of this PER suggests that the number of visitors to Bold Park from outside the Perth metropolitan area is nominal. 75% of park users visited the area at least once per week and 93% of users stated that their home address was within 20 kilometres of the park.

The PER highlights the significance of Bold Park and aims to preserve the bushland's values. Any management plan produced will need to address the question of use and access, the development of the interpretive centre and facilities and the catchment of funds to ensure adequate survival of the area.

The matter of maximising or minimising tourist potential would have to be considered as part of the objective setting exercise for management of the areas.

- Q1.5 How can monetary value be placed on such a priceless piece of bushland? Why haven't other capital cities developed their bushland to extinction? In London it is possible to walk for 20 miles through parkland and commons. There is a thicket of health alongside the "all England" club in Wimbledon! Surely they constitute a bonanza for real estate developers? Isn't it time we applied the same values to the paltry pieces of bushland remaining near Perth instead of wasting so much time and money in staving off the developers?

A1.5 From the time the Council came in control of the land, it recognised the need to apply some portion for recreation and associated purposes. The Department of Planning and Urban Development has a minimum requirement of 10% on any subdivision being applied to public open space. Requirements of a regional nature are decided by government and one of the objectives of the System 6 Report was to establish broader community needs.

The PER recommends that the majority of the bushland comprising Bold Park and some surrounds be retained for its conservation and recreation values. Council supports this point of view on the basis however that financial infrastructure must be set in place to facilitate the appropriate management and maintenance of the areas to be conserved.

Q1.6 Public opinion strongly opposes housing and road development in Bold Park bushland. Ten thousand (10,000) citizens signed a petition to State Parliament, 725 written submissions opposing the Knightsbridge development were received by the EPA, 75% of users surveyed were opposed to housing and road development in the bushlands (Friends of Bold Park survey, 1987), the EPA received 246 submissions from the general public on the proposed realignment of West Coast Highway. During the Perth City Council's Planning Scheme review participants expressed the forthright position that Bold Park should be conserved. The Annual General Meeting of the Coast Ward Ratepayers in November 1992 expressed strong and unanimous views for the protection of Bold Park. The 'Search Conference' conducted by Mitchell McCotter produced a strikingly similar reaction.

A1.6 The statement is taken at face value as being authoritative and correct. One of the matters which must be considered in context of benefits and costs is how to ensure funding in perpetuity to achieve the objectives of conserving Bold Park and the bushland.

Q1.7 The management and education centre should be located near Perry Lakes, so that children do not have to cross Oceanic Drive.

A1.7 This proposed facility was so sited so as to make use of the area, formerly used as a "drive-in theatre", and now having low composite value.

The recommended location for the education and interpretive centre is within a highly degraded part of Bold Park. The PER's recommended site is not the final decision on its location and it will need to be examined in more detail in a management plan for the whole area. Perry House is already being used for this purpose and is also within a degraded area.

Q1.8 Bold Park is Perth's only centrally located coastal Regional Park. It is evident by the number of people, apart from local residents, who use the area for recreational activities, that Bold Park is very important to the people of Perth.

A1.8 While the value of the Bold Park facility to the area is not questioned, having regard to the scale of the survey, it is drawing a long bow to claim the area is "very important to the people of Perth".

Q1.9 The Turf Farm is the only grassed area in that region of Bold Park and is used by the public for passive pursuits requiring this open character. It should therefore remain an essentially open grassed area.

A1.9 The fate of the Turf Farm and a number of other present uses will have to be determined after the decision has been made on future land use and management matters.

From a conservation point of view the area has little value as it provides no habitat for native fauna and represents introduced flora which could pose a threat to the integrity of the native vegetation within the surrounding areas. The turf farm is visually intrusive and could be rehabilitated to improve the amenity of the area. Large areas of shaded turf and recreational facilities are provided nearby at Perry Lakes reserve which allow the public to undertake passive pursuits in more aesthetically appealing surroundings. The future of the area would be addressed in the management plan.

Q1.10 The Turf Farm is located in the foreground of views from Rochdale Road and from major trails and lookouts within the park. In its present form it is visually intrusive. The Turf Farm should therefore be completely rehabilitated.

A1.10 The fate of the Turf Farm and a number of other present uses will have to be determined after the decision has been made on future land use and management matters.

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- Q1.11 A road as an access and firebreak around the north eastern side of the Wollaston College should be provided.
- A1.11 Fire control is discussed in the report as a key management issue. However, a fire break does exist around Wollaston College.
- Q1.12 The ethos of ecologically sustainable development should permeate the education system. The Bold Park area is set to become an outstanding facilitator. The responsibility for this should not be isolated to the City Beach High School.
- A1.12 The future ownership and control of the Bold Park and bushland area will have to be resolved and the contribution of the City Beach Senior High School would become evident. However, there have been some suggestions that the future of this school is under consideration.
- Q1.13 Many schools use the area of Bold Park for education purposes. Geography, Biology, Art, Outdoor Education, physical education activities such as cross country running and orienteering all use the area as a unique teaching aid.
- A1.13 Any management plan for the Bold Park area will have to consider present uses, and those which may be permitted in the future. This is essential if conservation is the primary use and the integrity of the bushland is to be retained.
- Q1.14 There is no need for toilets and taps in Bold Park. Similarly, lawns, barbecues and other public facilities should be restricted to Perry Lakes area and Kings Park.
- A1.14 It is too soon to determine what services should be provided in Bold Park. A management plan will govern to some extent, the usage which is made of the area. Obviously, if the objective is to promote more passive use of the area, and that is achieved, it would be necessary to provide toilets and other basic facilities. It is agreed that the location of barbecues, lawn areas and similar should not be extended beyond those near the Perry Lakes.

Q1.15 People purchased land in Mount Claremont in the original auctions of 1962 with the expectation of the area expanding residential development to produce a greater demand for the facilities that a community requires. For example a feeder bus to the Swanbourne Railway Station, a consequential better use of the railways and perhaps a better timetable. It is also objectionable that the value of the land will be lost. The endowment lands should be sold progressively with the proceeds of those sales ploughed back into the facilities of the endowment lands. If residents miss out on the future benefits from this source of income then someone (probably the EPA if, in fact, the EPA persuade the Government to acquiesce in the current action) should have to pay residents for the higher cost of the land which they purchased in the 1960's which resulted from the expectation of an expanding community and resultant facilities.

A1.15 The commitment given to the people who purchased the land abutting the Mount Claremont Bushland (M46) would require research, however, it could be accepted that, as the M46 area south of Rochdale Road has for many years been zoned for residential subdivision, an expectation of this action would be reasonable.

It is also true that unless this area is subdivided there could result a lack of justification for the requirement of various community amenities such as public transport.

In relation to land values and effects of the options of developing, or not, the area south of Rochdale Road this would be a subjective decision as to individual preferences.

Q1.16 With the population of Perth expected to double within the next 30 years, there is a growing need for areas to be set aside for recreation. Bold Park is a marvellous place that should be preserved for the future.

A1.16 From the time the Council came in control of the land, it recognised the need to apply some portion for recreation and associated purposes. The Department of Planning and Urban Development has a minimum requirement of 10% on any subdivision being applied to public open space. Requirements of a regional nature are decided by government and one of the objectives of the system 6 report was to establish broader community needs.

It should be recognised however that the primary drive for the setting aside of Bold Park and adjacent bushlands is for conservation purposes. As a consequence of the development of a management plan it will be determined if recreation pursuits are compatible with the primary uses and if so what forms of recreation.

Q1.17 Kings Park is enjoyed by the people of Perth and visitors from inter-state and overseas. However, it is over used and does not have a lot of the natural WA bush feeling left. Bold Park is a place where people can better feel what the Australian bush is like. Bold Park should be kept as natural as possible so that these features are not lost. It would be a shame to make it like Kings Park.

A1.17 It would be unreasonable to expect that the flora in Kings Park would be the same as that at Bold Park, a coastal bushland area. The comment seems to suggest that Kings Park is over used - presumably by the many visitors it receives. It also suggests that Bold Park should be kept as natural as possible - this seems to present incompatible objectives - and these would have to be determined or included in the management plan.

2. Natural Values General

Q2.1 No further encroachment into Bold Park should be allowed it's ecological viability will become degraded.

A2.1 The lack of encroachment of development into Bold Park, the bushland to the south as far as Rochdale Road and the M46 bushland west of West Coast Highway, is supported.

Q2.2 The reason that Bold Park has remained in such 'good' condition is that there has been almost a complete lack of direct residential encroachment within its boundaries.

A2.2 No residential encroachment is advocated into the area north of Rochdale Road which includes Bold Park.

This is because of positive action by the Perth City Council as the owner of the land and its decisions in 1974, 1976 and 1991 to extend the boundaries of Bold Park. During this time the Council bought back land which had been sold for a church site and closed roads which were associated with the sub division.

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- Q2.3 The pine plantation is not in character with the remainder of Bold Park. The landscape character and the physical environment are so altered that under-storey plants cannot grow here. Apart from Crows, the White Tailed Black Cockatoo and the occasional Raptor use the area. The pines should be removed, provided it can be shown that they are not a significant and necessary regional/local food source for the White Tailed Black Cockatoo.
- A2.3 Although the pine plantation is not part of the natural vegetation and nor is it in character with the rest of the area, it has historical, landscape and recreational values and for this reason the PER recommends that it is retained. To clear the land in preparation for rehabilitation would expose the soil to erosion, reducing the visual amenity of surrounding areas and the acidification of the soil caused by the pine needles would result in a lengthy and expensive period of rehabilitation.
- Q2.4 The pine plantation should be left as it is, as a good contrast between native and introduced species of flora.
- A2.4 Clause 5.7.6 of the PER details the pros and cons of retention and partial or total removal of the pines. At this stage a decision on the future of the pine plantation has not been made and should be determined within the management plan to be prepared.
- Q2.5 Because the habitat differs from Kings Park, much of the bird life is different. Bold Park provides a significant reservoir of birds, assisting in the maintenance of an interesting diversity of birds in the suburbs, and some of the species found there are rarely to be found in the western suburbs. Therefore, Bold Park should remain as natural as possible to be used for conservation, passive recreation, and education, with no additional encroachment of roads or housing.
- A2.5 The PER recognises the conservation values of Bold Park and adjacent bushland areas. Council does not propose any encroachment of any sort into either Bold Park or the bushland areas generally north of Rochdale Road.

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- Q2.6 G Keighery's study on vegetation and flora of Bold Park established that the vegetation is typical of that once widespread on the Cottesloe, Quindalup and Karrakatta soil types of the Swan Coastal Plain. Much of this vegetation has been lost to urban development.
- A2.6 This view is supported in the PER and the Council's position now recognises the requirement for the retention of this broad diversity of vegetation by including the proposal to conserve the M46 area to the west of West Coast Highway as well as all bushland north of Rochdale Road including Bold Park.
- Q2.7 On the Swan Coastal Plain, Eucalyptus gomphocephala are naturally restricted to a narrow coastal strip 5 - 10 kilometres wide. Bold Park contains one of the last substantial Tuart stands in the Perth area.
- A2.7 It is acknowledged that good stands of Tuarts are found in the study area and that they are otherwise limited in occurrence in the inner metropolitan area. Further, Tuarts are recognised as being one of the most important Eucalypt species in terms of associated fauna.
- Q2.8 The Public Environmental Review document confirms that Bold Park has outstanding landscape values, forming part of an urban green belt area which provides vital habitat for our dwindling urban wildlife.
- A2.8 The PER acknowledges the importance of the area and Council's option will preserve this situation.
- Q2.9 The idea of wildlife corridors, as suggested in the State Conservation Strategy, is one that should be implemented at every opportunity, both for the continued presence of remaining flora and fauna and also for migratory birds.
- A2.9 The option by Council ensures the maintenance of avian corridors in particular and enhances the PER references by connections to the coastal vegetation belt.
- Q2.10 Bold Park is part of a corridor for wildlife from Kings Park to Lemnos Street to Bold Park. The significance of Bold Park should therefore be assessed in relation to the impact upon those other areas as well.

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- A2.10 The significance of the bushlands and the corridor links is identified in section 2.2.3 of the PER. Council's option ensures this linkage as well as the coastal vegetation linkages.
- Q2.11 Dead trees should be left in the Park to provide perches for birds of prey and lookouts for other birds, and also holes as nests for birds and possums. The urge to 'tidy up' the landscape should be guarded against.
- A2.11 It is agreed that dead trees provide perches and nesting sites for birds and possums, however, the issue of their maintenance is outside the terms of the PER and is an issue which would be addressed in a management plan for the area.
- Q2.12 Camel Lake is regrettably becoming choked and needs some careful attention.
- A2.12 It is acknowledged in the PER that Camel Lake is degraded due to weed invasion and changes to its original surface contours (section 2.1.2). The details of how it should be rehabilitated are outside the terms of the PER and would need to be addressed in the development of a management plan for Bold Park.
- Q2.13 Bold Park includes an important wetland, Camel Lake, which is used by waterbirds for breeding and feeding. Although the proposed housing is not adjacent to the wetland, it would in the long term make the Bold Park bushland less viable and useful for waterbirds and other wildlife.
- A2.13 Camel Lake is significant due to its relatively undisturbed state compared to other metropolitan wetlands and the presence of the regionally significant species, *Sonchus Affasper*. Without identification of the "proposed housing" it is difficult to give an answer to this concern. However, it is not anticipated to undertake any housing development in the influential environs of Camel Lake.
- Q2.14 Nowhere in Perth is there a better representation of the communities of the Spearwood Landform than those described from Bold Park. Recent research by the Western Australian Museum in Bold Park further enhances the values of this remnant native bushland, with the discovery of a rich and diverse ground arthropod assemblage, which contains some particularly interesting and significant species. The spider, *Synothele*

michaelseni, is rare in collections but relatively common in Bold Park, while an undescribed genus and species in the family Pimoidae has also been recorded there - the first record of this family in the southern hemisphere. The great variety of ground-dwelling invertebrates recorded indicate that large bushland remnants maintain an important, perhaps critical, component of previously widespread native ecosystems on the Swan Coastal Plain.

- A2.14 This statement is supported by the PER and is consistent with the area preservation determined in the Council's option for land use.
- Q2.15 The M46 and M47 areas have a much more diverse topography than Kings Park, which is the only large bush reserve within reasonable distance of Perth. These topographic variations lead to a greater complexity of habitat for flora and hence fauna.
- A2.15 The Council's option for land use recognises this and enhances this aspect of the conservation area by extending through to the coast line.
- Q2.16 Some plants which used to exist in Bold Park 60 years ago are no longer found there. For instance the Potato Orchid (*Lyperanthus nigricans*), the Rottnest Daisy and *Pikelia*, the Drooping Cone Flower is also quite scarce now.
- A2.16 The Council's proposed land use plan and recommendation for a Regional Park identity will help prevent the extinction of further species as appropriate funding will be available to manage the area appropriately. To leave the area as bushlands without appropriate research and management will result in further degradation and significant funds will be essential for this to be achieved.
- Q2.17 The significance of the point that the areas studied is large and interconnected cannot be overstated. The Bushland as a whole is much greater than the sum of its parts. The plant and animal species in the overall area remain at a remarkable high diversity in this suburban region because of the habitat variety. There are options for seasons, refuges to escape and repopulate after fire, drought, disease or adversity due to introduced plants, predators and competitors.

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- A2.17 This point is acknowledged and the Council's land use option not only facilitates this diversity of habitat but enables the funding to be available for proper management for continuance.
- Q2.18 Bold Park is one of few areas where the croited skipper (*Croitana croites*) survives. There are many other butterfly species using the area as a refuge.
- A2.18 It could be anticipated that through the maintenance of the area in a natural bushland condition and its future management as a regional park, the provision of habitats for butterflies will be maintained.
3. Natural values: Mount Claremont Bushland
- Q3.1 The Public Environmental Review document provides substantial evidence that the Mount Claremont Bushland has high and significant conservation value. The Environmental Protection Authority assessment of this area in its Report and Recommendations of 1988 should be overridden by this assessment. The long term viability of this area does not appear to be limited when the area is left alone, only if roads or houses encroach or are placed within the area is it likely to become degraded.
- A3.1 Council has approved various studies taking place in the Mount Claremont Bushland bounded by Rochdale Road, West Coast Highway, Cottesloe Golf Course and McClemens Road. This area forms a part of the M46 System 6 Report area. The remaining area of M46 exists on the west side of West Coast Highway and is an area in which little study has been undertaken. The area to the west however has been fenced off from animals and people for many years and may be more pristine than the Mount Claremont Bushland. With the acceptance of Council's Regional Park option, the preservation of the area west of West Coast Highway is assured.
- Q3.2 The Mount Claremont Bushland provides an important natural link between Bold Park and the undeveloped Commonwealth Defence land (to the south-west) and to the coastal dune system. Observations of bird life in this section of bushland indicate that bird densities and diversity are greater here than in Bold Park and that birds habitually cross between the two areas. If this area of bushland is lost then it is probable that bird numbers and diversity will be reduced in Bold Park.

A3.2 The importance of linkage between Bold Park and the Commonwealth land and Council controlled land to the west of West Coast Highway is acknowledged. With the appropriate re-alignment of West Coast Highway the direct linkage between these two areas will be enhanced by encouraging suitable vegetation being planted on the road margins.

Council's option for land use observes the requirement for this linkage and further ensures the preservation of the Commonwealth and western Quindalup areas.

Q3.3 The report does not adequately address the value of the Mount Claremont Bushland. The nature conservation value of this area is very high because it provides critical habitat to birds for feeding and nesting. The variety of plant communities in very good condition provides feeding grounds for many small bird species as described by Wykes (1990) and Schmitz (1992). The importance of the mixture of plant communities in providing habitat for different groups of birds is not explained. The dense thickets of *Acacia rostellifera* and the stands of *Allocasuarina lehmanniana* do not exist in the M47 area.

A3.3 The System 6 report identifies as M46 both the areas of Mount Claremont Bushland and the corresponding area west of West Coast Highway at the same value. It is agreed that the plant communities in M46 and M47 are different and it is understood that this is the reason for the separate zoning. Council's option ensures the preservation and appropriate management of a large area of the Quindalup and coastal ecosystems.

Q3.4 Over a thousand birds have been banded in the Mount Claremont Bushland over the past five years, recording over 50 species, about 40 of which occur regularly. Hundreds of honeyeaters of a variety of species move through the site, many staying for several months in late spring when nectar is at a peak. Many small bush birds that are never seen in domestic gardens still survive here. In addition, there are four species of wren here, which is unusually rich for anywhere, let alone in a suburban area.

- A3.4 It has been encouraging to see the results of the Council approved banding of birds programme in the Mt Claremont Bushland. Unfortunately no such approaches have been made to undertake work in the more pristine areas of M46 which occur on the west side of West Coast Highway. It could be expected, however, that as the western area is better connected to similar surrounding bushland, the diversity and numbers of species would be at least similar and possibly even greater.
- Council's land use option ensures the preservation of a large area of the Quindalup vegetation which has been isolated from public access for many years and also gives rise to funding which enables this to be properly managed.
- Q3.5 The birds of the Mount Claremont Bushland would be susceptible to cats. In response to media articles, a dozen bands from dead birds (mainly cat-kills) which have been banded in the Mount Claremont Bushland have been recovered.
- A3.5 As the area of the same vegetation west of West Coast Highway, which will be preserved within the Council's option, will be less susceptible to feral contamination and management issues will be suitably funded, this problem will be reduced.
- Q3.6 Some sectors of the Quindalup dunes system are not well represented in secured reserves, in particular those areas south of Lancelin. Parts of Bold Park are especially significant for this reason. The area south of Rochdale Road is in particularly good condition, it is the northern limit of *Agnois flexuosa*, and it has one of the major occurrences of *Acacia rostellifera* scrub in the metropolitan area; a community which is apparently very important for several wren species.
- A3.6 This statement is valid for the entire M46 area. Council's option not only ensures the conservation of a representation of a large area of the Quindalup dune system but facilitates a financial strategy which enables its continuance as a properly managed resource.

Q3.7 The Mount Claremont Bushland is not used by people, except for Christ Church Grammar for cross country running. The bush looks scruffy, with poor soil, devoid of any significant visual amenity - certainly compared with other bushland. The wildlife is not apparent to the uneducated wanderer. It is clear that since the subdivision of City Beach, that as a result of the growth of garden trees, bird life has increased markedly from that which existed.

A3.7 These comments are noted and are supported by Q.1.15.

4. Current environmental management issues

Q4.1 Some of the historical management practices such as inadvisable fire control measures and the planting of non-local native species have been harmful. The City of Perth would therefore be an inappropriate authority to manage this regional resource.

A4.1 It is unclear what is meant by 'inadvisable fire control'. At present, the only form of fire control within the park is the system of existing firebreaks, Council personnel trained in fire fighting techniques and the WA fire brigade which will respond to any reported fires. No form of controlled burn is conducted in Bold Park.

Q4.2 Weed eradication measures should be taken in the Bold Park south of Oceanic Drive. If a non-local native species is propagating to the detriment of local native flora or are intruding into the landscape then these plants should be removed.

A4.2 Weed control is carried out south of Oceanic Drive each year with the systematic spraying of Veldt grass. It was beyond the scope of the PER to examine in detail the methods to eradicate weeds and which species should be removed. This issue would be addressed in the preparation of a management plan.

This issue also relates to the high level of funds required to rehabilitate and maintain Bold Park to an improved level. This aspect is dealt with in the Council's option.

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- Q4.3 Some planting of Eastern States species of Banksia took place in the past and these should be removed. The local Banksias flower at staggered times of the year and are best suited to provide food for local birds and other fauna.
- A4.3 The issue of the removal of Eastern States species is a detailed management issue which should be addressed by a management plan for the area and, as such, is beyond the scope of the PER.
- Q4.4 Veldt grass and Wild Pelargonium are serious problems which need control in Bold Park. It is probably necessary to spray infested areas by hand, since Pelargonium will send up shoots from any roots remaining in the ground. Bridal creeper needs similar control to ensure that it does not become a problem like it is on the cliff faces of Kings Park.
- A4.4 The Council undertakes an annual programme to systematically spray for Veldt grass in Bold Park. The removal of the Pelargonium and Bridal Creeper would need to occur in conjunction with the rehabilitation of these areas. The rehabilitation of badly degraded or weed infested areas is an issue which needs to be addressed by a detailed management plan, being beyond the study brief requirements of the PER.
- Q4.5 The bridle trails through the park should be kept to the perimeter. Also too frequent orienteering where participants do not keep to the existing walk trails should be limited, perhaps to a specific area.
- A4.5 The use of the area for recreational purposes is an issue to be dealt with within a management plan for Bold Park. Orienteering is no longer permitted within the area due to the damage it causes to the native vegetation.
- The bridle trails are currently essentially to the edge of Bold Park, however, they have now been encompassed by bushland now set aside to be preserved as a consequence of Council's 1991 decision.
- Q4.6 Christ Church Grammar School students have been using the M46 area for cross country running. This is not an appropriate use for this area and they should use the made tracks in Bold Park.
- A4.6 The assessment of suitable and unsuitable recreational uses for Bold Park was outside the terms of the PER, however, it is an issue which will be addressed in the preparation of a detailed management plan for the area.

- Q4.7 Fire control is a difficult problem, but the suggestion of reticulated areas along walk trails will provide ideal conditions for the introduction of Cooch and Kikuyu grass and other weeds. These species will cause a greater fire problem than already exists. Perhaps the park should be closed to the public on high fire risk days. The option of experimenting with fire for habitat renewal, regeneration and fuel reduction should be preserved without artificial and illogical constraints such as the political, social and emotional objections of Europeans to use of fire as tool.
- A4.7 It is agreed that it would be inappropriate to have reticulated areas within the natural bushland. The suggestion of having reticulation and irrigation systems along the walk trails for use in the event of a fire had been raised in the past and for this reason it was mentioned in the PER, however, it was not considered as a viable option for fire control. The preferred fire policies for Bold Park will need to be examined in a detailed management plan for the area.
- Q4.8 Some form of fox, cat and rabbit control should be undertaken in Bold Park. Dogs should also be excluded from the Park, except in active recreation areas such as near the old Skyline Drive-in.
- A4.8 At present dogs are permitted to use Bold Park if they are kept on a leash. Cat traps are used to remove feral cats when they become a problem, however, there is no current detailed management programme for the removal of feral animals from the area.
- Q4.9 An attempt should be made to reintroduce some small mammals that occur naturally in the types of habitat that exist in Bold Park e.g. quenda, tammar, black gloved wallaby (last seen as a road kill on Oceanic Drive in 1981 or 1982), honey possum, woylie, bandicoot, chuditch, wambenger. This may require some fencing of road boundaries, with gates for visitor access. Well handled fauna introduction could get widespread public support and, if successful, could create a valuable ecotourism asset. Close monitoring of re-introduced animals would be required and this would be expensive.
- A4.9 The success of the reintroduction of small mammals would depend on the success of any programme to control feral animals in the area. Both programmes would be long term and would need to be addressed in the development of a detailed management plan for the whole area.

Q4.10 Any restoration of the vegetation should also consider encouraging or planting of food plants for butterflies which are under threat from the expansion of the metropolitan area in the north. Butterflies could then be introduced into the reserve from areas threatened by development. Bold Park can then act as a refuge area.

A4.10 The introduction of any specific species of flora to provide habitats and food for particular fauna is outside the terms of the PER and is an issue to be addressed in a detailed management programme for Bold Park.

A4. general There are 10 statements, suggestions, questions under this heading. Under the City of Perth Restructuring Act 1993, from 1 July 1994, this general area will be within the boundaries of the Town of Cambridge which will be responsible for the management of the area, and presumably, its future. The Town of Cambridge will need to develop policies and resources to implement its management philosophy.

5. Method of Analysis

Q5.1 The landscape analysis method used is a modified version of the now standard 'visual resource analysis' method. The modifications have resulted in a downgrading of landscape values especially in the south-central areas, and the Mount Claremont Bushland. The main problem stems from classification of land visible from internal trails and lookouts as 'low' sensitivity instead of 'high', as in the standard method. In addition, the standard method defines Zone A as 'inevident alteration', whereas, the consultants say that development could be suitable if it is subordinate to the landscape character. This is different from 'inevident'. Therefore, Figure 2.4 should be disregarded.

A5.1 There is an inherent problem in any visual analysis method in that classifications are either very subjective or open to interpretation. The method undertaken by the consultants is a defensible method with a detailed explanation of how it operates. Because of this it was accepted that this method be used, with the knowledge that, whilst various interpretations of the results could be made on a subjective basis, the basis for the assessment used could be clearly understood.

The Consultants have stated their assessment of landscape value being on the technique known as "visual resource analysis" (Figure 2.4). In this section on documenting the physical, biological and social characteristics, the consultants have clearly assessed a number of values, all of which are documented. Presumably there are other methods of assessing these values and had these been used, it could have been reasonable to expect some comment that these also were inappropriate.

Some comments, say 5.4, which claimed the analysis of the recreation value "is very narrow with no recognition of the likely future growth in recreation demand". The relevant chapter 2, referred to the existing environment and it would have been inappropriate for the consultants to anticipate any growth, or departure from the present situation.

The comment in 5.5 is perhaps unfair. The Appendix G relating to the User Survey does not indicate why the particular days/times were selected. However, the interpretation of usage could only come from the questions posed and answered. The comment in 5.5 seems to infer that the 1987 Friends of Bold Park Survey was undertaken at a time where it was likely that there would be a high usage of the facility, although there is no evidence to support this.

- Q5.2 The Visual Resource Analysis measurement is perplexing (section 2.3 of the PER). It is quite impossible to attempt to estimate the value of flora of a bushland from the distance of peripheral roadway, even with binoculars.
- A5.2 There is an inherent problem in any visual analysis method in that classifications are either very subjective or open to interpretation. The method undertaken by the consultants is a defensible method with a detailed explanation of how it operates. Because of this it was accepted that this method be used, with the knowledge that, whilst various interpretations of the results could be made on a subjective basis, the basis for the assessment used could be clearly understood.
- Q5.3 A brief glance obtained by even hundreds of commuters cannot be compared with the peaceful tranquility of even one short relaxing walk in the native bushland. It could be possible for commuters or passing tourists to value the tamed quality of a golf course over that of the natural WA bush.

A5.3 There is an inherent problem in any visual analysis method in that classifications are either very subjective or open to interpretation. The method undertaken by the consultants is a defensible method with a detailed explanation of how it operates. Because of this it was accepted that this method be used, with the knowledge that, whilst various interpretations of the results could be made on a subjective basis, the basis for the assessment used could be clearly understood.

Q5.4 The perspective of analysing the recreation value is very narrow, with no recognition of the likely future growth in recreation demand.

A5.4 It is difficult to predict future requirements, though in promoting conservation within existing parks and recreation reserves, there is an opportunity for future recreation needs to be considered and recognised.

Currently, the residential environs of Bold Park and the bushland is endowed with public open space areas to a level well in excess of the considered community requirement.

This is supported in Council's option for Regional Park recognition of the conservation area proposed.

Q5.5 The user survey downplays the study areas regional significance. The locations most frequently used were not surveyed at the busiest times, when people from greater distances would be more likely to visit. This explains the discrepancy between these results and the results of the 1987 Friends of Bold Park survey.

A5.5 The PER refers to both sets of data in its assessment of recreational use. It is recognised that the time restrictions for the preparation of the PER limited the size of the 1992 survey and the opportunities for seasonal variation. However, the results represent the best available data and the PER acknowledges that this latest survey captures mainly the regular users of Bold Park, whilst the 1987 Friends of Bold Park survey captured a wider range of users.

Q5.6 The recreation values assigned in the Public Environmental Review document indicate that the consultants assume that recreation value is synonymous with current degree of use. The matter of quality is ignored. Similarly, the areas potential should have been discussed.

- A5.6 Due to time limitations with the preparation of the PER, assessment is limited to the current recreational uses of Bold Park. The future management plan for the area will undertake a more detailed analysis of the permissible uses and any facility requirements.
- Q5.7 The rating for flora values gives only a moderate rating to the north east corner of the study site. However, this area is the only Tuart - jarrah woodland community and is important for vegetation diversity and in a regional sense. This community would also have significance for three nesting bird species and hence should have a composite rating of high, rather than moderate. The alternative alignment of the Western Suburbs Highway would reduce this area by 30%. This is a significant reduction in the only area of this community.
- A5.7 The rating of flora values was based on the diversity of species, the degree of disturbance, as measured by the level of weed invasion, and the presence of regionally significant flora (see section 3.3). The moderate rating for the tuart-jarrah woodland area in the north-east corner of the area is, therefore, a result of a combination of these factors. A number of flora studies on Bold Park found that the woodland areas had a higher level of disturbance than the heath areas which resulted in their valuing as moderate rather than high. Peripheral areas were also found to be more disturbed than sites further from roads and paths. In this instance, the location of the bushland and its open woodland character has led to a higher level of disturbance and species diversity which has reduced its value from high to moderate despite the presence of tuarts.
- Q5.8 The consultants composite values were intended to discover areas of low value which could be flagged for possible development. Even so-called 'low value' areas may be important to the whole area, helping to maintain the quality of 'high value' areas.
- A5.8 The PER did not reach this conclusion, however, the majority of low valued areas in the analysis were cited by the Consultant for rehabilitation.

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- Q5.9 Whilst it may seem that some areas should be low value because of 'low habitat qualities and considerable disturbance' this could be modified over time which may encourage more wildlife to use the rehabilitated areas. These areas are extremely important as buffers to the moderate to high value areas helping to keep the biological integrity intact. Even the low grading of the Christchurch playing fields would have some value to this end as a green belt helping to isolate that part of Mount Claremont Bushland.
- A5.9 The valuations given to the different sections of Bold Park are related to their level of disturbance, as measured by the level of weed invasion, and the presence of regionally significant species. The majority of areas which have been rated low floristically have been flagged for priority rehabilitation with native species.
- Q5.10 It is illogical that the consultants should present a preferred structure plan which is not supported by the majority of the community. Seventy five percent (75%) of submissions received by the consultants supported the conservation structure plan option (6.3.1).
- A5.10 The comment suggests it is inappropriate for the Consultants to present the preferred structure when 75% of the submission supported the conservation plan (figure 6.4), notwithstanding that the consultants explained their reasons. Appendix J to the report summarises the 41 submissions which were received.
- Is it logical to say that 31 people is the majority of the community?
- Q5.11 The method of determining composite values is not stated and gives incorrect outcomes. It is standard practice in heritage assessments to give a composite value of high if any one of the components rate high. Otherwise important values are lost in the overall assessment. For instance, the nature conservation values (fauna), educational and scientific values of M46 are lost in the composite giving an erroneous result.
- A5.11 While the comment may be a true reflection of figure 3.5, this should not be received out of context. Reading the figures 3.1 to 3.4 inclusive, together with the concluding text 3.5, one could not have any doubt of the Consultants view of the 'value' of the study area.

Section 3.4 of the PER describes how the composite values were determined. It also states that the composite values 'cannot be regarded as the sole indication of the value of the land'.

- Q5.12 It is disappointing that the Knightsbridge land was not included within the study area. Given that the State Government have been negotiating with the owners to purchase the land, it would have been advantageous to have had the land assessed using the criteria developed in the Public Environmental Review.
- A5.12 Both the City of Nedlands and the Department of Defence were approached by the EPA to involve their land in this study, however, the City of Nedlands declined and the Department of Defence is currently preparing its own management plan.
- Q5.13 The Public Environmental Review comments that structure planning requires both professional and political judgements. Professional judgements identify and describe the values of the area. Political judgements are required to determine whether the economic benefits of developing certain areas of moderate or low composite values outweigh the conservation values. These issues cannot be separated and all aspects, and not just environmental, need to be considered.
- A5.13 This statement encapsulates the objectives of the PER.
- i) assess the values of the study area;
 - ii) consider these within the context of regional planning issues;
 - iii) propose a range of appropriate land uses for the study area;
 - iv) make recommendations on the future management of the study.

The PER examines the combined impacts of several proposals including those proposed by local and State governments and Metropolitan Region and local planning schemes. This report as it stands represents the composite professional and community views. Acceptance by the Council and the State government through the EPA environmental assessment process will represent the political judgment on the proposals.

6. System 6 recommendations

Q6.1 Previous announcements by the Perth City Council that the entire area, including the land owned by Council, would be rezoned to Parks and Recreation and managed for conservation were accepted in good faith by the community. It is very disappointing that the Perth City Council appears to be using the PER to promote a housing development which would violate the System 6 recommendations.

A6.1 The PER aimed to provide broad Structure Plans to guide the future of the System 6 areas M46 and M47 within the City of Perth.

The aim of the PER was not to identify areas which should be developed, but to provide a structure plan for the study area. It examines a range of proposals for the area and assesses them against the values of the area. The findings of the PER support the System 6 recommendations for Bold Park by recommending that the area be retained for conservation and recreation purposes and designated a regional park. The PER is a more detailed study than System 6.

The detailed study has facilitated opportunities to determine future management and funding issues based on definitive knowledge of what exists and what options are available. To choose the most viable option for the entire area is now the challenge.

Q6.2 The consultants Structure Plan (ie. conservation for the whole area) should be adopted. This option is in line with the System 6 report which recommended that this area be set aside for its conservation, recreation and educational values and that it should be recognised as having regional significance and should therefore be given Regional Park status.

A6.2 It is agreed that it is preferable that Bold Park and some adjacent developed and under-developed open space areas be designated as a Regional Park and be recognised as having regional significance. Council's option encompasses this, together with funding opportunities that will enable the Regional Park to be then successfully maintained.

7. Structure Plans

Q7.1 The recent proposal by senior administrative staff of Perth City Council to subdivide the southern section of Bold Park bushland and the area between Oceanic Drive and the Boulevard for residential development is of major concern.

A7.1 The concept put forward by a senior officer of the Council was an attempt to recognise the lost revenue, the financial burden on a limited section of the community of a major regional resource and the need for a balanced approach to conservation.

It should be noted that a proposal for residential development between Oceanic Drive and The Boulevard did not form part of this concept.

Q7.2 Structure Plan 6.1, Option 1 - Conservation is the only option which will give protection to the entire area.

A7.2 This is true, though future land use and management decisions also have a role to play in the nature and quality of the experience which people have within the park.

Q7.3 The Public Environmental Review document recognises the value of adding the Knightsbridge land to the Bold Park area because of its flora, fauna, landscape and recreation values. The Swanbourne Rifle Range and the Mount Claremont Bushland provide equivalent values which should be added to the Regional Park area.

A7.3 The Knightsbridge land is neither within the ownership or jurisdiction of the City of Perth. Attempts to have the City of Nedlands be a part of the PER were unsuccessful. It is understood however, that the State Government has purchased the Knightsbridge land.

Q7.4 The metropolitan area is crying out for increased inner suburban living rather than building dormitory suburbs 30 kilometres out with the concomitant expansion of service, freeways, railways - and (today's news) photo-chemical pollution. The bush which is being destroyed at Wanneroo is far more significant than the bush now being sought to be saved here at Mount Claremont.

A7.4 The Council and the State Government, through urban consolidation policies and medium density zoning are attempting to offer people a choice in housing, location and type. The Council does not consider it appropriate or desirable to develop every piece of vacant land with housing in order to meet this objective. If this philosophy prevailed then every piece of park land within the City of Perth would be developed. It could be argued that since the population of metropolitan Perth is expected to double over the next thirty years, that even if Bold Park was developed with housing the outward expansion of the urban front would be halted in only a nominal way.

The conservation of significant bushland areas within any section of the metropolitan area is an important issue and it is a loss, not only to residents of the Wanneroo area, but to all the residents of Perth that a rich piece of remnant bushland has been lost.

8. Area north of Oceanic Drive

Q8.1 The 12 hectares south of the Boulevard are part of the historical and original 'Bold Park' and are zoned Parks and Recreation Reserve under the Metropolitan Region Scheme. These areas should be rehabilitated as a priority.

A8.1 Generally these comments refer to the rehabilitation or the growth within the area. Areas within this section have been severely inundated with exotic plants, developments, grassed areas, etc. Within the PER is a consideration of the development of an Education/Interpretive Centre and the need for some areas to be rehabilitated. The value of this treatment and other options will need to be further appraised in the Management Plan.

There are no proposals to change the zoning of this land although it is noted that rehabilitation, because of the level of degradation and inundation, will be difficult.

Q8.2 Development of the 12 hectares south of the Boulevard for active recreational purposes is opposed because the nearby area is well endowed with these facilities, but is lacking in easily accessible natural bush.

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- A8.2 The area involved is heavily inundated with contaminants at ground level and already contains various grassed areas and buildings. Rehabilitation of degraded areas will be difficult and expensive. These aspects, however, are best dealt with in context by a Management Plan.
- Q8.3 There is no need for additional active recreational areas in the region. Adjoining areas such as Alderbury Park, Perry Lakes Stadium, Gillivray Sports Ground and the possible addition of the levelled off Brockway Tip land provide the regional requirements for these types of facilities.
- A8.3 The area proposed for active recreational purposes is a large grassed oval which is already used for organised recreational activities. Although the surrounding areas have facilities catering for various activities, the use of sports grounds by certain sports can be incompatible and a range of grounds must be available to cater for the required demand. There are also a number of bushland sites in proximity to this area.
- Q8.4 The 26 hectares of 'degraded' land in the north west of the study area should be rehabilitated as a top priority as it would not only have value in its own right, but is a valuable corridor towards the City of Perth golf course and on to Herdsman Lake, an important refuge for bird life.
- A8.4 Please see A8.1.
- Q8.5 The area surrounding the old quarry site between the pool and the reservoir, contains the main stand of Banksia woodland for the study area north of Oceanic Drive. This area is important for biodiversity of the Park and is beneficial to the avian fauna of the northern section by having an area of nectar supply adjacent to an area of Tuart - Jarrah woodland nesting site.
- A8.5 These comments are noted.
- Q8.6 The Public Environmental Review document lists the *Eucalyptus foecunda* as a threatened species. This species has representation in the 12 hectares south of the Boulevard.

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- A8.6 The PER records *Eucalyptus foecunda* as a regionally significant species which is listed by CALM as a priority species, that is, a taxa in need of monitoring. A small stand of the species is located south of The Boulevard, however, larger areas are located to the south-east of the reservoir, immediately north of Oceanic Drive and around Reabold Hill. These areas will need to be considered in any management plan.
- Q8.7 *Eucalyptus foecunda* (Fremantle or Limestone Mallee) grows on a ridge to the south of Reabold Hill and is no longer commonly seen elsewhere in the Metropolitan area. It should therefore be protected.
- A8.7 The PER recommends the conservation of this area of Bold Park and, therefore, this and the proposed regional park designation would ensure the protection of the species.
- Q8.8 The White Stemmed Wattle (*Acacia xanthina*) and the Fremantle mallee (*Eucalyptus foecunda*) occur in the northern area of M47. These species are particularly vulnerable and protection and rehabilitation of the northern portion of M47 is therefore required.
- A8.8 The PER identifies the various locations of the species throughout the reserves and the comments are noted.
- Q8.9 This area should be totally rehabilitated. The depot/nursery option has some value, but the problems of visual intrusion and weed spread would outweigh the benefits. Institutional use would be inappropriate in the natural bushland setting, because it would not be of benefit to the general public.
- A8.9 These comments are noted and are best addressed in a management plan to ensure the entire context is considered.
9. Area South of Fortview Road
- Q9.1 The Fortview Road should not be developed because it provides aesthetic values and a north-south undeveloped continuity between the playing fields and the Cottesloe Golf Club.

A9.1 The PER recognises that residential development of the area south of Fortview Road would change the relatively natural and landscaped amenity of the area and that residential development would be prominent in the view shed from elevated parts of adjacent dunes.

Q9.2 Development of housing in the Fortview Road area will lead to the addition of cats into the Mount Claremont Bushland. Even cats with bells can kill birds. Also cats lose their bells, or may have litters in the bush areas.

A9.2 Some of the public comments reflect that the Mount Claremont is already threatened by feral animals. Control or isolation of such animals is a necessity for the conservation of any bushland area.

The area to the west of West Coast Highway has limited exposure to such contamination and would therefore best serve the conservation requirements of this ecological system. Council's option recognises this situation.

Q9.3 There are significant dangers to bushland flora and fauna resulting from adjacent residential development, these include: illegal rubbish dumping; invasion by weeds and garden plants; increased risk of fire outbreak, irrigation altering the climate for native plants; domestic pets (35 cats were mentioned in the Knightsbridge first PER). These introductions would have a catastrophic effect upon birds and animals in the area.

A9.3 Development close to natural areas can pose a threat to the bushland, however, the area already has a large weed population, is subject to the illegal dumping of rubbish and is surrounded by reticulated playing fields, a golf complex and established residential areas.

Council's option ensures a more pristine representation of this ecosystem is preserved and that funding is available for its proper management and survival.

Q9.4 The area south of Fortview Road has significant stands of mature Tuart which have environmental and heritage value. Further, adjacent to the 1.4 hectares is a significant number of Chamelaucium uncinatum which due to their relative isolation

from other populations are less likely to hybridise with the commercial strains planted and spreading in Bold Park. The species on the slope facing the 1.4 hectares would quickly degenerate as would the rest of the bushland if subdivision went ahead.

- A9.4 The points raised are noted and require consideration in the context of the entire bushland conservation and area development requirements.
- Q9.5 Immediately west of the end of Fortview Road is a dune with a population of Wembley wax (*Chamelaucium uncinatum*), one of the species of regional significance listed in Table 2.2. This population is currently isolated from cultivated forms, and is therefore uncontaminated by interbreeding. In Bold Park the cultivated forms have been introduced. Developing the Fortview Road area for housing will lead to introduction of cultivated forms of Geraldton wax which could easily escape into the bush and interbreed with the Wembley wax.
- A9.5 The point related to the population of *Chamelaucium uncinatum* (Geraldton Wax) is noted and the significance must be considered in the context of the overall bushland conservation development and funding strategy.
- Q9.6 The Fortview Road area also supports large numbers of birds, particularly honeyeaters, and a large area of relatively undisturbed heathland.
- A9.6 The point related to the birds is noted, however, the area generally has been cited as being fairly disturbed with weeds and inappropriate uses.
- Q9.7 The dune on which the Wembley wax is growing is vulnerable to erosion, as is the connecting ridge.
- A9.7 The comment is noted.
- Q9.8 The Tuart trees in this area are of important heritage value. The trees are estimate to be between 100 and 300 years old. This species is poorly represented in reserves in the metropolitan region.
- A9.8 This is a valid point and before any development is permitted, the site would require careful assessment to determine the heritage importance of the trees.

- Q9.9 The swale at the western end of Fortview Road would be a most suitable site for an education facility for the Bold Park area.
- A9.9 The site recommended for the development of the park management and education centre is a badly degraded area which would be difficult to rehabilitate and is more accessible to the general public than the Fortview Road area.
10. Mount Claremont Bushland and Rochdale Road Realignment
- Q10.1 The 'Mount Claremont Bushland' is of special significance and any reduction of its relatively small size could only risk harming its sustainability. This area should in fact have restricted access. The Rochdale development options give consideration to leaving the entire 37 hectares for conservation purposes.
- A10.1 Similar conservation values to the Mount Claremont Bushland have been given to the M46 area west of West Coast Highway. Council's option requires the conservation of this area which is relatively undisturbed by road structures and is more secure from interruption. Council's option also described only minor deviations to the existing Rochdale Road alignment, however, the final location will consider traffic safety as well as other considerations.
- Q10.2 It is disappointing that none of the development options give consideration to leaving the entire 37 hectares for conservation purposes.
- A10.2 This comment is noted.
- Q10.3 Work by the Western Australian museum on the wrens and lizards of the plant rich Quindalup heathland have shown that a particularly important arthropod assemblage exists to support this rare array of invertebrate specialists. The realignment of Rochdale Road through this area could not be supported because of this.
- A10.3 Whilst the concern is understood it would appear that similar investigations have not been conducted in the M46 area to the west side of West Coast Highway which is grouped as a similar ecosystem within the System 6 report. The western location appears to have been overlooked because of access difficulties.

The realignment of Rochdale Road will be developed within the context of an entire consideration.

Q10.4 The options for Rochdale Road realignment should not be developed. Rochdale Road should be blocked off at the Stephenson Avenue intersection, just granting access to Wollaston College. Traffic calming methods could be employed to decrease traffic flow south along Rochdale Road.

A10.4 The installation of traffic calming measures along the southern portion of the road is an issue to be addressed by the City of Nedlands and is outside the scope of the PER.

Rochdale Road must be considered in the wider context then simply a local road issue in the light of its major communication role from City outlets. Whilst the environmental issues related to the Rochdale Road alignment were canvassed these were not taken in the context of other related issues.

Q10.5 The area that Rochdale Road currently runs through is already degraded, whereas the new alignment would destroy relatively undisturbed habitat, and cut off an area of high flora and fauna diversity from the rest of the Park. Rehabilitation of the old alignment would require substantial resource allocation. It would be wiser to stop traffic from turning south onto Rochdale Road by using traffic islands or by closing that section of the Road.

A10.5 Please refer to A10.4.

Q10.6 Most traffic using Rochdale Road has come from some distance away and still has some distance to go. The realignment of Rochdale Road shown in Figure 6.3 will result in a saving of 750 metres, which is quite insignificant.

A10.6 Please refer to A10.4.

Q10.7 Rochdale Road should not be closed on its current location. It is a good barrier to fire getting from M47 to M46 and vice versa. The existing road and lack of paved trails in M46 tends to greatly reduce the public usage of M46. This condition should continue, as this area is providing a special remnant habitat for many bird species which would not otherwise be able to exist, neither in this locality, nor in the metropolitan area.

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- A10.7 This comment is noted. Please also refer to A10.4.
- Q10.8 Option 3 - Rochdale Road realignment option is stated as a preference for the following reasons: the realignment will utilise a mere 6.5 hectares of the total of 490 hectares recommended for rehabilitation and conservation; it would improve the traffic situation in Rochdale Road by providing a direct link between Underwood Avenue to West Coast Highway via Stephenson Avenue; it would integrate the Mount Claremont Bushland with the central part of Bold Park (with the removal and rehabilitation of the existing Rochdale Road alignment); and would allow some urban development to occur giving a return to the City of Perth Endowment Lands Trust Fund. For many years the City of Nedlands has been endeavouring to convince the City of Perth that the Stephenson Avenue/Rochdale Road intersection should be altered to give priority to the east - west movement. Option 3 achieves this.
- A10.8 This comment is noted and Council recognises the communication linkage for traffic required to West Coast Highway.
- Q10.9 Although the City of Nedlands is soon to undertake the construction of Local Area Traffic Management devices in the southern residential part of Rochdale Road, only the realignment of the northern section of Rochdale Road will solve the problem of heavy regional traffic using the southern portion of Rochdale Road.
- A10.9 The suggested Local Area Traffic Management devices in the southern residential part of Rochdale Road are unlikely to resolve the problem of heavy regional traffic using this road. They are more likely to affect local residential amenity in that area.
- The concern is noted however, and the Council's option addresses communication between Stephenson Avenue and West Coast Highway.
- Q10.10 The northern portion of Rochdale Road which intersects with the West Coast Highway has been measured to have only 3489 vehicles per day. However, there are 6775 vehicles per day using the southern residential portion of Rochdale Road. This bypass portion is obviously not working because of the need to back track. This northern portion of Rochdale Road should therefore be realigned.
- A10.10 This point is acknowledged.

11. Western Suburbs Highway

Q11.1 The proposed alignment of the Western Suburbs Highway along Bold Park Drive will have significant impacts upon the quality of life for residents in Elphin Street. What compensation will be paid to residents of Elphin Street who will be impacted by the noise and dust of construction and the continuing effects of vehicle pollution, noise, loss of visual amenity and severance which will be experienced if this road is built on the alignment of Bold Park Drive?

A11.1 The PER concludes that the alignment of the Western Suburbs Highway along Bold Park Drive, rather than along the existing MRS reserve, would have significantly less impact on the conservation and recreational values of the study area. However, it would have substantially greater impacts on adjoining residents, particularly in relation to traffic noise and also in terms of views and access to the study area.

With respect to payment of compensation if residents are affected by noise, dust, pollution and severance, as the Western Suburbs Highway is a regional road, compensation claims would be considered by the Department of Planning and Urban Development on behalf of the State Government. It is not within the scope of these comments to discuss matters relating to compensation under Town Planning legislation.

Council's option is to exclude this major road from Bold Park and Bold Park Drive.

Q11.2 The environmental values of the bushland between Oceanic Drive and the Boulevard are of inferior quality and the area is already partially developed. Therefore, it would be more sensible to align the Highway through this land rather than cause severe impacts upon the residents of Elphin Street.

A11.2 The PER concludes that the alignment of the Western Suburbs Highway along Bold Park Drive, rather than along the existing MRS reserve, would have significantly less impact on the conservation and recreational values of the study area, however, it would have substantially greater impacts on adjoining residents, particularly in relation to traffic noise and also in terms of views and access to the study area.

Council's option would remove the major road from this area altogether.

Q11.3 The obvious route for the Highway is from Pearson Street to Hale Road to join up with West Coast Highway. Part of Hale Road has recently been widened into four lanes at the Pearson Street end, and there is sufficient road reserve to enable it to be extended for its full length to the West Coast Highway.

A11.3 The suggested alternative route for the highway from Pearson Street to Hale Road to join up with West Coast Highway and then along the West Coast Highway is worthy of investigation for its capacity as well as its impact on adjacent land uses. The adoption of this route would necessarily require adequate upgrading of substandard sections of West Coast Highway, such as the proposed realignment at Challenger Parade.

Q11.4 The proposal to construct a Western Suburbs Highway through Bold Park should be deleted and action should be taken to remove the proposal from the Metropolitan Region Scheme.

A11.4 The removal of the Western Suburbs Highway reservation from the Metropolitan Region Scheme should be subject to identification of an alternative route, as per 11.3 above and the satisfactory adjustment of the West Coast Highway alignment to provide both for the safety and capacity of this route.

Council's option supports the principle of removing the Western Suburbs Highway through the body of Bold Park within the terms of A11.3.

Q11.5 The consultants interpretation of the Road Reserves Review recommendation for the Western Suburbs Highway is haphazard. The relatively recent decision by Government on the possible realignments of West Coast Highway should be factored into the interpretation in Figure 5.1 of the Public Environmental Review.

A11.5 The comments on 11.3 and 11.4 above refer.

Q11.6 An alternative to the Stephenson Highway through Bold Park and the Wembley Golf Course is to align Stephenson Avenue with Empire Avenue just north of Cromarty Street. Motorists would then travel from Stephenson Avenue to The Boulevard, to Howtree Place, to Brookdale Street. Motorists could then travel west on Underwood Avenue or continue south on Brockway Road to Alfred Road to link up with West Coast Highway.

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- All.6 Whereas the suggested alternative route as outlined in the comment could be used, it would take regional traffic through residential parts and therefore would not be acceptable.
- Q11.7 Has Stephenson Highway been designed to accommodate heavy haulage vehicles or road trains?
- All.7 Road trains require improved geometric standards to travel along designated routes. It is not envisaged that road trains would be allowed to travel along Stephenson Highway.
- Q11.8 Neither option for the Western Suburbs Highway, which are shown in Figure 5.1 should be implemented. The main strategy should be to decrease the overall traffic flow on existing roads, not encouraging more people to utilise private vehicles by providing greater access to and choice of highway.
- All.8 Whereas passenger vehicles are allowed to travel along all roads, the specific need for the Western Suburbs Highway arises from existing and future commercial vehicle travel requirements. Regional and commercial traffic should not be allowed to pass through residential areas. There is an economic cost to the community by not providing efficient routes for the movement of necessities on which the community and its lifestyle rely.
- Q11.9 Perth City Council had supported the Road Reserves Review option for removing the Metropolitan Region Scheme highway route through Bold Park, at its meeting of 16 September 1991. This should not be confused with supporting the alternative put forward by the Road Reserves Review. Other options are available which do not impact on Bold Park or its environs.
- All.9 Although the Perth City Council supported the removal from the Metropolitan Region Scheme of the Western Suburbs Highway route through Bold Park the necessary procedures for its removal have not as yet been implemented by the Department of Urban Planning and Development. The removal requires investigation and adequacy of available alternatives and would be subject to undertakings for providing such alternatives.
- Q11.10 On page 7.26 of the Public Environmental Review report, it is suggested that rezoning of urban land should take place first. However, it is desirable that an integrated approach be taken to the Metropolitan Region Scheme amendment which would include changes to road reservations at the same time.

A11.10 The Consultants have suggested this procedure on the basis of the land being reclassified to Parks and Recreation should take place notwithstanding the future of the Stephenson Highway reserve. They suggested that the alignment of that Highway should be discussed with the Main Roads Department and they were presumably of the view that the decision on the latter may unduly affect the former. However, there would not appear to be any reason why the amendments should not be proposed comprehensively and simultaneously.

12. Vesting and long term management issues

Q12.1 Bold Park and environs should be dedicated as a Regional Park, land which is currently zoned urban and should be rezoned Parks and Recreation. The land should be vested in the National Parks and Nature Conservation Authority and managed by the Department of Conservation and Land Management. The purpose of the Regional Park should be the Conservation of Flora and Fauna.

A12.1 The Council's option supports a majority of the open space areas in the environs of Bold Park together with the majority of Bold Park being set aside and recognised as a Regional Reserve. This option supports a management concept that also recognises the regional use of these areas and provides a funding source for sustainability.

Q12.2 A Regional Park should be established which encompasses the M46 and M47 recommendations of the System 6 report. This Park should be made an A Class reserve as a 'Nature Conservation Reserve for Educational and Scientific Purposes and Low Impact Recreational Activity'. The description of the purpose of the reservation needs to ensure that there is no further risk of resumption or development at a later time.

A12.2 The importance of Bold Park and areas of surrounding bushland and parkland in a Regional context is recognised and there is a need for security of tenure to facilitate appropriate management.

The Council resolved to release the PER to the Environment Protection Authority although the Consultants report did not contain the necessary comment from Council itself. This decision to release the document did not commit the Council to any one of the four management structures given as options.

With the public comments and questions now received however, a final position on the entire PER, management system and funding can be taken and will be presented as a recommendation to the EPA as soon as possible.

Q12.3 An active 'Friends of Bold Park' has promoted the welfare of the area and worked over many years to give Bold Park full protection and security of tenure. The 'Friends of Bold Park' should be involved in the Regional Park management, being represented on a Management Committee, and the principal management responsibility for the area should be with the Department of Conservation and Land Management.

A12.3 The "Friends of Bold Park" is one of many groups who have had an interest in the future and security of Bold Park and surrounding areas and it is recognised that a community interest is necessary to be supported to achieve a successful and sustainable Regional Park.

Council will recommend to the EPA a management system preference, and, subsequent to an adopted position by the Government, determination can be made by the then appropriate authority as to the position of assistance from community groups.

Q12.4 Accountability for, and management of, the Regional park should be given to a Board consisting of the Department of Conservation and Land Management, the new local government council and local interest groups, including the Wildflower Society of Western Australia, the Friends of Bold Park, the Royal Australian Ornithological Union.

A12.4 Various options for a management structure were suggested in the PER. Please refer to A12.3.

- Q12.5 No further excisions from the M46 and M47 lands (including those within the City of Nedlands) should be allowed. The entire area should be given A class reserve status and be managed by the Department of Conservation and Land Management and appropriate conservation groups and local government. Specific funding for the management of the area will need to be allocated from the public purse. It is imperative that this group immediately begin the preparation of a management plan for the area.
- A12.5 The Council's option addresses the issues of definition of area to be conserved, the area to be designated a Regional Park, the management structure for the Park and the funding source for sustainability. It is agreed that a high priority will need to be the preparation of a management plan for the Regional Park and infrastructure.
- Q12.6 The suggestion on page 7.9 that the regional park should include Herdsman Lake and Lake Claremont as well as the coastal strip and the natural and semi-natural areas list on page 7.9 has merit in enabling all of these areas to remain interconnected and be managed in accordance with the parks aims. If they are left out, then areas will be planted with non-local species (like Perry Lakes and the Wembley Downs Golf Course, which results in visual confusion and disharmony, and in time replacement of local with non-local species.
- A12.6 The Consultants have noted that this suggestion is beyond the PER areas, such as, the City of Perth Golf Complex and Perry Lakes Reserve which can still form successful linkages but without being brought under a single management control or other limitations, provided their existing purposes do not change. Exotic plant species mixed with indigenous species is not going to preclude this linkage.
- Q12.7 The main priority at this stage is to ensure that the vesting is appropriate and to prepare a management plan with community input. The Friends of Bold Park will have a very valuable role in educating the public and helping to manage the park; just as the Friends of Star Swamp and Friends of Trigg Reserve have been doing.

- A12.7 Whatever status Bold Park is given, the principal parties will have to consider the opportunities they may extend for community input.
- Q12.8 The Public Environmental Review ignores the fact that the concept of a regional park supports area within that park as having specific uses, e.g. intensive passive recreation, low impact recreation, scientific, education etc. It would be reasonable for the Perry Lakes area to be included in the Regional Park, but retained in local authority vesting, ownership and management responsibility, but with overall coordination coming from the Department of Conservation and Land Management.
- A12.8 The PER was limited in its area of assessment and support is given to an expansion of the area to be included within a management context. However, it would be appropriate that whatever the dimension of the regional park (or whatever the status of the major conservation/management area is given) it should be administered by a single authority.
- Q12.9 The total area of Bold Park and its environs should be a Regional Park. The 'Knightsbridge' land as well as the areas abutting the north and south sides of Rochdale Road referred to as the 'Mount Claremont Bushland' should be incorporated in the park.
- A12.9 The Knightsbridge land is neither within the ownership or jurisdiction of the City of Perth. Attempts to have the City of Nedlands be a part of the PER were unsuccessful. It is understood however, that the State Government has purchased the Knightsbridge land.
- Q12.10 The Commonwealth Rifle Range area should also be included in the area gazetted and managed as a Regional Park.
- A12.10 Whilst as the Consultants have noted this suggestion is beyond the scope of the PER, it is worthy of consideration by the authorities concerned.
- Q12.11 The Perth City Council and the Nedlands City Council boundaries should be rationalised so that Lot 1 Stephenson Avenue falls within the Perth City Council control and management and is incorporated into the Regional Park.
- A12.11 Whilst as the Consultants have noted, this suggestion is beyond the scope of the PER, it is worthy of consideration by the authorities concerned.

- Q12.12 The area is too valuable to be managed by a Local Authority, which generally lack the resources and expertise to manage open space areas of regional significance.
- A12.12 The City of Perth has for many years successfully managed significant areas of open space which are of regional significance.
- The management options indicated by the Consultant in the PER however are required to be considered further.
- Q12.13 Whilst the City of Perth Councillors have passed resolutions to protect the area from development, these have not been followed up by the appropriate amendments to the Metropolitan Region Scheme.
- A12.13 The Metropolitan Region Scheme is not a document within the authority of the Council to change. The PER, however, is a step towards identifying land use for the area which, when finally resolved, may give rise to changes within the Metropolitan Region Scheme.
- Q12.14 The time is apt with all the municipal boundary changes to relieve the future Cambridge administration of any burden in managing such an expansive area.
- A12.14 The purpose of the PER is to establish land uses within the area studied and as a consequence a management and funding system can then be established within the terms of the final outcomes.
- Q12.15 The City of Perth is currently claiming to have substantial reserves to provide a high standard of service and facilities for all ratepayers (letter entitled 'The City of Perth is Facing Demolition' addressed to each ratepayer in the City of Perth dated 14 October 1993). Why is it therefore necessary to consider destroying unique bushland in Bold Park and its environs?
- A12.15 The PER is to determine the land uses for Bold Park and sections of its environs. Within this area are substantial areas of land owned in fee simple by Council and zoned for subdivision. Within this context the Council does have substantial reserves. However, should alternative land uses now be determined, this position needs to be reviewed, together with the role of management and funding for these alternative land uses to ensure a balanced approach.

Q12.16 Whilst an A Class reserve would have merit, no attention has been given to the issue of native title in the Public Environmental Review. It is essential that the whole area remain available for the benefit of the whole community.

A12.16 The City Council is the owner in fee simple of the land and would therefore be interested in the way the land is held in the future and its management. The constitution and composition of any management authority would be a matter of determination subsequent to land uses being ascertained.

Q12.17 If the area is excised from the City of Nedlands and City of Perth to be vested in a management authority, then there is no reason why these Councils should be represented on that authority.

A12.17 The decision on the type of management for any of the land use areas will be determined after land uses are resolved and will be determined on land use type, status of the respective areas, the funding sources and land ownership.

Four options for management systems were nominated within the PER and at this time the City of Perth is not committed to any one option.

Q12.18 The area which is vested in the Ministry of Education should not infer that the Ministry of Education should be on the Board of Management for Bold Park. The position of land owners in the area on any management board would not be in the best interests of the future of the management of a natural park.

A12.18 The comment on page 7.10 related to a suggestion by the Consultants of composition of a Management Board - and noted a representative from landholders in the area. The matter of representation on any committee which may be formed will no doubt be the subject of a great deal of debate. It may be in the best interests if adjacent owners are involved in the management of the area, as it would ensure that their actions do not compromise the values of the bushland.

It may well be appropriate, however, to define the land use purposes as well as the owners and tenants roles within this context rather than pre-empt the management.

Q12.19 The Perth City Council should not have an expectation of gaining money from sales of this area, nor should there be any compensation if the land is to be reserved. A note in page 4.1 states that the proceeds of any sale of endowment land can only applied to the development of the endowment land.

A12.19 The report focuses on a number of issues and options for the long term use and management of the area.

The report does not focus on any financial aspects directly, although the matter is referred to in a management option similar to that of Kings Park - funded from consolidated revenue of the State Government.

The subject of management and financing will have to be considered at length in the discussions relating to structure of the accepted management/ownership option.

It is necessary, however, to ensure that funding is secure for any conservation area or alternatively the purpose will fail, when the work required is of the dimension envisaged for Bold Park.

Q12.20 It is important that Bold Park and environs be designated an A Class reserve as this would require consent of both Houses of Parliament to allow any alterations to the boundaries.

A12.20 Subsequent to the final determination of land uses within the PER study area and its environs, every endeavour should be taken to ensure that any areas set aside for conservation are sacrosanct.

Q12.21 Bold Park has never included the area south of Rochdale Road. This land has always been zoned, designated and intended as residential land. There is no new proposal from the Council administrative staff.

A12.21 Part of the proposal by the Administration of the Council was to use for residential purposes, the land to the south of a modified Rochdale Road alignment connected to Stephenson Avenue. The land concerned is presently classified "Urban" under the MRS and "Residential" under the City Scheme.

- Q12.22 The area designated for the Park Management Centre should be sized to match both its necessary and fundable operation, while minimising any break in the continuity of bushland between Oceanic Drive and The Boulevard.
- A12.22 The change of boundaries and establishment of the Town of Cambridge and the decision as to who may be the principal(s) of the suggested Park, are matters which will influence the suggested management and education centre. Obviously the matters of size and aesthetics would be of paramount importance.
- Q12.23 The whole area of Bold park and environs was classified by the National Trust (WA) in 1992 and placed on the Trust's register of important places. The National Trust are requesting the Australian Heritage Commission list the area on Register of the National Estate.
- A12.23 The National Trust listing is discussed comprehensively in the PER (4.7). The matter of seeking listing on the Register of the Australian Heritage Commission is likewise noted.
- Q12.24 The Perth City Council set aside 499 hectares in 1925 for a public park subsequently named Bold Park. A number of areas (more than 200 hectares in total) have been excised for development; residential, a golf course, City Beach High School, Water Authority reservoir. However, the Perth City Council extended the park in the 1970's by 119 hectares and in 1991 Council resolved to include (subject to Environmental Protection Authority approval) 53 hectares. However, this has not yet been implemented. If all the area in the Public Environmental Review is conserved (as in Structure Plan 6.1), then Bold Park will be of a similar size to that originally set aside.
- A12.24 These comments are noted.
- Q12.25 In 1939 the Perth City Council resolved to set aside 1000 acres of its endowment land as a park for the people of Perth. The City of Perth should be held to this commitment.
- A12.25 The current bushland and public open space areas, which include Bold Park that have been set aside for retention by Council, exceeds the 1000 acres.

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- Q12.26 The Public Environmental Review states on page 4.13 that because the study area is largely privately owned land it is not possible to seek conservation by reserved under the Land Act. However, in Section 7.1.4, in which the Crown Land Reserve option is discussed, the transfer of land tenure from Perth City Council to the Crown is referred to. Although this would be a large step for Council it is not impossible. Why should the Council want to retain control over the area. Surely the primary objective is to protect the bushland form both urban development and poor management. The Public Environmental Review's preferred management option does not satisfy this goal.
- A12.26 The comment relates to ownership of the land and what the Council as owner may wish to do.
- The PER was designed essentially to be a land use study and, from this, determinations can be made which include security of use for the future and management options for the components of use.
- Q12.27 Under the Public Environmental Review's preferred management proposal funding would come from a variety of sources, most of which provide a short term funding base for specific projects. This type of funding does not provide an adequate financial base on which long term management strategies can be developed.
- A12.27 This is a valid point which is a concern shared by Council and will be addressed in the final comments submitted to the EPA as a consequence of the matters raised in the public submissions.
13. Public Environmental Review process
- Q13.1 It is quite extraordinary how many times residents have to attend miscellaneous meetings and/or write letters to have their point of view heard, let alone have it acted upon. After years of argument and discussion, one would have thought that the Environmental Protection Authority and Perth City Council would have implemented the System 6 recommendation for a Regional Park.
- A13.1 The process presently in train is in accordance with the provisions of the Environment Protection Act. The introduction to the PER sets out clearly the objectives and indicates why it is necessary to go through a statutory process.

The argument and discussion to which reference has been made is part of the process on which a decision or decisions will be based.

Q13.2 There is a certain amount of frustration and cynicism that a cause which is so widely supported - that of the need for Bold Park and its environs to be designated a Regional Park - should need to have the evidence for this repeated time after time.

A13.2 The need for this PER arose when the area was identified by the System 6 Study in 1983 (Department of Conservation and Environment 1983). That study recommended that the areas M46 and M47 be designated as a Regional Park. Since that time various proposals, including the proposed residential development of the adjoining 'Knightsbridge' land and the extension of Underwood Avenue to link with West Coast Highway, have necessitated public consultation. In recognition of the cumulative impacts of the different development proposals, the Perth City Council committed itself to carrying out this PER to identify and address all of the issues which could affect the study area.

Q13.3 It has been suggested that the former Drive In Theatre site near Bold Park Drive is to be used as a depot for the new Town of Cambridge. The clear intention is to pre-empt Environmental Protection Authority recommendations. If it occurs for this area, will the System 6 and subsequent Environmental Protection Authority recommendations and community opposition to development be ignored for other parts of Bold Park Bushland.

A13.3 In the Restructuring brochure, prepared by the State Government, it was indicated that new Council offices could be built at Floreat Forum and that there would be an appropriate works depot.

The Commissioners are charged with the responsibility of establishing the infrastructure for the new Towns and they are aware of the PER and its ramifications.

- Q13.4 The Perth City Council is to be commended for two unusual features of the terms of reference for the Public Environmental Review. Firstly, they did not put up a development proposal and then try to get environmental information to support their case. Instead, they asked what would be best for the whole community. Secondly, they did not just ask the consultants to do a desk top study with access to only previously published information and in isolation from the community.
- A13.4 The Council was most anxious in the preparation of the PER that there should be a high level of public consultation and an opportunity for expressing its views.
- Q13.5 The Friends of Bold Park refer to a 1987 user survey indicating attendance by people from 105 different suburbs. The survey was a distortion, because people were canvassed to attend on that day, resulting in 20 to 30 times more than on any other day you would like to pick. Bold Park is not well used as a recreation area by the people of Perth and very few people value the area as claimed.
- A13.5 The value of Bold Park, and adjacent bushland areas, is not purely recreational and decisions on its future will be based upon its conservation, recreation, landscape, social, scientific, educational and financial value.
- Q13.6 The Public Environmental Review document was not available at the Mount Claremont Library for at least the first 10 days of the public review period.
- A13.6 This matter was not drawn to the Council's attention. The report in its draft form had been available at the office of the Perth City Council for a number of weeks earlier for the sum of \$10.00.
- Q13.7 The proponent makes no formal commitment in Chapter 10, so what is the purpose of this document, and how can it be meaningfully assessed? Will this allow the Minister to establish conditions for any activities or change the status of the area, without receiving any commitments from the proponents or its successors?

A13.7 As indicated in Q13.4 this PER is unusual in that Council did not have a use proposal being ascertained. The PER has been used as a public participatory process to help determine land uses as perceived by the community. In most respects the document was to be a proactive situation rather than reactive.

As the objective of the PER was to identify and address all of the issues which could affect the land, it could be claimed this has been achieved. The resolution of the many matters raised will be the subject of considerable debate.

14. Other Issues

Q14.1 Until the Environmental Protection Authority's recommendation for the realignment of West Coast Highway can be implemented, the current alignment should be fixed through relatively quick and inexpensive action as follows: fixing the super-elevation south of Challenger Parade, placing guard rails on the north bound bend, removing trees and relocating power poles and light standards which are poorly placed, closing of the southern intersection of Challenger Parade and reducing the permissible speed to 60 kilometres per hour.

A14.1 The current timetable for the realignment of West Coast Highway at South City Beach is for the work to commence in 1993/94 and for it to be substantially completed by 30 June 1995. The suggested fixing of the super-elevation, placing of guard rails on the north bound bend, removing trees and relocating power poles and light standards which are poorly placed together with the reduction of the permissible speed to 60 kilometres per hour would be largely ineffective. The current alignment is safe for the speed limit of 70 kilometres per hour. Accidents happen because vehicles are travelling at a much higher speed which appears to be suitable for the environment along the rest of the West Coast Highway outside inhabited areas. The most recent accident which claimed a life would not have been prevented by guard rails on the north bound bend because the accident appears to have been caused by the out of control vehicle colliding with a tree in the median between the two carriageways.

Q14.2 The location of *Agonis flexuosa* low woodland is not shown on Figure 2.2 (Vegetation map).

A14.2 Comment noted.

Appendix 3

List of individuals and organisations who forwarded a submission during public review of the Public Environmental Review document.

Ms Sonia Willey
Mr J Sarginson
G Watson & J Lowe
Ms B Roy
Mr J Jones
Mr S J Vauchan
Ms B Peters
K Clifton
P F Berry
Mr T Rooney & Ms J Walter
Mrs J Page
L J Minchin
Mr L van Erp
Ms F Cresswell
Ms B M Briggs
Mr P Grey
Mr & Ms OKeefe
Mr & Ms J J, P A & J A Kofman
M S Boland
Ms K Boland
K Torrens
Ms N Calcutt
Mr B & Ms L Moore
Ms J Pummer
Mr T Stockwell
Ms C Young
A Jensen
Ms J Cooper
Mr B Whitney
Ms K Padman
Mrs F A Cullen
Ms K Timuska - Carr
Ms B Gray
Mr & Mrs Gray
Dr R Smith
Mr M Gauntlett
Mr & Ms de Kock
Dr S Toussaint
Mr M Collinson
Mr M Malthouse
Mr T O'Brien & Ms H La Mela
Mr A Schaffer
L Schouten
Mr R & Ms A Britto
Mr E Barker
Ms D Honlett
Mr R Hatchett
Mr & Mrs Longman
Reverend Sharr
Ms C Hughes
Ms M Gray
Ms B Keighery
J C & M H Ross
Mr K Mc Alpine
Ms H Wellwood & Mr J McDonald
Mr G O'Conner
J Sheil
Ms M Hayres

Mr N R Venn
Mr & Ms C & E Cowan
Mr B & Ms H Clegg
Ms S Clegg
Mr J Crandell
Mr I & Mrs J Ozanne
Mr J Anderson
J H Robinson
A W Robinson
Ms E Valton
N R A Netherclift
Mr G C & Ms D A Truscott
Mr T Alford
Ms B Newbey
Ms D Emanuel
Mr T Frodsham
Mr N Giblett
Ms L Jackson
Mrs S Monger
Mrs E King
Mrs B MacLeod
K & F Chambers
Mr S & Ms B Greenway
Mrs B Knott
M A Cunningham
Dr J & Ms J Howieson
Mr & Ms B Kollman
Algie Family
Mr B Perriam
Ms A Chalwell
Ms M Flecker
Mr R W Dawson
Ms C Calcutt
Mr D Craig
Mr W & Ms Delamare
Ms M Eadie
Mr D Honey
Ms D Burnham
Mr J & Ms M Simpson
Ms Prestage
W Aspden
Mr R & Mrs M Nowland
D C M O'Connor & D K G Forbes
Ms Margo Murphy
Ms Sue Callister
Mr I & Mrs B Judge
J E Moody
Ms Helen Hsu
Ms Inez Doran
Mr M & Mrs C Holden
Ms Susan Cutler
Ms Patricia Ellis
Mrs M Spruce & Mr P Spruce
Mr Ronald Sly
Mr Alan Gutteridge
Mr Richard Jackson
Ms Elizabeth Wood
Mr Ian Carroll

Mr Anthony Kelly
W H Williams
Mr G & Mrs D Beer
Mrs G & Mr L Christiansen
Mr Malcolm N McMillan
Ms Debra Pak-Poy
Mr David G Aitken
M L Cambridge
Ms Allison Barr
Mr Jack Rowe
Ms Marjorie Pole
Dr Paul R Martin
Mr Geoffrey C Barr
Mr Philip J Stephens
Ms Astrid Serventy
Ms Wendy Alpers
Ms Barbara Downs
Mr S & Mrs J Briggs
Messrs C & H E Massey
Mr Brian A Everard
Mrs R Anastas
Ms Peggy Beech
R K Archer
Marko Hake
Mr Stanley N Austin
Ms Wendy Turak
Mrs Rae Hunt
Ms Iris James
Ms Kathryn D Murray
Ms Isobella Thomas
Mr Kevin Gillam
Mr Horace A Mofflin
Ms Jolande Macknay
Mr Colin K Jackson
Mr John W Felder
Mr Colin E Lawrence
Mr Philip War-Dickson
Mrs Y Clifton
Ms Barbara Reif
Mr Jon Roberts
Mr Peter M Howell
Mr Alexander Bruce
Ms Louise Bruce
Mr Bruce J Hegge
Ms Eleanor Bruce
Ms Dona Grybas-Mounsey
Ms Jeannine McCartney
Mr Neville Bruce
Ms Margaret Bruce
Ms Peta Sanderson
Mr David C Jerrat
Ms Pamela Hughes
Ms Jean Craing
Ms Gwynneth A Oxham
Mr & Mrs Esbenshade
Mr Tony Saraullo
Ms Elizabeth Newby
Mr Peter Glory

Mr Raymond Stenberg
Mr John Gilmour
Mr & Mrs Kimpton
Ms Enid Hopps
Mr G & Mrs C Swingler
Mr M A Clarke
Ms Pauline Powell
Mrs Jean Bouwer
Mr Les Ede
Messrs B R & D H Ellis
Mr David Weaver
Estmere Busch
Mr Roger Guinery
Ms Marie P Lake
Mrs Winifred Harrison
Mrs Kathleen Taylor and Family
Ms Beverley I Prideaux
Mr David Bruce and Ms Ann McDonald
Mr George Manasseh and Family
Mr John G Abernethy
Mr P Harrison
Dr J A Kozak
Mr & Mrs K & T Hayles
Ms M Shipley
Ms J Bot
Mr/Ms P A, R A & S J Dare
Ms R Murphy
Mr W Reed and Family
Mr & Mrs L M & V M Crump, Ms N N
Crump & Ms M J Crump
Mr D Boase-Jelinek
Mr/Ms J M Collier
Mr/Ms J T Jeffery
Ms K Tullis
Mr & Mrs A A & M Burbidge
Ms J Stanton
Mr/Ms K Walch
Ms D Weymouth
Mr P Drayson
Mr & Mrs J & J Allen
Ms J Drayson
Dr P J & Mrs P M Zeck
Mr R & Mrs S Boulter
Ms M De'Atta
Ms S Smyth
Mr M Hutchison
Ms M Hunter
Mr C Nolan
Ms S Turner
Mr J & Mrs S Casson
Mr P Watson
Mr R Brown
Ms S Lake & Mr/Ms D Maier
Mr M Ballesteros
Mr/Ms E J Milner
Mr & Mrs M N Ferguson
Mr/Ms J K Duncan
Mr S & Ms J Fisher

Mr R Fechie
Ms I Newton
Mr R & Mrs W Campbell
Ms S McCaig
Mr/Ms R M Williams
Mr/Ms R Prestage
Mr G Maskiell
Mr/Ms K R Ray
Mr J & Mrs R Lochore
Mr G Arrow
Ms M Payne
Mr D Curry
Mr D & Mrs M Drayson
Ms D Anderson
Mrs C Quinlivan
Ms M D Lillingston
Mr L Whitehouse
Mr/Ms K G Whitehouse
Mr J Fowler
Mrs S Davis
Mr D Loureue
Mr/Ms I C R Mackenzie
Mr J H O'Halloran
Mrs E F Day
Mr/Ms W G Mackie
Mr D Pearn-Rowe
Mr J & Mrs L Dodd
Ms J Webb Waré
Mrs J Harrison
Mr/Ms L F Whitehouse
Messrs B Maryan & R Browne-Cooper
Dr L V J Moyser and family
Mr/Ms D W Bibby
Mrs J Parsons
Ms D Archer
Mr C Cox
Mr/Ms C E S Davis
Mr/Ms R R Lake
Ms J Harvey
Ms C Taylor
Ms C Taylor
Mr/Ms E A Griffin
Mr L C Dehouten
Mr & Mrs J H & S E Davies
Mr J & Mrs M Beal
Mr J & Mrs S Beal
Ms H I Hills
Mr R Powell
Mr D Laslett
Dr B Wykes
Mr/Ms S W Knott
Mr & Mrs E & K Palmoja
Mr/Ms J W Southcombe
Mr & Mrs B Bocking
Mr R Robinson
Ms H Morris
Mr K & Mrs D Mahon
Mr D J McMillan

Mr/Ms R A Deverell
Ms M Brown
Mr/Ms J Markham
Mr/Ms B C Sierakowski
The Law Family
Mr I Yarwood
Mr D A Harvey
Mr & Mrs R L James
Mr P J Bath
Mr J A Adeney
Mrs K Smith
Ms I M Davis
Ms P Duggins
Mr U & Mrs H Roth
Mr & Mrs E Markham
Ms C Lasserre
Mrs M Markham
Mr/Ms R W Bradley
Ms V Rimes
Mr/Ms G D Rimes
Ms Barbara D Abernethy
Ms Betty Rees
Messrs J S Lushey & P S Smith
Messrs J & R Walmsley
Mr G and Mrs M Cross
Ms Galton-Fenzi
Mr John F Kehoe
Mr Clive Odgers
Ms Roberta Maughan
Mr Donald K Gudgeon
Ms Leslie Murphy
Mr Michael Hughes
Ms Ivy R Howard
Mr M & Mrs A Hopkins
Ms Nance Wilson
Ms Margaret Grant
Messrs M F & R J Maskiell
Mr Ronal Hedley
Mr J & Mrs J Videnieks
M E Sangster
Mr & Mrs J Hunt
Mr Anthony Davis
Mr L & Mrs J George
Ms Ruth Oliver
Mr Lawrence Bartlett
Ms Sabine Hecht
Mr Rayden L James
Ms Dorothy Blacklock
Mr R & Mrs A McEntee
Mrs G Morrison
Ms A Boddington
Mr & Mrs F Heyworth
Mrs F S B Woods
Mr Howard Turner
Mr John D Williamson
The Cale Family
Mr J & Mrs L Johnson
Ms Linda M Ray

Ms Jill Bignell
Mr E J & Mrs R V Wheatley
Ms Anne Mueller
Robin Hamilton
Messrs H N & M Holdman
Mr Jeremy Earl
Ms Margaret J Richards
Mr G & Mrs J Devine
Mr C & Mrs H Robins
Ms Bette Dadour
Ms Iris Clifford
Ms Sarah Southdern
Mr R & Mrs D Croker
Ms Dorothy Stephen
J Pierce
Ms Christine Gammon
Mr J & Mrs G McCulloch
Mr Michael G Marsh
Mr Vernon McFarlane
Mr Kevin McLean
Ms Joan collins
Ms Kerry Coyle
Messrs B & B W Roberts
Ms Rosmarie Candler
Ms Lisa King
Mr Stuart Barr
Ms Cate Murphy
Dr J F Russell
Mr J & Mrs S Abbott
Mr R J Hill
Mr R Bogoyer
Mr John W Rothwell
Mr Roland Hahnel
C J Otto
Mr Rodney Giblett
Mr T & Mrs P Nisbett
Mr Geoffrey R Shellam
Ms Erma Stein
R E Maidment
L A Lelom
Mr H & Mrs E Jarman
Ms Dorothy Polick
Ms Anne Bradley
Mr James Palmer
Ms Anne Palmer
Ms Linda McGrath
Dr K C Wan
Ms Verena Stoffel
Mr Peter A Reynolds
Mr Graeme Roy
C Nicholas
Ms Wendy Porter
Mr Robert Harper
Ms June Rankine-Wilson
Mr Robert A Woods
Mrs Elizabeth Fenton
Ms Jean R Williams
Mr Peter M McDonald

Ms Isobel V Date
Major L J Olive
J M Hollingsworth
Messr R X & E M L Parkin
E W Vis
D W Hollingsworth
Ms Betty Grenville
T C Stoneman
Messrs R W & F Wray
Ms Shirley Loney
Messrs R L & J R Weston
Mr Otto Mueller
K Gates and C Stedman
Ms Jo Dallimore
Ms Claudia Harfst
Ms Mary Gray
Mr J R Simmonds
Mr Gregory M Harrison-Ward
Mr Geoff Park
Ms Elizabeth Wilkes
Mr & Mrs F E & E J Taylor
Mr/Ms H E Prestage
Mr B H Newman
Mr R Waterton
Mrs D Herne
Mr & Mrs M & M Flint
Ms D E Harman
Ms P Sawyer & Mr J Sharpe
Mr & Mrs B & M Dangerfield
Mr G Fernandes
Mr H Pickett
Mr and Mrs Mogyorosy
Mr L S Owen
Mr A P & Mrs L M Latham
Ms M Sill
Ms B Leonard
Mr G & Mrs B Edmunds
Ms M Leyer
Ms H Boffey
Mr M Cox
Ms C Lynn
Ms L Hughes
Mr B & Mrs F Mack
Ms G Genero
Mr B Oliver
Mr J R Brown
Mr P & Ms C Gabriel
Mr P & Mrs E Waller
Mr E Konarik
Mr/Ms C Greenwood
Mr/Ms A Dean
Ms L Segal
Ms Pavidson
Mr P & Mrs S Bowen
Mr/Ms M W J Jarvis
Mr V Abbott
Mr A P Hayes
Messrs C P & M B Bennett

Ms Gillian Lillingston
Mr P & Mrs L Green
Ms Ann MacKay
Ms Sue Boland
Mr Kenneth Brown
Ms Marcia Watson
A P Brogan
Mr D Tessler & Ms M Cameron
A J Smith
Mr N & Mrs R Henderson
Mr Peter Chappell
Mr Gordon Allen
Ms Eileen Northover
Mr James R Manser
N R Hewitt
J C Hewitt
Ms Valda Longson
Ms K C Edwards
Mr John Joyner
J A Kelly
P G Walker
Ms Dorothy H Perret
Ms Sarah Sunberg
Mr P & Mrs K Mead
Mr Richard Purdon
K Allen
R Smart
Mr Graham Giles
Messrs Backhouse
Mr H & Mrs L Hunt
Ms Norah Brockman
Ms Patricia Crawford
Ms Ruby D Johnson
Mrs P W Muntz
M M Godfrey
Mr Michael Revington
Mr D & Mrs J Beattie
H Tompkins
Mr Peter Gilletti
Mrs June Price
Ms Lorraine Boyce
The Sanderson Family
Ms Nicole Stott
Ms Susan Thomson
Ms Jean Ramsden
Ms Ann MacBeth
Dr K Atkins, Secretary
Ms Kerry Simpson
Mr Frank L Hamilton
Ms Vera Payne
Mrs Win Lee
Mr & Mrs J C A Owen
B J White
Mr Campbell C Crockett
T D Lightfoot

Appendix 4

Letter from the Perth City Council dated 18 October 1993.



CITY OF PERTH

Enquiries to Mr M J Rundle (265 3263)
Town Clerk's Department
Your Ref.
Our Ref. 1002572

Council House
27-29 St George's Terrace,
Perth, Western Australia, 6000
G.P.O. Box C120 Perth, 6001
Telephone (09) 265 3333
Facsimile (09) 221 2142

18 November 1993

The Environmental Protection Authority
38 Mounts Bay Road
PERTH 6000

ATTENTION: MR S SMALLEY

Dear Sir

I refer to my letter of 18 October 1993, wherein it was requested that the Authority defer determination of the Bold Park Stage 2 Public Environmental Review, until the advice of the Council had been forwarded.

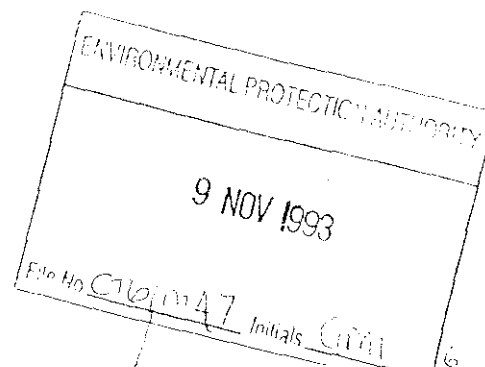
The purpose of my letter is to confirm that the Council, at its meeting held on 15 November 1993, resolved that the preferred Structure Plan 6.4, as proposed by Mitchell McCotter in the Draft PER, be accepted.

I trust the Council's advice will be taken into consideration by your Authority when determining the review.

Yours faithfully

R F DAWSON
CHIEF EXECUTIVE/TOWN CLERK

WPADMISC/5004



72003 INFO

Appendix 5

List of species of regionally significant flora found in the study area.

Table 2.2 SPECIES OF REGIONAL SIGNIFICANCE

Species	Comm*	Location	Significance
White Stemmed Wattle (<i>Acacia xanthina</i>)	4(ii)	M47	Near the southern limit of its distribution. The stand is one of the highest in the metropolitan area.
Peppermint (<i>Agonis flexuosa</i>)	5	M46 & M47	At its northern most limit. Poorly represented in inner metropolitan reserves
Dune Sheoak (<i>Allocasuarina lehmanniana</i>)	4(iii)	M46 - A good stand on a northern dune slope on south side of Rochdale Road opposite Wollaston College	Occurrence of this species are limited in metropolitan reserves
Firewood Banksia (<i>Banksia menziesii</i>)	6(ii)	M47 - in central and eastern Bold Park	An uncommon yellow flowering form
<i>Beyeria cynorum</i>	6	M47	Listed as a Priority 1* species
Wembley Wax (<i>Chamelaucium uncinatum</i>)	3(d)	M46 & M47	This natural form of Geraldton Wax is at its southern most limit of distribution. This form is poorly conserved in the metropolitan area with the nearest known stands occurring in the Moore River area. According to Keighery et al (1990) this form is of horticultural significance
Limestone Marlock (<i>Eucalyptus decipiens</i>)	7(iv)	M47 with good stands in northern M47	It is poorly conserved in the metropolitan area
Fremantle Mallee (<i>Eucalyptus foecunda</i>)	8	M47 with good stands in northern M47	Listed as a Priority 4 species. This is the only recorded occurrence between Woodman Point and Quinns Rocks apart from two specimens surviving on the cliffs in East Fremantle
Tuart (<i>Eucalyptus gomphocephala</i>)	7(i)	M46 & M47	One of the most important Eucalypt species in terms of associated fauna. Good stands are found in the study area which are otherwise limited in occurrence in the inner metropolitan area
Rock Mallee (<i>Eucalyptus aff. falcata</i>)	3(ii)	M47/- occurring on a limestone ridge near Skyline drive-in site	Limited in reserves in the inner metropolitan area

Table 2.2

SPECIES OF REGIONAL SIGNIFICANCE (Continued)

Species	Comm*	Location	Significance
Corky Bark (<i>Gyrostemon ramulosus</i>)	6	M47	At its southern most limit of distribution. It is not well represented in reserves in the metropolitan area
<i>Hakea ruscifolia</i>	3(i)	M47	One of few stands in the metropolitan area
<i>Jacksonia sericea</i>	3(i)	M47	Listed as a Priority 3 species. Occurrences in the study area are towards the northern limits of this species
Limestone Banjine (<i>Pimelea calcicola</i>)	3(ii)	M47	Uncommon in reserves in the metropolitan area
Cheesewood (<i>Pittisporum phylliraeoides</i>)	3(i)	M46, M47	Two of four occurrences in the metropolitan region
<i>Sonchus aff. asper</i>	8	Camel Lake	One of only two known populations of this native <i>Sonchus</i>
<i>Stylidium aff. affine</i>	3(ii)	M47	An important Restricted Species confined to the Swan Coastal Plain. Apart from the population in the study area it is only known at Yanchep and Yalgorup National Parks
Cookie's Tongues (<i>Templetonia retusa</i>)	3(i)	M46, M47	A yellow-flowered form occurs in M46

Notes:

Source: CALM, 1990

- Comm = Community - For community name refer to numbers on Table 2.1 or Figure 2.2
Dames and Moore (1992) listed *Eucalyptus 'petrensis'* as a significant (Priority 3) taxon found in the study area, however it is thought to have been planted.
- Priority One taxa with few poorly known populations on threatened lands
Priority Two taxa with few poorly known populations on conservation lands
Priority Three taxa with several poorly known populations, some on conservation lands
Priority Four taxa in need of monitoring
Priority Five taxa presumed extinct