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**PROPOSED KNIGHTSBRIDGE SUBDIVISION
STEPHENSON AVENUE, CITY BEACH**

BOND CORPORATION

Department of Conservation
and Land Management
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**Report and Recommendations
of the
Environmental Protection Authority**

Environmental Protection Authority
Perth, Western Australia
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STEPHENSON AVENUE, CITY BEACH

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Report and Recommendations
by the
Environmental Protection Authority

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CONTENTS

	Page
SUMMARY AND RECOMMENDATIONS	iii
1. INTRODUCTION	1
2. SUMMARY OF PROPOSAL	3
3. BACKGROUND	7
4. SUMMARY OF PUBLIC SUBMISSIONS	12
5. PROPONENT'S RESPONSE TO ISSUES RAISED	18
6. ENVIRONMENTAL ASSESSMENT	19
6.1 THE IMPORTANCE OF SYSTEM SIX REPORT	19
6.2 THE IMPORTANCE OF SYSTEM SIX RECOMMENDATION M47	21
6.3 ASSESSMENT OF THE DEVELOPMENT OF LOT 1 (THE PROPOSAL)	28
6.4 THE SYSTEM SIX M47 AREA AND FUTURE PRESSURES	36
. Western Suburbs Highway	
. Underwood Ave extension	
. Development of Lot 1	
. Development of Perth City Council Endowment Land	
. Dangerous Curve in West Coast Highway	
6.5 THE REGIONAL PARK CONCEPT - M47 AND M46	42
7. CONCLUSION	49

APPENDICES

Appendix A	Summary of issues raised in public submissions
Appendix B	Proponent's response to issues raised in public submissions
Appendix C	System Six Recommendation M47
Appendix D	System Six Recommendation M46
Appendix E	EPA letter on Underwood Avenue Extension
Appendix F	Nedlands City Council letter of 13 November 1979
Appendix G	DCE letter of 28 December 1979
Appendix I	EPA letter of 23 April 1987 to Peet and Co.
Appendix J	EPA letter of 23 April 1987 to City of Nedlands
Appendix K	EPA letter of 23 April 1987 to City of Perth
Appendix L	EPA letter of 23 April 1987 to State Planning Commission
Appendix M	EPA letter to all parties who sought advice about Lot 1 and the System Six Recommendation M47.

FIGURES

Figure	Title	Page
1	Locality Plan.	2
2	Proposed Subdivision Layout	4
3	Boundary of the Original 'Bold Park'	10
4	Distribution of Submissions opposing the Proposal	13
5	Distribution of Submissions supporting the Proposal	14
6	Frequency analysis of Submissions	17
7	Vegetation of significance in the System Six M47 area	23
8	Bold Park User Survey - Place of Residence	26
9	Proposals which may impact upon the System Six M47 area	36
10	Remnant vegetation adjacent to the System Six M47 area	43
11	Management areas and possible changes to System Six M47 area	44
12	Remnant vegetation adjacent to the System Six M46 area	45
13	Areas which should be managed in sympathy with the System 6 M46 area.	46

SUMMARY AND RECOMMENDATIONS

Bond Corporation Holdings proposes to subdivide and develop Lot 1 Stephenson Avenue, City Beach, for residential purposes. It is zoned 'urban' under the Metropolitan Region Scheme and 'Development Zone' under the Nedlands City Planning Scheme. The land is approximately 19 ha in area and the residential estate would be known as "Knightsbridge".

Lot 1 Stephenson Avenue is contained within the boundary of the Government endorsed System 6 Recommendation M47. The EPA's System 6 Recommendation identified the land within the M47 boundary as "constituting open space of regional significance". The M47 area includes the land known as "Bold Park".

The proposal to develop Lot 1 was assessed under the provisions of Part IV of the Environmental Protection Act 1986. The level of environmental assessment was set at Public Environmental Report (PER) by the Minister for Environment after he had upheld appeals on this point. The PER was released for a public review period closing on 1st February 1988. During this period 863 public and government agency submissions were received.

In addition to receiving written submissions, the EPA met with representatives of the proponent and a local action group, the Friends of Bold Park, to hear the respective points of view in person.

In carrying out its assessment of this proposal, the Environmental Protection Authority has undertaken the following:

- . reviewed the potential environmental impacts of developing a residential estate on Lot 1 itself;
- . reviewed the potential environmental impacts of a residential estate on the land covered by System 6 Recommendation M47; and
- . reviewed the proposal in the context of other known pressures on the land covered by System 6 Recommendation M47.

In order to reach conclusions and make recommendations on the proposal, the Authority also re-examined the values identified for the System 6 M47 area and commented upon the importance of the System 6 study.

SYSTEM 6 AND THE M47 AREA

The EPA's System 6 Study resulted in a comprehensive set of proposals recommended to, and accepted in principle by, Government for the protection of areas for broad conservation and recreation purposes in the most densely populated region of the State. It is assumed that with population growth, pressures on these areas will increase. Accordingly, the Authority sees the implementation of the System 6 Recommendations to be of the greatest importance.

One of the principal general recommendations in the System 6 Report is concerned with the identification, setting aside and management of open space of regional significance. The values of such open space are contributed to in various ways by different parcels of land involved.

As well, the System 6 Report notes that "open space of regional significance consists of a great deal more than land formally set aside for the purpose. In a functional sense, it can include land in a wide range of tenure and condition." The Report adds "It may be managed for the retention of the natural vegetation, or developed as "green belts" or parks for recreation. It may consist of uncleared bush awaiting development or farmland forming man-made rural landscapes of considerable amenity value."

Rather than acquire and manage all appropriate land, the System 6 Study proposed an alternative. This is "to leave much of the land in question in private ownership while subject to planning or development constraints." The alternative is based on the premise that protection of natural values should be reflected in amenity and real estate values leading therefore to both private and public benefits.

The System 6 Report further recommends that open areas of regional significance should be identified as regional parks through the planning process and to include both public and private lands.

The System 6 Recommendations include over 60 which cover areas within which land is privately owned. Thus, the circumstance of Lot 1 being within the boundary of M47 is not unique. The Environmental Protection Authority's position regarding development proposals for such private property is that proposals must meet the intent and objectives of the appropriate System 6 Recommendations for the Authority to consider them to be environmentally acceptable.

Therefore, in order to assess this proposal, the Authority reviewed the significance and values of the System 6 M47 area especially with respect to the criteria of conservation, recreation and education. As a result of this review, the Environmental Protection Authority has reaffirmed the important regional values of the M47 area. In summary these are:

- . 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 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.

ASSESSMENT OF THE PROPOSAL

The EPA considered in its assessment, that while the values of Lot 1 itself are not unrepresented elsewhere in the M47 area, development of the land would reduce the overall area of natural vegetation and introduce a range of impacts associated with positioning housing adjacent to conserved natural

vegetation. In addition, the Authority considered that the proposal made no allowance for the fact that it was proposed for land encompassed by a System 6 Recommendation. This contrasted with other proposals affecting System 6 recommendations such as Buckland Hill M55 (approximately 30% open space proposed), Waterways Mandurah C50 (System 6 land transferred to the Crown free of cost) and Halls Head Canal project C50 (land identified in the System 6 Report set aside for open space). These points led the Authority to reach the following conclusions:

- . the proposal as described in the PER makes no significant concession to the intent and objectives of the System 6 M47 Recommendation; and
- . additionally, there are a number of individual impacts which, cumulatively, would unacceptably reduce the values of the M47 area.

THE ENVIRONMENTAL PROTECTION AUTHORITY CONCLUDES ACCORDINGLY THAT THE DEVELOPMENT AS PROPOSED IS NOT ENVIRONMENTALLY ACCEPTABLE.

As part of the assessment, the Authority considered the key elements of the proposal which, if changed, could have the potential to ameliorate the main environmental impacts.

In summary these were:

- . limiting the housing development to an area south of the ridgeline which generally runs east-west across Lot 1;
- . relocation of public open space to separate the housing development from the balance of the M47 land;
- . ensuring buffers are included within Lot 1, and
- . rearranging roads to the periphery of the site.

THE ENVIRONMENTAL PROTECTION AUTHORITY CONCLUDES THAT WITH THE IMPLEMENTATION OF THE ABOVE CHANGES, THE PROPOSAL WOULD BE MORE ENVIRONMENTALLY ACCEPTABLE.

REGIONAL PRESSURES ON THE M47 AREA

The proposal to develop Lot 1 may be viewed as one among a number of other impacts on the System Six M47 area which need to be addressed on a comprehensive basis.

Apart from the proposed housing development for Lot 1 Stephenson Avenue, the Authority has identified four other potential developments which cumulatively, would threaten the integrity of the M47 area. These additional four potential developments are:

- . the Western Suburbs Highway, the reserve for which runs through the western portion of the M47 area. The impact of the construction of the Highway would cause a direct loss of vegetation and alienation of a considerable area of M47 to the west of the proposed Highway;
- . the extension of Underwood Avenue: a westward extension of this road has been proposed through the M47 area. Similar impacts to the Western Suburbs Highway would result;

- . development of Perth City Council Endowment Land, some 53 ha of 'urban' zoned land in the southern portion of M47. Similar impacts to those outlined for the development of Lot 1 would occur if this land was developed for housing; and
- . the dangerous curve in West Coast Highway near the intersection with Challenger Drive. A realignment of West Coast Highway to remove this bend would reduce the values of the M47 area.

With respect to these four potential developments, the Environmental Protection Authority has reached the following conclusions:

THE ENVIRONMENTAL PROTECTION AUTHORITY CONCLUDES 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;
- . THE EXTENSION OF UNDERWOOD AVENUE ACROSS THE M47 AREA TO WEST COAST HIGHWAY AS PROPOSED BY THE PERTH CITY COUNCIL WOULD BE LIKELY TO HAVE A SIGNIFICANT AND ADVERSE ENVIRONMENTAL IMPACT ON THE PRESENT ENVIRONMENTAL, RECREATIONAL AND EDUCATIONAL VALUES OF THE M47 AREA;
- . ANY CONNECTION OF STEPHENSON AVENUE THROUGH THE M47 AREA TO WEST COAST HIGHWAY WOULD REDUCE THE ENVIRONMENTAL VALUES OF THE WHOLE AREA AS WELL AS THREATENING PLACES (WITHIN THE SOUTHERN SECTION) OF ENVIRONMENTAL AND ETHNOGRAPHIC VALUE;
- . ANY PROPOSAL TO DEVELOP THE PERTH CITY COUNCIL ENDOWMENT LAND WITHIN THE M47 AREA FOR RESIDENTIAL PURPOSES, WOULD (IN A SIMILAR WAY TO THE IMPACT OF LOT 1) BE LIKELY TO REDUCE THE EXISTING ENVIRONMENTAL, RECREATIONAL AND EDUCATIONAL VALUES OF THE M47 AREA;
- . RECOGNISING THAT A REALIGNMENT OF WEST COAST HIGHWAY MAY BE JUSTIFIED ON THE GROUNDS OF COMMUNITY SAFETY, IT WOULD NEVERTHELESS RESULT IN A REDUCTION IN THE OVERALL VALUES OF THE M47 AREA. HOWEVER, SHOULD A REALIGNMENT TAKE PLACE, THE SECTION OF LAND ALIENATED WOULD HAVE REDUCED VALUES AND COULD BE USED FOR RESIDENTIAL PURPOSES ON AN EXCHANGE BASIS FOR LAND WITHIN THE M47 AREA BOUNDARY CURRENTLY IN PRIVATE OWNERSHIP; AND
- . EXAMINING THE OVERALL VALUES OF THE M47 AREA AND THE POTENTIAL FOR CUMULATIVE IMPACTS, IT WOULD BE UNABLE TO SUPPORT ALL OF THE FIVE PROPOSALS WITHIN THE M47 AREA ON THE GROUNDS THAT THEIR CUMULATIVE IMPACTS WOULD BE CONSIDERABLE AND ENVIRONMENTALLY UNACCEPTABLE.

Further to these conclusions the Authority has made specific recommendations on these issues. These are addressed later in this summary.

THE REGIONAL PARK CONCEPT - M46 AND M47

In both assessing the proposed development of Lot 1 Stephenson Avenue and in reviewing the potential cumulative impacts of additional developments which could affect the M47 area, the Authority reviewed the regional park concept of M47 and its contiguous area covered by Recommendation M46. The Authority has recommended that a Regional Park encompassing both the M46 and M47 areas be established to protect these open space areas of regional significance. Furthermore, the EPA has recommended that the Perry Lakes open space, the

Wembley Golf Course, the Army land and the Cottesloe Golf Course be managed in sympathy with the Regional Park and that Perth City Council reviews the boundary of Bold Park. The Regional Park should be managed through a suitable management arrangement including public representation.

The EPA considers that the assessment of Lot 1 Stephenson Avenue has been complex and difficult because of the importance of the land in a regional context and because this development is not the only proposal known to have potential impacts on the System 6 M47 area.

The Authority concludes that in the assessment of Lot 1 has become necessary to examine cumulative impacts in a broad regional context and in doing so believes there is a need for a Regional Park to be established.

The Authority has reached the following major conclusions and makes recommendations accordingly:

CONCLUSIONS REGARDING THE DEVELOPMENT OF LOT 1

CONCLUSION

THE ENVIRONMENTAL PROTECTION AUTHORITY CONCLUDES THAT:

- . THE DEVELOPMENT AS PROPOSED MAKES NO SIGNIFICANT CONCESSION TO THE OBJECTIVES AND INTENT OF THE SYSTEM SIX RECOMMENDATION FOR THE AREA,
- . THERE IS A NUMBER OF INDIVIDUAL IMPACTS WHICH CUMULATIVELY WOULD UNACCEPTABLY REDUCE THE CONSERVATION, RECREATION AND EDUCATION VALUES OF THE AREA; AND
- . ON THIS BASIS, THE AUTHORITY CONCLUDED THAT THE DEVELOPMENT AS PROPOSED IS NOT ENVIRONMENTALLY ACCEPTABLE.

CONCLUSION

THE ENVIRONMENTAL PROTECTION AUTHORITY BELIEVES THAT THE UNDESIRABLE IMPACTS OF THE PROPOSAL COULD BE AMELIORATED IF THE PROPOSAL WAS MODIFIED BY:

- . LIMITING THE SUBDIVISION TO THE AREA SOUTH OF THE RIDGELINE WHICH GENERALLY RUNS EAST-WEST ACROSS THE NORTHERN SECTION OF LOT 1;
- . RELOCATING PUBLIC OPEN SPACE TO SEPARATE THE DEVELOPMENT FROM THE BALANCE OF THE M47 LAND;
- . ENSURE THAT BUFFER AREAS ARE WITHIN LOT 1, AND
- . RE-ARRANGE SUBDIVISION ROADS TO THE PERIFERY OF THE SITE.

THE AUTHORITY CONCLUDES THAT WITH THE IMPLEMENTATION OF THE ABOVE CHANGES, THE PROPOSAL WOULD BE MORE ENVIRONMENTALLY ACCEPTABLE.

CONCLUSIONS AND RECOMMENDATIONS REGARDING THE M47 and M46 AREAS

RECOMMENDATION 1

- . AS THE PROPOSED WESTERN SUBURBS HIGHWAY IS LIKELY TO HAVE A SIGNIFICANT AND ADVERSE IMPACT ON THE M47 AREA, AND ON THE UNDERSTANDING THAT THERE ARE REALISTIC ENGINEERING AND PLANNING ALTERNATIVES (WITHOUT REQUIRING MAJOR INTRUSIONS INTO THE M47 AREA), THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE PROPOSED HIGHWAY SHOULD BE GENERALLY REMOVED FROM THE M47 AREA.
- . THE ENVIRONMENTAL PROTECTION AUTHORITY NOTES THAT THE WESTERN SUBURBS HIGHWAY STAGE II STUDY CONCLUDED THAT THERE WAS NO FURTHER BASIS FOR A NORTH/SOUTH HIGHWAY AND ACCORDINGLY THE AUTHORITY RECOMMENDS THAT THE FURTHER 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 THE MAIN ROADS DEPARTMENT AS SOON AS POSSIBLE. IN DUE COURSE, IF THE WESTERN SUBURBS HIGHWAY IS CONSIDERED NECESSARY, ANY PROPOSAL SHOULD BE REFERRED TO THE AUTHORITY. THE AUTHORITY NOTES THAT MINOR INTRUSIONS INTO THE M47 AREA MAY BE NECESSARY IN ORDER TO PROVIDE FOR A FUTURE ALTERNATIVE FOR THE WESTERN SUBURBS HIGHWAY

CONCLUSION

THE AUTHORITY CONCLUDES THAT THE EXTENSION OF UNDERWOOD AVENUE ACROSS THE M47 AREA TO WEST COAST HIGHWAY AS PROPOSED BY THE PERTH CITY COUNCIL WOULD BE LIKELY TO HAVE A SIGNIFICANT AND ADVERSE ENVIRONMENTAL IMPACT ON THE PRESENT ENVIRONMENTAL, RECREATIONAL AND EDUCATIONAL VALUES OF THE M47 AREA.

RECOMMENDATION 2

- . THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE EXTENSION OF UNDERWOOD AVENUE ACROSS THE M47 AREA TO WEST COAST HIGHWAY NOT PROCEED.

CONCLUSION

THE AUTHORITY CONCLUDES HOWEVER, THAT ANY CONNECTION OF STEPHENSON AVENUE THROUGH THE M47 AREA TO WEST COAST HIGHWAY WOULD REDUCE THE ENVIRONMENTAL VALUES OF THE WHOLE AREA AS WELL AS THREATENING PLACES (WITHIN THE SOUTHERN SECTION) OF ENVIRONMENTAL AND ETHNOGRAPHIC VALUE.

RECOMMENDATION 3

- . AS THE AUTHORITY IS CONCERNED OVER THE POTENTIAL ENVIRONMENTAL IMPACT OF ROADS IN THE M47 AREA, THE AUTHORITY RECOMMENDS THAT NO SUCH ROADS BE PLANNED OR CONSTRUCTED WITHOUT FIRST BEING REFERRED TO THE ENVIRONMENTAL PROTECTION AUTHORITY.

CONCLUSION

THE AUTHORITY NOTES THAT THE SECTION OF LAND ALIENATED FROM THE M47 AREA BY A POSSIBLE REALIGNMENT OF WEST COAST HIGHWAY WOULD BE OF CONSIDERABLY REDUCED VALUE IN THE LONG TERM. ACCORDINGLY, THE AUTHORITY CONCLUDES THAT IT COULD BE USED FOR RESIDENTIAL PURPOSES ON AN EXCHANGE BASIS, FOR LAND WITHIN THE M47 AREA BOUNDARY CURRENTLY IN PRIVATE OWNERSHIP.

RECOMMENDATION 4

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE NECESSARY ENVIRONMENTAL AND ENGINEERING STUDIES INTO THE POSSIBLE REALIGNMENT OF WEST COAST HIGHWAY (IN ORDER TO RESOLVE THE DANGEROUS CURVE NEAR CHALLENGER PARADE) SHOULD BE UNDERTAKEN AS SOON AS POSSIBLE AND THE RESULTS REFERRED TO THE AUTHORITY FOR ASSESSMENT BEFORE ANY APPROVALS ARE GIVEN.

RECOMMENDATION 5

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT ANY LAND ULTIMATELY AGREED UPON TO BE EXCISED FROM THE M47 AREA (AND BOLD PARK) BY THE POSSIBLE REALIGNMENT REFERRED TO IN RECOMMENDATION 4 OF WEST COAST HIGHWAY, COULD BE USED FOR DEVELOPMENT BUT ONLY ON AN EXCHANGE BASIS FOR LAND WITHIN THE M47 AREA BOUNDARY CURRENTLY IN PRIVATE OWNERSHIP.

RECOMMENDATION 6

IN VIEW OF THE POTENTIAL ADVERSE IMPACTS THE DEVELOPMENT OF PERTH CITY COUNCIL ENDOWMENT LAND WITHIN THE M47 AREA WOULD HAVE ON THE OVERALL ENVIRONMENTAL, RECREATIONAL AND EDUCATIONAL VALUES OF THE AREA, THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THIS LAND SHOULD NOT BE SUBSTANTIALLY DEVELOPED, BUT PRIMARILY REMAIN AS PART OF THE LARGER REMNANT BUSHLAND OF THE M47 AREA. ENVIRONMENTALLY DEGRADED LOCATIONS WITHIN THE 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. ANY DEVELOPMENT PROPOSALS BY THE PERTH CITY COUNCIL FOR THIS AREA SHOULD BE REFERRED TO THE ENVIRONMENTAL PROTECTION AUTHORITY FOR ASSESSMENT.

RECOMMENDATION 7

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE STATE PLANNING COMMISSION AND PERTH AND NEDLANDS CITY COUNCILS SHOULD INITIATE THE NECESSARY AMENDMENTS TO THE METROPOLITAN REGION SCHEME AND CITY PLANNING SCHEMES RESPECTIVELY, TO REFLECT ANY GOVERNMENT AND COUNCIL DECISIONS ARISING OUT OF THESE RECOMMENDATIONS.

RECOMMENDATION 8

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT A REGIONAL PARK ENCOMPASSING THE M46 AND M47 AREAS BE ESTABLISHED IN ORDER TO PROTECT THESE OPEN SPACE AREAS OF REGIONAL SIGNIFICANCE AND TO FACILITATE MANAGEMENT AND USE FOR A RANGE OF PURPOSES INCLUDING CONSERVATION, RECREATION AND EDUCATION.

RECOMMENDATION 9

THE ENVIRONMENTAL PROTECTION AUTHORITY AUTHORITY RECOMMENDS THAT THE WEMBLEY GOLF COURSE AND THE PERRY LAKES OPEN SPACE AREA SHOULD BE MANAGED BY THE PERTH CITY COUNCIL IN SYMPATHY WITH THE VALUES OF THE LAND CONTAINED WITHIN THE SYSTEM 6 M47 AREA AND THE REGIONAL PARK CONCEPT (SEE FIG 11).

RECOMMENDATION 10

GIVEN THAT THE ORIGINAL AREA HAS HAD VARIOUS DELETIONS AND ADDITIONS OVER THE YEARS, THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE PERTH CITY COUNCIL SHOULD REVIEW THE BOUNDARIES OF BOLD PARK IN THE LIGHT OF CURRENT COMMUNITY EXPECTATIONS AND ANTICIPATED FUTURE NEEDS.

RECOMMENDATION 11

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT AREAS CONTAINING NATIVE VEGETATION ADJACENT TO THE AUTHORITY'S M46 RECOMMENDATION SHOULD BE MANAGED BY THE COMMONWEALTH, THE NEDLANDS CITY COUNCIL AND THE COTTESLOE GOLF CLUB, IN SYMPATHY WITH THE VALUES OF THE LAND CONTAINED WITHIN THE SYSTEM 6 M46 AREA AND THE REGIONAL PARK. (SEE FIG 13).

RECOMMENDATION 12

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT AS A MATTER OF PRIORITY, THE INVOLVED AGENCIES INVESTIGATE THE ESTABLISHMENT OF A SUITABLE MANAGEMENT ARRANGEMENT (INCLUDING PUBLIC REPRESENTATION) TO OVERVIEW AND CO-ORDINATE THE OVERALL MANAGEMENT OF THE REGIONAL PARK. IN THIS REGARD, THE ENVIRONMENTAL PROTECTION AUTHORITY IS PREPARED TO ASSIST WITH ANY INITIAL CO-ORDINATION REQUIRED.

CONCLUSION

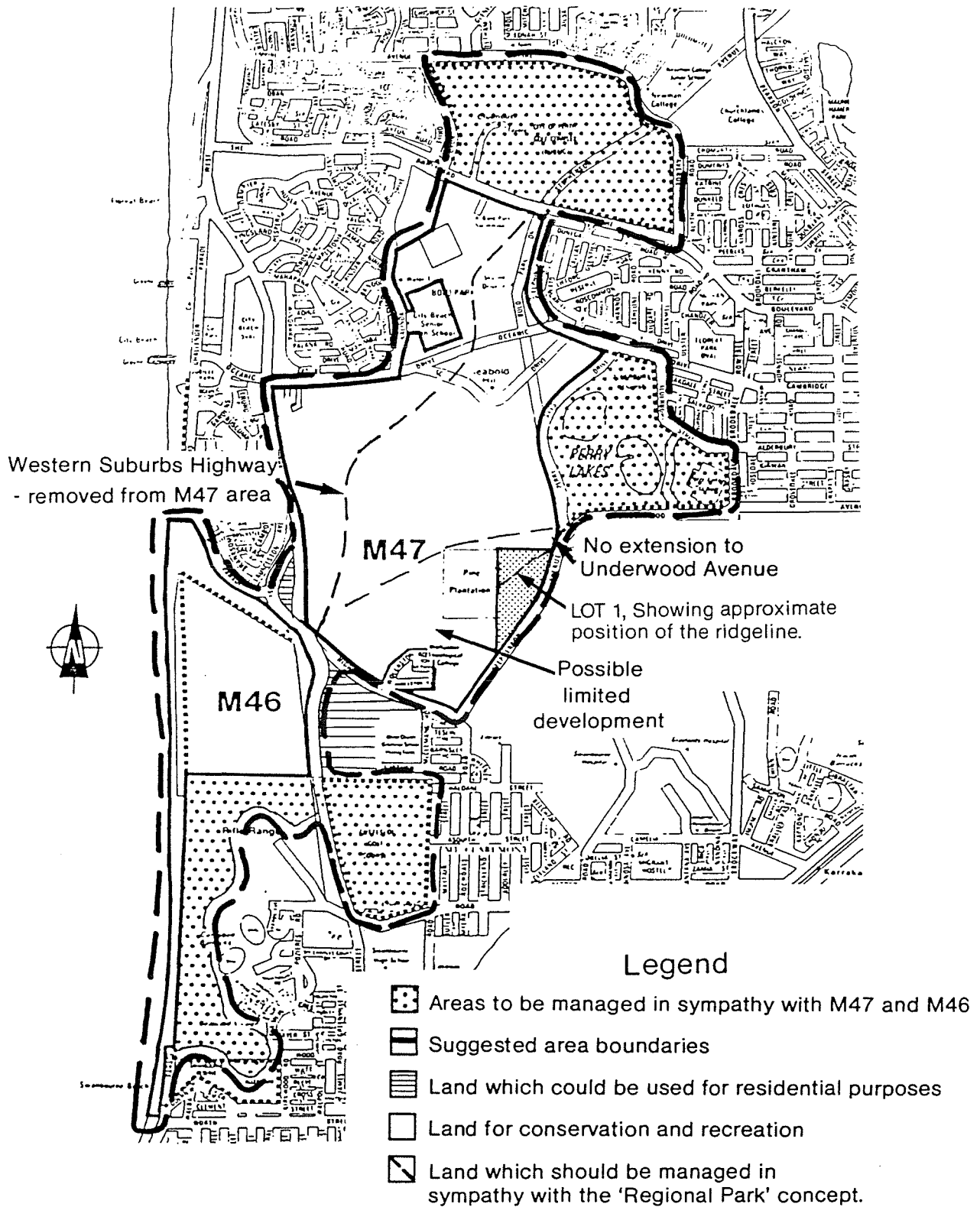
IN VIEW OF THE CURRENT VALUES AND LIMITED LONGTERM VIABILITY OF THE M46 AREA SOUTH OF ROCHDALE ROAD, THE ENVIRONMENTAL PROTECTION AUTHORITY CONCLUDES THAT ITS DEVELOPMENT MAY BE ACCEPTABLE IF CARRIED OUT IN AN ENVIRONMENTALLY SENSITIVE MANNER. AREAS OF HIGHER CONSERVATION VALUE SHOULD BE PROTECTED IN AN OPEN SPACE SYSTEM. WHILST ANY DEVELOPMENT WOULD REDUCE THE AMOUNT OF REMNANT VEGETATION IN THE LOCALITY, IT MAY NOT BE SIGNIFICANT IF DECISIONS ARE MADE WITH RESPECT TO THE M47 AREA WHICH RESULTS IN PROTECTING THE EXISTING ENVIRONMENTAL VALUES OF THAT AREA.

RECOMMENDATION 13

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT A PRIORITY MATTER FOR CONSIDERATION BY WHATEVER ARRANGEMENT IS SUBSEQUENTLY AGREED UPON TO MANAGE THIS REGIONAL PARK (RECOMMENDATION 8), IS TO UNDERTAKE A DETAILED REVIEW OF THE BOUNDARIES OF THE PARK AND TO MAKE A RECOMMENDATION ON THAT MATTER TO THE ENVIRONMENTAL PROTECTION AUTHORITY.

CONCLUSION

THE ENVIRONMENTAL PROTECTION AUTHORITY HAS CONCLUDED OVERALL, THAT IF THE RECOMMENDATIONS CONTAINED WITHIN THIS REPORT ARE ACCEPTED AND IMPLEMENTED, THE EXISTING VALUES OF THE M46 and M47 AREAS IN THE REGIONAL CONTEXT WILL HAVE BEEN ADEQUATELY PROTECTED AND THAT IN PARTICULAR, THE ESTABLISHMENT OF A REGIONAL PARK OVER THESE AREAS WILL BE A MAJOR ACHIEVEMENT TOWARDS SECURING, FOR FUTURE GENERATIONS, CONSERVATION AND RECREATION LANDS WITHIN THE INNER METROPOLITAN AREA.



PLAN ILLUSTRATING EPA CONCLUSIONS AND RECOMMENDATIONS.

1. INTRODUCTION

Bond Corporation Holdings (through its subsidiary Harpford Pty Ltd) proposes to subdivide Lot 1, Stephenson Avenue, City Beach, for residential purposes.

The subject land (Lot 1) is zoned 'Urban' in the Metropolitan Region Scheme and 'Development Zone' under the provisions of the Nedlands City Planning Scheme.

Lot 1 adjoins the southern boundary of Bold Park and is included within the System Six M47 area boundary. The System Six Report has identified lands within this boundary area as 'constituting open space of regional significance.' (See Fig 1)

The Authority decided that the development of Lot 1 would, if implemented, be likely to have a significant effect on the environment and accordingly, it should be assessed by it under the provisions of Part IV of the Environmental Protection Act 1986.

The Authority initially set the level of assessment for the proposal at Notice of Intent. However, appeals were lodged against this decision. The Hon Minister for Environment subsequently upheld the appeals and directed the Authority to assess the proposal at the Public Environmental Report (PER) level.

Guidelines for the preparation of the PER were drafted by the Environmental Protection Authority, and both the proponent and the appellants were given the opportunity of providing comments on the draft. The guidelines were subsequently modified as a result of the comments raised by both parties and then issued to the proponent.

The PER was released for public review on the 4 December 1987 with an initial closing date of 29 January 1988; this was subsequently extended to the 1st of February as the PER was not available to the public until late on the day of release. The submission from the Perth City Council was accepted outside the public review period because of Council meeting times.

During the public review period 863 public and Government agency submissions were received on the PER. A discussion and summary of the submissions is provided in Section 4 of this report and a more detailed list of issues raised in submissions is contained in Appendix A.

A summary of the issues raised in the submissions was provided to the proponent in accordance with the normal assessment process. The proponent has responded to those issues raised and this response is discussed in Section 5. The proponent's response is contained in Appendix B.

Prior to assessing the PER, the opportunity was given to both the proponent and The Friends of Bold Park (the main group critical of the proposal) to address the Environmental Protection Authority in order to emphasise what they saw as the key issues and to clarify with the Authority areas about which there might have been some ambiguity. It also provided an occasion for the proponent to raise wider issues of concern.

The Environmental Protection Authority has reviewed the environmental implications of this proposal by considering the information contained in the PER, the issues raised in submissions, the proponents response to those submissions, the oral presentations of the parties involved and following its own investigations.

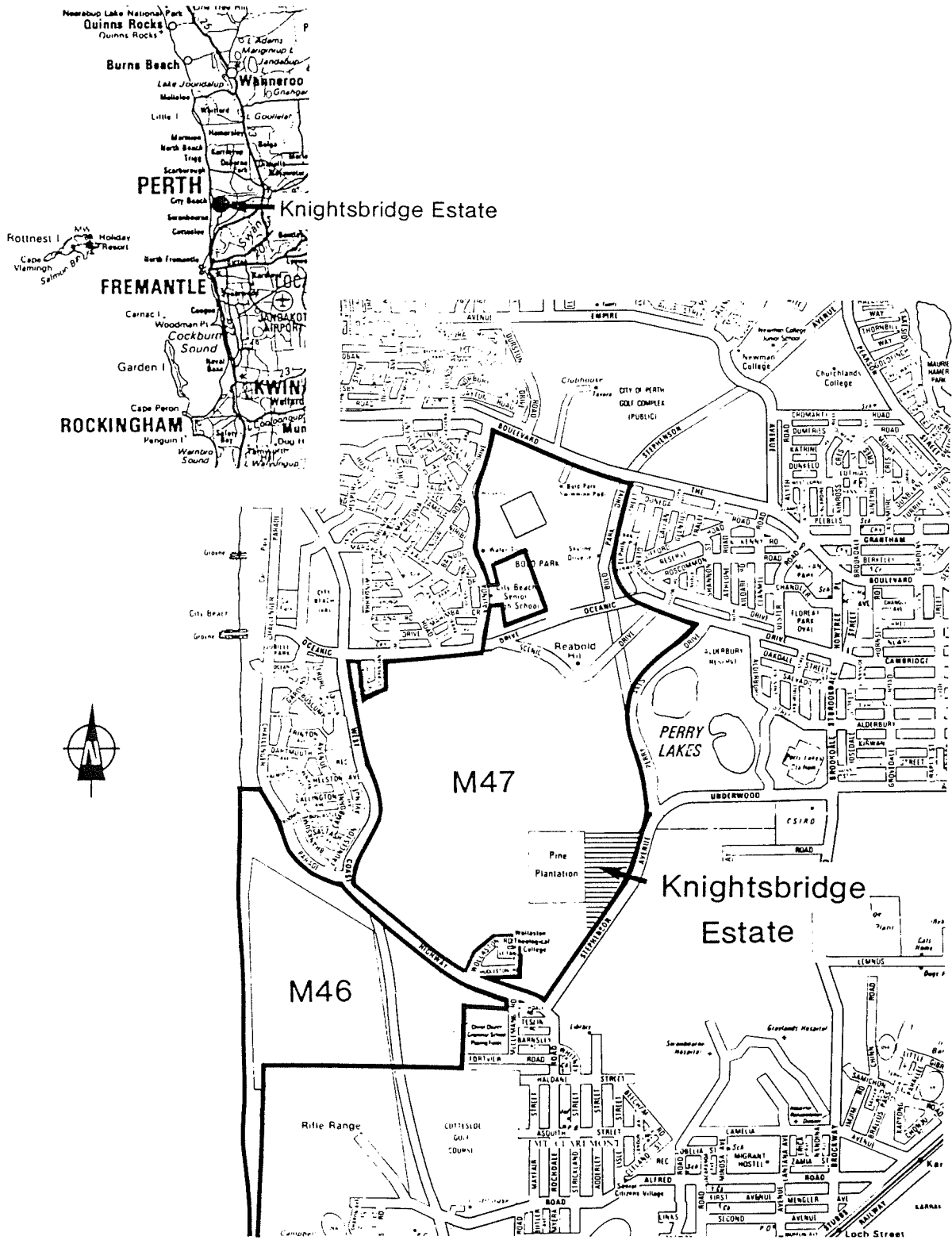


Figure 1

Locality Plan

2. SUMMARY OF PROPOSAL

Bond Corporation Holdings Limited propose to develop Lot 1 Stephenson Avenue, City Beach as a residential subdivision.

The site is a 19 ha area of bushland located within the City of Nedlands and bounded to the north by Bold Park and west by City of Perth land. Stephenson Avenue is the south-eastern boundary. (Refer to the Locality Plan, Fig 1.)

The proposal is to subdivide the site into 136 residential lots ranging in size from 800 m² to 1550 m². The estate will be known as "Knightsbridge". (See Fig 2.)

The subdivision plan includes provision of:

- . Utilities - an internal road network, water supply, deep sewerage, on-site drainage, underground electricity supply, gas supply and telephones.
- . A home-store lot - including a residence, 150 m² of retail floor space and a clubhouse with public toilet and washing facilities.
- . Public open space - covering 2.08 ha (10.9%) of the site. This will be landscaped and reticulated. Two stormwater drainage basins will be situated in the public open space. Two ornamental lakes, pedestrian/bicycle paths, seating, a gazebo and two public tennis courts will be part of the public open space.
- . Landscaping - in addition to the public open space, roadside verges, drainage basins, the Stephenson Avenue west side road reserve and a 2.08 ha buffer zone and fire break in Bold Park along the northern boundary of the site will be landscaped.
- . Reticulation - is proposed to be provided to the western side of the Stephenson Avenue road reserve, the buffer zone in Bold Park, traffic roundabouts and some residential street verges.

Other points of the proposal are:

- . Water supply for reticulation and the ornamental lakes will be obtained from a groundwater bore near the northern lake.
- . Because of problems with water supply to some lots, the highest point of the site will be cut to reduced level (RL) 43 m to enable gravity-fed water supply to the affected lots.
- . The development of the lots, road network and infrastructure will involve earthworks and construction of limestone retaining walls.
- . Controlled fencing will be provided along the northern site boundary abutting Bold Park, the Stephenson Avenue west side road reserve boundary and along lot boundaries which border areas of public open space.

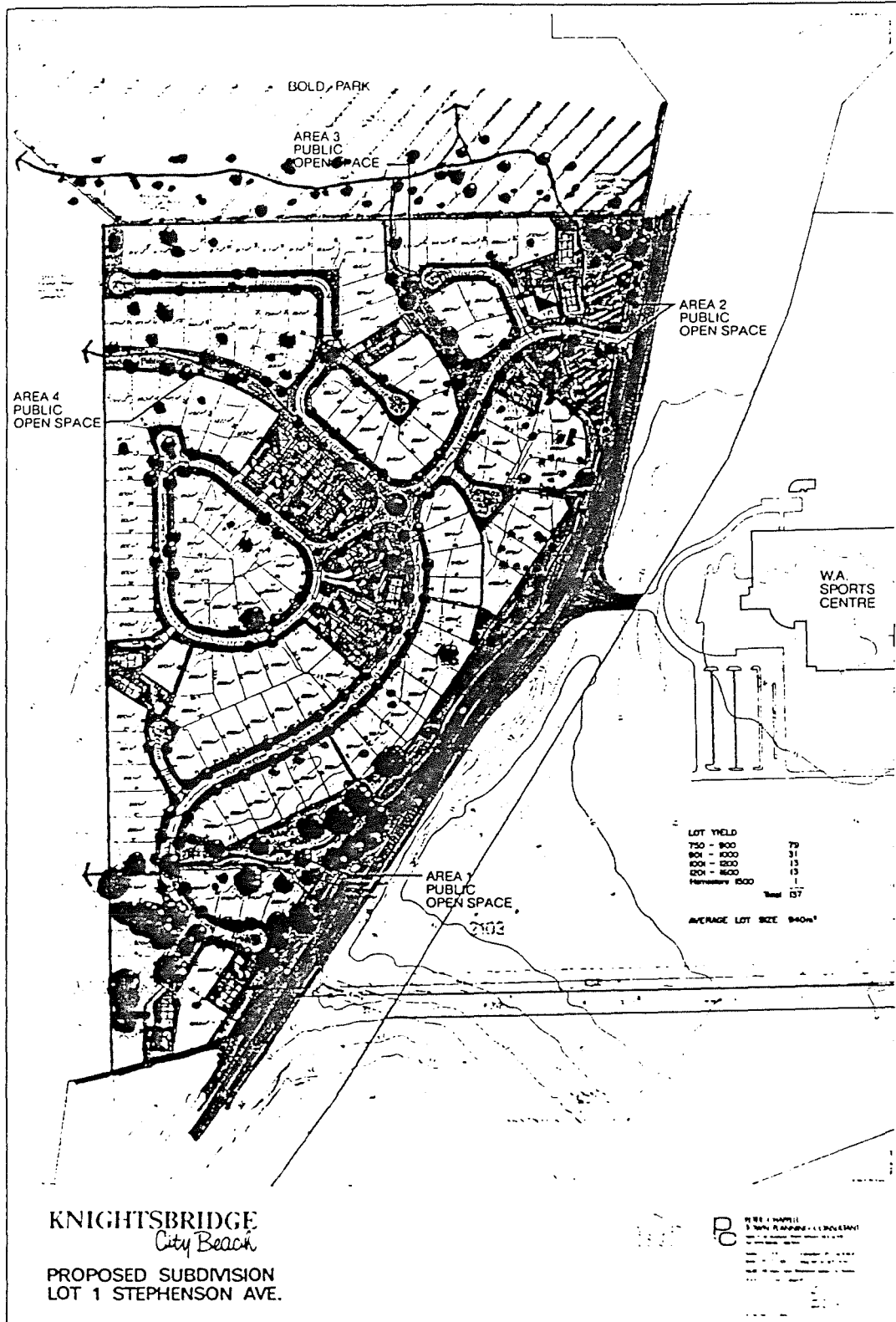


Figure 2 Proposed subdivision layout

A number of environmental management commitments have been included in the proposal, the major of which are as follows:

Site clearance and earthworks phase -

- . Protect flora and fauna on the site.
- . Protect the adjacent bushland.
- . Control dust levels.
- . Minimise hazards to traffic on Stephenson Avenue through control of truck movements.
- . Prevent fire hazards by burning waste material in a controlled manner and providing fire-fighting equipment on site.
- . Remove all refuse and construction wastes from the site and dispose of these in an approved manner.
- . Restrict site preparation times to alleviate noise problems.

Landscaping phase -

- . Retain conspicuous trees.
- . Provide landscaping and reticulation for public open space and some other areas.
- . Plant new vegetation to enhance the landscape.

The impacts on Bold Park are proposed to be minimised by -

- . Providing signs at the boundaries of public lands indicating that pets are prohibited in the park.
- . Providing signs warning about fire risk and need for precaution.
- . Providing rubbish bins near the entrances to Bold Park from the site.

In the transfer of land to individual owners, covenants are proposed to include:

- . Protect vegetation on lots -
 - . Any buildings or improvements carried out on the lots shall be contained within a building envelope subject to Nedlands City Council permission.
 - . All areas outside the approved building envelope will be tree preservation areas where no vegetation can be removed or destroyed without Nedlands City Council approval.
- . Maintain visual quality -
 - . All metal deck roof material shall not be of the reflection type and shall generally blend in with the natural surroundings.

Management of public lands:

- . Public lands are proposed to be initially developed and managed by the proponent for a period up to two years or until all the lots have been sold and then for the Nedlands City Council to be responsible for management and maintenance.
- . For the additional public lands, the proposal is that the 2.08 ha buffer area within Bold Park will be developed by the proponent and subsequently managed and maintained by the Perth City Council. For the landscaped and reticulated section of Stephenson Avenue, it is proposed that it be managed and maintained by the Main Roads Department.

A complete list of the proponent's commitments is contained in Appendix B as part of the proponent's response to issues raised in public submissions.

3. BACKGROUND

There has been a wide range of issues raised in the PER and assessment process beyond issues of a purely environmental nature. It is necessary therefore to set forth in some detail the background to the proposal and its assessment.

SYSTEM STUDY

The whole of Western Australia has been divided into twelve regions or Systems, for the purpose of striking a balance between development and conservation. The Perth Metropolitan Area is included in System 6, and an extensive public process was used to strike that balance.

The primary aim of this study was to 'identify opportunities for setting aside areas of land in the most intensively used part of Western Australia, for the purposes of conservation of natural areas and recreation in a natural setting.'

To produce the final report, the following stages were followed:

- . Public submissions were called for to identify lands of conservation or recreation value.
- . Technical committee investigations were undertaken.
- . Preparation of the System 6 'Green Book' and release for public submissions from April 24 to November 30, 1981.
- . Consideration of submissions and recommendations by the EPA - leading to the preparation of the System 6 'Red Book'.
- . In March 19, 1984 State Cabinet accepted in principle the recommendations for Part I of the Report and approved the progressive implementation, as far as possible, of the detailed recommendations in Part II. Part I sets out principles and makes recommendations which provide the framework for implementing the location - specific recommendations in Part II.

This whole process was highly interactive with the public and included extensive media coverage at each of the various stages.

REGIONAL PARKS CONCEPT

This concept is also addressed in Section 6.4. However it is appropriate that it be discussed as background. Essentially, the concept of Regional Parks as expounded in the System Six Report is that areas identified through planning procedures as having open space of regional significance should be viewed and managed as a regional park. Land within such regional parks may have a range of values, uses and tenure including both public and private. A special significance of the concept of regional parks is the opportunity provided within such areas for passive recreation within a natural setting. This value is particularly important within the inner metropolitan area as lands with such values are being developed rapidly.

An increasing emphasis on the planning philosophy of urban infilling and raising inner metropolitan urban densities, means that the regional values of existing areas of open space of significance will be ever increasing as competition for their usage rises as other areas of open space (or natural bushland) are developed.

Apart from identifying areas with potential for Regional Parks, the System Six Report intended that the application of the concept would provide a framework for co-ordinated landuse planning and management within designated areas.

SYSTEM SIX RECOMMENDATION M47

The specific area recommendation applicable to Lot 1 is M47 (see Appendix C). Essentially this recommendation identifies land within its area boundary (including Lot 1) as constituting open space of regional significance. This significance relates to the values identified in the report as applying to the whole area and would be contributed to in various ways by the different parcels of land involved.

Thus any proposals within the recommendation area must be viewed in the regional context as well as their own right. Specifically the relationship of the proposal with other lands within the recommendation area and the predicted impact upon those lands is of prime importance. This interpretation is not just for the M47 area recommendation but applies to all specific area recommendations; it is however particularly relevant where areas of regional significance are involved.

EXTENSION OF UNDERWOOD AVENUE

In April 1986, the Perth City Council requested the Environmental Protection Authority's advice regarding its proposal to extend Underwood Avenue across the M47 area to West Coast Highway.

The Authority responded in June 1986 and in essence advised that the matter could not be viewed in isolation and required a comprehensive approach to address all of the issues involved. Specifically all the main parties involved were asked for input. The Authority's response is at Appendix E.

The Authority further wrote to Perth City Council on the 11 September 1986 and 12 February 1987 endeavouring to have the matter comprehensively addressed. No positive moves in this direction have occurred until early in 1987.

REZONING OF LOT 1

The matter of rezoning of Lot 1 to 'Development Zone' under the provisions of the Nedlands City Planning Scheme has been raised by the proponent.

In letters to the Department of Conservation and Environment in 1978 and November 1979, the City of Nedlands advised that 'no significant changes are proposed in the Town Planning Scheme. It is essentially a retention of the status quo with all zonings remaining intact, except a small area in Leura Street.' (See copy of NCC letter in Appendix F.) No reference was made to Lot 1 owned by the University of WA.

It was on this basis that the Department of Conservation and Environment on 28 December of 1979, advised that it offered no comment or opposition to the Scheme. (Copy of letter in Appendix G.)

It will be evident from this exchange of correspondence, that there is no basis for the claims that DCE (now EPA) had given environmental clearance for a change in status of the University land (Lot 1).

SALE OF UNIVERSITY LAND (LOT 1)

In April 1987, the matter of the sale of the University land was referred to the Authority by the University's sales consultant. That letter raised the question of the System Six Recommendation M47 and its relationship with Lot 1. It also raised the question of the development of Lot 1.

The Authority responded on the 23 April 1987 advising that Lot 1 is covered by the System Six Report's proposals and identifying the need for competing land uses in the area to be resolved on an integrated and co-ordinated basis. It also pointed out that the decision-makers involved had been advised not to make decisions about subdivision of the land until the Authority has given its environmental advice. (copy of letter in Appendix I)

At the same time, the Authority wrote to the Cities of Nedlands and Perth and the State Planning Commission advising each as to the Authority's position. (Copies at Appendices J, K and L.)

In addition, numerous letters and requests were received from consultants and prospective tenders for Lot 1 seeking clarification on the development possibilities and procedural requirements relating to Lot 1. The Authority replied to all those requests in a similar manner (copy of letter in Appendix M). No direct request for information was received from Bond Corporation, although a consultant, Mr P Chappell, understood to be retained by the proponent, made a request and was sent a reply.

At the time there was extensive press coverage of the matter and an article in The West Australian of 25 April 1987 clearly indicated development proposals for Lot 1 would require the Authority to report on them and that wider issues relative to the whole area would need to be addressed.

The Authority has consistently advised all parties involved with this matter since April 1986 that Lot 1 is within the System Six M47 recommendation area boundary. In addition the Authority has taken positive action since June 1986 to facilitate the resolution of the various matters relating to the M47 area.

BOLD PARK

Much debate and confusion has surrounded the question as to what the boundaries of Bold Park are. It is understood that in 1927, Perth City Council declared that an area of land then known as the '1 000 acre park' would be set aside for all time for the enjoyment of the people of Perth. It was proposed that a Deed of Trust would be prepared to ensure that its integrity would remain. It is not known if such a Deed was made. Later, the area was named Bold Park. Figure 3 shows the approximate original boundaries of the '1 000 acre park'.



Figure 3

Approximate boundary of 'Bold Park' as shown in the newspaper depicting the 1927 resolution of the Perth City Council, 'the 1000 Acre Park'

Since its original declaration, Bold Park has had lands added to it and development has intruded within its boundaries. Substantial portions of the original (and extended) Bold Park are included within the System Six M47 area.

CLAIMS BY THE PROPONENT

The proponent has variously claimed that the EPA, or the Minister for Environment, has:

- . denied the proponent natural justice in dealing with appeals under the Environmental Protection Act against the level of environmental impact assessment and in not acquiescing to demands of the proponent for access to all submissions lodged on the PER;
- . made errors with respect to System 6 M47 recommendation by including Lot 1, Stephenson Avenue within the boundary and further claimed that this has been admitted in private by the Chairman of the EPA;
- . breached various procedural requirements of Part IV of the Environmental Protection Act and other requirements relative to the appeals process under the Act; and
- . made claims regarding the rezoning of Lot 1 as detailed above.

With the exception of this last issue above, the Environmental Protection Authority makes no comment here other than to say that throughout the process of assessment, it has sought to act properly and in good faith and in accordance with what it has understood to be the requirements of both statutory law and natural justice. The Authority has taken legal advice on various matters where it saw the need to do so. These are matters on which there may be room for difference of opinions, but the fact that the Authority has not made, nor now makes, any specific response to various allegations should not be taken as tacit agreement with those allegations.

4. SUMMARY OF PUBLIC SUBMISSIONS

The Public Environmental Report for this proposal was released for public comment for an eight week period. The initial closing date of 29 January 1988 was subsequently extended to the 4 February 1988.

Before commenting on the submissions, the Authority wishes to emphasise that mere quantitative weight of numbers of submissions in itself, is not taken by the Authority to be their main significance. The Authority is primarily concerned with the issues of relevance rather than the numbers of times they are raised.

A total of 863 submissions were received during the review period and 36 after the closing date for submissions.

Of the submissions lodged within the review period 725 opposed the proposal and 128 supported it. None of the submissions were petitions but rather individual (or couples') submissions.

Of those opposing the proposal none were standard letters although many were on a blank submission form which required the person lodging the submission to write if they supported or objected to the proposal and to sign it.

Of the 128 submissions supporting the proposal, 122 were a standard letter to which a signature and address was added.

Whilst the majority of submissions were of one page or less, many were quite detailed and comprehensive documents.

The submissions lodged within the review period were analysed and the issues raised summarised into twenty three categories, one category being support for the proposal. (see Appendix A) Submissions lodged out of time were not formally considered, although they were examined to see if any additional matters were raised which were not included in the other submissions; no additional matters were identified.

The distribution of submissions was plotted by postcode of origin and these are shown on Fig 4 for those opposing and Fig 5 for those supporting the proposal.

It was noted that whilst those opposing the project were concentrated in postcodes adjacent to the project site there was a fairly wide regional response.

Those in favour of the project showed some concentration of submissions adjacent to the site.

Of submissions lodged within the review period from postcodes within the City of Perth, 345 were opposed and 12 were in support of the project.

A summary of the issues is presented in Appendix A. The issues that received the most frequent comment related to:

- . Visual impact of the proposal on Bold Park and a lessening in its amenity value.

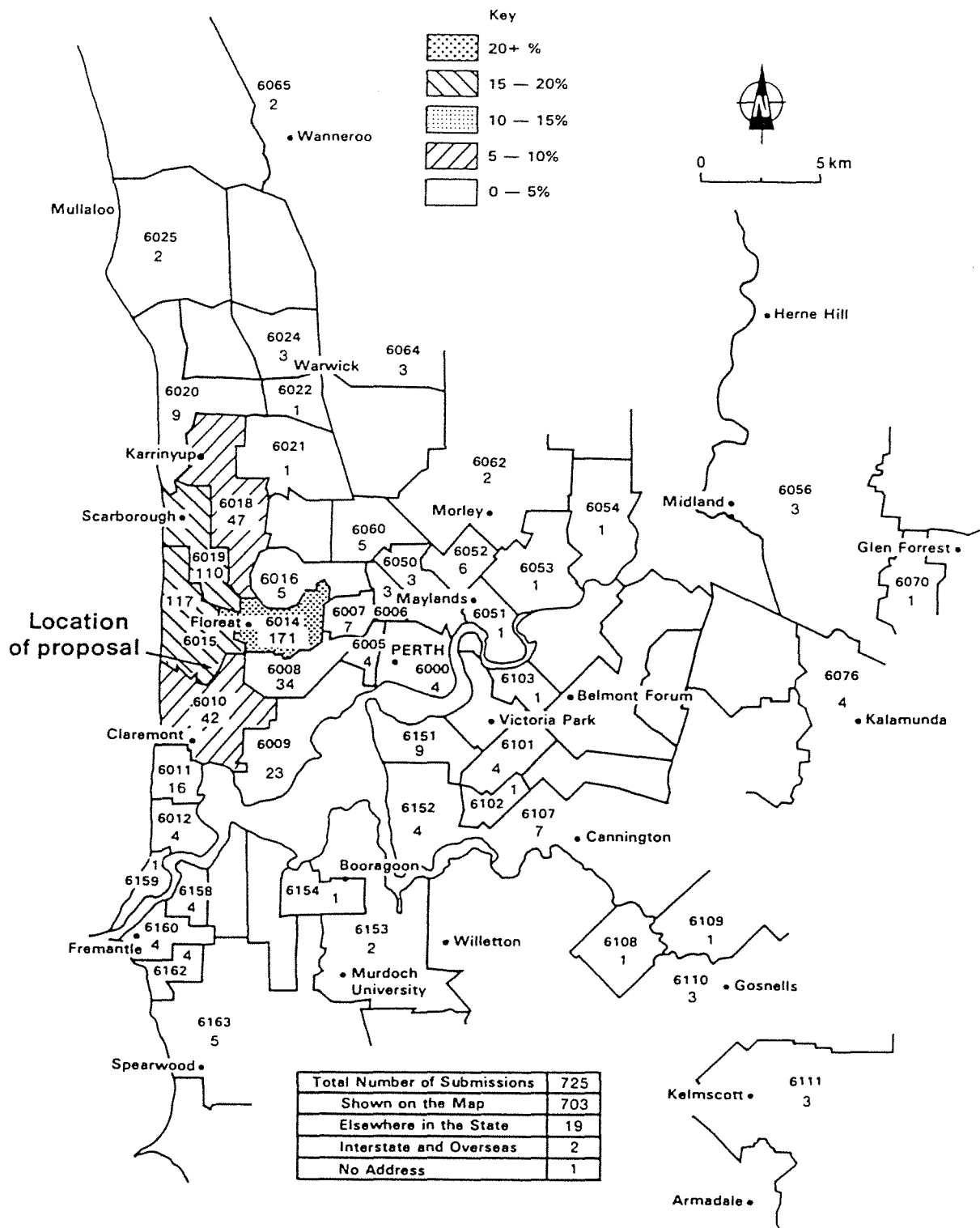


Figure 4 Distribution of submissions opposing the proposal by the postcode of origin.

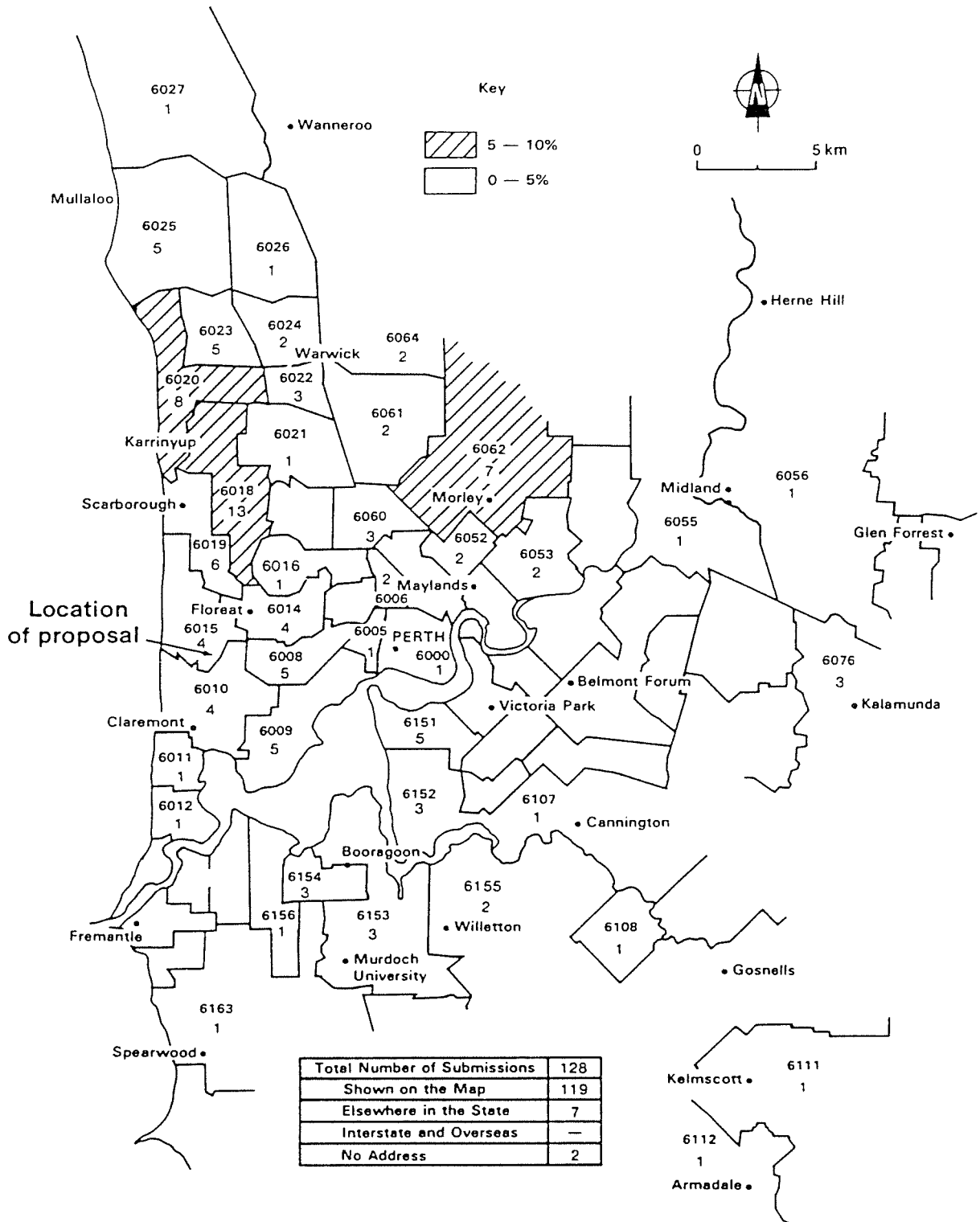


Figure 5 Distribution of submissions supporting the proposal by the postcode of origin.

- . Disagreement with the assertions made in the PER that Lot 1 is not within the System Six Recommendation Area M47.
- . The disadvantages to the people of Perth if the proposal is implemented, was not considered.
- . The proposal if implemented, would reduce the area of bushland in the M47 area and thus reduce its overall value.
- . The proposal would result in an increase of edge effects on the remnant bushland including:
 - . increased incidence of fires in Bold Park;
 - . predation of fauna within Bold Park by domestic pets (especially cats);
 - . increased rubbish dumping;
 - . increased weeds and exotic plants;
 - . increased human impact;
 - . use of pesticides; and
 - . increased noise levels.
- . Bold Park together with adjacent areas of natural vegetation should be for future generations as one large reserve.
- . Disagree with the statements in the PER that Lot 1 has no environmental value. Lot 1 and the adjacent bushland together has values for walking, birdwatching, wildflower viewing, jogging, panoramic viewing, peace and quiet.
- . Support for the proposal including:
 - . land purchased in a fair and open manner;
 - . land was zoned for residential purposes at time of purchase;
 - . development of Lot 1 is supported on grounds of justice and no rare or endangered flora or fauna exist on the site whose survival would depend on the land being left in its present state;
 - . the nature of the development is a satisfactory balance between man and nature;
 - . proponent is committed to a high quality environment by the form of development proposed, retention of conspicuous vegetation and building covenants being imposed (including building envelopes);
 - . the development is responsible;
 - . the proponent should be allowed to proceed as Bold Park and Perry Lakes plus other parklands are more than adequate for the area. People as well as snakes need a place to live;
 - . the development should proceed providing the remaining bushland is left untouched.

The frequency with which various issues were raised (as listed contained in Appendix A) is shown in figure 6.

The Authority included the issues raised in the public submissions in its consideration of the proposal.

The summary of issues raised in submissions was provided to the proponent. The proponent has responded to those issues raised and that response is contained in Appendix B. The Authority took into account the proponent's response in its assessment of the proposal.

SUBMISSIONS LODGED DURING REVIEW PERIOD

Category	No. of Submissions	
Oppose development (reason given)	716	
Oppose development (no reasons)	9	
Oppose development (standard letter)	nil	725
Support development	6	
Support development (standard letter)	122	128
Neither oppose nor support development (technical comment only)		10
		863

SUBMISSIONS LODGED AFTER CLOSE OF REVIEW PERIOD

Category	No of submissions
Oppose development	27
Support development	8

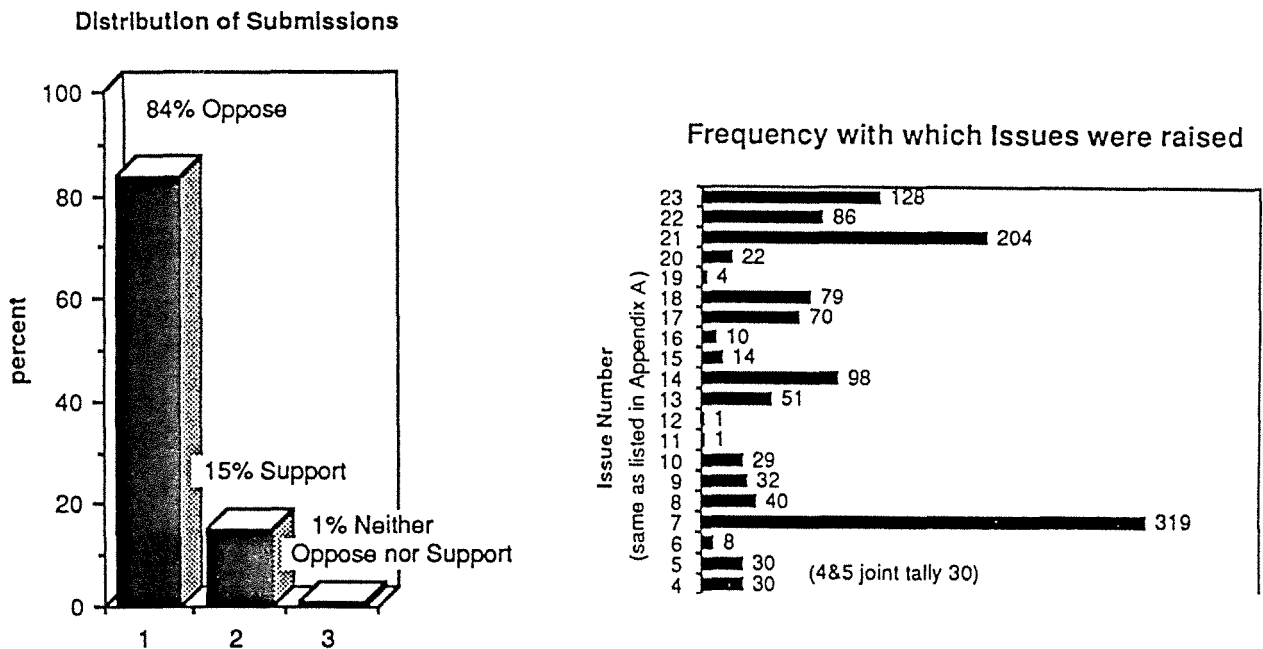


Figure 6 Frequency analysis of submissions

5. PROPONENT'S RESPONSE TO ISSUES RAISED

A copy of the summary of issues raised in public submissions was provided to the proponent in accordance with the normal assessment process (see Appendix A).

The proponent has responded to the summary of issues and its response is contained in Appendix B.

In addition to responding to each issue, an overview of the major issues as perceived by the proponent was provided. The major issues identified were:

- . conservation status;
- . edge effect;
- . visual impact;
- . planning precedent; and
- . groundwater impact.

In its response to the submissions, the proponent has made minor alterations to the proposal as follows:

- . groundwater bore/s will be located as far away from Camel Lake as possible;
- . pumping tests will be undertaken to determine the extent of draw down and affect on Camel Lake;
- . if requested by Perth City Council, the proponent will re-cut PCC firebreaks and pave them with crushed limestone; and
- . provision of reticulation for, and initial landscaping of, the area of Bold Park abutting the northern site boundary, if requested by the Perth City Council.

The Authority has viewed the proponent's response to the submissions and has taken them into account in its assessment of the proposal.

6. ENVIRONMENTAL ASSESSMENT

6.1 THE IMPORTANCE OF SYSTEM 6

The Environmental Protection Authority's System 6 Study and resultant recommendations to Government represents a comprehensive set of proposals for conservation and recreation in the most populous part of the State. The major aim of the System 6 Study was to ensure that the remaining opportunities for the conservation of natural areas in System 6 were recognised and to recommend ways and means of setting these areas aside for their protection following consideration of competing uses.

Accordingly, the implementation of the System 6 Recommendations to secure a system of conservation and recreation areas and their management is considered by the Authority to be of the greatest importance. Furthermore, the importance of the System 6 Recommendations must only increase with additional pressures from a growing city. In the event that growth is accommodated by urban consolidation, then conservation and recreation areas within the existing metropolitan region will assume greater local and regional importance.

Recommendations made in the System 6 Report address both public and private land. In fact, over sixty of the specific recommendations include land which is privately owned. However, the Environmental Protection Authority's position regarding land use proposals for private property covered by System 6 recommendations is that such proposals must meet the objectives and intent set by the specific System 6 recommendation covering the land. Experience has suggested that in order to meet the Environmental Protection Authority's requirements in this regard, such proposals need to make concessions to the System 6 Recommendation.

The status of the Environmental Protection Authority's System 6 Recommendations is that State Cabinet has accepted in principle the general recommendations contained in Part I of the System 6 Report and has approved the progressive implementation as far as possible, of the specific area recommendations contained in Part II of the Report.

Part I of the Report contained general recommendations on the principles of the Study and Part II made specific area recommendations.

Of particular relevance are the general recommendations contained within Part I which relate to land use planning, the management of parks, reserves and open space and other lands identified as areas of regional significance. The most important of these are, in summary:

- . the Government should establish an investigation into legislative means of achieving, through public planning procedures, the protection of the conservation and public amenity values of designated privately owned areas, without necessitating public acquisition of the land affected;
- . areas identified through planning procedures as open space of regional significance should, where appropriate, be designated as Regional Parks; and

. the National Parks Authority (now part of the Department of Conservation and Land Management) should be given the responsibility for coordinating the planning and management of areas identified as Regional Parks, and for the following functions:

- (i) the provision of technical and other advice to managing agencies and owners; and
- (ii) an examination of the present funding and coordination of development programmes.

The specific reference to planning procedures is particularly important, as it is primarily through this mechanism that competing land uses within areas identified in the System Six Report are identified and resolved.

The general recommendations sought to provide a framework for facilitating the objective of protecting lands which were identified as having values for conservation and recreation purposes. This is particularly important where lands had been identified as possessing regional significance.

6.2 THE IMPORTANCE OF SYSTEM 6 RECOMMENDATION M47

The area of land which the proponent wishes to develop for housing, Lot 1 Stephenson Avenue, is contained within the boundary of System 6 Recommendation M47.

The values of M47 are for conservation, recreation and education.

One of the main factors affecting these values of the M47 area is that, with the adjoining area covered by Recommendation M46, it is one of the largest areas of remnant bushland left in the coastal fringe of urban Perth. The values of the M47 lie not only in its size, but also in its diversity of flora, range of soil types and habitats. Also many species of flora within its area are rare or uncommon near Perth and several species are at the extremes of their range. Therefore it is of both local and regional significance in the metropolitan area. This was also recognised in the System 6 Report.

The M47 area itself is of a comparable size to Kings Park and together with the M46 area they provide excellent examples of the bushland prior to European settlement. The M47 area remains relatively undeveloped and therefore comprises wholly of bushland except for minor developments in the Reabold Hill area. Also, M47 is not as degraded as Kings Park in terms of weeds and the number of exotic plant species nor is it subjected to the same use pressures as experienced in Kings Park.

As part of the environmental assessment process of examining the environmental acceptability or otherwise of the proposed development of Lot 1, Stephenson Avenue, the Environmental Protection Authority reviewed in detail the values originally identified in the System 6 Report for the M47 area.

PHYSIOGRAPHY

There are three main physiographic regions within M47 and these are:

- . the sandy undulating Quindalup Association dunes which comprise most of M47 south of Oceanic Drive;
- . the low lying swale area, with occasional wetlands, on the leeward side of the dunes around Perry Drive; and
- . the undulating Cottesloe Association limestone area north of Oceanic Drive.

Because of the different landforms, soil age, underlying geology and depths of soil there is a local diversity of soil types which support a diverse environment. Vegetation ranges from the heaths on shallow limestone soils and Quindalup soils, shrublands and tuart, jarrah, banksia, woodlands on the deeper soils of the dunes and deeper limestone soil areas to flooded gums in the wetland areas.

On the leeward side of the sandy dunes, large natural amphitheatres occur in the swales between the heads of the parabolic dunes. In the swale region there are mostly tuart/jarrah/marri associations, with vegetation such as the flooded gum associations in the seasonally inundated areas (for example, Camel Lake). The limestone area north of Oceanic Drive, although of the Cottesloe formation, has not been affected by the aeolian sand drifts as experienced to the south of Oceanic Drive where Quindalup sands override

the Cottesloe formation. Thus, the soils range from relatively more developed shallow soils on the tops of the limestone ridges to deeper sands in the valleys.

Although the landforms, soils and some of the vegetation cover may be represented in smaller reserves in the coastal fringes of the developed portion of the metropolitan area, they do not generally have the three physiographic regions represented together and secondly do not occur over as large an area as that of the M47 area.

VEGETATION

The regional significance of the flora occurring in M47 is at two levels. First, there is a wide diversity of plants. There are about 318 species so far recorded for the portion of M47 south of Oceanic Drive of which 96 have been introduced. There are 7 basic plant associations: swamp, tuart, jarrah, banksia, heath, wattle, and limestone heath vegetation types. Some of these vegetation types are restricted to relatively small areas (eg. the swamp type). Others such as the jarrah and banksia types are more widespread throughout M47. Apart from Kings Park, which only represents vegetation associated with the Karrakatta Complex - Central and South, M47 is the only large area that represents the Cottesloe Complex - Central and South in the built area of the Perth Metropolitan Region. On this basis, any further decrease in the existing M47 area will reduce the viability of this large and diverse representative. Secondly, there are special floristic values of both regional and State significance within M47 (see figure 7); and these include:

- . Fremantle mallee (Eucalyptus foecunda) - there are at least two stands in M47 which are of major significance. Apart from one or two specimens surviving in East Fremantle they are the only recorded occurrences between Woodman Point and Quinn's Rock.
- . Limestone marlock (E. decipiens) - M47 contains one of the two largest stands of this species in the metropolitan region, and the only one with a near-natural understorey. Also, this species is not well represented in other reserves on the Swan Coastal Plain.
- . Tuart (E. gomphocephala) - M47 has the best occurrence of this species in the inner metropolitan region. It is the largest protected population and has a good age-range and general health. It is also of biological value in terms of bird nesting and associated insect food supply for insectivorous birds.
- . Wembley wax (Chamelaucium uncinatum - natural form of Geraldton Wax). - stands of this species in M47 are of significance, together with a small population found in M46, because they are the southernmost natural occurrences. The nearest known stands are in the Moore River area.
- . Peppermint (Agonis flexuosa) - the northernmost occurrence of this species is found in M47, and with few exceptions, it is not well represented elsewhere in reserves in the inner metropolitan area. Until recently, the northernmost stands occurred near the intersection of West Coast Highway and Oceanic Drive. These were destroyed by residential development.

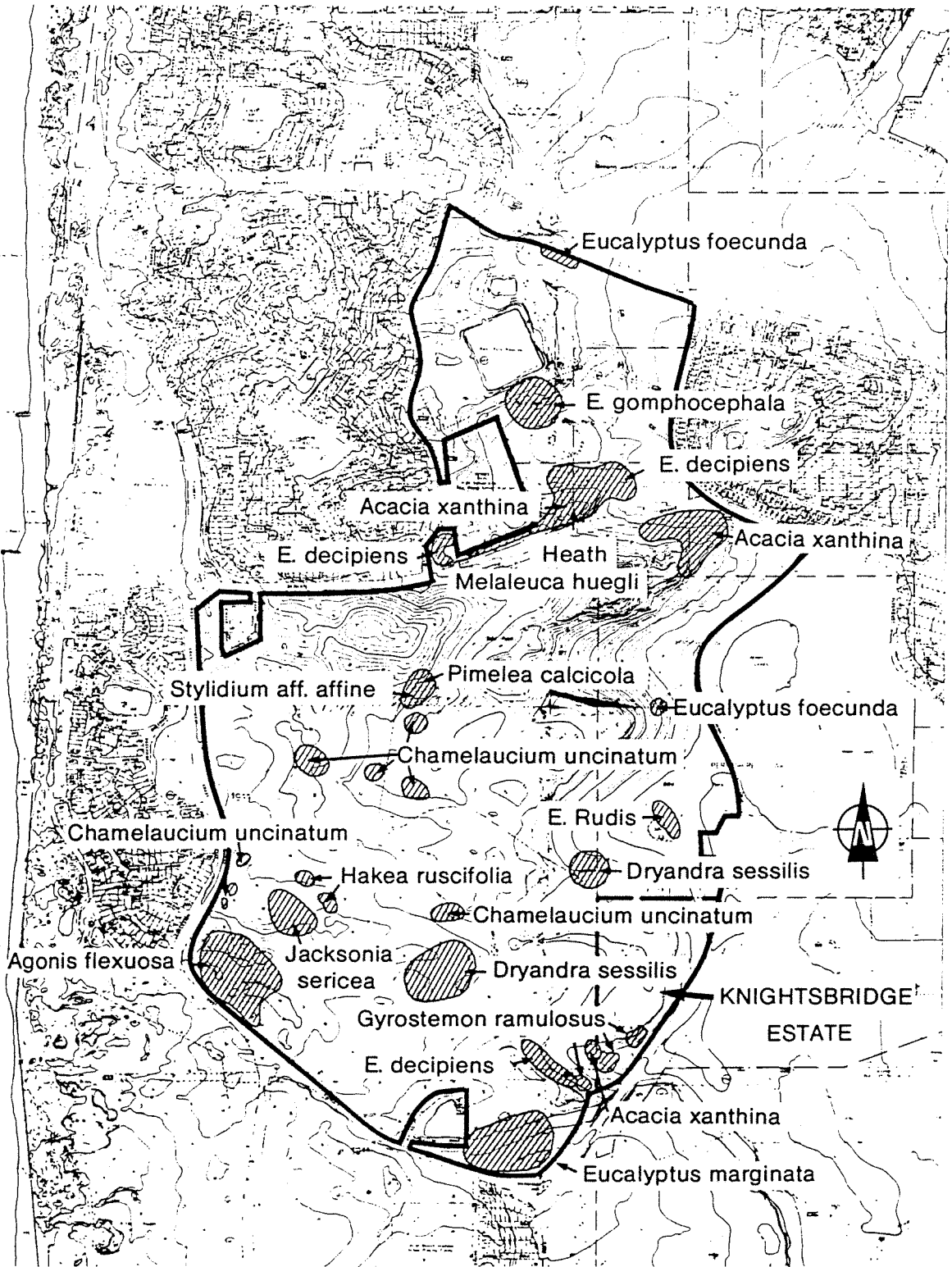


Figure 7
 Vegetation of significance within the System 6 area M47

- . White-stemmed wattle (Acacia xanthina) - the occurrence in M47 is close to the southernmost extent of the species which extends from Geraldton to the Swan River. The species in M47 is mostly in the form of a pure stand with an intact understorey, and there are no other known stands of this quality in the metropolitan region.
- . Corky bark (Gyrostemon ramulosus) - the occurrence in M47 is close to its southernmost limit with other occurrences in Trigg Reserve. It has a wide but sporadic distribution and is not well represented in existing reserves in the metropolitan region.
- . Jacksonia sericea - this is towards the northern limits of this species, with occurrences in the Trigg Reserve. It is of thicket form in parts of M47.
- . Limestone banjine (Pimelea calcicola) - this species is not common in the reserves and other areas in the metropolitan region.
- . Hakea ruscifolia - the stand in M47 is uncommon and is one of the few known stands in the metropolitan region.
- . Stylidium aff. affine - M47 has one of the largest known stands in the metropolitan region. This species is confined to the Swan Coastal Plain, not known from any other protected area, and is a large healthy population.

Another value within M47 although not of regional significance is the pure stand of jarrah (E. marginata) near the intersection of Stephenson Avenue and Rochdale Road.

There are other areas of remnant native vegetation adjacent and to the south of the M47 area. These areas are in part, included within the M46 recommendation area. The flora of the M46 area is primarily associated with the Quindalup complex. (see Appendix D for details of the M46 recommendation)

In conclusion, there are at least 11 known species of flora of either regional or State significance in M47. These together with the area's overall large size and diversity are of great importance, and more so in conjunction with the vegetation of the M46 area. The M46 and M47 areas provide one of the best and last examples in the built area of the metropolitan region of the transition between the Quindalup Complex along the coastal foreshore and the Cottesloe Complex and small sections of the Karrakatta Complex.

However, M47 in its own right is of great regional significance and threats to the plant diversity from reduction in area and by likely edge effects (eg. fire and weed invasion) from proposed developments will impair the regional conservation value of M47.

FAUNA

In comparison to flora, fauna has not been as well recorded. However, based on the strong correlations between floristic diversity and fauna diversity it can be expected that there is also a wide diversity of fauna in M47. From records so far this would appear to apply to avifauna and reptiles. However, because of the lack of data on amphibians and mammals their diversity is unknown.

Avifauna: From both specific and general observations the community may comprise about 50 species of which about half are sedentary and the remainder seasonal visitors, migrants or occasional visitors. Like flora in M47, the avifauna shows a high diversity which corresponds to the large area and the richness of habitats. Apart from the sedentary birds, M47 is one of the larger "stepping stones" providing food and shelter for seasonal visitors (particularly honey eaters) and migratory birds travelling through the metropolitan region in winter. Food resources, shelter and nesting facilities are mostly associated with the vegetation in M47, and thus, any reduction in area of M47 will reduce these resources and facilities.

Of specific regional value is the occurrence of the 3 species of Fairy-wren, which now have very localised populations in the metropolitan region, and the Button-quail (Turnix varia). The latter species has not been recorded recently in any other reserve in the metropolitan region.

Reptiles: Although there has been a limited amount of research conducted so far in M47, there are no indications that any species are confined to this area. However, there are strong habitat preferences, for example, the heaths contain the richest reptile communities with banksia woodlands also providing a rich community. Tuart woodlands have a different community and probably fewer species.

As with avifauna, results of research conducted elsewhere show a strong correlation between vegetation diversity and diversity of reptiles. Thus, further research may prove this to be the case in M47.

By January 1988, the WA Museum had recorded 25 species from four sites in M47. Other more general sources of information suggest that there could be about 32 species in M47.

Important aspects about the reptile communities of the area is that the species present, such as bob-tailed lizard, sandhill dragon and bearded dragon, skinks and geckos, are abundant despite the amount of disturbance already occurring in the M47 area. This is also of special interest when comparison is made to the decline of the mammals in M47.

Amphibians: Only three species have been recorded two of which require wetland habitats and the other occurs on deep sands. The significance of these species is not well documented.

Insects and Mammals: There are too few data to comment on the local, regional or State significance. However, insects such as the jewel beetle are of special interest and in general insects and other terrestrial invertebrates are a major food resource for many vertebrates. Insects are also involved in pollination of native plant species.

Ground-dwelling invertebrates: Research undertaken within the M47 area indicates that there is a diversity of invertebrate fauna with values as high as those observed in forest regions of Dwellingup and Manjimup. This species richness is an indication that M47 is an area of special value for native invertebrate fauna and accordingly warrants protection.

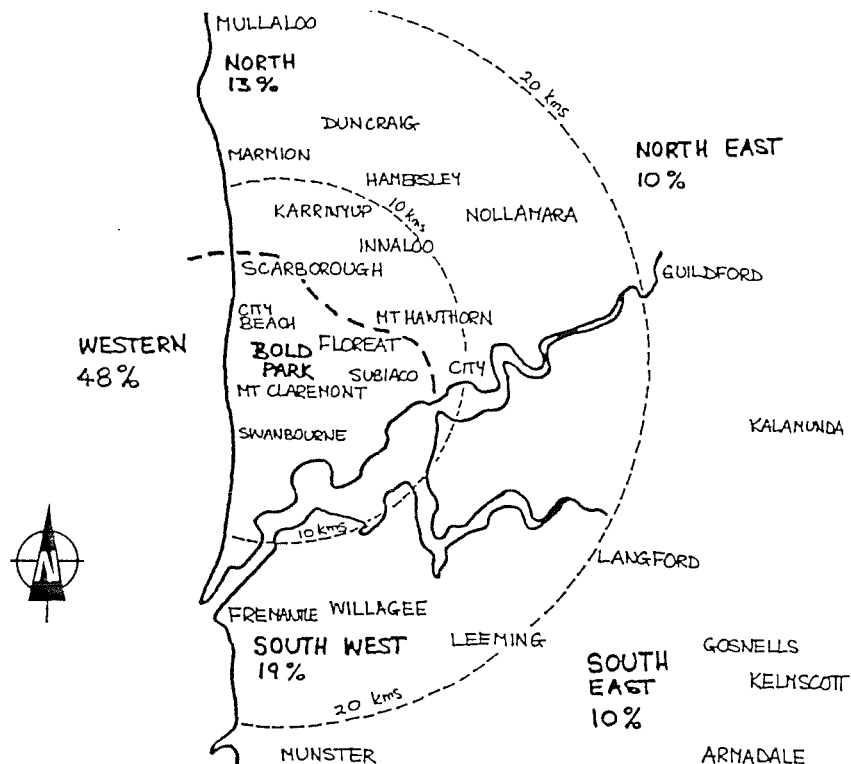


Figure 8 Place of residence of survey participants

Source: "Survey of Users of Bold Park Bushland"
October 1987, Friends of Bold Park

In summary, the fauna, as with the flora of M47, is of regional significance. This large area provides diverse habitats for a range of avifauna, reptiles and other fauna. Thus, reduction in area will reduce faunal habitat. Also, the proposed residential development is likely to result in an increase of the foreign predator population (eg. cats and dogs). This could pose serious threats to small fragile faunal populations such as amphibians, mammals and some species of avifauna in M47.

RECREATION

A recent visitor survey of 689 people at the M47 area shows that the park is used by people from throughout the Perth Metropolitan Region. (see figure 8) Tourism is also another factor in terms of the visitor population.

Most of the activities are associated with the natural setting of M47 and include bushwalking, sight-seeing, picnicking and nature study. The large area of M47 permits long walks and a bushland setting remote from the influence of traffic and urban activities. This is not replicated elsewhere in the coastal section of the built area of the metropolitan area, except for Kings Park.

The regional recreation significance of M47 is likely to increase in view of the current planning concepts of increasing residential density in the inner metropolitan region. That is, there is likely to be a decrease in bushland areas and an increase in residential development, with a higher demand for open space amenity. Thus, it is expected that M47 will be of greater regional significance in the future.

The increasing value and importance of open space does not apply solely to recreational pursuits but also to 'breaks' in urban areas where a visual relief is provided to an otherwise continuous urban development.

EDUCATION

The M47 area in terms of its flora and fauna provides a wider diversity of habitats than could be expected in smaller reserves. The M47 area is also important because of its large representation of the Cottesloe Complex with minor areas of the Quindalup and Karrakatta Complexes. This together with other large reserves eg. Kings Park, Whiteman Park, and the State Forest areas, provides a network of natural bushland areas representing a coast-inland flora and fauna transition within the built area of the metropolitan region.

Any decrease in the area of M47 in terms of incompatible uses will reduce the current values of the area and thus its use for educational purposes.

CONCLUSION

THE LARGE AREA OF M47 IS AN IMPORTANT REMNANT OF NATIVE VEGETATION CLOSE TO THE CITY, AND IN A SETTING LARGE ENOUGH TO BE MANAGEABLE AND PROTECTABLE. IT SUPPORTS A WIDE DIVERSITY OF FLORA AND FAUNAL HABITATS IN WHICH SOME SPECIES ARE OF REGIONAL AND STATE SIGNIFICANCE. ANY DECREASE IN SIZE OF M47 WOULD RESULT IN A REDUCTION OF THE VALUE OF THIS AREA.

THE REGIONAL SIGNIFICANCE AND THE CONSERVATION, RECREATION AND EDUCATION VALUES OF THE M47 AREA IDENTIFIED IN THE SYSTEM 6 REPORT HAVE BEEN, IN THE OPINION OF THE AUTHORITY, REAFFIRMED.

6.3 ASSESSMENT OF THE DEVELOPMENT OF LOT 1 (THE PROPOSAL)

Lot 1, Stephenson Avenue, the area within which the proposed development for housing would occur, falls within the boundary of the Environmental Protection Authority's System 6 M47 Recommendation. The Authority has identified all lands within that boundary as constituting open space of regional significance for conservation, recreation and education.

The proponent, in the PER and the response to issues raised in submissions, has suggested some ambiguity exists as to whether the Environmental Protection Authority in its M47 Recommendation, intended to include privately owned land (ie Lot 1) within its boundary and accordingly be subject to the recommendation covering the area.

The Environmental Protection Authority has repeatedly and consistently indicated that the land subject to the proposal is included within the boundary of the M47 Recommendation and is therefore subject to that recommendation.

In addition, Lot 1 is clearly shown as being within the area boundary of the M47 recommendation in Figure 116 of Part II of the System Six Report (see Appendix C). The text of the recommendation also specifically refers to part of Location 2103 (Lot 1 is the only part of Location 2103 west of Stephenson Avenue) and the numbers 2103 are located over Lot 1. The plan of the same area in the 1981 System Six 'Green Book' (Figure 120) also showed the subject land as being within the area boundary.

Until the time of the sale of Lot 1 by the University of Western Australia, no doubt had been raised by any party, including the University regarding Lot 1 not being within the boundary of the M47 area and being subject to the recommendations relating thereto.

The potential environmental impacts of this proposal relate to two interrelated issues. The first is the impacts of the proposal on Lot 1 itself; the second is the impacts of the proposal in terms of its effect on the remnant bushland contained within the whole System Six M47 area. As well, the Authority has examined a number of known additional pressures on the M47 area, but has addressed this wider view in the following Section 6.4.

. INTRINSIC VALUES OF LOT 1

The PER contends that the environmental values of Lot 1 are not significant in that the vegetation and habitats of Lot 1 are neither rare nor endangered and are generally represented within Bold Park or in other reserves. The Authority generally accepts this viewpoint. However, it recognises that whilst by no means unique, the site possesses environmental value in that it is not highly degraded, it is part of a larger remnant bushland area and it acts as a buffer to protect the integrity of this larger bushland against environmentally degrading edge effects. In this regard, the PER in the opinion of the Authority, has failed to reflect adequately these values of Lot 1 as being part of the larger bushland but has rather viewed the land in isolation.

THE ENVIRONMENTAL PROTECTION AUTHORITY, IN ASSESSING THE POTENTIAL ENVIRONMENTAL IMPACTS OF THE PROPOSAL ON LOT 1, HAS CONCLUDED THAT:

- . ALTHOUGH THE CONSERVATION, RECREATION AND EDUCATION VALUES OF LOT 1 ITSELF ARE NOT UNREPRESENTED ELSEWHERE WITHIN THE M47 AREA; BUT
- . BECAUSE LOT 1 IS PART OF A LARGER REMNANT BUSHLAND AREA, IT IS NOT HIGHLY DEGRADED AND IT BUFFERS THE WHOLE AREA AGAINST ENVIRONMENTALLY DEGRADING EDGE EFFECTS, IT IS CONSIDERED TO HAVE CONSERVATION VALUE.
- . EFFECTS OF DEVELOPING LOT 1 ON THE M47 AREA

The development of Lot 1 for housing would radically change the existing nature of the environment of the area. Consequently, the changed environment would lead to environmental impacts on the balance of the M47 land.

In assessing the proposal, the Environmental Protection Authority considers that its implementation would have significant environmental impacts on the System 6 M47 area in the following ways:

- . Intent of the M47 Recommendation

The intent of the System 6 M47 Recommendation is for the area to be designated and managed as a Regional Park because of its regional open space significance. The concept of regional open space is intended to provide for the protection of open space of regional significance.

The System 6 Report notes that "open space of regional significance consists of a great deal more than land formally set aside for the purpose. In a functional sense, it can include land in a wide range of tenure and condition." The Report adds "It may be managed for the retention of the natural vegetation, or developed as "green belts" or parks for recreation. It may consist of uncleared bush awaiting development or farmland forming man-made rural landscapes of considerable amenity value."

Rather than acquire and manage all appropriate land, the System 6 Study proposed an alternative. This is "to leave much of the land in question in private ownership while subject to planning or development constraints." The alternative is based on the premise that protection of natural values should be reflected in amenity and real estate values leading therefore to both private and public benefits.

The Authority has examined the proposal and considers that the proponent in designing the project has not had regard to the intent of the System 6 Recommendation M47. Instead the proponent through the PER has concentrated on examining in a narrower sense, the potential environmental impacts on the land in isolation. The replacement in large part of an area of native vegetation with urban development cannot be regarded as sympathetic to a regional park. With the possible exception of the required (10%) public open space area, which is required of every residential subdivision, the proposal makes no concessions to the fact that it is located within the System 6 area.

In terms of other proposals for the development of privately owned land within System Six recommendation areas making concessions to the intent and objectives of these recommendations, the Authority has noted the following examples:

- . Buckland Hill Residential Project (Recommendation M55). The proponent of this project has set aside approximately 30% of the development site for open space purposes. This action has contributed towards the retention of some of the existing values of the site and the intent of the System Six recommendation.
- . Waterways (J Holland) Mandurah Canal Project (Recommendation C50). Portion of the project site was identified in the System Six Study as having conservation value. In response, the proponent has transferred in excess of 8 ha of land to the Crown free of cost, for conservation purposes. In addition, the normal public open space provision was met together with substantial foreshore reserves. The desirability and value of the project is to a certain extent, reflected in its proximity to the conservation area.
- . Halls Head (Parry's) Canal Project (Recommendation C50). In planning for this project the proponent has made specific provision for all the land identified in the System Six recommendation as having conservation value to be set aside as open space for conservation purposes. This provision is over and above the standard open space contribution and in addition to land for foreshore purposes.

The design of the project also had specific regard to protecting the values of the conservation land (and adjacent shallow water areas).

- . Parry's Sticks Channel Project (Recommendation C50). The proposal for this project makes provision for all the land identified within the site as having conservation value (in the C50 recommendation) to be protected as open space for conservation purposes. Foreshore reserves and normal public open space areas are in addition to the conservation area.

The Authority notes that the above actions are appropriate concessions to the intent and objectives of the System Six recommendations for the respective areas.

The Authority also makes the following points about the impacts of the proposal:

- . Visual impact when viewed from Stephenson Avenue, from Bold Park lookout and from other areas within Bold Park.

Whilst the PER (and the proponent's response to submissions) acknowledge that some visual change will occur as a result of the project, the amenity values of the M47 considered as a whole, do not appear to have been fully appreciated. In addition, despite claims to the contrary, the site and any consequential development is within the viewshed of several areas within M47 as well as extensively from Stephenson Avenue.

Although view quality and appreciation is a subjective matter, the Authority notes that the natural values of M47 and its regional attraction as a result thereof are elements of the M47 area. The scarcity of areas such as the M47 area, contribute to its value as open space of regional significance.

In addition, the specific proposal to cut and earthmove the prominent ridge on the north east of Lot 1 to allow for reticulation of mains water supply would change the existing visual amenity.

Accordingly, the Authority rates any potential visual intrusion into the M47 area as a matter of concern.

Several submissions were received, including one from the Perth City Council expressing particular concern about the visual intrusion which would occur as a result of the proposal. Suggestions were made that the development should not be permitted north of the ridge line in order to minimise visual intrusion.

The Authority believes that any reduction in the amenity values of the M47 would be undesirable.

The intrusion into Bold Park of a buffer area which will reduce the overall environmental values of the Park.

The proposal put forward the notion that a buffer between the housing on the northern side of Lot 1 and the balance of the M47 land would be developed outside the Lot 1 boundary.

Many submissions raised concern over this matter as did the owners and managers of Bold Park (Perth City Council). The Council has rejected any proposal to create a landscaped buffer area within the Park on the basis of its impact on the Park.

The Authority believes that any required buffer area must be internal within the proposal and it is strongly opposed to any removal of vegetation or reticulation of existing bushland within Bold Park in order to protect this private development.

The Authority notes, in the response on issues raised in the submissions, that the proponent will provide a landscaped and reticulated area within Bold Park abutting the northern boundary of the site, if requested by the Perth City Council.

The Authority makes a specific recommendation on this point later.

Fire management within Bold Park would have to be improved to protect proposed residences

The question of increased fire risk to the M47 area as a consequence of the project will be addressed later. However the protection of proposed houses from fires emanating from within M47 area is a separate issue.

At present there is no need for high levels of management between existing bushland and Lot 1, as there is no development within Lot 1. Should the proposal proceed, the Perth City Council may be required to improve fire management within M47 area in order to prevent fires from entering Lot 1.

The means of achieving better fire management at the interface between Lot 1 and existing bushland would primarily involve wider fire breaks, with a consequent loss of vegetation or by the creation of a reduced fuel zone adjacent to Lot 1. The process of reducing fuel levels or widening firebreaks would reduce the conservation value of the existing bushland.

Submissions suggested, and the Authority agrees, that the proposal should incorporate any necessary protection from external fires within the bounds of Lot 1. The current proposal does not make such a concession.

This issue also relates to the proposed buffer zone within Bold Park as this zone is described in the PER as a buffer zone and firebreak.

In addition to the above, the Environmental Protection Authority has reviewed the following environmental impacts. The significance of these is in their cumulative capacity to affect the M47 area rather than individually as they would add, incrementally, to the loss of values of the M47 area.

Edge effects including increased fire risk to Bold Park, invasion of weeds, generation of urban noise, rubbish dumping and use of pesticides

The Authority accepts that noise, rubbish dumping and pesticide use will not be of major significance individually. The matter of rubbish dumping will require additional management by the Perth and Nedlands City Councils.

The matter of fire risk is of more concern, as generally the presence of more people and fire sources in an area will increase the risk of fires. It is noted also that fire reporting may be more efficient due to more people being able to see smoke. The invasion of weeds such as veldt grass may affect the fire risk as well as change of vegetation assemblages.

Impact on groundwater generally (and Camel Lake specifically)

The abstraction of an estimated 145 000 cubic metres of groundwater annually as a result of the proposal would place additional demands on the regional groundwater resources in this locality. The creation of ornamental lakes and extensive irrigation of landscaped area is part of the 'high quality development' proposed but this can only be achieved at some cost to groundwater resources.

Whilst not of major significance, the use of large quantities of groundwater in this area will have some impact on water resources and possibly on Camel Lake.

As this issue is 'manageable' by the Water Authority of WA the Environmental Protection Authority believes that if any adverse impact is detected, the Water Authority could control groundwater usage.

Reduction in the size of the remnant bushland area and limiting its diversity and amount of valuable habits.

The proposal will reduce the size of the remnant vegetation within the M47 area directly. Although some of the existing vegetation will remain, its value will be reduced.

The loss of some communities or specific plants, such as heathland association or the Gyrostemon ramulosus which are uncommon within M47 area will be of greater significance than the relative area involved.

The area/boundary ratio of the remaining bushland will be altered

When viewed against the whole of M47 area, the change in the area of the remnant bushland or its area/boundary ratio brought about by this project, would be small. Nevertheless, it will marginally reduce the value of the remaining area. Areas of vegetation which at present are adjacent to Lot 1, will also be exposed to edge effects not currently present, thus increasing their potential for degradation.

WITH RESPECT TO THE POTENTIAL ENVIRONMENTAL IMPACTS OF THE PROPOSAL ON THE M47 AREA, THE AUTHORITY CONSIDERS THAT:

. FIRSTLY, THE PROPOSAL MAKES NO SIGNIFICANT CONCESSION TO THE OBJECTIVES AND INTENT OF THE SYSTEM 6 RECOMMENDATION FOR THE AREA; AND

. SECONDLY, THERE IS A NUMBER OF INDIVIDUAL IMPACTS WHICH CUMULATIVELY WOULD UNACCEPTABLY REDUCE THE CONSERVATION, RECREATION AND EDUCATION VALUES OF THE M47 AREA.

ACCORDINGLY, THE ENVIRONMENTAL PROTECTION AUTHORITY CONCLUDES THAT THE DEVELOPMENT AS PROPOSED IS NOT ENVIRONMENTALLY ACCEPTABLE.

However, in considering the potential environmental impacts of the proposal, the Authority considers that the following changes to the proposal would ameliorate some of the significant impacts.

AMELIORATION OF IMPACTS

. LIMIT SUBDIVISION:

Limit the subdivision to the area south of the ridgeline which generally runs east-west across the northern section of Lot 1. This modification would to a large extent overcome the impact of visual intrusion by the proposal into the M47 area with the consequential loss of its amenity value. Development behind the ridge would generally not be visible from within the M47 area.

This modification would not prevent the development site being viewed from Stephenson Avenue and accordingly the existing natural bushland vista from that viewpoint will still be changed.

Additionally, the need to undertake major earthmoving operations by cutting 5 metres from the top of the ridge would be avoided. This would preserve the existing skyline and character of the viewscape of the M47 area and assist in maintaining its present amenity value.

To a certain extent the area north of the ridge which would not be developed, would separate the developed portion of Lot 1 from Bold Park. This would generally reduce the impact of the range of edge effects already described. In terms of fire risk, the health vegetation would generally carry a lower fuel load than the more heavily vegetated section along the existing boundary of Lot 1.

The closed heath community is also generally more resistant to the invasion of exotic plants and especially grasses, than other more open forms of vegetation, accordingly it would form a limiting barrier to the invasion of weeds.

The heath area was also identified in the PER as being uncommon within the M47 area. Protection of this heath from development would therefore allow the retention of this vegetation association and its fauna habitats.

RELOCATING PUBLIC OPEN SPACE:

Public open space should be relocated to separate the development from the balance of the M47 area.

The use of the normally required 10% public open space areas to act as buffers (or transitional areas) between development and the bushland, would improve the separation between the two uses and reduce the range of edge effects previously discussed. If developed as low key, semi natural areas, they would need little or no water (thus reducing the need for irrigation). They would, as partially cleared areas also act as low fuel zones thus limiting to the passage of fire either from or to the bushland.

Such low key open space areas would also allow for a degree of passive, and active recreation in a natural setting which would in turn help to reduce usage pressures within the M47 area.

Used in this suggested fashion, the 10% public open space would allow the eventual development of Lot 1 to blend in with its natural setting by way of a vegetated transition, rather than an abrupt, hard boundary as proposed.

With less clearing of the open space area their value, especially in terms of bird habitat would be retained to a greater degree than proposed, thus contributing to the values of the larger bushland area.

If an open space area was located immediately to the south of the ridgeline, it may be that no earthworks would be necessary to allow for water reticulation mains. This would reduce the overall extent of earthworks on Lot 1, as well as minimising the alteration of existing views.

With the possibility of open space areas being used in this manner, together with the retention of land north of the ridge as natural bushland, the need for a landscaped buffer within Bold Park would be removed.

BUFFERS WITHIN LOT 1:

All buffer areas should be within Lot 1.

As discussed above, the set back behind the ridge and the use of open space areas to buffer development from the bushland, would mean that a buffer within Bold Park, or on the western side of Lot 1 would not be required.

REALIGNED SUBDIVISION ROADS:

Roads within the subdivision should be re-arranged to the periphery of the site.

The placement of internal subdivision roads to the periphery of the site would assist in reducing edge effects and would provide efficient and easy access to the bushland by fire fighting and other emergency vehicles. Simple management techniques are available to prevent undesirable vehicular access to the bushland.

In addition, roads would provide a fire break between the bushland (or open space areas) and the housing development. Public access to the bushland would also be preserved. The road reserves also allow for some landscaping opportunities which would assist in providing a transition to naturally vegetated areas, as development (housing) would be set back a greater distance away from the interface with the bushland than proposed.

THE ENVIRONMENTAL PROTECTION AUTHORITY CONCLUDES THAT WITH THE IMPLEMENTATION OF THE ABOVE CHANGES, THE PROPOSAL WOULD BE MORE ENVIRONMENTALLY ACCEPTABLE.

While these conclusions have been reached by the EPA as a result of assessing this proposals potential environmental impacts against the existing M47 area, the Authority has also addressed the proposal in the regional context of additional proposals known to exist and which may impact upon the M47 area.

These additional proposals have the potential to affect the long term viability of the M47 area.

6.4 THE M47 AREA AND FUTURE PRESSURES

As part of this assessment report, the Authority has decided that all known proposals which could have an impact on the M47 area should be examined in a comprehensive manner. Failure to take this wider perspective, would result in a piecemeal approach to individual proposals, which could cumulatively lead to a substantial reduction in the values of the M47 area.

Whilst the Authority does not currently have before it specific referrals for all the known proposals within the M47 area, it believes that it should examine them in order to identify the environmental implications of each proposal in the cumulative context. The Authority believes that its advice on these matters will provide some guidance to the proponents and the decision-making authorities involved.

The Authority has identified five proposals within the M47 area which it believes requires its attention. These proposals are shown in Figure 9

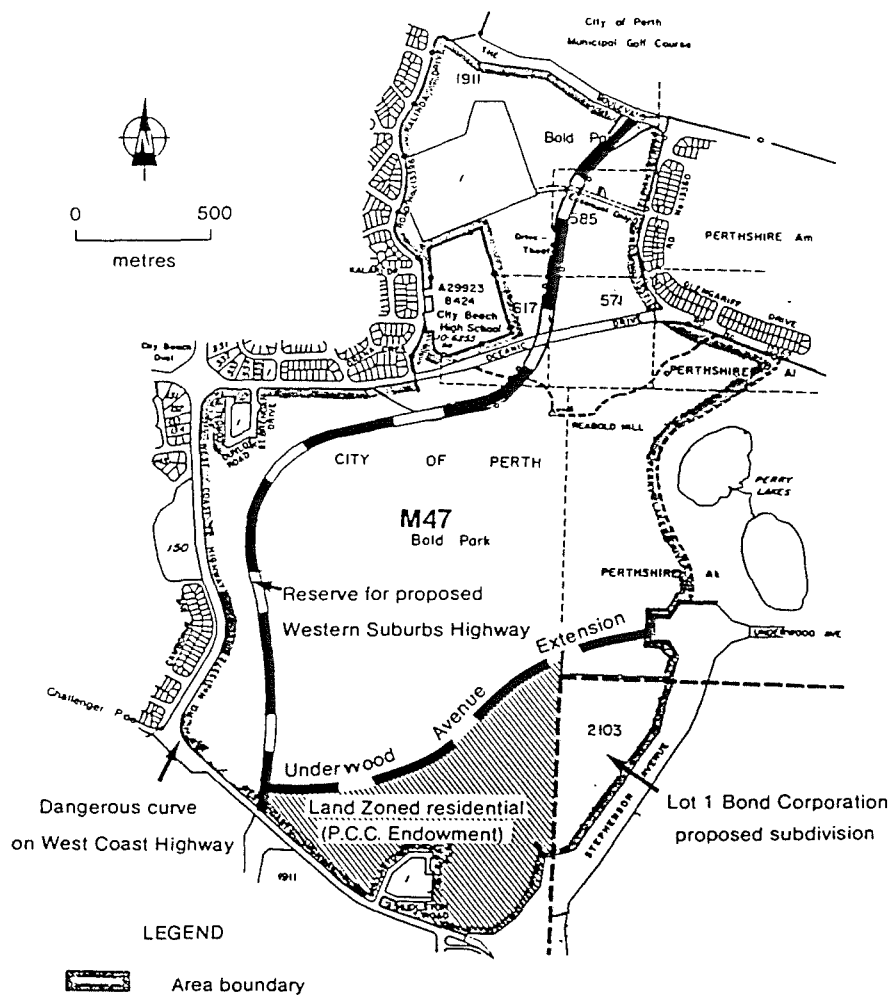


Figure 9

Proposals which may impact upon the M47 area

Western Suburbs Highway. When the reserve for this highway was created in the Metropolitan Region Scheme in 1982 it was essentially a relocation of the highway from a position to the east of Reabold Hill. This realignment through the western portion of Bold Park was not assessed by the Environmental Protection Authority at the time of the Metropolitan Region Scheme Amendment. In general terms, the highway would have a significant impact on the M47 area by direct destruction of valuable flora and by the alienation of a considerable area west of the highway from the main bushland area. The area so alienated would be difficult to manage and would be of limited value for conservation or recreation. In addition, the alignment of the highway north of Oceanic Drive would destroy areas containing rare or uncommon plants including Eucalyptus decipiens, Acacia xanthina and heath associations. Noise generated from the highway would diminish the recreational amenity of the Park.

The highway would also increase the susceptibility of the bushland to edge effects.

The portion of M47 between the Boulevard and Oceanic Drive would be bisected by the highway, thereby limiting its environmental and recreational values.

The earthworks associated with this highway (from the Boulevard to its intersection with West Coast Highway) could cover some 20 ha of land and almost 40 ha would be alienated from the main body of the bushland.

THE AUTHORITY CONCLUDES 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.

Underwood Avenue Extension. A proposal for this extension has been referred to the Environmental Protection Authority by the Perth City Council. In response, the Authority advised that a PER would be the most appropriate means of addressing the matter and that any assessment of the proposal must include a range of other issues related to the need for the road and the cumulative impact of other matters on the System Six M47 area.

The road proposal could require up to 6 ha of land for road works and would alienate in excess of 50 ha of land (excluding 19 ha of Lot 1.) from the main bushland area within the M47 area. The same comments regarding alienation and edge effects as applied to the Western Suburbs Highway apply also to this proposal.

Since the initial referral of this proposal in June 1986 no further proposal or documentation for the extension has been received by the Environmental Protection Authority.

THE AUTHORITY CONCLUDES THAT THE EXTENSION OF UNDERWOOD AVENUE ACROSS THE M47 AREA TO WEST COAST HIGHWAY AS PROPOSED BY THE PERTH CITY COUNCIL WOULD BE LIKELY TO HAVE A SIGNIFICANT AND ADVERSE ENVIRONMENTAL IMPACT ON THE PRESENT ENVIRONMENTAL, RECREATIONAL AND EDUCATIONAL VALUES OF THE M47 AREA.

The Authority is aware, that in October 1987, the State Planning Commission decided not to support the road extension as it would be contrary to the System Six Report.

The Authority notes that in rejecting the extension of Underwood Avenue, the State Planning Commission identified the necessity to find a suitable alternative connection from Underwood Avenue to West Coast Highway. The Authority appreciates this need.

THE AUTHORITY CONCLUDES HOWEVER, THAT ANY CONNECTION OF STEPHENSON AVENUE THROUGH THE M47 AREA TO WEST COAST HIGHWAY WOULD REDUCE THE ENVIRONMENTAL VALUES OF THE WHOLE AREA AS WELL AS THREATENING PLACES (WITHIN THE SOUTHERN SECTION) OF ENVIRONMENTAL AND ETHNOGRAPHIC VALUE.

A recommendation regarding roads in this section is made later in the report.

Development of Lot 1. The environmental implications of this proposal have been already discussed in detail. The Authority notes that whilst the proposal in a suitably modified form would be more environmentally acceptable, the proposal will nevertheless have some adverse environmental impacts on the values of the M47 area.

Development of Perth City Council Endowment Land. The Authority notes that this land is zoned 'Urban' in the Metropolitan Region Scheme and 'Residential' (R20) in the City of Perth Planning Scheme. It comprises about 53 ha of bushland which forms part of the remnant bushland contained within the M47 area. The land is mostly naturally vegetated and contains flora of environmental value generally, and specifically some particularly valuable areas of dryandra, jarrah, Eucalyptus decipiens and Gyrostemon ramulosus. The area also contains a site identified as having ethnographic significance for Aboriginal people.

The Perth City Council is currently managing this land in conjunction with the larger Bold Park bushland and it is used by the public also as part of the larger area and for generally the same purposes. Walk trails have been constructed through the area and linked with a network of trails to adjacent lands.

There is within this area a section known as the turf farm and a small pine plantation where the natural vegetation has been removed and thus environmental values reduced; these areas however, still possess recreational values consistent with the Regional Park Concept.

Adjacent to the turf farm is the Wollleston theological college complex. This area is not included within the M47 area boundary.

The overall area zoned residential, possesses environmental and recreational values in its own right as well as forming an integral and substantial portion of the remaining bushland in the M47 area.

The Authority believes that the development of this area would have a similar range of environmental impacts on the M47 area as those identified as applying to the development of Lot 1. The extent of possible impacts would be different to those of Lot 1 bearing in mind the fact that this area is almost three times that of Lot 1 and it contains different environmental values.

The Authority considers that the Endowment land is similar to Lot 1 in that it is portion of the overall M47 bushland and contributes directly to the area's regional significance. In addition, and over and above this general value, the area contains specific environmental and community values of special importance.

THE AUTHORITY CONCLUDES THAT ANY PROPOSAL TO DEVELOP THE PERTH CITY COUNCIL ENDOWMENT LAND WITHIN THE M47 AREA FOR RESIDENTIAL PURPOSES, WOULD (IN A SIMILAR WAY TO THE IMPACT OF LOT 1) BE LIKELY TO REDUCE THE EXISTING ENVIRONMENTAL, RECREATIONAL AND EDUCATIONAL VALUES OF THE M47 AREA.

Formulation of any proposals for development or conservation/recreation uses in this area, is the responsibility of the Perth City Council.

Dangerous Curve in West Coast Highway. The Authority is aware that the sharp bend in West Coast Highway near its intersection with Challenger Parade, (see fig 9) has a high accident record. The Authority has been advised that the solution to the problem generally lies in straightening the curve by realigning West Coast Highway. Such a realignment would intrude into the M47 area (and Bold Park). Detailed studies would be required to determine the preferred alignment.

Within the M47 area adjacent to the curve, there are stands of Peppermint gum, Agonis flexuosa which appear to be the northern most naturally occurring stand of this tree. With the exception of the Peppermint gum, there appears to be no flora or habitats which are rare or uncommon. This area is however, the only example of the Quindalup Association within the M47 area although this association is well represented in the M46 area and other reserves within and outside the metropolitan region.

The Authority advises that it recognises that it may be necessary to accept an intrusion into the M47 area (and Bold Park) by the realignment of West Coast Highway in order to correct the dangerous curve in the vicinity of the Challenger Parade intersection. This advice is subject to areas of environmental value being firstly identified and avoided as much as possible in the realignment.

The Authority recognises that a realignment of West Coast Highway may be justified on the grounds of community safety, although it will nevertheless result in a reduction in the overall values of the M47 area.

THE AUTHORITY NOTES THAT THE SECTION OF LAND ALIENATED FROM THE M47 AREA BY A POSSIBLE REALIGNMENT OF WEST COAST HIGHWAY WOULD BE OF CONSIDERABLY REDUCED VALUE IN THE LONG TERM. ACCORDINGLY, THE AUTHORITY CONCLUDES THAT IT COULD BE USED FOR RESIDENTIAL PURPOSES ON AN EXCHANGE BASIS, FOR LAND WITHIN THE M47 AREA BOUNDARY CURRENTLY IN PRIVATE OWNERSHIP.

In regard to land which may be alienated from the M47 area by the realignment of West Coast Highway, the Authority believes that it is the responsibility of the Perth City Council to further examine the future of this land and to undertake any required action regarding possible exchanges for other privately owned land within the M47 area.

The various engineering and environmental studies required to detail the possible realignment of West Coast Highway should be undertaken by the Perth City Council in consultation with other involved agencies and referred to the Environmental Protection Authority for assessment.

Following the review of the potential implications of the above five proposals, it is clear to the Authority that each will impose its own set of detrimental impacts upon the existing values of the M47 area.

IN EXAMINING THE OVERALL VALUES OF THE M47 AREA AND THE POTENTIAL FOR CUMULATIVE IMPACTS, THE AUTHORITY HAS CONCLUDED THAT IT WOULD BE UNABLE TO SUPPORT ALL OF THE FIVE PROPOSALS WITHIN THE M47 AREA ON THE GROUNDS THAT THEIR CUMULATIVE IMPACT WOULD BE CONSIDERABLE AND ENVIRONMENTALLY UNACCEPTABLE.

Accordingly, in order to protect the environmental integrity of the M47 area and its value within the Regional Park Concept, the Authority makes the following recommendations:

RECOMMENDATION 1

AS THE PROPOSED WESTERN SUBURBS HIGHWAY IS LIKELY TO HAVE A SIGNIFICANT AND ADVERSE IMPACT ON THE M47 AREA, AND ON THE UNDERSTANDING THAT THERE ARE REALISTIC ENGINEERING AND PLANNING ALTERNATIVES (WITHOUT REQUIRING MAJOR INTRUSIONS INTO THE M47 AREA), THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE PROPOSED HIGHWAY SHOULD BE GENERALLY REMOVED FROM THE M47 AREA.

THE ENVIRONMENTAL PROTECTION AUTHORITY NOTES THAT THE WESTERN SUBURBS HIGHWAY STAGE II STUDY CONCLUDED THAT THERE WAS NO FURTHER BASIS FOR A NORTH/SOUTH HIGHWAY AND ACCORDINGLY THE AUTHORITY RECOMMENDS THAT THE FURTHER 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 THE MAIN ROADS DEPARTMENT AS SOON AS POSSIBLE. IN DUE COURSE, IF THE WESTERN SUBURBS HIGHWAY IS CONSIDERED NECESSARY, ANY PROPOSAL SHOULD BE REFERRED TO THE AUTHORITY. THE AUTHORITY NOTES THAT MINOR INTRUSIONS INTO THE M47 AREA MAY BE NECESSARY IN ORDER TO PROVIDE FOR A FUTURE ALTERNATIVE FOR THE WESTERN SUBURBS HIGHWAY

RECOMMENDATION 2

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE EXTENSION OF UNDERWOOD AVENUE ACROSS THE M47 AREA TO WEST COAST HIGHWAY NOT PROCEED.

RECOMMENDATION 3

AS THE AUTHORITY IS CONCERNED OVER THE POTENTIAL ENVIRONMENTAL IMPACT OF ROADS IN THE M47 AREA, THE AUTHORITY RECOMMENDS THAT NO SUCH ROADS BE PLANNED OR CONSTRUCTED WITHOUT FIRST BEING REFERRED TO THE ENVIRONMENTAL PROTECTION AUTHORITY.

RECOMMENDATION 4

THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE NECESSARY ENVIRONMENTAL AND ENGINEERING STUDIES INTO THE POSSIBLE REALIGNMENT OF WEST COAST HIGHWAY (IN ORDER TO RESOLVE THE DANGEROUS CURVE NEAR CHALLENGER PARADE) SHOULD BE UNDERTAKEN AS SOON AS POSSIBLE AND THE RESULTS REFERRED TO THE AUTHORITY FOR ASSESSMENT BEFORE ANY APPROVALS ARE GIVEN.

RECOMMENDATION 5

- . THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT ANY LAND ULTIMATELY AGREED UPON TO BE EXCISED FROM THE M47 AREA (AND BOLD PARK) BY THE POSSIBLE REALIGNMENT REFERRED TO IN RECOMMENDATION 4 OF WEST COAST HIGHWAY, COULD BE USED FOR DEVELOPMENT BUT ONLY ON AN EXCHANGE BASIS FOR LAND WITHIN THE M47 AREA BOUNDARY CURRENTLY IN PRIVATE OWNERSHIP.

RECOMMENDATION 6

- . IN VIEW OF THE POTENTIAL ADVERSE IMPACTS THE DEVELOPMENT OF PERTH CITY COUNCIL ENDOWMENT LAND WITHIN THE M47 AREA WOULD HAVE ON THE OVERALL ENVIRONMENTAL, RECREATIONAL AND EDUCATIONAL VALUES OF THE AREA, THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THIS LAND SHOULD NOT BE SUBSTANTIALLY DEVELOPED, BUT PRIMARILY REMAIN AS PART OF THE LARGER REMNANT BUSHLAND OF THE M47 AREA. ENVIRONMENTALLY DEGRADED LOCATIONS WITHIN THE 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. ANY DEVELOPMENT PROPOSALS BY THE PERTH CITY COUNCIL FOR THIS AREA SHOULD BE REFERRED TO THE ENVIRONMENTAL PROTECTION AUTHORITY FOR ASSESSMENT.

RECOMMENDATION 7

- . THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE STATE PLANNING COMMISSION AND PERTH AND NEDLANDS CITY COUNCILS SHOULD INITIATE THE NECESSARY AMENDMENTS TO THE METROPOLITAN REGION SCHEME AND CITY PLANNING SCHEMES RESPECTIVELY, TO REFLECT ANY GOVERNMENT AND COUNCIL DECISIONS ARISING OUT OF THESE RECOMMENDATIONS.

6.5 THE REGIONAL PARK CONCEPT - M46 AND M47

In 1983 the Authority identified the M46 and M47 areas as constituting open space of regional significance. The M46 area was identified as contributing to that significance in conjunction with the M47 area. Figure 1 of Chapter four in Part I of the System Six Report showed these two areas as a potential Regional Park.

The concept of Regional Parks was originally introduced in the Stephenson Hepburn Report of 1955 and subsequently reflected in the provisions of the Metropolitan Region Scheme. The System Six Report developed this concept and expanded it to include lands with a range of tenure and condition but all contributing to overall regional significance. The concept also included landscapes of amenity value. The dynamic nature of these various lands contributing to an overall value was appreciated. It was accepted that a "planning authority would take account of land functioning as open space as well as land formally set aside for the purpose" in the planning process.

Regional parks provide frameworks for cohesive land-use planning and management of lands which are covered by location specific recommendations in Part II of the System 6 Red Book.

Since 1983 no action has been taken with the establishment of the suggested Regional Park for M46 and M47. In fact, the two areas have been subject to various isolated decisions involving development and roads. Some of these decisions have reduced the values of these areas.

The Authority's examination of the proposal for Lot 1 and its subsequent consideration of other proposals in the M47 area has highlighted the value of these areas and the potential risks they face by a loss of existing values. A particular value of these areas is the opportunity provided for passive recreation in a natural setting.

Despite intrusions by development into these areas, their values (and especially M47) is probably greater now than it was in 1983 and prompt action is required if these values are to be protected.

RECOMMENDATION 8

THE AUTHORITY RECOMMENDS THAT A REGIONAL PARK ENCOMPASSING THE M46 AND M47 AREAS BE ESTABLISHED IN ORDER TO PROTECT THESE OPEN SPACE AREAS OF REGIONAL SIGNIFICANCE AND TO FACILITATE MANAGEMENT AND USE FOR A RANGE OF PURPOSES INCLUDING CONSERVATION, RECREATION AND EDUCATION.

In reviewing the significance and values of the M47 area (Section 6.2), the Authority noted that there were areas adjacent to the M47 area which contain remnant vegetation and accordingly warranted investigation. (see Fig 10).

The Perry Lakes open space and the Wembley Golf Course areas possess environmental and recreational values in their own right, including substantial stands of remnant native vegetation.

Both areas are within the original 'Bold Park' and are reserved under the Metropolitan Region Scheme and Perth City of Planning Scheme as Parks and Recreation. In addition, they are being used for activities which are consistent with the objectives of the Regional Park Concept.

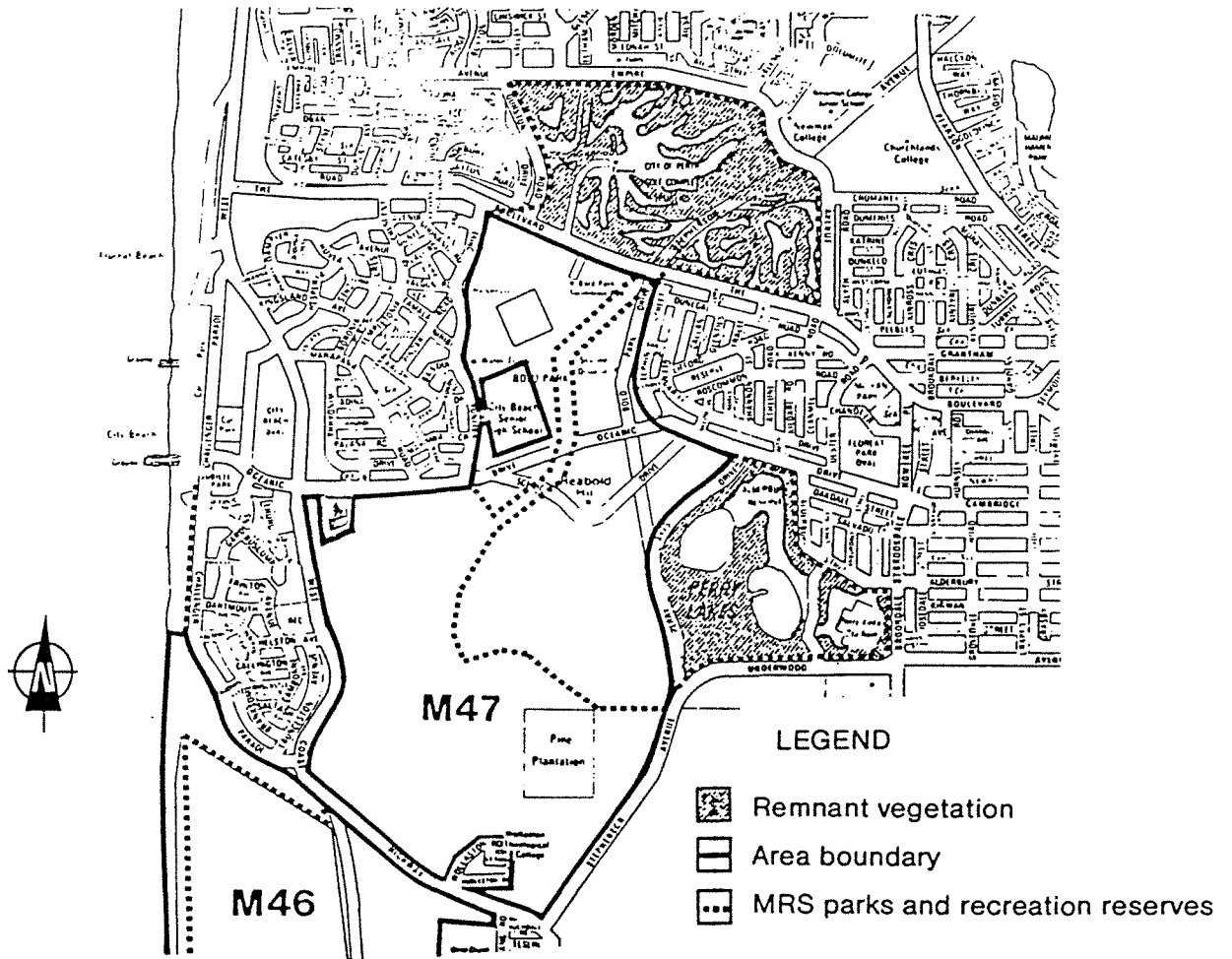


Figure 10
 Remnant native vegetation on lands adjacent
 to System 6 recommendation area M47

RECOMMENDATION 9

THE AUTHORITY RECOMMENDS THAT THE WEMBLEY GOLF COURSE AND THE PERRY LAKES OPEN SPACE AREA SHOULD BE MANAGED BY THE PERTH CITY COUNCIL IN SYMPATHY WITH THE VALUES OF THE LAND CONTAINED WITHIN THE SYSTEM 6 M47 AREA AND THE REGIONAL PARK CONCEPT (SEE FIG 11).

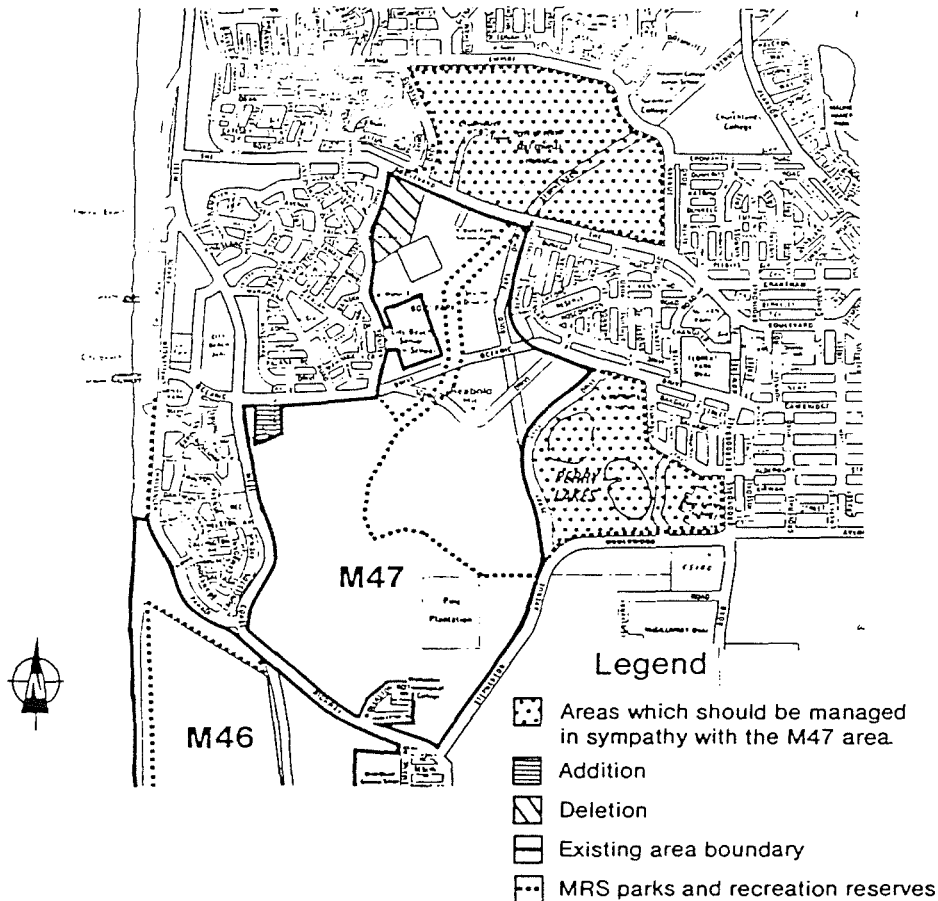


Figure 11

Management areas and possible modifications to the boundaries of System 6 area M47

The Authority's examination of the M47 area has shown that the original (1927) concept and extent of Bold Park is a major asset to the people of Perth.

RECOMMENDATION 10

GIVEN THAT THE ORIGINAL AREA HAS HAD VARIOUS DELETIONS AND ADDITIONS OVER THE YEARS, THE ENVIRONMENTAL PROTECTION AUTHORITY RECOMMENDS THAT THE PERTH CITY COUNCIL SHOULD REVIEW THE BOUNDARIES OF BOLD PARK IN THE LIGHT OF CURRENT COMMUNITY EXPECTATIONS AND ANTICIPATED FUTURE NEEDS.

The Authority noted that minor alterations to the M47 area may also be desirable, these include the addition of a small area near Saint Brenden Drive and the deletion of the bowling club and retirement village in Kalinda Drive (see Fig 11).

Discussion on these possible modifications should be held with the Perth City Council prior to any formal decisions being taken on the modified boundary of the M47 area.

Whilst the Authority noted that Perth City Council has adopted limited management objectives for portion of the M47 area, it believes that there is a need for an overall management plan incorporating the whole M47 area. This management plan could include objectives and strategies which will permit the existing values of the area to be maintained and enhanced, including the implementation of the Regional Park Concept as recommended in the System Six Report.

Accordingly, the Environmental Protection Authority encourages the Perth City Council, with the assistance of relevant Government agencies, the public and environmental groups, to prepare a management plan for the M47 area. This plan could reflect the possibility of some degraded lands within the area (such as the old drive-in site or the turf farm) being used for activities compatible with the intent and objectives of the Regional Park Concept.

In examining the M47 area and making the various conclusions and recommendations contained in this report, the Authority decided that it was also necessary to examine the adjacent M46 area to the south. These two areas are environmentally complementary.

The Authority noted that there are substantial areas of remnant vegetation on land adjacent to the M46 area which add to the existing values of the M46 area. (see Fig 12).

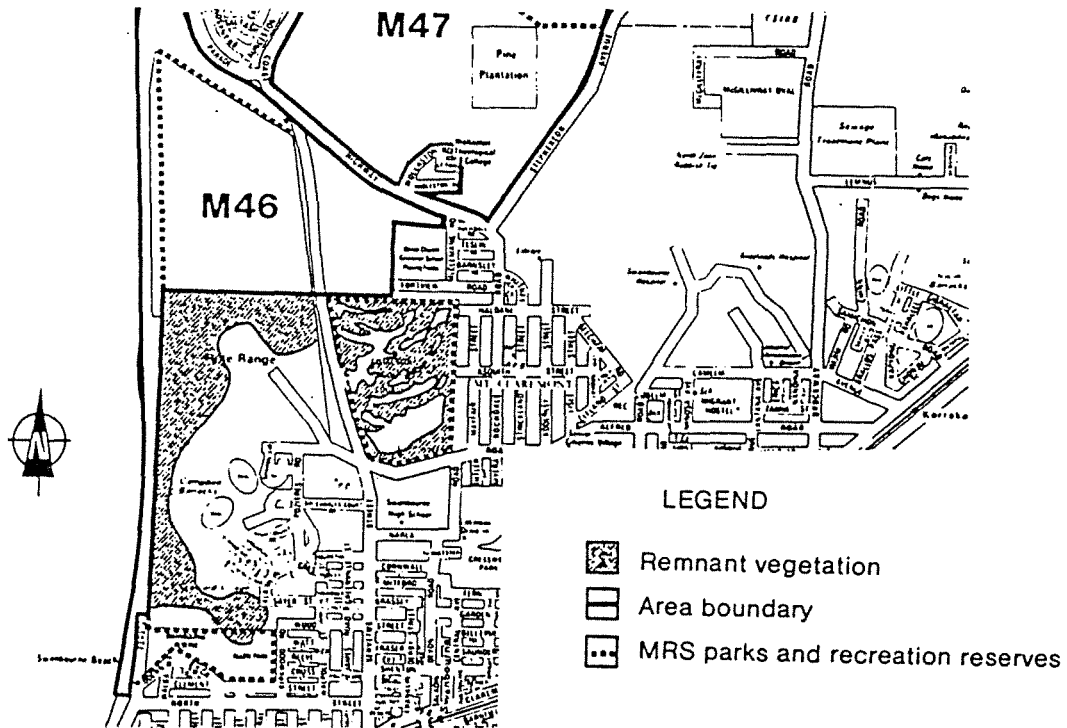


Figure 12

Remnant native vegetation on lands adjacent to System 6 recommendation areas M46

These stands of remnant vegetation primarily occur on Commonwealth land (used for Army facilities and for the rifle range) and within the Cottesloe Golf Course area which is a C Class Reserve for Recreation and vested in the City of Nedlands.

Portions of these areas possess environmental and recreation values in their own right including substantial stands of remnant vegetation which is related to the Quindalup Association.

The golf course is a use which is consistent with the objectives of the Regional Park Concept and is reserved in the Metropolitan Region Scheme for Parks and Recreation.

RECOMMENDATION 11

THE AUTHORITY RECOMMENDS THAT THESE AREAS SHOULD BE MANAGED BY THE COMMONWEALTH, THE NEDLANDS CITY COUNCIL AND THE COTTESLOE GOLF CLUB, IN SYMPATHY WITH THE VALUES OF THE LAND CONTAINED WITHIN THE SYSTEM 6 M46 AREA AND THE REGIONAL PARK. (SEE FIG 13).

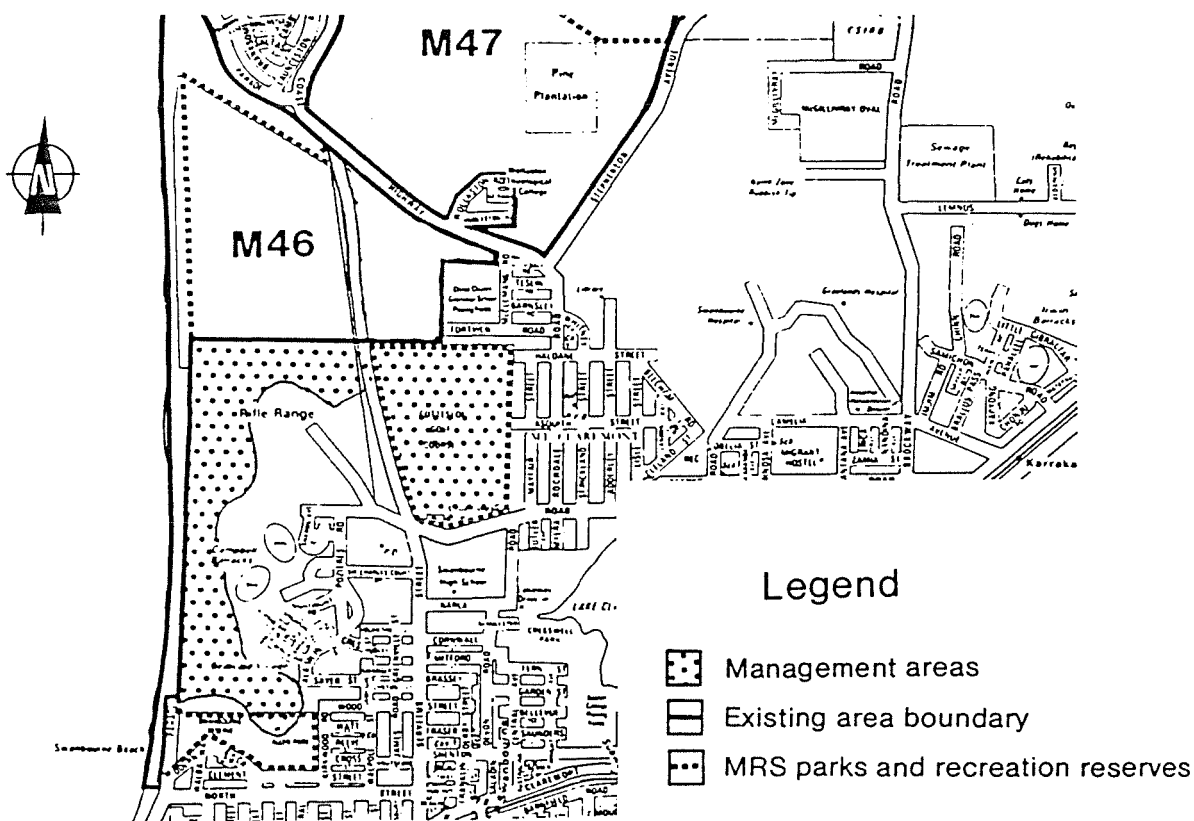


Figure 13

Areas which should be managed in sympathy with the System 6 area M46

In viewing the M46 area, the Authority noted that the area south of Rochdale Road and east of West Coast Highway is zoned 'Urban' in the Metropolitan Region Scheme and 'Residential' (R20) in the City of Perth Planning Scheme.

It is understood that it is Perth City Council Endowment Land. The situation with this land is therefore similar to that of the Endowment land within the M47 area and Lot 1. Accordingly, the Authority believes that it should examine the section of M46 area south of Rochdale Road and provide comment.

The land comprises about 37 ha and is well covered with remnant native vegetation. The general value of the area is described in the System Six Report (Recommendation M46). Since that recommendation was made (1983), the Servetus Street extension (now called West Coast Highway) has severed this area from the larger body of the M46 recommendation area. It is now physically isolated, smaller in size and subject to degrading edge effects from adjoining roads and development. Accordingly, the longterm environmental viability of this area has been considerably reduced and may be limited. The area does not appear to be managed or used to the same degree as lands in the M47 area.

The Authority notes that this area has some conservation value, but that vegetation associations it contains are generally well represented elsewhere in the balance of the M46 area, in the M47 area or in other reserves. Its environmental values, especially with respect to habitats for avifauna (birds) would be complementary to the values of the remainder of the M46 area and the M47 area.

IN VIEW OF THE CURRENT VALUES AND LIMITED LONGTERM VIABILITY OF THE M46 AREA SOUTH OF ROCHDALE ROAD, THE AUTHORITY CONCLUDES THAT ITS DEVELOPMENT MAY BE ACCEPTABLE IF CARRIED OUT IN AN ENVIRONMENTALLY SENSITIVE MANNER. AREAS OF HIGHER CONSERVATION VALUE SHOULD BE PROTECTED IN AN OPEN SPACE SYSTEM. WHILST ANY DEVELOPMENT WOULD REDUCE THE AMOUNT OF REMNANT VEGETATION IN THE LOCALITY, IT MAY NOT BE SIGNIFICANT IF DECISIONS ARE MADE WITH RESPECT TO THE M47 AREA WHICH RESULTS IN PROTECTING THE EXISTING ENVIRONMENTAL VALUES OF THAT AREA.

Formulation of proposals in the southern section of M47 and the eastern section of M46 for development or conservation/recreation, will be the responsibility of the Perth City Council. Whatever plans are finally proposed, they will need to be referred to the Environmental Protection Authority.

In the recommendation for the creation of a Regional Park for the M46 & M47 areas, the question of management was raised. At present both areas suffer from a lack of management resources to protect and fully utilise their present values. It is not only the lack of management which is a problem but also the lack of coordination of planning and management effort.

As the integrated Region Park for the M46 & M47 area involves two local authorities and numerous land owners/managers, the Authority believes that it is essential that the management of each section is properly integrated with adjacent sections and the Regional Park as a whole.

RECOMMENDATION 12

THE AUTHORITY RECOMMENDS THAT AS A MATTER OF PRIORITY, THE INVOLVED AGENCIES INVESTIGATE THE ESTABLISHMENT OF A SUITABLE MANAGEMENT ARRANGEMENT (INCLUDING PUBLIC REPRESENTATION) TO OVERVIEW AND CO-ORDINATE THE OVERALL MANAGEMENT OF THE REGIONAL PARK. IN THIS REGARD, THE ENVIRONMENTAL PROTECTION AUTHORITY IS PREPARED TO ASSIST WITH ANY INITIAL CO-ORDINATION REQUIRED.

RECOMMENDATION 13

THE AUTHORITY RECOMMENDS THAT A PRIORITY MATTER FOR CONSIDERATION BY WHATEVER ARRANGEMENT IS SUBSEQUENTLY AGREED UPON TO MANAGE THIS REGIONAL PARK, IS TO UNDERTAKE A DETAILED REVIEW OF THE BOUNDARIES OF THE PARK AND TO MAKE A RECOMMENDATION ON THAT MATTER TO THE ENVIRONMENTAL PROTECTION AUTHORITY.

7. CONCLUSION

The Authority has examined the proposal by Bond Corporation Holdings Ltd to develop a residential estate on Lot 1 Stephenson Avenue, City Beach.

Lot 1 is located within the area boundary of the System Six Recommendation M47, the whole of which has been identified as constituting open space of regional significance.

In assessing the proposal, the Authority viewed the environmental implications of it being implemented;

- . in terms of the values of Lot 1 itself;

the values of Lot 1 as being part of a larger remnant bushland (M47 area), and
- . the specific impacts it may have on land contained within the M47 area in the context of its existing condition, use and regional

THE AUTHORITY CONCLUDES THAT:

- . THE PROJECT AS PROPOSED MAKES NO SIGNIFICANT CONCESSION TO THE OBJECTIVES AND INTENT OF THE SYSTEM SIX RECOMMENDATION FOR THE AREA, AND
- . THERE IS A NUMBER OF INDIVIDUAL IMPACTS WHICH CUMULATIVELY WOULD UNACCEPTABLY REDUCE THE CONSERVATION, RECREATION AND EDUCATION VALUES OF THE AREA.

ON THIS BASIS, THE AUTHORITY CONCLUDED THAT THE DEVELOPMENT AS PROPOSED IS NOT ENVIRONMENTALLY ACCEPTABLE.

IN MAKING THIS CONCLUSION, THE AUTHORITY BELIEVES THAT THE UNDESIRABLE IMPACTS OF THE PROPOSAL COULD BE AMELIORATED IF THE PROPOSAL WAS MODIFIED BY:

- . LIMITING THE SUBDIVISION TO THE AREA SOUTH OF THE RIDGELINE WHICH GENERALLY RUNS EAST-WEST ACROSS THE NORTHERN SECTION OF LOT 1;
- . RELOCATING PUBLIC OPEN SPACE TO SEPARATE THE DEVELOPMENT FROM THE BALANCE OF THE M47 LAND;
- . ENSURE THAT BUFFER AREAS ARE WITHIN LOT 1, AND
- . RE-ARRANGE SUBDIVISION ROADS TO THE PERIPHERY OF THE SITE.

THE AUTHORITY CONCLUDES THAT WITH THE IMPLEMENTATION OF THE ABOVE CHANGES, THE PROPOSAL WOULD BE MORE ENVIRONMENTALLY ACCEPTABLE.

As a result of undertaking the assessment of the proposal, the Authority saw the need, and consequently undertook an examination of the System Six Recommendations M46 and M47 in the regional context, including various proposals within these areas which, if implemented, may have the potential to adversely impact upon the values of these areas.

The Authority reviewed the proposals and has made the following conclusions:

- . the M47 area constitutes open space of regional significance as originally stated in the 1983 System 6 Report (and probably more so today);
- . the Authority would be unable to support all of the five proposals within the M47 area as their cumulative impact would be considerable and environmentally unacceptable;
- . the Western Suburbs Highway if built, would be likely to have a significant and adverse impact on the M47 area and accordingly should be removed from within the M47 area;
- . Underwood Avenue should not be extended across the M47 area to West Coast Highway as it would be likely if built, to significantly reduce the present values of the M47 area;
- . Perth City Endowment Land within the M47 area should not be substantially developed, as this would (in a similar way to the impact of Lot 1) be likely to reduce the existing values of the M47 area;
- . any connection of Stephenson Avenue through the M47 area to West Coast Highway would be likely to reduce the values of the M47 area;
- . no roads should be planned or constructed through the M47 area without referral to the Authority;
- . for reasons of community safety, it may be justified to realign West Coast Highway by intruding into the M47 area, however such intrusion will reduce the values of the M47 area;
- . land which may be excised from M47 by the possible realignment of West Coast Highway, could be used for residential purposes on an exchange basis for privately owned land within the M47 area;
- . portion of the M46 area south of Rochdale Road may have limited longterm environmental value and accordingly may be available for development if it is carried out in an environmentally sensitive manner;
- . a Regional Park should be established encompassing the M46 and M47 areas;
- . land adjacent to the M46 and M47 areas containing remnant vegetation should be managed in sympathy with those areas;
- . investigations into the establishment of a management body for the Regional Park should be undertaken;
- . modifications to various Planning Schemes should be undertaken to formalise any decisions of Government or the Cities of Nedlands and Perth resulting from this report.

Various recommendations are made regarding these conclusions.

THE ENVIRONMENTAL PROTECTION AUTHORITY HAS CONCLUDED OVERALL, THAT IF THE RECOMMENDATIONS CONTAINED WITHIN THIS REPORT ARE ACCEPTED AND IMPLEMENTED, THE EXISTING VALUES OF THE M46 and M47 AREAS IN THE REGIONAL CONTEXT WILL HAVE BEEN ADEQUATELY PROTECTED AND THAT IN PARTICULAR, THE ESTABLISHMENT OF A REGIONAL PARK OVER THESE AREAS WILL BE A MAJOR ACHIEVEMENT TOWARDS SECURING, FOR FUTURE GENERATIONS, CONSERVATION AND RECREATION LANDS WITHIN THE INNER METROPOLITAN AREA.

APPENDICES

- Appendix A Summary of issues raised in public submissions
- Appendix B Proponent's response to issues raised in public submissions
- Appendix C System Six Recommendation M47
- Appendix D System Six Recommendation M46
- Appendix E EPA letter on Underwood Avenue Extension
- Appendix F Nedlands City Council letter of 13 November 1979
- Appendix G DCE letter of 28 December 1979
- Appendix I EPA letter of 23 April 1987 to Peet and Co
- Appendix J EPA letter of 23 April 1987 to City of Nedlands
- Appendix K EPA letter of 23 April 1987 to City of Perth
- Appendix L EPA letter of 23 April 1987 to State Planning Commission
- Appendix M EPA letter to all parties who sought advice about Lot 1 and the
System Six Recommendation M47

ISSUES RAISED IN THE SUBMISSIONS ON THE PER-KNIGHTSBRIDGE ESTATE

1. (a) A number of respondents disagree with that portion of the PER which indicates that Lot 1 has no environmental significance in that the flora and fauna are not outstanding, and that they can be found elsewhere. They draw attention to section C1 and Appendix D of the PER and also the extract from System 6 study (Appendix E) which clearly indicate that the flora and fauna are rich and diverse.
- (b) There are many who believe that the section on fauna is inadequate because:
- it documents vertebrate fauna by inference, drawing on an old study of the area between the Moore and Swan Rivers.
 - no mention at all is made of invertebrates.
 - no attempt has been made to determine which reptiles, mammals or amphibians are actually on the site which makes it difficult to make an informed estimate of the conservation value of the site.

A current ecological study of greater Bold Park has recorded 24 species of reptiles, 1 species of native mammal and 3 species of frogs so far. The PER suggests that fewer species would be found on the site.

One submission identified 22 more species of birds than contained in Appendix D of the PER (Attachment 1) and also provided another list (Attachment 2) which contains 70 species. The submission said that a total of 78 birds are therefore listed for this area. Of these the PER mentions 40.

One submission referred to a study of ground-dwelling invertebrates, some 200m from the subdivision site, which indicates a diverse invertebrate fauna with diversity values as high as those observed in the jarrah forest at Dwellingup or Manjimup.

- (c) A number of submissions pointed out that the PER based conservation value of flora on a very narrow set of criteria ie rare or endangered species only. They expressed the view that this led to an under estimation of the value of Lot 1. Other criteria which should have been included are the variety of plant communities, number of species, degree of disturbance, replication of communities elsewhere.
- (d) Many submissions were concerned that the report did not set biological issues in a regional context. For example, that Bold Park and surrounding lands are the largest remnant of coastal bushland in Perth.
- (e) Some submissions identified Banksia menziesii, and heath which was in good condition and a less common vegetation, as requiring protection. They expressed the opinion that banksias and their surroundings should not be disturbed and that heath vegetation on the north facing ridge and ridge top should be retained in public open space.

2. The PER did not consider the land swap option adequately.
3. Options of other uses for the site were not adequately addressed by the PER nor did it give any criteria for the preferred option or why some apparently suitable alternatives were dismissed.
4. No reference was made by the PER to the importance of the size of conservation reserves.

Submissions expressed the view that the importance of Bold Park bushland (bounded by West Coast Highway, Oceanic Drive, Perry Lakes Drive, Stevenson Avenue and Rochdale Road including Lot 1) lies in its size and compact shape. They argued that:

- (i) this enabled the bushland to support and maintain a rich diversity of plants and animals in a complex ecosystem not found elsewhere;
- (ii) the compact shape of the bushland aided the management of the weed and feral animal infestation and fire impacts due to the low perimeter/area ratio.

Several submissions regarded Lot 1 as a buffer to Bold Park helping to protect the inner bushland from the spread of weeds and fire.

5. Submissions also expressed concern that the proposed development would result in an increased perimeter/area ratio of the Park and increased edge effects (rubbish dumping, weeds etc) which will lead to a reduction of the conservation value of the Park and make management of the Park more difficult.
6. The covenant in the PER requiring residents to retain native vegetation is not assured. An example is Crestwood Estate Thornlie where the covenant requiring residents to retain native trees was totally ineffective despite a committee to administer such matters. As a result of the development of Lot 1 for residential purposes, most native vegetation will be removed. Also, reticulation and use of fertilizers will probably kill several susceptible native species. In addition works for utilities, infrastructure and levelling would cause major loss of existing vegetation.
7. The PER asserts that Lot 1 has no value as open space. Submissions stated that it has value as one of the last wild havens in Perth with opportunities for walking, bird-watching, wildflower viewing, jogging, panoramas and peace and quiet. The adjacent bushland together with Lot 1 has all the values expressed above.
8. The PER indicated that groundwater would be used to supply water for reticulation and for artificial lakes. Submissions were concerned that the draw of the estate would further lower the levels of Perry Lake and Camel Lake resulting in adverse ecological damage.
9. PER assurances in regard to controls minimising edge effects are unrealistic eg fences will not deter cats from entering Bold Park and destroying wildlife. The overall edge effects have not been adequately addressed.
10. The 'buffer zone' referred to in the PER will not be between the site and Bold Park but in Bold Park. The impact of the buffer zone as

proposed is considerable and is strongly opposed. Submissions state that the buffer zone must be located within Lot 1 and not within Bold Park.

11. In relation to bushfire protection, a submission indicates that a low fuel buffer zone and hard access is required along the northern and western boundaries of the area to be subdivided. The location of the low fuel buffer should be within the proponent's land ie the responsibility lies with the proponent.
12. Because of the proximity of the proposed development to an ethnographic site (Aboriginal site) at the junction of Stephenson Avenue and West Coast Highway, one submission suggested the proponent be advised to consult Aboriginal people at Nyoongah Community Cultural Complex regarding the proposal and the significance of this site.
13. Much concern was expressed in regard to the development which would have a severe visual impact on Bold Park from the Reabold Hill lookout, walk trails and within other areas of the Park. The amenity of large areas and existing values of Bold Park will be reduced by this visual impact.
14. There was also concern that the housing estate would result in:
 - (a) increased incidence of fires in Bold Park.
 - (b) destruction of Bold Park's wildlife by domestic animals (particularly cats).
 - (c) increase in rubbish dumping.
 - (d) increase in the introduction of exotics and weeds.
 - (e) increase in human impact, through use and misuse.
 - (f) use of pesticides.
 - (g) increased noise levels.
15. The PER regards Camel Lake as unworthy of preservation yet the lake has an excellent stand of Eucalyptus rudis and the understorey at the northern end is of a good standard. It is a significant Perth wetland.
16. With regard to reference to the Wycherley report as authority for the proposition that 'the University of WA land was rejected for incorporation into the Park largely because of its downgraded condition and poor conservation value' submissions disagreed with this view because the 'Wycherley Report' was done at a time when it was proposed to extend Underwood Avenue further west, and recommendations in this report were made on the basis that this would occur. As the extension is no longer supported, the question of the value of the subject land and the desirability of it being incorporated with Bold Park could be reviewed.
17. The PER pointed out what the proponent felt were errors or anomalies in the System 6 Study particularly in relation to area boundaries.

However, the proposal clearly contravenes the System 6 Recommendations. The whole of the System 6 Recommendation is for a regional park. Accordingly, the proposal should not be allowed to proceed.

18. The PER indicated that the land could not be given back to the community because shareholders would be disadvantaged. The report however did not consider the disadvantages to the people of Perth if the residential development proceeded. The matter also relates to commercial risk and is unrelated to environmental impact.
19. Submissions expressed the view that if the current visual and environmental characteristics of Bold Park are to be preserved, the Knightsbridge subdivision cannot be supported in its present form.

They identified modifications which should be incorporated into the development if the subdivision is to proceed. The main issues are:

- (a) Development in the north western corner of the proposed subdivision will significantly intrude on the Park from visual and ecological considerations as the north west corner generally slopes down to the north from the east/west ridge which extends from the subdivision into the Park. Because of this intrusion of the subdivision into the Park, it is recommended that the north west corner be public open space to retain the integrity of that section of the Park.
 - (b) from visual considerations, it is requested that the high area in the southern section of the site should be retained as naturally vegetated Public Open Space.
 - (c) for the reasons of intrusion (as indicated in (a)), the road connection between the Bond subdivision and any Perth City Council residential area should be on the southern side of the aforementioned ridge.
 - (d) use of dark coloured roofs of a green, brown or other colour compatible with tree canopies will reduce the visual impact of the subdivision.
20. Comment about PER in general:

- (a) it is a biased document which argues Bond Corporation's case for the subdivision;

Some examples given in submissions are:

- The first sentence of the PER reference is made to Lot 1 as being 'uncleared land' which suggests that the land needs clearing. The definition of the land is in question. Is it a sanctuary for flora and fauna? Is it a refuge for people who live in a highly urbanised environment? Is it one of the last vestiges of wilderness in the metropolitan area?
- In the PER the proposed subdivision is described as 'highly appealing'. Houses built on a site where there was previous natural bush would be an extremely ugly site to many people.
- The PER does not give detailed consideration to the arguments against the residential option. It was on account of public

outcry that the Minister decided to demand a PER. The PER was obliged therefore to answer its opposition.

- The PER states in an offhand way that the land is of little environmental significance without answering the question of its relationship to Bold Park and its importance to the people of Perth. Because this is not answered, the PER does no more than restate the Bond case in commercial terms.
- The PER places emphasis on the perceived need for high quality residential development in the region. Development of Lot 1 may offer an elite, wealthy few in our society a place to live. It may be argued that this minority already possess the means to live where they please at the present time, therefore the need is hardly pressing.
- The PER mentions purchase of the site in 'good faith' for development. Both UWA and the proponent (Bond Corporation) were fully informed of the perceived conservation value of the land before, during and after sale of Lot 1. Both parties entered into the contract knowing that the EPA were concerned at the proposed land use and that residential development was not inevitable. Thus the purchase of the land was speculative. Maintaining that residential development of Lot 1 was in 'good faith' is questioned.

(b) Submissions expressed the view that the report had inadequacies.

For example submissions stated that:

- It fails to properly assess the impact of the project on the fauna and flora of the area because it does not collect or present adequate baseline data. The report only gives vague generalities as to which fauna could be expected to occur.
- The report fails to comply with the requirements of the EPA listed in appendix A that the fauna should be assessed.
- No mention is made or attention given to the land use on the northern boundary of Lot 1 ie Bold Park. The requirements of the PER have not been met here.
- The PER states that only 230 conspicuous trees are on the site. A count on 12/12/87 determined that there were in the order of 1300 trees.

(c) Submissions expressed that the report had some incorrect assumptions.

For example, submissions stated:

- From the PER, it is inferred that relevant authorities (Perth City Council and Nedlands City Council) favour residential development of the site. However, the Nedlands Council has never stated that it approves urban development of the site.

- The assumption that a previous development which was not part of the recommendations of the System 6 study sets a precedent (p. 36 PER) is absurd.
 - Statements on (p 44 PER) in reference to mobile fauna being able to move to other areas have never been scientifically proved and are intuitively wrong. The assumption that parts of ecosystems have a vacuum into which displaced individuals move like human refugees, shows a total lack of understanding of natural populations.
21. A large number of submissions said that they would like to see Bold Park together with adjacent natural vegetation areas including the subject land, preserved for future generations as one large reserve.
 22. Many submissions emphasised that the overall environmental value of the System 6 M47 area is considerable and concern was expressed by several submissions that any erosion of this large bushland area will in itself reduce its overall value. In addition, it will set a precedent for possible additional areas within the Recommendation boundary being developed for housing and so further eroding its value.
 23. Submissions in support of the proposal were received. These were primarily proforma submissions and raised the following points:
 - (a) Bond Corporation purchased the land from the University of WA in a fair and open manner at public tender.
 - (b) At the time of purchase, it was clear that the land was zoned for purposes including residential.
 - (c) The proposed 'Knightsbridge' development is supported on the ground of justice and complemented by the information in the PER that there are no rare or endangered flora and fauna on the site whose survival would depend on the land being left in its present state.
 - (d) In view of the fact that any form of development necessarily involves a change in an existing environment, the nature of the proposed development is a satisfactory balance between man and nature.
 - (e) The developer demonstrates a commitment to a high quality environment by the 'benched' form of land preparation, assurance that as much as possible of the conspicuous existing vegetation will be retained and the inclusion of building covenants (including the envelopes on each lot).

Other supportive submissions stated that:

- The development is a responsible one and should be allowed to proceed.
- Bond Corporation and PCC should be allowed to develop their own land. Bold Park and Perry Lakes plus many additional parklands are more than adequate for the area. People as well as snakes need a place to live.

- The development should be allowed to proceed provided that the remainder of the bushland is left untouched.
- The proponent should be allowed to develop the land in accordance with the terms and conditions when originally purchased.

BOND CORPORATION HOLDINGS LIMITED
RESPONSE TO ISSUES RAISED
IN PUBLIC SUBMISSIONS ON THE
KNIGHTSBRIDGE PUBLIC ENVIRONMENTAL REPORT

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TABLE OF CONTENTS

Page

SUMMARY

1	INTRODUCTION	1
2	CONSERVATION STATUS	3
3	EDGE EFFECTS	7
4	VISUAL IMPACTS	9
5	PLANNING PRECEDENTS	10
6	GROUNDWATER IMPACTS	11

APPENDICES

A	Summary of public submissions
B	Response to public submissions
C	List of proponent's commitments
D	EPA press statement
E	<u>West Australian</u> article, 25 April 1987
F	Department of Conservation and Environment letter

SUMMARY

This document has been prepared in response to a summary of submissions received from the Environmental Protection Authority (EPA) regarding the Knightsbridge Public Environmental Report (PER).

The responses to submissions are made in total reliance upon the accurate and comprehensive nature of the summaries compiled by the EPA of the submissions it received. The EPA has not provided Bond Corporation with the full text of any of the submissions made by the opponents of the Knightsbridge proposal. Indeed, the EPA has refused Bond Corporation access to the submissions despite request, and despite the fact that the preface to the PER (which preface was prepared by the EPA and inserted into the PER at the direction of the EPA) states that the 'submissions will be treated as public documents, unless confidentiality is requested'.

As a consequence of not being provided with the full text of the submissions made against its proposal, Bond Corporation considers that its ability to adequately and comprehensively answer those submissions is impeded, and it has thereby been denied natural justice.

The development of Lot 1 Stephenson Avenue in accordance with its zoning has been allowed to become an issue in the local press, where rational explanation of the legitimate entitlement of the owner is insufficient justification to opponents of the project.

The proponent recognizes that the Environmental Protection Act, 1986 does enable the EPA to determine whether a development has undue environmental impact and should therefore be prevented, regardless of ownership or zoning. It is obliged to make its finding known to the Minister for Environment. The proponent has responsibly acquiesced to the due environmental approval process.

In 1978, the EPA (then the Department of Conservation and Environment) was made aware of the Nedlands City Council (NCC) town planning changes to enable development of Lot 1, and confirmed in writing that it did not perceive any environmental difficulty with the proposed new scheme.

The present EPA, at outset of this project in June-August 1987, also considered that the project only warranted Notice of Intent level assessment. Pressure groups convinced the Minister for Environment otherwise.

Bond Corporation recognizes the following as being the major environmental issues to be responsibly addressed regarding its Knightsbridge development:

- . conservation status of the property
- . effect of the project on neighbouring land
- . visual impact in the general area of development
- . planning status of the land and precedents
- . groundwater impact of the development.

These issues have all been addressed in the PER and are further amplified here in response to specific objections outlined in the summary of submissions.

The proponent finds that there are no grounds to preclude or modify the development in respect of any of the five items nominated above.

There have been three emotive objections to the project. These are:

- . It is contrary to the **Recommendations** of the System 6 Study.
- . It is one of the last or the biggest remaining example of coastal wilderness habitat in the Perth metropolitan area.
- . The EPA warned prospective purchasers that they might be at risk in endeavouring to develop the land according to its prescribed zoning.

The PER and this document show that the Recommendations of System 6 on Bold Park could not and did not refer to Lot 1 Stephenson Avenue. The proponent also shows the System 6 Study to have been substantially in error in regard to many aspects of its appraisal of Bold Park; one of these was to include both Lot 1 Stephenson Avenue and Perth City Council residential land in its 'area boundary'.

Regardless of this finding, this document confirms that Recommendations of the System 6 Study historically have been applied by convenience rather than by rigorous prescription.

In regard to claims that Bold Park is the last or biggest remnant of coastal bushland in Perth, this document demonstrates these claims to be grossly fallacious. The metropolitan area includes the Neerabup and Yanchep National Parks, together with reserves at Lakes Cooloongup/Walyungup, Woodman Point, Lake Joondalup and Triggs, all having a similar habitat and totalling an area of approximately 8,000 ha.

Bond Corporation did not receive any advice that indicated it was taking financial risk in purchasing the land. This aspect is reviewed in further detail under point 20 a) in Appendix B of this document.

Having reviewed the summary of submissions, Bond Corporation can find no reasons for the development to be modified or restrained.

1 INTRODUCTION

On 4 December 1987, Bond Corporation (the proponent) released a Public Environmental Report (PER) for public comment over an eight-week review period. During this time, members of the public and government agencies were requested to make submissions to the Environmental Protection Authority (EPA) with regards to the PER, so that their comments could be considered by the EPA in its assessment of the proposal.

Submissions received by the EPA, including those received during a three-day extension to the review period and those received late, included comments both for and against the proposal. These were summarized by the EPA and forwarded to the proponent for a response. The summary of issues raised in the submissions is presented in Appendix A. Appendix B provides a specific response to each item raised in the EPA summary, and a revised list of the proponent's commitments to environmental management, taking into account the issues presented in this document, is included in Appendix C.

The responses are preceded by an overview of the major issues as perceived by the proponent; these are:

- . conservation status
- . edge effect
- . visual impact
- . planning precedent
- . groundwater impact.

A request was made by the proponent for a copy of each of the public submissions, but in accordance with current EPA practice this request was denied. Copies of four submissions - from the Perth City Council (PCC), the Water Authority of Western Australia (Water Authority), the Bush Fires Board and the Western Australian Museum - were obtained with kind permission of those respondents. EPA assessment officers were available to provide assistance with interpretation of the summary.

Development of Lot 1 Stephenson Avenue became controversial at the time the University of Western Australia (UWA) offered the site for sale by public tender in April 1987.

On 24 April, the EPA released a press statement (Appendix D), which resulted in an article in the West Australian on 25 April (Appendix E).

The West Australian article indicated that the possibility of two roads through the park gave the EPA concern. It also stated that the development of both the UWA land and the PCC land remaining to the south of Bold Park depended on those roads and that they needed to be assessed before the EPA would allow development to proceed. The EPA press release stated in part that the UWA land 'forms part of the Bold Park area which is covered by a System 6 recommendation and advocates the area's value as a Region Park'.

Bond Corporation was the successful tenderer. Subsequent to this, The Chronicle suburban newspaper carried a remarkably factual article under the controversial

front-page headline that read 'EPA slaps stop order on plans' and went on to state:

- . that the site was next to Bold Park;
- . that the EPA wanted a co-ordinated overall plan for roads and residential subdivision.

In quoting the EPA Chairman, The Chronicle article stated:

The EPA did not want detailed plans, just enough information to see what the various proposals 'add up to' in an area designated for preservation in the System 6 report.

'The narrow question is really should there be housing development in a System 6 area and should there be two major roads through Bold Park', Mr Carbon said.

Over the past year, the proposal has received considerable coverage in the local suburban press and, to a much lesser extent, the State circulation newspapers. The media coverage has served to highlight the following points:

- . The proposal is very much a local issue.
- . Press bias in favour of 'Friends of Bold Park Bushland' in order to create sensationalism has lead to a distortion of some of the issues associated with the proposal and an inflated perception of public opinion against the proposal.

It appears that anomalies in the M47 section of the System 6 Study were first formally brought to the attention of the EPA by Tony Lennon of Peet & Co. on behalf of the UWA in two separate letters dated 16 April 1987. The EPA replied to these letters on 23 April 1987.

Bond Corporation wrote to the EPA on 7 July 1987 indicating that it had found important anomalies in the System 6 Study relating to the site and that it had facilitated the liaison between those parties that the EPA had requested for the previous two years to join with it in resolving the environmental issues relating to Bold Park. However, once arranged the EPA declined to participate in the meetings and they were subsequently cancelled. Bond Corporation letters of 10 and 24 August show that the EPA had no major reservations regarding the intrinsic conservation status of the land and that it was aware that the UWA land had been located within a System 6 area boundary by mistake.

Notwithstanding this, the EPA advised Bond Corporation on 7 September 1987 (in a letter dated 31 August) that the project would require formal assessment and that the EPA would advise the level of that assessment. At that time, Bond Corporation considered that its original Notice of Intent (NOI), together with supporting information that might be required to amplify the subject for the EPA, would be satisfactory. It is understood that the EPA recommended to the Minister for Environment that the project be evaluated at the NOI level; however, the Minister overruled that decision and required that the project be formally addressed at the PER level of assessment. Bond Corporation considered that the objections raised by the public and supported by the Minister were insufficient and inappropriate to warrant their upholding. However, it has not been possible to appeal against the Minister's decision or obtain access to the actual objections lodged. As a result, the PER has been prepared and has been subject to public display, evaluation and submissions. The submission summaries are addressed throughout this document.

2 CONSERVATION STATUS

As a consequence of the proposal, there has been much debate on whether:

- . the recommendations of the System 6 Study for area M47 apply to the site;
- . the site was considered in the assessment by the Ecology Working Party convened by the PCC and chaired by Dr P.R. Wycherley;
- . development of the site for residential subdivision should be constrained by recommendations of the System 6 Study and the Wycherley Report.

Despite the interesting nature of this debate, the principal issue that must now be determined is whether the site can be conserved in its present condition or is obligated to development. As the site has been zoned for some form of development for many years, a decision to preclude development would overturn routine and long-established planning procedures. Implicit in this revolutionary proposition is the direct cost of conservation and whether this would be better directed to other areas, i.e. would the \$40 million required to purchase residual bushland adjacent to Bold Park be better spent by government on improving existing conservation areas.

It is clearly stated in the PER that the site has no environmental significance in terms of flora and fauna, and little conservation, recreation or education use. This conclusion is based on the evidence available that indicates the site does not contain any plants or animals that are considered so rare or endangered that conservation of the site is necessary for their preservation. Furthermore, it is argued that all habitats occurring within the site are considered to be sufficiently well represented in the adjacent Bold Park and other reserved areas in the metropolitan region, such as Kings Park. In addition, national parks at Neerabup (1,078 ha) and Yanchep (2,799 ha) are within the metropolitan area and those at Moore River (17,543 ha) and Yalgorup (11,740 ha) are immediately adjacent to the metropolitan area, all of which consist predominantly of coastal bushland. A high proportion of Perth's residential suburbs are closer to these parks than they are to Bold Park.

Many respondents appear to have confused Lot 1 with greater Bold Park, thereby overstating the significance of the site. In 1927, the PCC set aside a large area of land for recreational use by the public 'forever'. The original area was subsequently reduced through the development of the Wembley Golf Course; Perry Lakes; residential subdivisions in Wembley Downs and Floreat; and a high school, water reservoir, drive-in theatre and retirement village. The terms of reference for the PCC study of Bold Park in 1974 recognized the alienations made to the park, encompassed considerations of PCC land right down to Rochdale Road, but quite properly excluded consideration of the UWA land. In 1976, approximately 99 ha of bushland was added as a result of recommendations made by the Ecology Working Party.

Interestingly, the PCC has not yet put in place any covenants or reserves on the titles to this land, thereby inadvertently perpetrating the confusion that exists over the boundaries of Bold Park.

The following land use areas are present within Bold Park:

- . an area predominantly of bushland (excluding Lot 1 and the PCC endowment land), containing walking and bridle trails, look-out facilities at Reabold Hill, and a grassed area and ranger's residence in the north-east corner;
- . City of Perth Golf Complex (Wembley Golf Course);
- . an area between The Boulevard and Oceanic Drive, which contains some bushland and a bowling club, retirement village, water supply reservoir, swimming pool, drive-in theatre and high school, plus various grassed areas, including an old quarry used occasionally as an amphitheatre;
- . an area bounded by Oceanic Drive, Brookdale Street, Underwood Avenue, Alderbury Street and Perry Lakes Drive, which consists of playing fields, the Perry Lakes Sports Stadium and facilities and Perry Lakes, with the balance being parkland cleared for passive recreation.

Statistics for the use of the bushland section of Bold Park are not available, but observations by the City of Perth Planner indicate that usage has increased since the upgrading of some bulldozed fire-breaks to limestone walkways. The catchment for people using the bushland section of Bold Park is not known, but it is likely that most of them come from the surrounding residential areas, due to the nature of the recreational activities undertaken (mainly walking or jogging). Other areas of Bold Park and the Reabold Hill look-out would be expected to have greater usage and a larger catchment area, due to the range of sporting and recreational facilities provided. For specific conservation activities such as bushwalking and bird-watching, the bushland at Bold Park competes with other bushland and national parks within and adjacent to the metropolitan area.

Opponents to the proposal frequently refer to the size of the existing parcel of bushland as being one of its main attributes, quoting for example, 'that Bold Park and surrounding lands, is the largest remnant of coastal bushland in Perth' (Appendix A 1d). This argument ignores the following important points:

- . Limiting the area comparison to the inner metropolitan area conveniently ignores the large national parks consisting predominantly of coastal bushland that are appropriately planned and located within and immediately adjacent to the metropolitan area, such as those at Neerabup, Yanchep, Moore River and Yalgorup. These parks total 33,160 ha in area. As the majority of Perth people would require motor vehicle transport to visit Bold Park, these national parks are highly competitive alternatives. In many instances they are closer and offer greater environmental diversity than the bushland at Bold Park.
- . Size is only one factor contributing to conservation status; others that are considered to be more important include the variety of flora and fauna communities, the number of species, the degree of disturbance and the replication of communities elsewhere. In these aspects, the site is a poor comparison to the existing conservation areas.
- . Large areas of coastal bushland that are not national parks still remain both north and south of the metropolitan region;
- . Even with the development of Lot 1 and the adjacent residentially zoned PCC endowment land, the remaining bushland will still be the largest remnant of coastal bushland in the inner Perth metropolitan area.

The summary of submissions (Appendix A) indicates technical criticism of the method by which the conservation status was determined. The approach adopted for the PER, wherein the site was checked for its potential to contain rare or endangered species and the replication of habitats in adjacent Bold Park and elsewhere was acknowledged, is still considered appropriate. The inference approach adopted for the vertebrate fauna, which involved drawing upon data from the Royal Australian Ornithological Union (RAOU) for bird information and from the Western Australian Museum faunal studies of the northern Swan Coastal Plain, was one recommended by officers of the Western Australian Museum at the time of preparing the PER.

It appears that some respondents to the proposal have used a similar technique for establishing probable species lists, i.e. drawing upon data from similar habitats elsewhere. This strengthens the argument for the replication of habitats elsewhere, particularly in the parks at the periphery of the metropolitan area. The exception to this approach was the submission from the Western Australian Museum, which included additional baseline data collected after the preparation of the PER. Discussions with the museum officers confirmed that their sampling sites were located within Bold Park and not on Lot 1. In fact, they were some distance from it.

As discussed in Appendix B, the variations in bird species can be accounted for by the use of different survey strategies, presuming of course that the submitted lists can be authenticated. In any event, no evidence has been presented that the additional bird species claimed for the park are rare or endangered, or depend specifically upon Lot 1 for migrating or breeding behaviour.

The development site and adjacent Bold Park are not environmentally unique or unusual in any respect other than that they are examples of coastal bushland located within the metropolitan area. As has already been discussed in this section, there are four national parks, as well as large areas of uncleared bushland, inside and immediately outside the metropolitan area that adequately represent coastal bushland. The national parks have been established to conserve flora and fauna and allow interaction with people in a controlled manner. Therefore, it is strongly arguable whether ecologically based conservation is an appropriate land use for Bold Park. Rather, it is argued that it would be better to keep Bold Park as a bushland park, similar to what it is at present, with only a secondary emphasis on conservation. This would allow the park to be an alternative to the adjacent passive and active recreation facilities, and would permit people to undertake activities, such as walking their dogs (on leashes) or riding horses, that are not necessarily compatible with conservation reserves. There is currently no management plan for the System 6 M47 area. While the System 6 Study recommended management plans for most of its areas, it omitted to do so in this most important instance.

The question that needs resolution is what is an appropriate size for the bushland area to serve the needs of the community. The present bushland area of 356 ha (including the development site and the PCC endowment land, but excluding the pine plantation) has resulted from the planning for roads rather than from what has been assessed as an appropriate requirement for bushland in the area. Likewise, the System 6 Study does not comment on an appropriate size for a bushland area in the region. Even with development of Lot 1 and even if the PCC subsequently proceeds with development of its adjacent residentially zoned land-holding, the bushland area would still be a significant 302 ha. This does not take into account residual good quality bushland in the golf course and the area between the Boulevard and Oceanic Drive. These are also part of Bold Park.

The size of this area is not unfavourable when compared with Kings Park (405 ha), as the latter includes a significant area for internal roads, botanical gardens and clearings, as well as a large area fronting the Swan River virtually inaccessible to the public due to the steepness of the terrain. The proponent is not aware of any shortcomings in the area of bushland available in Kings Park, i.e. Kings Park had a bowling club and has tennis courts, an oval, a herbarium, car parks and memorial areas. In addition, users of the bushland at Bold Park would be able to experience a greater sense of 'wilderness' than users of Kings Park, due to the absence of internal roads and because the Bold Park bushland would only have busy perimeter roads on two boundaries rather than four, as is the case with Kings Park. An area of 302 ha would easily accommodate the range of habitats found in the present bushland area, as well as being of sufficient size to enable conservation of the flora and fauna with appropriate management. Within the range of areas being discussed (302-356 ha), and in terms of conservation status, the size of the bushland area is considered to be of secondary importance to management.

In terms of the latter point regarding management, the PCC submission is particularly relevant in that it mentions the use of a portion of the revenue generated by the sale of the PCC land for maintenance and management of Bold Park.

In summary, the significance of the bushland in Bold Park and, to a lesser degree, the proposed development site lies principally in its location within the metropolitan area. With appropriate management, the proposed subdivision development can proceed without significantly diminishing the value of the adjacent bushland. The current management practice is not conducive to the conservation desires of opponents to the development, while acceptance of the development would allow greater resources to be devoted to appropriate management of the adjacent bushland. It is argued that to fulfil the intent of the System 6 Study, neither the site nor the adjacent PCC residentially zoned land need be included within the M47 area. All significant vegetation nominated in the Study lies outside the areas zoned for urban development. Even in the event of all possible development proceeding, the remaining bushland area would still adequately fulfil the role of an open space, specifically bushland, of regional significance.

3 EDGE EFFECTS

Edge effects arise from the interaction of non-bushland related human activities with the bushland, particularly at the bushland interface. Detrimental edge effects include rubbish dumping, increased incidence of fire, the spread of weeds and the impact of uncontrolled domestic animals. Point 14 of Appendix B specifically addresses each of these in relation to the proposed development and the adjacent Bold Park, and demonstrates that these edge effects can be managed to acceptable levels. This section discusses the philosophy behind the perimeter treatment to the development.

The perimeter can be divided into three distinct sections:

- . that which fronts Stephenson Avenue;
- . that which is Bold Park bushland to the north;
- . that which is bushland and a pine plantation on residentially zoned land to the west.

The Stephenson Avenue frontage is not a contributor to edge effects by the definition above, but it is worth noting the landscaping treatment proposed for this area to enable visual integration with the adjacent Perry Lakes.

It is recognized that to minimize and manage edge effects, a buffer between residential development should be provided. Depending upon circumstances, this buffer can be bushland, parkland, a road or controlled access fencing. For this development, controlled access fencing (or hard buffer) is considered to be the most effective for the following reasons:

- . it provides for visual uniformity;
- . it effectively controls the passage of dogs and most vertebrate fauna (none of the other buffers will also control cats and highly mobile vertebrates such as small lizards and possums);
- . it provides an effective means of controlling the entry points of bushland park users, including children;
- . it provides a barrier to the migration of weeds and other alien flora;
- . by restricting access, it should reduce rubbish dumping because 'over the fence' activities can be easily traced;
- . it complements the sand fire-breaks to inhibit the spread of fire.

Unfortunately, the proposed landscaped area to the north of the development has been viewed by some respondents solely as a buffer zone to control edge effects, rather than for its intended purpose as local visual integration. The northern boundary's role as a buffer is only secondary and therefore not essential; controlled access fencing would provide the primary buffer.

Any additional perimeter fire treatment required as a consequence of the subdivisional development can be viewed as an edge effect. The local councils are responsible for the implementation of appropriate perimeter fire treatments and in the event of a fire the Fire Brigade would be responsible for the fire-fighting effort.

The Nedlands City Council (NCC) has indicated that it requires perimeter fire-breaks of 2 m minimum width to uncleared blocks in excess of 2,000 m² and that this requirement is irrespective of the adjacent land use. Typical residential lots like those proposed for the development do not require perimeter fire-breaks.

Through application of the same Fire Brigade regulations pertaining to perimeter fire-breaks, the PCC would be expected to have similar requirements to the NCC. Examples within Bold Park where these regulations have been applied include the City Beach High School and the retirement village. The bushland area has a comprehensive system of strategic double fire-breaks to control bush fires. These include existing double fire-breaks to the western and northern boundaries of Lot 1.

It is considered that any decision regarding additional perimeter fire protection should be considered as part of the planning process. At this stage, the possible extension of Underwood Avenue and the future development of the adjoining PCC residentially zoned land can be considered in the context of appropriate fire control to the perimeter of the residential development. Should the PCC so require, the proponent will recut the PCC perimeter fire-breaks and pave these with crushed limestone to improve access for fire-fighting.

4 VISUAL IMPACTS

Visual impacts are highly subjective; the proponent is not aware of any developments rejected on the basis of unacceptable visual impact under environmental legislation in Western Australia. The claims by some opponents of the proposal that the development would lead to visual degradation of the site are not supported by observation of human behavioural patterns. Many, if not most, people in Perth are home-owners who have taken considerable effort in designing and maintaining their houses and consider them visually attractive. Furthermore, the preference of most people for vistas of the developed environment is reflected by substantially higher land prices on the western side of the Darling Scarp overlooking the city as opposed to those on the east viewing forested areas.

Without resorting to statistics, it is self-evident when visiting the park that visitors (walkers and joggers) prefer to use the limestone paved fire-breaks and not the soft sand fire-breaks. There is no provision for bicycle riding. People rarely walk off through the undergrowth.

The proposed controlled access fence would not be seen by visitors to Bold Park bushland unless they trekked through bushland to view the property. Such uncontrolled access activity is likely to be inconsistent with any management plan drawn up in the future.

The important northern boundary to Lot 1 is screened by 40 m of bushland and is therefore difficult to discern from the sand fire-break used as a bridle trail. The property cannot be viewed from the northern limestone walking trails because of an intervening hill.

The views from the Reabold Hill look-out have also been discussed in the PER and by respondents. There are two levels of viewing: the main car park area and the look-out atop Reabold Hill. The view from the car park predominantly consists of the surrounding bushland and this would not substantially change, as the development site would be screened by an intermediate ridge. A small elevated portion of the site is presently visible from the car park; however, this area would be subject to lowering as part of the development and would therefore be screened by the intermediate ridge. From the look-out, a large portion of the development on the site would be seen, which would mostly consist of two-storey structures. However, the retention of the majority of conspicuous trees and the partial screening provided by bushland in the foreground should enable the development to resemble established areas of City Beach, which are also clearly visible and quite attractive when viewed from the look-out. It is worth noting that most of the vista from Reabold Hill consists of urban development and, in this respect, the proposed development would not be out of character.

The site has been zoned 'Urban' since 1963 under the Metropolitan Region Scheme, and is still zoned Urban. The NCC had the site zoned for 'Public Purposes - University of Western Australia' until 1985 when it was changed to 'Development Zone' under the NCC planning scheme.

The timing of the zoning change is significant in relation to the publication of the Department of Conservation and Environment's System 6 Study in 1983 in that although the recommendations from this study were known at the time of the zoning change, the change was not opposed by any of the conservation groups or the EPA despite extensive advertising by the NCC. The proposed zoning change was referred to the Department of Conservation and Environment (now the EPA) on 4 September 1978. The Department responded on 5 October 1978 (Appendix F) that the amendments did not have any major environmental implications and it therefore had little to offer in the way of comments and advice.

The appropriate time to instigate environmental review on future urban development is at the time of zoning change rather than on an individual ad hoc basis prior to proposed development, which appears to have been the case with Knightsbridge. The appropriate means of land use control is through the SPC's Metropolitan Region Scheme, which considers land use on a broad scale. Any anomalies, such as conflicts with environmentally significant areas, should be resolved expeditiously rather than being left until problems arise. This responsibility does not rest with individual proponents, but rather with the SPC and the EPA.

The SPC has recently revised the corridor plan used for developing the Metropolitan Region Scheme (State Planning Commission. 1987. Planning for the future of the Perth Metropolitan Region). The corridor plan allowed for 'fingers' of urban development separated by areas of alternative land uses including parks, forests and agriculture. The recent revisions recommended urban infilling of some of the areas between the development corridors; the proposed subdivision, in an area already zoned urban, is in compliance with this revised strategy of infilling undeveloped areas.

The Outline Development Plan for Lot 1 was advertised by the NCC as a condition of the Development Zone. No public submissions were received against this development during the legal advertising period that commenced on 4 December 1987 and concluded on 29 January 1988.

The development's potential impact on groundwater was considered in the PER (Sections 5.1.5 and 6.6.2) in order to assess its effect on Camel Lake. The submission from the Water Authority is particularly relevant to this issue in that it confirms the assessment given in the PER that the development would not be expected to markedly affect the regional water table level or nearby Camel Lake. It should be noted that contrary to the Water Authority's comments, the potential effect on the groundwater table was evaluated, albeit in a simplified fashion and not by a recognized hydrogeological consultant. With regard to the latter, it was considered unnecessary to use a specialist consultant for such a simple problem and because there were adequate regional data available from the Water Authority's urban water study. (Water Authority of Western Australia. 1987. Perth urban water balance study vol.1. Perth: Centre for Water Research).

The Water Authority's comments in relation to minimizing the amount of irrigated landscaped area are at odds with the proponent's desire to develop a high quality subdivision. The bore or bores supplying the irrigation water would be located as far away as possible from Camel Lake, and pumping tests would be undertaken during construction to demonstrate that draw would not adversely affect Camel Lake. If in the future the groundwater demands generated by the development were shown to be having a detrimental effect on the groundwater levels in the area, then the Water Authority and the NCC would need to agree upon modifications to the abstraction and use strategy.

**APPENDIX A
SUMMARY OF PUBLIC SUBMISSIONS**

SEE APPENDIX A OF EPA REPORT AND RECOMMENDATIONS

ATTACHMENT I

BIRDS RECORDED IN BUSHLAND
PARTS OF BOLD PARK

Source: W.A. Museum

Birds Recorded in Bushland
Parts of Bold Park

Listed in PER
Appendix "D"

White-faced Heron	
Black-shouldered Kite	X
Brown Goshawk	
Collared Sparrowhawk	X
Australian Kestrel	X
Stubble Quail	
Spotted Turtledove	X
Laughing Turtledove	X
Rainbow Lorikeet	X
Ring-necked Parrot	X
Elegant Parrot	
Caraby's Cockatoo	
Galah	X
Pallid Cuckoo	X
Shining Bronze Cuckoo	
Laughing Kookaburra	X
Sacred Kingfisher	
Rainbow Bee-eater	X
White-backed Swallow	X
Welcome Swallow	X
Tree Martin	
Richard's Pipit	
Black-faced Cuckoo-Shirke	X
Rafous Whistler	
Grey Shrike-Herush	
Grey Fantail	X
Willie Wagtail	
Western Flyeater	
Weebill	X
Brown Thornbill	
Yellow-rumped Thornbill	
White-bowed Scrib-wren	
White-winged Fairy-wren	X
Australian Sittella	
Mistletoebird	
Spotted Pardalote	X
Striated Pardalote	X
Grey-breasted Silvereye	X
Brown Honeyeater	X
Singing Honeyeater	X
White-naped Honeyeater	
White-cheeked Honeyeater	
Western Spinebill	X
Little Wattlebird	X
Red Wattlebird	X
Magpie-lark	X
Grey Butcherbird	
Magpie	X
Australian Raven	X
New Holland Honeyeater	

ATTACHMENT 2

**BIRDS, MAMMALS, AMPHIBIANS AND REPTILES
OF BOLD PARK BUSHLAND**

Source: References Attached

* Denotes species gazetted as rare or otherwise in need of special protection

BIRDS

ACCIPITRIDAE

<u>Elanus notatus,</u>	Black-shouldered Kite
<u>Haliastur sphenurus,</u>	Whistling Kite
<u>Accipiter fasciatus,</u>	Brown Goshawk
<u>A. cirrhocephalus,</u>	Collared Sparrowhawk
<u>Aquila audax,</u>	Wedge-tailed Eagle
<u>Hieraaetus morphnoides,</u>	Little Eagle

FALCONIDAE

<u>Falco peregrinus,</u>	Peregrine Falcon *
<u>F. longipennis,</u>	Australian Hobby
<u>F. cenchroides,</u>	Australian Kestrel

TURNICIDAE

<u>Turnix varia,</u>	Painted Button-quail
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COLUMBIDAE

<u>Columba livia,</u>	Feral Pigeon
<u>Streptopelia chinensis,</u>	Spotted Turtle-Dove
<u>S. senegalensis,</u>	Laughing Turtle-Dove
<u>Phaps chalcoptera,</u>	Common Bronzewing

CACATUIDAE

<u>Calyptorhynchus sp.,</u>	White-tailed Black-Cockatoo
<u>Cacatua roseicapilla,</u>	Galah
<u>C. sanguinea,</u>	Little Corella

LORIIDAE

<u>Trichoglossus haematodus,</u>	Rainbow Lorikeet
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PLATYCERCIDAE

<u>Purpureicephalus spurius,</u>	Red-capped Parrot
<u>Platycercus icterotis,</u>	Western Rosella
<u>Barnardius zonarius,</u>	Port Lincoln Ringneck
<u>Neophema elegans,</u>	Elegant Parrot

CUCULIDAE

<u>Cuculus pallidus,</u>	Pallid Cuckoo
<u>C. pyrrhophanus,</u>	Fan-tailed Cuckoo
<u>Chrysococcyx basalus,</u>	Horsfield's Bronze-Cuckoo
<u>C. lucidus,</u>	Shining Bronze-Cuckoo

STRIGIDAE

<u>Ninox novaeseelandiae,</u>	Southern Boobook
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TYTONIDAE

<u>Tyto alba,</u>	Barn Owl
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PODARGIDAE

<u>Podargus strigoides,</u>	Tawny Frogmouth
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AEGOTHELIDAE

<u>Aegotheles cristatus,</u>	Australian Owlet-nightjar
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ALCEDINIDAE

Dacelo novaeguineae,
Halcyon sancta,

Laughing Kookaburra
Sacred Kingfisher

MEROPIDAE

Merops ornatus,

Rainbow Bee-eater

HIRUNDINIDAE

Cheramoeca leucosternum,
Hirundo neoxena,
Cecropis nigricans,

White-backed Swallow
Welcome Swallow
Tree Martin

MOTACILLIDAE

Anthus novaeseelandiae,

Richard's Pipit

CAMPEPHAGIDAE

Coracina novaehollandiae,

Black-faced Cuckoo-shrike

MUSCICAPIDAE

Petroica multicolor,
Pachycephala pectoralis,
P. rufiventris,
Colluricincla harmonica,
Rhipidura fuliginosa,
R. leucophrys,

Scarlet Robin
Golden Whistler
Rufous Whistler
Grey Shrike-thrush
Grey Fantail
Willie Wagtail

MALURIDAE

Malurus splendens,
M. lamberti,
M. leucopterus,

Splendid Fairy-wren
Variegated Fairy-wren
White-winged Fairy-wren

ACANTHIZIDAE

Sericornis frontalis,
Smicronis brevirostris,
Gerygone fusca,
Acanthiza apicalis,
A. inornata,
A. chrysorrhoa,

White-browed Scrubwren
Weebill
Western Gerygone
Inland Thornbill
Western Thornbill
Yellow-rumped Thornbill

NEOSITTIDAE

Daphoenositta chrysoptera,

Varied Sittella

MELIPHAGIDAE

Anthochaera carunculata,
A. chrysoptera,
Lichenostomus virescens,
Lichmera indistincta,
Phylidonyris novaehollandiae,
P. nigra,
Acanthorhynchus superciliosus,

Red Wattlebird
Little Wattlebird
Singing Honeyeater
Brown Honeyeater
New Holland Honeyeater
White-cheeked Honeyeater
Western Spinebill

DICAEIDAE

Dicaeum hirundinaceum,

Mistletoebird

PARDALOTIDAE

Pardalotus punctatus,
P. striatus,

Spotted Pardalote
Striated Pardalote

ZOSTEROPIIDAE

Zosterops lateralis,

Silvereye

GRALLINIDAEGrallina cyanoleuca,

Australian Magpie-lark

ARTAMIDAEArtamus cyanopterus,

Dusky Woodswallow

CRACTICIDAECracticus torquatus,

Grey Butcherbird

Gymnorhina tibicen,

Australian Magpie

CORVIDAECorvus coronoides,

Australian Raven

MAMMALS**TACHYGLOSSIDAE**Tachyglossus aculeatus,

Short-beaked Echidna

DASYURIDAESminthopsis sp.,

Common Dunnart

PHALANGERIDAETrichosurus vulpecula,

Common Brushtail Possum

BURRAMYIDAECercartetus concinnus,

Western Pygmy-possum

TARSIPEDIDAETarsipes rostratus,

Honey-possum

MACROPODIDAEMacropus irma,

Western Brush Wallaby

M. fuliginosus,

Western Grey Kangaroo

MOLOSSIDAETadarida australis,

White-striped Mastiff-bat

VESPERTILIONIDAENyctophilus major,

Greater Long-eared Bat

N. geoffroyi,

Lesser Long-eared Bat

Chalinolobus gouldii,

Gould's Wattled Bat

C. morio,

Chocolate Wattled Bat

Pipistrellus tasmaniensis,

Great Pipistrelle

Eptesicus regulus,

King River Eptesicus

MURIDAEPseudomys albocinereus,

Ash-grey Mouse

Rattus rattus,

Black Rat

Mus musculus,

House Mouse

LEPORIDAEOryctolagus cuniculus,

Rabbit

CANIDAEVulpes vulpes,

Fox

FELIDAEFelis catus,

Feral Cat

AMPHIBIANS & REPTILES

LEPTODACTYLIDAE

Frogs

Heleioporus eyrei
Limnodynastes dorsalis
Myobatrachus gouldii
Pseudophryne guentheri
Ranidella insignifera

GEKKONIDAE

Geckos

Crenadactylus o. ocellatus
Diplodactylus spinigerus
Phyllodactylus m. marmoratus

PYGOPODIDAE

Legless Lizards

Aprasia repens
Delma fraseri
D. grayii
Lialis burtonis
Pletholax concinnus
P. g. gracilis
Pygopus lepidopodus

AGAMIDAE

Dragon Lizards

Pogona m. minor
Tympanocryptis a. adelaidensis

SCINCIDAE

Skinks

Cryptoblepharus plagiocephalus
Ctenotus fallens
C. lesueurii
Egernia napoleonis
Hemiergis quadrilineata
Lerista elegans
L. lineata *
L. lineopunctulata
L. praepedita
Menetia greyii
Morethia lineoocellata
Tiliqua occipitalis
T. r. rugosa

VARANIDAE

Monitors

Varanus gouldii
V. t. tristis

TYPHLOPIDAE

Blind Snakes

Ramphotyphlops australis

ELAPIDAE

Elapid Snakes

Notechis coronatus
N. curtus
Pseudonaja a. affinis
Rhinoplocephalus gouldii
R. nigriceps
Vermicella bertholdi
V. bimaculata
V. calonotos *
V. f. fasciolata

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APPENDIX B
RESPONSE TO PUBLIC SUBMISSIONS

1. a) The PER indicates the number of flora and fauna species expected to be present in Lot 1. The suggestion that the 19 ha area of Lot 1 contains a rich and diverse flora and fauna and therefore has a high degree of environmental significance is not valid. The Bold Park reserve may be described as having a rich and diverse flora and fauna, although confirmation of this through appropriate studies is required. However, based on the evidence presented in the PER, Lot 1 does not contain a similarly rich and diverse flora and fauna. Virtually all flora and fauna species present in Lot 1 occur elsewhere within the Perth metropolitan area or elsewhere within Western Australia.
- b) An officer of the Western Australian Museum was contacted to provide additional information on fauna present in Lot 1 so that this issue could be evaluated. He advised that no information was available on fauna specifically present on the site; however, a survey was at that time being conducted in the main part of Bold Park reserve, although adequate data from this survey were not then available. This survey concentrated on areas near Reahold Hill and adjacent to West Coast Highway. Because the survey could not provide any data at the time of consultation, and because no other adequate sources of information were known to the officer, advice was given that the best data source would be the 1978 Western Australian Museum faunal studies of the northern Swan Coastal Plain. These studies contain useful data on habitat types and species present, and were therefore used as a basis for lists of mammals and reptiles that have been reported, or are likely to occur, in the Bold Park area.

Data on the avifauna survey of Bold Park were provided by the RAOU upon request. The RAOU data were obtained during five visits over twelve months during 1985-86. These data were supplemented by several site visits to Bold Park and Lot 1 in November 1987, which resulted in the addition of another eight species to the Metropolitan Bird Project list.

The RAOU was again contacted in February 1988 to confirm the avifauna data presented in the PER. The RAOU provided revised data that were more comprehensive than the original, thereby making the first list obsolete. The revised list of forty-eight birds observed in Bold Park during the Metropolitan Bird Project is presented in Table B1 at the end of this appendix. It indicates that no birds observed in Bold Park are considered rare in the Perth metropolitan region, with only eight considered uncommon. Most are either common or very common. Two additional species were observed during several visits to Bold Park and the site in November 1987, and should be included in the Metropolitan Bird Project list. These are the Little Eagle (uncommon) and the New Holland Honeyeater (common).

One submission must have attached a list of birds allegedly recorded in bushland parts of Bold Park (Attachment 1 of the summary of issues).

The Western Australian Museum was stated as being the source for the list. However, the museum has advised that it did not compile such a list. Hence, there is a need to review the authenticity of that submission and the proponent's request to view the public submissions received by the EPA.

Furthermore, that submission reported that twenty-two species were identified in addition to those listed in the PER. Upon examination, it was found that six of the species were cited in the PER (Section 5.2.2) as having been observed during site visits to Bold Park and Lot 1. They include the Shining Bronze Cuckoo, Rufous Whistler, Yellow-rumped Thornbill, New Holland and White-cheeked Honeyeaters, and Grey Butcher-bird. These species were not included in the original Metropolitan Bird Project list provided by the RAOU.

In addition, the submission's bird list included:

- . the Brown Thornbill, which does not occur further west than South Australia (Blakers, Davies and Reilly. 1984. The atlas of Australian birds. p.738);
- . the Western Fly-eater, which is the same as the Western Gerygone listed in the PER (Section 5.2.2).

Another bird list was presented in Attachment 2 of the summary of issues. This list was derived from literature sources; the technique most likely used would have involved relating the location of Bold Park to the general distribution of each bird, and drawing upon inference based on habitat compatibility. This methodology has less validity than actual 'ground truthing' by on-site survey during the relevant seasons of the year (such as in the RAOU Metropolitan Bird Project).

In summary, differences in the compilation of bird lists are attributed to many factors, including:

- . survey technique
- . seasonal variations
- . preceding fire regimes
- . inaccuracies in identification
- . duration and frequency of survey
- . coverage of representative habitats
- . condition of the representative habitats.

When inference based on habitat and known distribution is adopted, together with actual observations, a further margin for professional skill is introduced.

In conclusion, the most comprehensive data available on the avifauna in Bold Park are considered to be the revised RAOU data provided in Table B1.

One submission claimed that a location 200 m from Lot 1 had a ground-dwelling invertebrate fauna as diverse as that of the jarrah forests at Dwellingup or Manjimup. Without conducting a pitfall trapping programme over all seasons within the boundaries of Lot 1, the findings presented cannot be verified. The location of this study may have been Camel Lake, which would be a different habitat to that occurring in Lot 1. Hence the need for the opportunity to review the public submissions.

Invertebrate fauna was not addressed in the PER, because its habitat requirements are less limited than those for vertebrate fauna. More importantly, the EPA guidelines for the preparation of the PER did not indicate any requirement to assess the invertebrate fauna. Therefore, it is difficult to recognize the worth of the issue raised.

The PER was prepared on the basis of advice from recognized institutions and on the results of specific commissioned surveys. Time constraint did not enable a comprehensive fauna survey of Lot 1 to be carried out over many months, nor was it required in the EPA guidelines. Discrepancies in fauna estimates between those presented in the PER and those reflected in the EPA's summary of public submissions are attributable to the fact that data became available after the PER was released for public comment. Examples include data from the Western Australian Museum's ongoing ecological survey and the revised bird list from the RAOU Metropolitan Bird Project. These data would certainly have been included in the PER were they available at the time.

- c) The conservation value of the flora on Lot 1 is addressed in Section 2 of this document. The response given in d) below is also relevant to this issue.
- d) The view that Bold Park is the largest remnant of coastal bushland in Perth suggests that because it is large, it has value for conservation. This is not considered to be valid, as it ignores other overriding factors such as the variety of flora and fauna communities, the number of species, the degree of disturbance and the replication of communities elsewhere.

In addition, more significant areas of coastal bushland than Bold Park have been reserved as national parks elsewhere on the Swan Coastal Plain. These include Neerabup, Yanchep, Moore River and Yalgourup. Kings Park has also been reserved, while vast areas of unreserved coastal bushland remain north and south of the metropolitan area.

The reference to 'surrounding lands' in the summary of issues is unclear, requiring clarification through examination of the original submission.

- e) As stated in the PER (Section 5.2.1), only three trees of the yellow-flowered form of Banksia menziesii were observed in Lot 1. It has been reported that up to twenty yellow-flowered B. menziesii plants have been sighted within Bold Park. As such, responsibility for the conservation of the B. menziesii in Bold Park lies with the City of Perth.

Although reported to be not common within the metropolitan area, the yellow-flowered form of B. menziesii is known to be widely distributed in areas between Murchison River and the southern Swan Coastal Plain.

Any loss of heath from Lot 1 would be insignificant because larger areas of heath in better condition exist and will remain in Bold Park. Heath also occurs in national parks and reserves along the coastal plain.

- 2. The PER addresses the concept of a land swap in Section 3.1. As stated, the proponent could not accept the parcels of land suggested by particular groups as suitable for a land swap, because:

- . they had inappropriate zoning for residential development;
- . they were smaller in size than the 19 ha site, which would result in a lower lot yield upon development;
- . they were located in the City of Perth, which could result in complicated transfer procedures with the City of Nedlands;
- . they did not have the same premium location and therefore the same value.

The concept of land swap is far more complicated than simply an exchange of similar sized parcels of land. For commercial reasons, the alternative land to be made available for a swap with Lot 1 would require:

- . a compatible location;
- . similar inherent value;
- . to be located within the same municipality;
- . identical development opportunities;
- . the parties involved to indicate their willingness to complete the exchange in the short term with minimal complexity.

Land swap procedures would necessitate complex and time consuming negotiation between land owners for adequate compensation for the proponent's holding cost, plus for the extensive planning, PER preparation, engineering and landscape design work already undertaken for the Lot 1 site. Another major consideration is the factor of timing. The proponent purchased the land because it considered it appropriate for immediate development, not medium or long term development.

The proponent was aware of the zoning of the land at the time of purchase. Residential development was and remains its preferred choice of land development. Alternative uses for the land were addressed in the PER to comply with the EPA guidelines. No appropriate alternatives were found.

The individual submissions need to be reviewed to determine the validity and experience behind claims that some 'apparently suitable alternatives were dismissed'.

3. The PER (Section 3.2) lists a total of thirty-nine possible land uses permitted under the NCC's development zone for Lot 1. The permitted land uses include boat and car sales yards, fast food outlets, hospitals, hotels, light industries, night clubs, transport depots and warehouses. These particular land uses were considered inappropriate for the site.

The site was considered to have a 'high suitability' for the accommodation of twenty-one of the thirty-nine permitted land uses. Of these, only ten were assessed to have a low potential for environmental impact.

The criteria for selection of the preferred land use option were:

- . suitability of the site for the purpose
- . high site coverage

- . high demand, to ensure acceptable return on investment
- . low potential for environmental impact on adjacent Bold Park
- . commercial judgement of the owner.

Residential use (dwelling house) was the only permitted land use option that met all criteria. Other permitted land use options did not meet these criteria and would not ensure a technically sound, economically viable and environmentally acceptable development. Land uses normally associated with residential development, such as a child minding centre, consulting rooms, convenience store, dual accommodation units and home occupation, were also considered acceptable within the preferred residential land use option.

4. The assertion that 'the importance of Bold Park bushland (bounded by West Coast Highway, Oceanic Drive, Perry Lakes Drive, Stephenson Avenue and Rochdale Road and including Lot 1) lies in its size and compact shape' ignores the fact that Lot 1 has always been privately owned and has never been a part of Bold Park. The only association that Lot 1 has with Bold Park is that one boundary is adjacent to the park. Therefore, the size and shape of the existing Bold Park area will not change whether or not Lot 1 is developed.

Concerning the perceived change in the perimeter to area ratio, opponents to the development chose to ignore the high perimeter to area ratios of many conservation areas more significant than Bold Park, which are found in the south-west of Western Australia. Examples of these reserves include the Neerabup, Yalgorup and Leeuwin—Naturaliste National Parks. These national parks still manage to maintain their high conservation status despite their high perimeter to area ratios.

- i) The assertion that Bold Park 'bushland supports and maintains a rich diversity of plants and animals in a complex ecosystem not found elsewhere' is scientifically fatuous. It also ignores the existence of significant conservation reserves on the Swan Coastal Plain, such as the Neerabup, Yanchep, Moore River and Yalgorup National Parks, Kings Park and many others.
- ii) The question of edge effects is addressed under Point 14.

5. The concern that development of Lot 1 would result in an increased perimeter to area ratio and increased edge effects is particularly weak when the number of other alienated sites within Bold Park is taken into account; these include:

- . PCC pine plantation (adjacent to Lot 1)
- . Water Authority of Western Australia reservoir
- . Skyline drive-in theatre
- . City Beach bowling club
- . Boy Scout Association Hall
- . Bold Park swimming pool and car park
- . retirement village.

Each of these alienated sites equally imposes edge effects, together with substantially increasing the effective Bold Park perimeter to area ratio. It would appear that the existence of these developments has already led to a reduction in the conservative value of some parts of Bold Park. It is

significant that none of these existing developments (in particular, the retirement village, which would have required an amendment to the town planning scheme) generated any significant opposition. In addition, none required the submission of a public environmental impact assessment.

6. The structure and intent of the covenants on properties are to retain wherever practicable the major large vegetation of the area until such time as newly planted vegetation grows to soften the development. As such, the development would never be as conspicuous as the existing yellow sands of the rubbish tip and Water Authority sewage easement. There is no requirement to make each tree sacrosanct because the conservation status of Lot 1 does not warrant this.

A portion of Lot 1 will be levelled to RL 43 m to enable gravity-fed water supply to eleven of the 136 lots. The loss of vegetation in this area is inevitable. However, through the reduction in level, the development will be far less visible from Reabold Hill.

Loss of existing vegetation through works for utilities installation has been kept to the minimum for residential subdivision. As shown in Figure 4.3 of the PER, the concept plans for water supply, reticulation, sewerage and drainage indicate that each follows the roadways. Figure 6.1 indicates that the proposed roadways affect as few of the conspicuous trees within Lot 1 as possible.

Any loss of existing vegetation due to infrastructure installation will of course be compensated by trees and shrubs planted in landscaped areas such as roadside verges, drainage basins, public open space and Stephenson Avenue west side road reserve. In addition, residents will maintain landscaped gardens, many of which will have a substantial native tree content.

7. Describing Lot 1 as 'one of the last wild havens in Perth with opportunities for walking, bird-watching, wildflower viewing, jogging, panoramas and peace and quiet' is grossly overstating the recreational value of the 19 ha site. Apart from the fact that recreational usage of the site has to be low because of access, any activity by the public on the site is conducted without the consent of the present owner. Although such activities are, in effect, acts of trespass, the present owner to date has not enforced these rights of land ownership.

With only 200 m of established limestone path on Lot 1, representing less than 1% of the existing nature walks and bridle paths in the adjacent Bold Park, present opportunities for recreational activities on the site are minimal. Development of a residential subdivision on the 19 ha adjacent to Bold Park will not reduce the opportunities for walking, bird-watching, wildflower viewing, jogging, panoramas and peace and quiet within Bold Park.

In addition, the proposal allows for extensive public walkways and public open space areas throughout the residential development. These would provide further opportunities for recreational activities such as walking, jogging, cycling and relaxing. People using that portion of the park near the proposed home-store will have the added amenity of being able to obtain refreshments.

8. The impacts of the proposed development on groundwater supply to Perry Lakes and Camel Lake are addressed in Section 6 of this document.
9. The question of edge effects is addressed under Point 14.
10. The summary of issues (Appendix A) does not make it clear whether the EPA or the submissions are opposing the buffer zone. As such, there is a real need to view the public submissions received by the EPA. A possible 2.08 ha of irrigated and landscaped area situated in Bold Park adjoining the northern boundary of Lot 1 was included in the layout following discussions with officers from the SPC and the EPA. The proposed buffer zone required the acceptance of the PCC and subsequent approval by the EPA and SPC. Because it has been rejected by the PCC, the proponent has reverted to its original restricted access fencing to provide a practical buffer between the residential development and the parklands.
11. The provision of low fuel buffer zones and hard access along the northern and western boundaries of Lot 1 is addressed in Section 3 of this document.
12. During the preparation of the PER, the Museum of Western Australia was contacted to determine the existence of any registrations of Aboriginal sites within and immediately adjacent to Lot 1. No Aboriginal sites were registered within Lot 1, while one registration (ethnographic site S2131) located near the junction of Stephenson Avenue and West Coast Highway was noted.

The proponent has since consulted with representatives from the Nyoongah Community Cultural Complex regarding the proposal and the significance of this registered site. Initial comments from a representative of the Community indicate that the ethnographic site is sufficiently distant from Lot 1 to alleviate the need for concern.

Following initial discussions, a site visit has indicated that the sacred site was a European fig tree which had been bulldozed during fire-break maintenance by the PCC. Some coppice regrowth has since occurred from the root stock. The detached trunk is currently protruding from the bulldozed heap.

Discussions with the Community are continuing.

13. The PER indicates (Section 6.8) that approximately three-quarters of the existing 360° view from Reabold Hill includes urban development. The primary landscape features in the direction of Lot 1 currently include the blue roofs and facade of the Western Australian Sports Centre, the orange roof of John XXIII College and the large extent of yellow sands covering a quarry, rubbish tip and Water Authority sewage easement. These are all more than 1,200 m away. However, there is residential development within 600 m to the west of the look-out which does not appear out of place. The most intrusive man-made features observed from the look-out are the squarish architecture of the City Beach High School and the large roofed Water Authority water reservoir.

Most of the site proposed for development would be out of sight from Reabold Hill due to intervening ridges. From the Reabold Hill car park,

very little of Lot 1 is visible. The remaining area would contain many existing tall trees and shrubs, together with landscaped gardens and planted street trees. As a result, housing would be largely obscured from sight from Reabold Hill.

Similarly, the topography, landscaped gardens and street trees will minimize the visual impact from walk trails and from other areas within Bold Park. The development will not be visible from the existing limestone walk trails. The controlled access fence will be partially visible from the sand bridal trail 40 m to the north. Intervening bushland provides an effective screen to the development. Unless a new walk trail is installed, the development will be well screened.

The high quality residential subdivision on Lot 1 will be a well planned and laid-out development in harmony with the surrounding environment, one that maintained much of the existing vegetation with considerable areas of landscaped public open space. The quality of the housing and gardens will be high, with emphasis on aesthetic appeal. To many people, such a development will provide a pleasing viewscape.

14. Concern that residential development of Lot 1 would result in detrimental edge effects on Bold Park is unjustified. There are a number of examples within the metropolitan region of residential areas situated adjacent to natural bushland without causing significant edge effects. The urban development along Park Avenue in Crawley adjacent to Kings Park is one such example. The quality of the bushland opposite this development is of equal standard to more isolated bushland found elsewhere in Kings Park.

- a) It is extremely unlikely that residents of Lot 1 would be responsible for any fires in Bold Park. The possibility of accidental fires in Bold Park caused by backyard barbeques or other sources is limited to residents of the northern boundary. Fences separating backyards from natural bushland will provide some protection to the bushland from fire sources in the residential subdivision.

- b) Domestic pets would be restricted from intruding into Bold Park by a controlled fence line along the northern boundary. There are adequate by-laws that prohibit dogs being allowed in streets without an appropriate leash. These laws would be applicable within Bold Park.

Feral cats are already known to inhabit Bold Park. Thus, the existing native fauna should be in balance with a resident feral cat population. In addition, the domestic pets from existing residential areas adjacent to Bold Park have easy accessibility to the wildlife. These residential areas include City Beach and Floreat subdivisions along Oceanic Drive to the north, City Beach subdivisions along West Coast Highway to the west, and a Mt Claremont subdivision near the Stephenson Avenue and Rochdale Road intersection south of Bold Park. Unlike the proposed Lot 1 development, many of the houses fronting these roads have either no fencing or inappropriate fencing to contain domestic animals. Opponents' expressions of concern over the impact of domestic animals do not appear to extend to the existing residential areas surrounding Bold Park.

- c) Rubbish dumping would be precluded by the provision of boundary fencing and controlled access to Bold Park. The provision of weekly rubbish collections and the issuing of vouchers to City of Nedlands

ratepayers for four bulk rubbish pick-ups each year would alleviate the need for illegal rubbish dumping. In addition, receptacles would be provided near the entrances to Bold Park from the residential area for the disposal of rubbish by bushwalkers. 'Over-the-backfence' rubbish dumping will be readily traceable. Measures can be taken by the PCC, supported by the appropriate legislation, to prosecute residents found to be conducting illegal rubbish dumping activities.

- d) The risk of introducing exotic plant species and weeds from the residential subdivision is insignificant, when consideration is given to the extent of exotic plants and weeds already present through most areas of Bold Park. Indeed, one exotic plant on PCC residentially zoned bushland is a registered ethnographic site.

The use of the bridle paths by horses would be responsible for introducing significantly more weeds and exotics (deposited from hooves and faeces) than the residential subdivision. Bushwalking activities have already been responsible for spreading weeds and exotics throughout Bold Park.

- e) Opponents to the development argue that Bold Park exists to be used by all members of the public. The proponent is not in dispute with this view; however, the assertion that increased levels of use would result in the deterioration of Bold Park is not supported. Potential problems are not related to numbers of users, but to the effective management of the area being used.
- f) The level of use of pesticides within the residential development would be similar to that used in subdivisions throughout the metropolitan area. The wide diversity of bird species observed throughout the metropolitan area during the 1985-86 avifauna survey for the Metropolitan Bird Project would indicate that the existing levels of pesticides used in residential areas are not sufficient to significantly affect large numbers of birds. As such, the level of pesticide usage to be adopted for the proposed residential area is not considered to be sufficient to cause any adverse impacts on the wildlife of Bold Park.
- g) The PER states (Section 6.5) that noise emissions during construction would be in compliance with the Noise Abatement (Neighbourhood Annoyance) Regulations, 1979 (as amended) of the Environmental Protection Act, 1986. Residential noise levels when the subdivision was occupied would be similar to those in other residential subdivisions throughout the metropolitan area. These noise levels would not cause undue disturbance to users of Bold Park. The topography of Lot 1 would assist in maintaining low noise emissions from much of the residential subdivision. The noise levels from the subdivision would probably not exceed those of the existing traffic using Stephenson Avenue and Oceanic Drive.

15. The assertion that Camel Lake is 'a significant Perth wetland' worthy of conservation is not sound. The System 6 Study does not refer to Camel Lake by name, but as 'the small seasonal swamp near the corner of Perry Lakes Drive and Underwood Avenue'.

The presence of a stand of Eucalyptus rudis nearby does not justify a high priority for the conservation of Camel Lake. Stands of E. rudis can be found near most wetlands on the Swan Coastal Plain. The poor quality of

surrounding vegetation, the presence of numerous alien weedy grasses and extensive alterations to the natural surrounding topography are not characteristics of a significant Perth wetland worthy of conservation.

Regardless of the conservation value of Camel Lake, development of Lot 1 would not adversely affect the wetland. Hence, the inference that the conservation value of Camel Lake would be reduced as a result of residential development is irrelevant.

Two artificial ponds would be constructed in the public open space area adjacent to Stephenson Avenue. Although not natural wetlands, the edges of the ponds would support the growth of appropriate vegetation such as rushes. In time, a simple freshwater ecosystem would develop within these ponds. Because of their location, access to these ponds would be easier than Camel Lake for children to view or study elements of a freshwater ecosystem.

16. The PER (Section 5.4.1) restated the primary recommendation of the Wycherley Report as being 'the retention of the greater part of the bushland in the area adjacent to Bold Park, excising ... the area south of the proposed important regional road (referring to the extension of Underwood Avenue) ... The area excised would be available for residential and community development.'

Even though Lot 1 was not in the terms of reference for the Wycherley Report, it was included in that report. The Wycherley Report stated unequivocally that Lot 1 should be part of land developed for residential use; i.e. to quote the report:

It is proposed that **residential development be encouraged** in the portion of the Endowment Lands excised from the bushland park south of the realigned regional road forming the southern boundary for the following reasons.

- 8.2.1 Some capital may be generated, which, with an amendment to the Act if necessary, could fund the other development.
- 8.2.2 The residents in this area will provide additional people to report fires.
- 8.2.3 More rangers resident in or adjacent to Bold Park are considered essential for proper fire-control. It may be expensive to service isolated residences, (or toilets or barbecues for that matter) but this can be overcome if these are part of a general development of the neighbourhood.

Indeed Table 10.1 of the Wycherley Report recommended that 0.5 ha of UWA land remain bushland and 18.6 ha be 'Residential and Development'.

Clearly the proposed extension of Underwood Avenue was considered by the Working Party as a logical southern boundary separating the proposed extension to the Bold Park reserve from the area proposed for residential and community development. In addition, land south of the original Bold Park reserve (which incorporated Lot 1), bordered by Rochdale Road (then West Coast Highway) and Stephenson Avenue, was assessed to be substantially disturbed as a result of repeated bushfires, erosion by vehicles and pedestrians, the development of Wollaston Theological College, the establishment of a couch grass plantation and the existence of a pine

plantation. Had this area been assessed to have a high conservation value, it may also have been recommended as an extension to the Bold Park reserve. The Working Party recognized that the PCC intended some residential development to the south of the extended park and considered this to be beneficial to the management of the bushland.

Opponents to development of Lot 1 suggest that as the proposed Underwood Avenue extension has been shelved, the area south should automatically become a part of Bold Park.

Several comments are pertinent to this suggestion. Firstly, the degraded condition and poor conservation value of the area, including Lot 1, were major reasons for recommending residential development of the area. The condition of the area is unlikely to have improved since the Working Party made its assessment and, if anything, has probably deteriorated. As a result, there is even less reason for it to become incorporated with Bold Park as a conservation area and not to be developed for residential purposes.

Secondly, although the SPC announced in October 1987 that it no longer intended to extend Underwood Avenue through Bold Park, it is understood that the PCC is developing a regional planning strategy, including road planning for the area. As such, the possibility of a recommendation advocating the extension cannot be discounted.

17. The proposition that the proponent should accept anomalies in the System 6 Study boundaries, precluding possible urban development on Lot 1, would suggest that past errors or injustices should be permitted to continue indefinitely. As clearly demonstrated in the PER (Section 5.4.2), the System 6 Study recommendations cannot and should not have applied to Lot 1 because the land, under UWA ownership, was a private land-holding and previously recommended for residential purposes by the NCC.

The difficulty appears to be that opponents to the development do not recognize that the System 6 Study mistakenly assumed Lot 1 (2103) was in the City of Perth, whereas it is in the City of Nedlands.

M47 Bold Park, City Beach

The recommended area comprises part of Endowment Land, owned by the City of Perth, subject to the City of Perth Endowment Lands Act, including part of Locations 571, 585, 617, 1911, 2103 and part of Perthshire Locations Al and Ak (Figure 116). Part of the area is 'reserved' for Parks and Recreation under the Metropolitan Region Scheme.

As stated in the PER, the PCC had already extended Bold Park in 1976. However, the System 6 Study in 1983 clearly did not recognize the extension of Bold Park (refer map in System 6 Study), rather it assumed that the PCC had yet to extend the park.

Hence, the recommendations section of the System 6 Study:

Recommendations

- M47.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M47.2 That the Perth City Council's proposal to maintain and extend Bold Park is endorsed.

These recommendations cannot be distorted to apply to Lot 1 (2103) the development site, which is in the City of Nedlands.

Of even greater importance and relevance than the System 6 Study M47 area boundary is the conservation value of Lot 1. As stated throughout the PER, the conservation value of Lot 1 is considered to be low, and thus not worthy of inclusion within the M47 area boundary.

18. The PER indicates (Section 3.1) that Bond Corporation is a public company, accountable to its shareholders, and must therefore endeavour to achieve a reasonable rate of return on assets and shareholder funds. This responsibility prevents the granting of Lot 1 to the local authority or the SPC for community use without adequate compensation for costs incurred.

One submission commented that the PER did not, however, address the disadvantages to Perth people if the residential development were to proceed.

The development of Lot 1 would not interfere with the public's enjoyment of Bold Park. In fact, the people of Perth would benefit from the increased availability of high quality residential land. The existing demand for such land is supported by the fact that between November and December 1987, the proponent compiled a register of forty-eight persons willing to pay deposits to purchase a total of fifty-three lots following development approval. Additional benefits would be a substantial expanded rating base in the City of Nedlands and optimization of the nearby existing facilities and infrastructure.

19. a), b) and c)

The visual impact of the proposed subdivision is discussed in Section 4 of this document, wherein the adverse visual impact of the development is contested. Furthermore, it can be argued that a 'hotch-potch' mixture of bush and development would adversely affect the visual integrity of the subdivision and hence degrade the view from other aspects. The location of the connection between Lot 1 and future PCC development to the west was agreed with the planning department of the PCC and is therefore appropriate for both this development and future developments on a planning basis.

- d) The use of dark coloured roofs (a green, brown or other colour compatible with tree canopies) would be encouraged to reduce the visual impact of the subdivision. As stated in the PER (Section 7.2), the covenants would ensure that where the building design calls for a metal deck roof, the material used shall not be of the reflection type. Such metal deck roofs shall be painted Zincolume or Colorbond material and shall blend in with the natural surroundings.
20. a) To claim that the PER is a biased document is nonsense. The PER was prepared in accordance with the guidelines issued by the EPA. Two drafts of the PER were submitted and amended in accordance with comments made by the EPA before the PER was approved for publication. It can only be assumed that approval was granted on the basis that the PER was technically sound and addressed all relevant issues as required by the EPA.

- The term 'uncleared land' in the PER (Section 1.1) was used to indicate that existing vegetation on the parcel of land under discussion had not previously been removed. No other meaning, such as 'the land needs clearing', was intended or implied. It is questionable whether the proponent should have to respond to such a statement.

To claim that the people of Perth live in a highly urbanized environment is naive. To insinuate that the predominantly single residential, well landscaped western suburbs of Perth are highly urbanized in comparison to average affluent cities of the western world is quite unjustified.

To claim that it is one of the last vestiges of wilderness in the metropolitan area is to deny existence of the surfeit of parks clearly identified on the Metropolitan Region Scheme maps of the metropolitan area. So where is the bias?

- The suggestion that 'houses built on a site where there was previous natural bush would be an extremely ugly sight to many people' ignores the fact that all residential areas throughout the metropolitan area were at some stage natural bushland. Residential development is necessary to meet the increased housing demands for the increasing population of Perth. However, unlike most other residential developments in Perth, the Knightsbridge proposal has endeavoured to maintain as much natural vegetation as practicable. Provision has been made to landscape a total of 8.26 ha, representing 43% of the site. The proponent has endeavoured to ensure that the subdivision would be aesthetically pleasing, yet not overly conspicuous.
- Consideration of alternatives to the residential option selected by the proponent has been comprehensively addressed in the PER (Section 3) and under Point 3 in this Appendix.
- The environmental significance of Lot 1, together with its relationship to Bold Park, is addressed in Section 2 of this document.
- The argument that the purchasers of lots within the Knightsbridge development 'possess the means to live where they please at the present time' does not take cognizance of the existing high demand for residential land close to the ocean, city centre, natural bushland, well-established services and recreational facilities. The City Beach area encompasses all these attributes. This demand is discussed under Point 18, which indicates that potential buyers are willing to pay deposits to purchase lots following development approval.

Residential development in the inner core of the metropolitan area is in accordance with the recently revised planning concept for Perth, which advocates less corridor development and more urban infilling of available land.

- One submission questions the assertion that the land was purchased 'in good faith'.

The issue relating to 'purchase in good faith' and claims that there was some risk requires close attention by opponents to the project who may not be aware of the following facts:

- 1) The advertising brochure circulated by the UWA in relation to the sale did not suggest any problems with residential development.
- 2) The UWA did not at any time communicate any concern on environmental matters to Bond Corporation.
- 3) Prior to the sale, the EPA did not write or otherwise inform Bond Corporation or any of its subsidiaries of any environmental concern.
- 4) The only useful piece of information in relation to this possibility of concern was an article in the West Australian on 25 April 1987 (Appendix E).

Bond Corporation subsequently obtained a copy of the press statement issued by the EPA (Appendix D). It indicates some concern in relation to possible roadworks and a need for overall co-ordination, but it does not say that the intending purchaser of Lot 1 shall be at financial risk because the EPA will prevent the site's development.

- 5) It is unusual for any appropriately zoned residential land to require formal EPA assessment. Indeed the EPA and the Minister for Environment have waived this requirement for land zoned 'Public Purposes' at Buckland Hill, saying that it is a matter purely for town planning procedures. They go on to say that the spirit and intent of System 6 conservation can be adequately served through the town planning procedures, i.e. a PER is not required - just rezoning. Lot 1 is way ahead of this, because it is already appropriately zoned.
- 6) Bond Corporation presented a preliminary NOI to the EPA Chairman on 29 June 1987, as is customary. It was some seventy-one days later (and well outside the twenty-eight days prescribed within the Environmental Protection Act, 1986) before a letter to Bond Corporation from the EPA stated that formal assessment under Part IV of the Act would be required, but that it was yet to determine the level. A few weeks later, the EPA decided on NOI level. This was in turn overruled by the Minister who upheld two appeals in regard to PER level of assessment as against NOI, and denied Bond Corporation the opportunity to present a case prior to determining the matter.

Given this history, it is not reasonable to question Bond Corporation's good faith both as a purchaser and a responsible proponent in this project.

The Minister, despite repeated requests, would not release the text of the appeals he upheld. So the proponent has had only fairly generalized summary statements to consider.

It has never been shown that there has been 'public outcry' on this issue. It has been taken up in the local press in response to intensive lobbying by a relatively small local-action group.

b) The assessment of flora and fauna in Lot 1 is addressed under Point 1. The approach taken to assess the impact on flora and fauna is considered consistent with current practice in environmental impact assessment. This does not require the extensive collection of baseline data rather it concentrates on potential for impacts.

- As indicated in part a) of Point 20, the PER could not have failed to comply with the requirements of the EPA in regard to assessment of fauna, because the EPA reviewed and made comments on two drafts of the PER before it was approved for publication. It is requested that the EPA resolve this issue.
- The land use on the northern site boundary of Lot 1 is addressed in Section 3 of this document.
- The PER (Section 6.1) states that 230 conspicuous trees are present on Lot 1, whereas one submission claims that 1,300 conspicuous trees were counted in December 1987. The difference in the definition of a conspicuous tree would account for this discrepancy. It is probable that the latter count included shrubs. The proponent needs to review the submission to determine the definition of trees, etc. The proponent does not include Banksias for practical reasons. It is recognized that Banksias can be maintained in domestic gardens, as there are many examples of Banksias in cultivated gardens throughout the Claremont-Wembley Downs areas.

c) - The rezoning of Lot 1 from 'Public Purposes - University of Western Australia' to 'Development Zone' by the NCC in 1985 enabled a wide range of land use and development options for the site, subject to NCC approval (Section 3.2). Possible land use options included residential development. Based on informal discussions with members of the NCC, the proposal for residential development was favourably received. However, no formal approval could be granted until after the EPA made its report and recommendations, because of the wide ranging powers of the Environmental Protection Act, 1986.

The comment about precedent setting being absurd needs to be reviewed in full, not in summary. It is not known why the EPA has required the proponent to consider this statement.

- The approval and construction of a residential retirement village within Bold Park, as defined prior to 1976, are considered a precedent because development within that area is not consistent with the recommendations of the System 6 Study. More importantly, however, the development neither met with opposition, nor was it subjected to formal EPA assessment. The proponent considers that the approval authorities should maintain some consistency in the approval procedures relating to developments proposed in areas affected by System 6 Study recommendations.

- The PER states (Section 6.6.1) that mobile fauna, particularly the mammals, birds and reptiles, would be capable of moving into adjacent bushland where similar habitats are located, following disturbance from site preparation. It is quite common for wildlife to colonize adjacent bushland following preparations for new residential developments.

One submission commented that the ability of mobile fauna to move to other areas has never been scientifically proved and is intuitively wrong. This argument assumes that the receiving environment has optimum utilization of all available ecological niches. The likelihood of niches being available for mammals, birds and reptiles in the adjacent Bold Park is significantly higher than would be expected in a less disturbed or pristine environment. The impacts of human utilization of, and incursions by domestic animals into, Bold Park are likely to have contributed to the creation of these vacant niches.

21. The opponents' desire for Bold Park, together with adjacent natural vegetation areas including Lot 1, to be preserved for future generations as one large reserve would require either Lot 1 being purchased by an authority capable of administering the land, or donation of the site by the proponent to the public.

In the first instance, as stated in the PER (Section 3.1 and Appendix B), prospective organizations were offered the opportunity to purchase Lot 1, and all organizations declined.

Secondly, because the proponent is a public company accountable to its shareholders, it would not be acting in the shareholders' interest if it granted Lot 1 to the public through an appropriate authority, without adequate compensation for costs incurred.

This argument advocating the preservation of Lot 1 for future generations is highly emotive. The argument ignores the adequate provision of properly managed conservation and recreational areas within and adjacent to the Perth metropolitan area. It also incorrectly infers that bushland gains in conservation value once it is surrounded by residential development.

22. The anomalies and errors associated with the System 6 M47 area boundaries have been adequately addressed in the PER (Section 5.4.2). Lot 1 could never have been considered a component of Bold Park as it was a private land-holding. It was previously recommended for residential purposes, even by the PCC who has no say in the matter. For this reason, the overall environmental value of Lot 1 should remain a separate issue from the environmental value of the System 6 M47 Bold Park area. If opponents are really genuine, they should request the PCC to close the golf course in Bold Park and rehabilitate it to bushland. They should similarly request removal of the swimming pool, bowling club, Water Authority reservoir and rehabilitation of the Skyline drive-in site.

The setting of a precedent for possible future housing development within the M47 Bold Park area should not be an issue in the approval process for the proposed development of Lot 1. Environmental approval for development should be based solely on the merits of the proposal submitted to the EPA. Similarly, the question of whether approval for development

sets a precedent for additional development elsewhere is beyond the scope of the environmental impact assessment process for the proposal under consideration.

23. There are some nine varied items under point 23 in the summary of issues. However, the EPA document denigrates these as being 'proforma' submissions. It did not note how many 'anti-development' submissions were proforma.

Table B1 Birds of Bold Park

Species	Reabold Hill ^a	Perry Lakes ^b	Perth ^c
Black-shouldered Kite	3		Common
Brown Goshawk	1		Common
Australian Kestrel	5		Common
Australian Hobby	1		Uncommon
Brown Falcon	2		Uncommon
Rainbow Lorikeet	5	1	Common
Purple-crowned Lorikeet		1	Uncommon
Galah	11	4	Common
White-tailed Black Cockatoo	5	4	Common
Port Lincoln Parrot	6	12	Very common
Western Rosella	1		Uncommon
Elegant Parrot	1		Uncommon
Laughing Kookaburra	11	11	Very common
Sacred Kingfisher	3	1	Common
Rainbow Bee-eater	3	1	Very common
Pallid Cuckoo	2		Common
Shining Bronze Cuckoo	4		Common
Black-faced Wood-swallow		4	Uncommon
Welcome Swallow	7	11	Very Common
White-backed Swallow		1	Uncommon
Tree Martin	3	10	Very common
Grey Fantail	8	3	Very common
Willie Wagtail		2	Very common
Jacky Winter	2		Uncommon
Rufous Whistler	8	1	Very common
Black-faced Cuckoo-shrike	9	1	Very common
Western Gerygone	10	4	Common
Weebill	10	4	Common
Western Thornbill	8		Common
Inland Thornbill		1	Common
Yellow-rumped Thornbill	9		Common
Varied Sittella	4		Common

Species	Reabold Hill ^a	Perry Lakes ^b	Perth ^c
Spotted Pardalote		1	Common
Striated Pardalote	8	6	Very common
Silvereye	10	1	Very common
Western Spinebill	10		Common
Brown Honeyeater	11	5	Very common
Singing Honeyeater	10	5	Very common
White-cheeked Honeyeater	9		Common
Red Wattlebird	11	12	Very common
Little Wattlebird	6		Common
Richard's Pipit	1	1	Common
Grey Butcher-bird	11	6	Very common
Australian Magpie-lark		1	Very common
Australian Magpie	11	12	Very common
Australian Raven	11	12	Very common
Feral Pigeon		1	Very common
Laughing Turtle Dove		3	Very common

a Out of eleven monthly visits

b Out of twelve monthly visits

c Data from 130 sites

Very common >50% of sites
Common 10-50% of sites
Uncommon 2-10% of sites
Rare <2% of sites

APPENDIX C
LIST OF PROPONENT'S COMMITMENTS

The proponent makes the following commitments:

- . Construction and development of the site as one stage to proceed as soon as possible after approval.
- . Construction commitments to include all those matters detailed in Section 7.1 of the PER and particularly:
 - construction materials and practices to be in accordance with the relevant Australian codes;
 - site development and infrastructure to be completed within six months of approval;
 - the bore/s supplying irrigation water to be located as far away as possible from Camel Lake;
 - during construction, pumping tests to be undertaken to demonstrate that draw would not adversely affect Camel Lake;
 - dust and noise control measures to be enacted subject to conditions of the NCC;
 - boundary of the site to be marked to protect adjacent lands;
 - construction workers to be instructed to be careful of vegetation and fauna;
 - trucks removing spoil to be covered, if required;
 - all trees for retention to be marked;
 - refuse and construction material wastes to be disposed of in a controlled manner;
 - chemical toilets to be used on site;
 - following completion of all site works, cleared areas to be hydro-mulched;
 - any other conditions as required by the NCC.
- . Development of the subdivision in accordance with Figure 4.2 of the PER.
- . Development of all infrastructure and provision of all services underground.
- . Development of all public open space and recreation facilities and provision of tennis courts, gazebo, park seating, toilet and washing facilities in the home-store for public use.

- . Covenants as outlined in Section 7.2 of the PER to be included on all transfers of land.
- . Meeting of all SPC, EPA and NCC planning and engineering requirements.
- . Meeting of all other public authorities requirements.
- . Should the PCC so require, the proponent will recut the PCC perimeter fire-breaks and pave these with crushed limestone to improve access for fire-fighting.
- . Landscape commitments to include:
 - provision of a uniform wall around the residential portions of the site;
 - retention of all conspicuous trees, wherever possible;
 - application of tree conservation measures where appropriate;
 - provision of a pedestrian/cycle path network;
 - provision of paths in public lands as stabilized limestone;
 - provision of reticulation for all public open space, roadside verges and Stephenson Avenue frontage;
 - provision of planting beds in roadside verges;
 - maintenance of all public open space and roadside verges and provision and operation of a reticulation system for two years or until all lots are sold;
 - provision of reticulation for, and initial landscaping of, the area of Bold Park abutting the northern site boundary, if requested by the PCC;
 - retention of all stormwater on site;
 - provision of reticulation equipment of high quality and subject to NCC approval;
 - hydro-mulching of all public open space and roadside verges where appropriate;
 - selective trimming of understorey and dead limbs from existing vegetation for safety and aesthetics;
 - planting of ground cover and grasses in public open space and road verges;
 - provision of signs on the northern and western boundaries of public lands indicating that pets are prohibited in Bold Park;
 - provision of signs near entrances to Bold Park from the site warning about the risks of fire outbreak and the need for precautions;
 - provision of rubbish bins near the entrances to Bold Park from the site.

**APPENDIX D
EPA PRESS STATEMENT**

PRESS STATEMENT

ENVIRONMENTAL PROTECTION AUTHORITY EXPRESSES CONCERN
OVER PROPOSALS IN BOLD PARK

The Environmental Protection Authority has advised that there should be no development approvals for the University of Western Australia land in Bold Park until proper plans were prepared and assessed. The Underwood Avenue land, owned by the University of Western Australia, forms part of the Bold Park area which is covered by a System Six recommendation and advocates the area's value as a Region Park.

The Chairman of the Authority, Mr Barry Carbon, said that there were several proposals in the Bold Park area, which collectively could affect the high recreation and conservation values of the area. Mr. Carbon said 'it was essential for a co-ordinated and integrated approach to be taken in assessing these proposals'. Final approvals to any development in the proposed Bold Park Regional Park cannot be made until the E.P.A. has reported on them.

There are proposals to construct roads through the area, one being the extension of Underwood Avenue to join West Coast Highway and the other being the Western Suburbs Highway which would run through the western section of the Park.

The southern portion of the area is zoned for residential development and is owned by the Perth City Council and University of Western Australia. The Perth City Council has advised the Authority that it proposes to subdivide its holding for housing.

The EPA believes that it is unlikely that two major roads through the area would be environmentally acceptable and that the whole question regarding the road proposals and their impact must be addressed before it would be able to provide any recommendation on the question of the residential zoned land. The Authority wanted to ensure that individual proposals were not assessed in isolation.

Mr Carbon said that 'as the various proposals involved two Councils, the State Planning Commission, the Main Roads Department and the University of W.A., it was difficult to easily resolve the matter. The Authority has been trying to get a co-ordinated approach underway for over twelve months. The EPA was anxious to bring all the parties together to find a solution which would ensure that the conservation and recreation values of the area were maintained'.

APPENDIX E
WEST AUSTRALIAN ARTICLE, 25 APRIL 1987

EPA halts Bold Park land plans

THE Environmental Protection Authority has temporarily halted \$40 million plans by Perth City Council and the University of WA to subdivide more than 80 hectares of Bold Park land for housing.

By ROBERT WAINWRIGHT

The authority has also told the Main Roads Department that plans for two major roads — the western suburbs highway and extension of Underwood Avenue through the park — cannot go ahead till an overall study has been done of the area.

The decision is seen as a victory for local residents who have been lobbying the Government to halt the university's plans to sell off 19ha of bushland on the north side of Stephenson Avenue.

The university has offered the land for sale by public tender. It is estimated to be worth \$9 million. The council planned to

subdivide another 60ha of land — worth an estimated \$30 million — which it owns next to the university land.

Both developments depend on the future extension of Underwood Avenue through the park, an extension that EPA chairman Barry Carbon said could have a serious environmental impact on the area.

"The EPA believes it is unlikely that two major roads through the area would be environmentally acceptable and that the whole question of road proposals and their impact must be addressed before it could provide any recommendation on the question of the residentially-zoned land," Mr Carbon said.

"Final approvals for any development in the proposed Bold Park regional park cannot be made till the EPA has reported on them."

Because the proposals involved two councils, the State Planning Commission, Main Roads Department and university, the matter was difficult to resolve.

"We are anxious to bring all parties together to find a solution which will ensure that the conservation and recreation values of the area are maintained," he said.

A representative of the Friends of Bold Park Bushland, Pru Brown, welcomed the EPA's decision but said the

group was concerned that the subdivision would still go ahead.

"There is still a long way to go before we are satisfied," she said.

The university's deputy vice-chancellor of finance, Professor Roy Lourens, said the university would accept the EPA's ruling.

Perth town clerk Reg Dawson said the council had rezoned the land for residential subdivision in 1974.

"We would expect to follow the normal planning processes and the future road extensions are critical for our development plans," he said.

The Commissioner for Main Roads, Mr Don Aitken, could not be contacted for comment.

WEST AUST 25/4/87

APPENDIX F
DEPARTMENT OF CONSERVATION AND ENVIRONMENT LETTER

Department of
CONSERVATION and ENVIRONMENT

33889

Town Clerk
City of Nedlands
71 Stirling Highway
NEDLANDS WA 6009

your ref.
our ref: 227/74/78.21
enquiries: N Orr

Dear Sir

TOWN PLANNING REGULATIONS 1967
CONSULTATIONS WITH PUBLIC AUTHORITIES DURING PREPARATION
OF TOWN PLANNING SCHEMES

Thank you for your letter of September 4, 1978 in which you advise that the City of Nedlands is proceeding with a review of its Town Planning Scheme No. 1.

From discussions with Mr F McGrath it is apparent that the amendments contemplated do not have any major environmental implications, in which case this Department has little in the way of comments and advice to offer.

If there are any other changes contemplated beyond those discussed with Mr McGrath, this Department would be grateful for the opportunity to comment on them.

Yours faithfully

C. F. Porter
C F Porter
DIRECTOR

October 5, 1978

M47 BOLD PARK, CITY BEACH

The recommended area comprises part of Endowment Land, owned by the City of Perth, subject to the City of Perth Endowment Lands Act, including part of Locations 571, 585, 617, 1911, 2103 and part of Perthshire Locations Al and Ak (Figure 116). Part of the area is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

Private groundwater extraction may affect vegetation in the area, which contains sewerage works and SEC lines, and may be affected by proposed road works. The proposed Western Suburbs Highway is routed to pass through the area.

The area of natural bushland and pine plantations to the south-west of Bold Park has been proposed by the Perth City Council for inclusion in the Park. The pine plantations include a quarry and a paddock which will be used for parking and picnic facilities. The Council is seeking an amendment to the Endowment Lands Act, to enable money gained from the sale of Endowment Land to be used to maintain and extend Bold Park, for which the Council has a development and management policy.

The area has deep, calcareous sands on the high sharp ridges, pale yellow and grey siliceous sands in the interdunal valleys, and dark-brown sands east of Reabold Hill.

Most of the section west and south-west of Reabold Hill is covered by woodland or open-woodland of tuart. The deeper moister soils of the valleys and depressions carry dense stands of banksia with a scattering of tuart and sheoak, and just north of the pine plantation, a few isolated jarrah. The understorey is dominated by blueboy and *Pelargonium capitatum*.

On the limestone ridges and the upper part of Reabold Hill the tree cover is sparse or absent. There are a few tuarts, but the vegetation is mainly a very rich closed-scrub or closed-heath, which includes snakebush, rats' tails and yellow lily, and where limestone is present, parrot bush, yellow leschenaultia and spider-net grevillea.

The vegetation on the northern slope of Reabold Hill, just below and east of the old quarry, is distinctive and comprises closed-scrub dominated by *Acacia xanthina* with a few emergent tuarts associated with such species as *Scaevola nitida* and chenille honeymyrtle.

The vegetation of the dry slopes and ridges comprises woodland or open-woodland of tuart, with an understorey of banksia, and a groundstorey which includes blueboy, one-sided bottlebrush and prickly moses. In the extreme south-west the vegetation includes *Olearia axillaris*, *Conostylis* and *Melaleuca acerosa*.

Along the western side of Perry Lakes Drive there is open-forest of tuart, jarrah, marri and flooded gum. Flooded gum is dominant around the small seasonal swamp near the corner of Perry Lakes Drive and Underwood Avenue, with some swamp banksia in the understorey. North of the swamp is a thicket of Fremantle mallee, which is uncommon in System 6 and rare in the metropolitan area.

Although much of the section of Bold Park between Oceanic Drive and The Boulevard is developed, there are still areas of bush. Especially significant is another smaller stand of Fremantle mallee north of Oceanic Drive, and the area south-west of the Skyline Drive-In, which supports low open-forest and low woodland of limestone marlock, which is uncommon in the metropolitan area. The grassed area around Perry Lakes contains a large number of native trees, including flooded gum, tuart and marri, with a second storey of wattle and banksia.

Bold Park supports close to a hundred varieties of birds, including a number of rare species such as the splendid wren (now lost from Kings Park) and the black-capped sitella. Species from Perry Lakes include black duck, grey teal and grebe. The reptiles in Bold Park include the bob-tailed lizard, sandhill dragon and bearded dragon, four species of skink and three of gecko. There is also a wide variety of insects, including the large colourful iridescent jewel beetle.

Reabold Hill is one of the highest parts of the Coastal Plain near Perth and is used for sightseeing. The remainder of the area is popular for bushwalking, for which gravel paths have been provided, and for recreation in general.

The area constitutes open space of regional significance (see Figure 1, Chapter 4) because of its high conservation, recreation and education value, and its proximity to Perth residential areas. Coordinated management of the area is likely to be required, particularly in view of the proposals for road and service corridors to pass through it. Important management considerations for the area include: encouraging the growth and regeneration of local indigenous flora (especially the Fremantle mallee and limestone marlock); restricting planting to local indigenous flora; and fire control.

Recommendations:

M47.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).

M47.2 That the Perth City Council's proposal to maintain and extend Bold Park is endorsed.

M46 SWANBOURNE BEACH AND RIFLE RANGE

The recommended area is situated in Swanbourne and comprises Reserves A23729 and A27250, for Recreation, both vested in the City of Nedlands; the eastern portion of Location 1911, owned in freehold the City of Perth, subject to the City of Perth Endowment Lands Act; and a portion of Location 313, most of this being covered by lease 37L/449, held by the Commonwealth, with a smaller part comprising vacant Crown land (Figure 115). The northern tip of Location 1911 is "reserved" for Parks and Recreation under the Metropolitan Region Scheme.

The City of Perth section in the north supports, in equal abundance, closed-heath of wattle and open-heath dominated by melaleuca. The tops of the dunes are rich in species, including Geraldton wax, one-sided bottlebrush, snakebrush, tar bush and rats' tails. There are some patches of closed-scrub of peppermint in the northern section, and woodland of tuart and banksia with an understorey of prickly moses, scrub sheoak, boobialla and zamia in the eastern section.

The Indian Ocean foreshore is relatively undisturbed in the northern section and contains mainly acacia species. The land, however, once supported a woodland of tuart, as indicated by dead and dying trees.

There is a wide variety of birds, including the variegated and white-winged wren, white and yellow-plumed honeyeater and the white-backed swallow. The area is of great significance as a corridor for the movement of birds along the coast and thence inland through reserves such as Bold Park (M47).

Snakes in the area include the colourful western black-striped snake, which is infrequent in System 6 and rare elsewhere, the half-ringed snake and the little whip snake. The turtle frog occurs in the older dunes. It has unusual habits, spending most of its time underground where it feeds on termites. Two species of jewel beetle and one species of ant lion, which eats other insects dependent on dune vegetation and which has practically disappeared from the metropolitan area, are also found in the area.

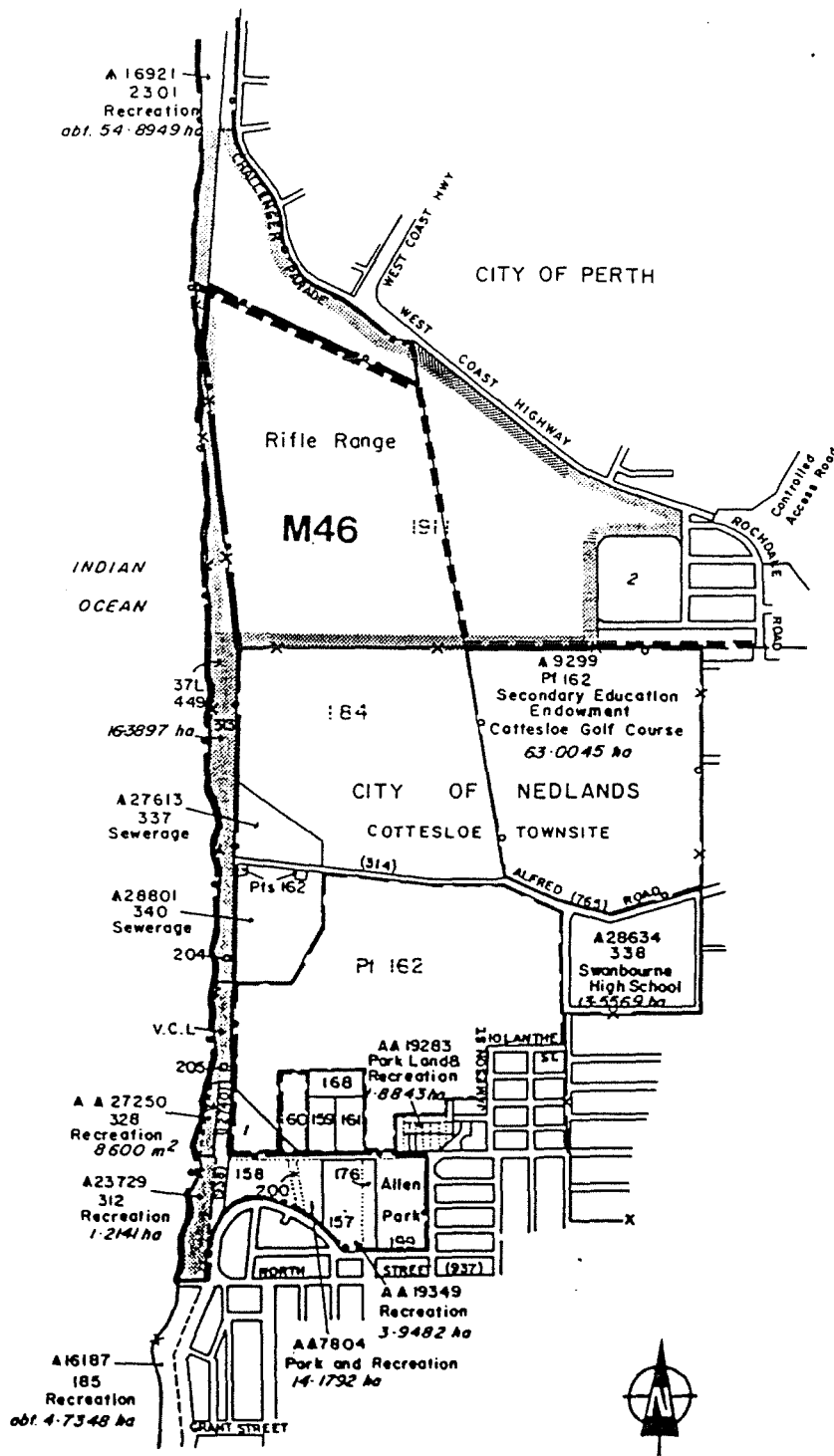
Despite its conservation value, the MRPA questions the justification for extending the boundaries of the Parks and Recreation area.




The foreshore is used intensively for recreation. Access and facilities, however, are inadequate. The vegetation of the foredunes to the south of the Rifle Range has been destroyed by off-road vehicles and by people seeking pedestrian access to the foreshore. This traffic seriously threatens the stability of the dune system and the damage would extend further northward if access were to be provided. It is important that well-defined paths should be provided along the foreshore and foredunes in order to conserve the biologically significant dune vegetation. The North Swanbourne foreshore is poorly provided with services, lacking toilets, surf-lifesaving facilities and access for emergency vehicles.

The recommended area contributes to open space of regional significance, in conjunction with Bold Park (M47), because of its high conservation and recreation value (see Figure 1, Chapter 4). Important management considerations for the area include: protecting and managing the dunes in a manner consistent with the conservation of flora and fauna; restoring and stabilising the damaged foredunes, south of the Rifle Range, by planting suitable dune plants, preferably locally indigenous species; prohibiting all vehicular and pedestrian access to the dunes, except along well-defined pathways; and providing sufficient facilities for the health, safety and comfort of the public using the foreshore.

Recommendations:

- M46.1 That our general recommendations on planning and management of Regional Parks be applied to this area (see Recommendations 15 and 16, Chapter 5).
- M46.2 That the vacant Crown land be declared a Class C Reserve for Recreation and that the Reserve be vested in the City of Nedlands.
- M46.3 That the Nedlands City Council, in consultation with the Department of Conservation and Environment prepare a management plan for Reserves A23729 and A27250, and the vacant Crown land.
- M46.4 That the Perth City Council, in consultation with the Department of Fisheries and Wildlife prepare a management plan for Location 1911, giving particular attention to the foreshore portion.
- M46.5 That the Commonwealth of Australia retain as much uncleared land within lease 37L/449 as possible.



- LEGEND**
-  AREA BOUNDARY
 -  M.R.S. PARKS AND RECREATION RESERVE
 -  LOCAL AUTHORITY BOUNDARY

**CITIES OF PERTH
and NEDLANDS**



LANDS DEPARTMENT PUBLIC PLAN No
PERTH 2000 07-21, 07-22, 07-23, 07-24
07-25, 08-24
D.C.E. Ref. No F 29
1990 LANDS DEPARTMENT ROAD GUIDE—MAP 55 REF. 14.47

Figure



ENVIRONMENTAL PROTECTION AUTHORITY

BP HOUSE,
1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000
Telephone 322 2477

Town Clerk
City of Perth
PO Box C120
PERTH WA 6000

Your Ref.

Our Ref. 73/86 001802

Dear Sir

I refer to your letter of 10 April 1986 in which you sought the Authority's advice on Council's proposal to extend Underwood Avenue through to West Coast Highway.

The Authority has considered this matter and in particular notes that the proposed road would cross part of the area affected by the System Six recommendation for Bold Park (M47). The Authority has also noted that the southernmost portion of the System Six area is zoned residential under Councils Town Planning Scheme. Both the road proposal and the existing zoning can, therefore, be seen to conflict with the System Six recommendation which, as you would be aware, advocates the planning and management of Bold Park and the adjacent area as a regional park.

In examining this matter, many issues relating to the perceived road problems in this locality became apparent. It is, however, noted that only one of these relates to the proposed sports stadium, which Council uses as justification for the proposed extension. The other matters include the deliberations of the Western Suburbs Road Study Group, the current studies by the Urban Lands Council for the Graylands area (and surrounds), development options for Perth City Council owned lands in the locality and proposals by the City of Subiaco for a one-way pair road system on Roberts Road, and Hay Street. It is, therefore, evident that Council's proposal has both local and regional implications. In addition, as road and traffic related difficulties in the general area, and the possible remedial measures, extend across several municipal boundaries, the overall situation is clearly a complex one.

The Authority considers that it would be inappropriate to respond to the conflict between the Underwood Avenue proposal and the System Six Recommendation (eg by modifying the recommendation) without a thorough examination and review of all the issues involved. Matters requiring attention in this context would include:

- a review of System Six recommendation M46 and M47;
- the need for formal amendment of the Metropolitan Region Scheme;
- integration of the environmental impact assessment and formal planning processes; and
- the implications of the future Stephenson Highway alignment through the Western portion of Bold Park.

As any proposal affecting the System Six recommendations would be likely to attract considerable public interest, the Authority considers that the examination and review process should provide the opportunity for public involvement. It is therefore likely that the Authority would call for formal documentation of the environmental aspects of proposed strategies for the resolution of road and traffic difficulties in the general area. A Public Environmental Report would be the most appropriate means to achieve this objective and it is in this context that integration of the impact assessment and planning processes would require careful attention.

As evident from the preceding, the Authority considers it essential that this complex matter be addressed in a comprehensive manner and with input from all involved parties, these being:

- . State Planning Commission
- . Main Roads Department
- . City of Subiaco
- . City of Nedlands
- . Urban Lands Council
- . University of Western Australia
- . The public

As an initial step towards the resolution of this matter, discussions between the key agencies involved (VIZ, PCC, SPC, MRD, DCE, and NCC) would be necessary. Although, as a proponent, Council will need to play an instigating role in arranging these discussions, the Department of Conservation and Environment would be available to assist Council in this matter. In this regard, Messrs Peter Skitmore and Paul Holmes are nominated as contact officers.

Yours faithfully

SIGN: B. A. CARBON
B A CARBON
CHAIRMAN

3 June 1986

CITY OF NEDLANDS

71 STIRLING HIGHWAY, NEDLANDS, W.A. 6009
TELEPHONE 386 2414

OFFICE HOURS: MON.-FRI. 9 A.M. TO 4 P.M.

ALL CORRESPONDENCE TO BE ADDRESSED TO TOWN CLERK P.O. BOX 9, NEDLANDS 6009

Enquiries: MR. MCGRATH Our Ref.: FEM:CB Your Ref.:

13th November, 1979

The Secretary,
Department of Conservation and
Environment,
B.P. House,
1 Mount Street,
PERTH. W.A. 6000.

Dear Sir,

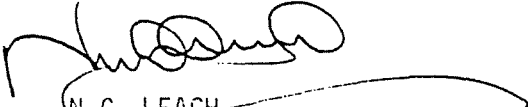
SUBJECT: TOWN PLANNING SCHEME NO. 2

Please find attached a new notice of advice that the City of Nedlands is preparing a Town Planning Scheme and the matter is referred to your organization as required in the Town Planning Regulations.

Approximately 18 months ago a similar notice was sent to your organization and to which you replied advising that no objections were made to the Council's proposal. This repetition has occurred through the Council involving itself with the public in the preparation of its Scheme and a considerable period of time has elapsed since the original notification.

Accordingly, it is necessary that the proposed review of the Scheme be again advertised. As previously advised, no significant changes are proposed in the Town Planning Scheme. It is essentially a retention of the status quo with all zonings remaining in tact, except a small area in Leura Street, Nedlands where it is proposed that land which is currently zoned "shopping" will be changed to "single residential". The Scheme Text retains almost entirely the previous Scheme Text but in addition provisions are made for discretionary clauses which will enable the Council to more efficiently administer its Town Planning Scheme. These do not effect the works of statutory authorities.

Yours faithfully,


N.G. LEACH
TOWN CLERK

Town Clerk,
City of Nedlands,
P.O. Box 9,
NEDLANDS, W.A. 6009.

FEM:CB
227/74/78.21 BM:RE
Mr. B. Masters.

Attention : Mr. McGrath.

Town Planning Scheme No. 2.

Thank you for your letter of 13th November 1979 in which you advise of the preparation of Town Planning Scheme number 2.

From information available to this department, it does not appear that there will be any changes in the scheme which are likely to deleteriously affect the environment.

Therefore, this department does not wish to make any comment on the scheme nor to offer any opposition to it.



C.F. Porter
DIRECTOR.

28 December, 1979.



ENVIRONMENTAL PROTECTION AUTHORITY

1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000

Telephone (09) 222 7000

1 BLETTER 1

copy on 199/74 v3

Mr T Lennon
Joint Managing Director
Peet and Company Limited
200 St George's Terrace
PERTH WA 6000

Your Ref

Our Ref

Inquiries

Dear Mr Lennon

LOT 1 STEPHENSON AVENUE, CITY BEACH/CITY OF NEDLANDS

The Environmental Protection Authority has recently considered your letter dated 16 April and your request for clear advice on the nature of any development constraints effecting land at Bold Park. You are aware that this land is covered by the System 6 Report's proposals. The Environmental Protection Authority would have liked to have been able to give you clear guidance on this issue, but unfortunately there is a lack of information available on several development proposals for Bold Park.

The Perth City Council has proposed an extension of Underwood Avenue westwards through Bold Park to join West Coast Highway. There is a separate proposal for the western suburbs highway to pass through Bold Park from the south to the north. There is also a proposal by Perth City Council to open the southern area for urban development. The Environmental Protection Authority has no firm details for any of these proposals and has not been able to recommend on the environmental acceptability of the impacts, or possible impacts, on the System 6 area. The only resolution on these proposals made by the Environmental Protection Authority is that it is unlikely it would consider it to be environmentally acceptable to have two major roads through Bold Park.

The EPA has in the recent past requested the City of Nedlands, the Perth City Council and the Main Roads Department to meet in order to provide an integrated proposal for the area. It was the intention to provide one simple description of environmental impacts so that the public could be informed, and so that EPA may give the Government advice on environmental impacts on Bold Park. Despite specific requests to the Perth City Council by the EPA in June and September 1986 and February 1987 no such response has been forthcoming.

The EPA regrets the delay, and appreciates that commercial decisions need to be made in the very near future. In the absence of some input from the various landholders and developers, including the University of WA, as the owners of Lot 1, no reasonable advice can be given by EPA. The City of Nedlands, City of Perth and the State Planning Commission have again been reminded of the dilemma, and it has been pointed out that they should not make a decision about the sub division of the land until EPA has given its environmental advice.

The Authority believes that the environmental value of Bold Park area is such that it is essential to ensure that all of the various competing land uses are assessed on an integrated and coordinated basis to ensure these values are maintained or enhanced. To this end the officers of the Authority would be available to assist in providing advice on the resolution of the aforementioned issues.

Yours sincerely



B A CARBON
CHAIRMAN

23 April 1987



ENVIRONMENTAL PROTECTION AUTHORITY

1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000

Telephone (09) 222 7000

22
122

Town Clerk
Nedlands City Council
PO Box 9
NEDLANDS WA 6009

copy 1987/74

Your Ref

Our Ref

Enquiries

Dear Sir

SYSTEM 6 RECOMMENDATION AREA M47 BOLD PARK, PROPOSED SALE OF LOT 1 OF SWAN LOCATION 2103, STEPHENSON AVENUE

The Environmental Protection Authority has recently considered your Town Planning Officer's request for clear advice on the nature of any development constraints effecting land at Bold Park. You are aware that this land is covered by the System 6 Report's proposals. The Environmental Protection Authority would have liked to have been able to give you clear guidance on this issue, but unfortunately there is a lack of information available on several development proposals for Bold Park.

The Perth City Council has proposed an extension of Underwood Avenue westwards through Bold Park to join West Coast Highway. There is a separate proposal for the western suburbs highway to pass through Bold Park from the south to the north. There is also a proposal by Perth City Council to open the southern area for urban development. The Environmental Protection Authority has no firm details for any of these proposals and has not been able to recommend on the environmental acceptability of the impacts, or possible impacts, on the System 6 area. The only resolution on these proposals made by the Environmental Protection Authority is that it is unlikely it would consider it to be environmentally acceptable to have two major roads through Bold Park.

The EPA has in the recent past requested your Council, the Perth City Council and the Main Roads Department to meet in order to provide an integrated proposal for the area. It was the intention to provide one simple description of environmental impacts so that the public could be informed, and so that EPA may give the Government advice on environmental impacts on Bold Park. Despite specific requests to the Perth City Council by the EPA in June and September 1986 and February 1987 no such response has been forthcoming.

The EPA is concerned about the delay in resolving this matter and appreciates that commercial decisions need to be made in the very near future. In the absence of some input from the various landholders and developers, including the University of WA, as the owners of Lot 1, no reasonable advice on proposals can be given by EPA. Also, it should be noted that under Section 41 of the Environmental Protection Act it is inappropriate for any final decisions to be made on this matter until your Council has received advice on the environmental issues from the Minister for the Environment. Similar advice has been given to the Perth City Council and the State Planning Commission.

The Authority believes that the environmental value of Bold Park area is such that it is essential to ensure that all of the various competing land uses are assessed on an integrated and coordinated basis to ensure these values are maintained or enhanced. To this end the officers of the Authority would be available to assist in providing advice on the resolution of the aforementioned issues.

Yours faithfully



B A CARBON
CHAIRMAN

23 April 1987



ENVIRONMENTAL PROTECTION AUTHORITY

1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000

Telephone (09) 222 7000

Town Clerk
Perth City Council

Your Ref

Our Ref

Enquiries

Dear Sir

SYSTEM 6 RECOMMENDATION AREA M47 BOLD PARK, PROPOSED SALE OF LOT 1 OF SWAN LOCATION 2103, STEPHENSON AVENUE

The Environmental Protection Authority has recently considered your City Valuer's request for clear advice on the nature of any development constraints effecting land at Bold Park. You are aware that this land is covered by the System 6 Report's proposals. The Environmental Protection Authority would have liked to have been able to give you clear guidance on this issue, but unfortunately there is a lack of information available on several development proposals for Bold Park.

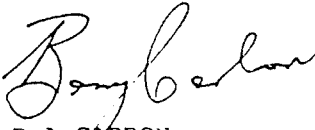
The Perth City Council has proposed an extension of Underwood Avenue westwards through Bold Park to join West Coast Highway. There is a separate proposal for the western suburbs highway to pass through Bold Park from the south to the north. There is also a proposal by your Council to open the southern area for urban development. The Environmental Protection Authority has no firm details for any of these proposals and has not been able to recommend on the environmental acceptability of the impacts, or possible impacts, on the System 6 area. The only resolution on these proposals made by the Environmental Protection Authority is that it is unlikely it would consider it to be environmentally acceptable to have two major roads through Bold Park.

The EPA has in the recent past requested your Council, the City of Nedlands, and the Main Roads Department to meet in order to provide an integrated proposal for the area. It was the intention to provide one simple description of environmental impacts so that the public could be informed, and so that EPA may give the Government advice on environmental impacts on Bold Park. Despite specific requests to your Council by the EPA in June and September 1986 and February 1987 no such response has been forthcoming.

The EPA is concerned about the delay in resolving this matter and appreciates that commercial decisions need to be made in the very near future. In the absence of some input from the various landholders and developers, including the University of WA, as the owners of Lot 1, no reasonable advice can be given by EPA. The City of Nedlands, and the State Planning Commission have again been reminded of the dilemma, and it has been pointed out that they should not make a decision about the sub division of the land until EPA has given its environmental advice.

The Authority believes that the environmental value of Bold Park area is such that it is essential to ensure that all of the various competing land uses are assessed on an integrated and coordinated basis to ensure these values are maintained or enhanced. To this end the officers of the Authority would be available to assist in providing advice on the resolution of the aforementioned issues.

Yours faithfully

A handwritten signature in cursive script, appearing to read 'B A Carbon', written in dark ink.

B A CARBON
CHAIRMAN

23 April 1987



ENVIRONMENTAL PROTECTION AUTHORITY

1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000

Telephone (09) 222 7000

copy on 199/10

Executive Secretary
State Planning Commission

Your Ref:

Our Ref: IB:jc

SYSTEM 6 RECOMMENDATION AREA M47 BOLD PARK, PROPOSED
SALE OF LOT 1 OF SWAN LOCATION 2103, STEPHENSON AVENUE.

As you may be aware the Environmental Protection Authority has recently considered requests for clear advice on the nature of any development constraints effecting land at Bold Park. This land is covered by the System 6 Report's proposals (recommendation M47). The Environmental Protection Authority would have liked to have been able to give clear guidance on this issue, but unfortunately there is a lack of information available on several development proposals for Bold Park.

The Perth City Council has proposed an extension of Underwood Avenue westwards through Bold Park to join West Coast Highway. There is a separate proposal for the western suburbs highway to pass through Bold Park from the south to the north. There is also a proposal by Perth City Council to open the southern area for urban development. The Environmental Protection Authority has no firm details for any of these proposals and has not been able to recommend on the environmental acceptability of the impacts, or possible impacts, on the System 6 area. The only resolution on these proposals made by the Environmental Protection Authority is that it is unlikely that it would consider it to be environmentally acceptable to have two more major roads through Bold Park.

The EPA has in the recent past requested the City of Nedlands, the Perth City Council and the Main Roads Department to meet in order to provide an integrated proposal for the area. It was the intention to provide one simple description of environmental impacts so that the public could be informed, and so that EPA may give the Government advice on environmental impacts on Bold Park. Despite specific requests to the Perth City Council by the EPA in June and September 1986 and February 1987 no such response has been forthcoming. Although copies of these letters have already been provided to you, additional copies are enclosed for your convenience.

The EPA is concerned about the delay in resolving this matter and appreciates that commercial decisions need to be made in the very near future. In the absence of some input from the various landholders and developers, including the University of W.A., the owners of Lot 1, no reasonable advice on proposals can be given by EPA. The City of Nedlands and the Perth City Council have again been reminded of the dilemma, and it has been pointed out that they should not make a decision about the sub division of the land until EPA has given its environmental advice. The Authority also requests that should the Commission receive any subdivisional or development proposals for this area, it should refer them to the EPA and not make any decision on them until you have received its recommendations.

Clearly, as identified in my letter dated 3 June 1986 to the Perth City Council, there are major planning issues in the Bold Park area which will involve action by your Commission. In addition, it is noted that no action has been taken by your Commission to amend the Metropolitan Region Scheme to include the western extension of Bold Park with the Parks and Recreation reserve.

The Authority believes that the environmental value of Bold Park area is such that it is essential to ensure that all of the various competing land uses are assessed on an integrated and coordinated basis to ensure these values are maintained or enhanced. To this end the officers of the Authority would be available to assist in providing advice on the resolution of the aforementioned issues.



B A CARBON
CHAIRMAN
23 April 1987



ENVIRONMENTAL PROTECTION AUTHORITY

1 MOUNT STREET, PERTH, WESTERN AUSTRALIA 6000

Telephone (09) 222 7000

117

Mr P Chappell
Chappell Planning Consultants
PO Box 796
SUBIACO WA 6008

Your Ref.

Our Ref.

Enquiries:

copy on 7/88

Dear Mr Chappell

LOT 1 OF SWAN LOCATION 2103- STEPHENSON AVENUE, CITY BEACH

The Environmental Protection Authority has recently considered your request for clear advice on the nature of any development constraints effecting land at Bold Park. You are aware that this land is covered by the System 6 Report's proposals. The Environmental Protection Authority would have liked to have been able to give you clear guidance on this issue, but unfortunately there is a lack of information available on several development proposals for Bold Park.

The Perth City Council has proposed an extension of Underwood Avenue westwards through Bold Park to join West Coast Highway. There is a separate proposal for the western suburbs highway to pass through Bold Park from the south to the north. There is also a proposal by Perth City Council to open the southern area for urban development. The Environmental Protection Authority has no firm details for any of these proposals and has not been able to recommend on the environmental acceptability of the impacts, or possible impacts, on the System 6 area. The only resolution on these proposals made by the Environmental Protection Authority is that it is unlikely it would consider it to be environmentally acceptable to have two major roads through Bold Park.

The EPA has in the recent past requested the City of Nedlands, the Perth City Council and the Main Roads Department to meet in order to provide an integrated proposal for the area. It was the intention to provide one simple description of environmental impacts so that the public could be informed, and so that EPA may give the Government advice on environmental impacts on Bold Park. Despite specific requests to the Perth City Council by the EPA in June and September 1986 and February 1987 no such response has been forthcoming.

The EPA regrets the delay, and appreciates that commercial decisions need to be made in the very near future. In the absence of some input from the various landholders and developers, including the University of WA, as the owners of Lot 1, no reasonable advice can be given by EPA. The City of Nedlands, City of Perth and the State Planning Commission have again been reminded of the dilemma, and it has been pointed out that they should not make a decision about the sub division of the land until EPA has given its environmental advice. Accordingly, it is necessary for any proposals for Lot 1 to be formally assessed under the provisions of the Environmental Protection Act.

The Authority believes the environmental value of Bold Park area is such that it is essential to ensure all of the various competing land uses are assessed on an integrated and coordinated basis. This will ensure these values are maintained or enhanced. To this end the officers of the Authority would be available to assist in providing advice on the resolution of the aforementioned issues.

Yours sincerely

A handwritten signature in cursive script, appearing to read 'B A Carbon', written in black ink.

B A CARBON
CHAIRMAN

23 April 1987