

Riverslea Subdivision (Sussex Locations 9002 and 9101), Margaret River

Greendene Development Corporation Pty Ltd

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

**Environmental Protection Authority
Perth, Western Australia
Bulletin 1224
July 2006**

Environmental Impact Assessment Process Timelines

Date	Progress stages	Time (weeks)
24/12/02	Level of Assessment set (following any appeals upheld)	-
25/07/05	Proponent Document Released for Public Comment	148
22/08/05	Public Comment Period Closed	4
11/05/06	Final Proponent response to the issues raised	37
10/07/06	EPA report to the Minister for the Environment	8

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Summary and recommendations

Greendene Development Corporation Pty Ltd proposes to subdivide an area of land (Locations 9002 and 9101) within the developing Riverslea residential area, one kilometre east of the Margaret River townsite. The proposed subdivision covers an area of approximately 12.28 hectares (ha) including riparian vegetation adjacent to Darch Brook and a tributary to Darch Brook, of which approximately 4.78 ha of remnant upland vegetation is proposed to be cleared for the 65 lot subdivision. This report provides the Environmental Protection Authority's (EPA's) advice and recommendations to the Minister for the Environment on the environmental factors relevant to the proposal.

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

The EPA is also required to have regard for the principles set out in section 4A of the *Environmental Protection Act 1986*.

Relevant environmental factors and principles

The EPA decided that the following environmental factors relevant to the proposal required detailed evaluation in the report:

- (a) Watercourses – Darch Brook and its tributary; and
- (b) Vegetation – ecological function of the upland vegetation adjacent to Darch Brook and its tributary.

There were a number of other factors which were very relevant to the proposal, but the EPA is of the view that the information set out in Appendix 3 provides sufficient evaluation.

The following principles were considered by the EPA in relation to the proposal:

- (a) Precautionary Principle;
- (b) Principle of intergenerational equity; and
- (c) Principle of the conservation of biological diversity and ecological integrity.

Conclusion

The EPA has considered the proposal by Greendene Development Corporation Pty Ltd to subdivide Locations 9002 and 9101, approximately one kilometre east of the Margaret River townsite, for residential purposes.

The EPA notes that the proponent has revised the subdivision to provide a 50 metre upland buffer between the edge of the riparian vegetation of Darch Brook and the proposed subdivision, and a set back of at least 15 metres of upland vegetation to the

north of the tributary and the proposed subdivision. The EPA is satisfied that this revised proposal which retains the riparian vegetation and an ecologically functioning area of upland vegetation, provides confidence that the overall integrity of this section of Darch Brook and downstream can be held at existing levels.

The EPA has recommended that management of stormwater from the site, rehabilitation of the tributary to Darch Brook and the ongoing management of the foreshore areas of the watercourses in the proposal area be managed through the implementation of a Stormwater and Watercourse Rehabilitation Management Plan.

The EPA has also provided other advice regarding a portion of uncleared land (0.67 ha) to the north of the subdivision which is owned by the proponent. The proponent does not have environmental, nor planning approval for this area of vegetation which is comprised of similar vegetation to the proposal area and presents the same constraints on development with regard to set backs from Darch Brook. In order to encompass a holistic approach to development adjacent to Darch Brook the EPA has recommended that the foreshore reserve be extended north, to the intersection of the previously constructed subdivision.

The land to the east of Darch Brook is currently zoned Rural although it is understood that future development of this land is being contemplated. Without prejudicing the requirements for development that is likely to have a significant impact on the environment to be referred to the EPA and other necessary approvals processes, the EPA would expect that any future proposed development would also be set back 50 metres from the edge of riparian vegetation.

The EPA has concluded that the proposal is capable of being managed to meet its objectives, provided that there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4 and summarised in Section 4.

Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for Greendene Development Corporation Pty Ltd to subdivide Locations 9002 and 9101, approximately one kilometre east of the Margaret River townsite, for residential purposes;
2. That the Minister considers the report on the relevant environmental factors and principles as set out in Section 3;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4, and summarised in Section 4; and
4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report.

Conditions

Having considered the proponent's revised proposal and the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by Greendene Development Corporation Pty Ltd to subdivide Locations 9002 and 9101 for residential purposes, is approved for implementation.

These conditions are presented in Appendix 4. Matters addressed in the conditions include the following:

- (a) That the proponent prepare and implement a Stormwater and Watercourse Rehabilitation Management Plan.

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1. Introduction and background

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment on the environmental factors and principles relevant to the proposal by Greendene Development Corporation Pty Ltd to subdivide an area of land within the developing Riverslea residential area, one kilometre east of the Margaret River townsite.

The area identified for the proposal covers 12.28 hectares (ha) including riparian vegetation adjacent to Darch Brook and a tributary to Darch Brook, of which approximately 4.78 ha of remnant upland vegetation is proposed to be cleared for the subdivision. The proposal includes roads within the subdivision, installation of a sewerage connection, rehabilitation of the tributary and the creation of reservations for Darch Brook and its tributary as well as an area of Public Open Space.

The Riverslea subdivision proposal was referred to the EPA in October 2002 and the level of assessment was set as Public Environmental Review (PER) with a public review period of four weeks. This level of assessment was based on the vegetation of the site being in 'very good' to 'excellent' condition and rich in flora and fauna species, including a diverse understorey, and being adjacent to a watercourse (Darch Brook). Darch Brook flows directly to the Margaret River, located approximately 900 metres to the north. This area is also important to members of the public in a 'social' sense. The scoping document outlining the environmental investigations to be undertaken was approved by the EPA in December 2003. The proponent provided the EPA with the PER document in July 2005 and the PER was approved for release for a four-week public review in August 2005.

Further details of the proposal are presented in Section 2 of this report. Section 3 discusses the environmental factors and principles relevant to the proposal. The Environmental Conditions to which the proposal should be subject, if the Minister determines that it may be implemented, are set out in Section 4. Section 5 provides Other Advice by the EPA, Section 6 presents the EPA's Conclusions and Section 7, the EPA's Recommendations.

Appendix 5 contains a summary of submissions and the proponent's response to submissions and is included as a matter of information only and does not form part of the EPA's report and recommendations. Issues arising from this process, and which have been taken into account by the EPA, appear in the report itself.

2. The proposal

The residential subdivision proposal by Greendene Development Corporation Pty Ltd forms part of the developing Riverslea residential area, one kilometre east of the Margaret River townsite.

The proposal in the PER described a 74 lot residential subdivision in Margaret River requiring clearing of approximately 6.3 ha of remnant vegetation, adjacent to Darch Brook and a tributary to Darch Brook. The proposal includes roads within the subdivision, construction of a sewer line, rehabilitation of the tributary to Darch

Brook and the creation of reservations for the waterways and an area of Public Open Space.

Since of release of the PER, a number of modifications to the proposal have been made by the proponent. These include:

- a set back of 50 metres from the edge of riparian vegetation associated with Darch Brook and the proposed subdivision;
- a set back of 15 metres from the edge of the upland vegetation to the immediate north of the degraded tributary and the proposed subdivision;
- a reduction in the area of the proposed subdivision and total number of proposed residential lots from 74 to 65 lots;
- a reduction in area of vegetation to be cleared from 6.3 ha to 4.78 ha;
- clarification of the 'proposal area' to be 12.28 ha, given that the proposal includes rehabilitation of the tributary to Darch Brook;
- the creation of a Dual/Multiple Use Path as a management boundary between the Darch Brook foreshore reserve and the proposed subdivision;
- the sewer line connecting to the pump station on Lot 27 Bussell Highway will be at least 50 metres from Darch Brook riparian vegetation and a site of Aboriginal Heritage significance (i.e. Darch Brook Aboriginal Heritage Site ID 4495).

The main characteristics of the proposal are summarised in Table 1 below. A detailed description of the proposal is provided in Section 2 of the PER (ATA Environmental, 2005).

Table 1: Key Proposal Characteristics

Element	Description
Proposal	Creation of 65 residential lots
Proposal Area (including tributary, proposed Public Open Space, and foreshore reserves)	Approximately 12.28 hectares
Area of disturbance	Approximately 4.78 hectares of clearing
Infrastructure	Roads within the subdivision and installation of a sewerage connection. A Dual/Multiple Use Path to be an interphase between the Darch Brook foreshore reserve and the subdivision.
Set backs: Darch Brook Tributary to Darch Brook	50 metre upland buffer between edge of Darch Brook riparian vegetation and the proposed subdivision. Set back of at least 15 metres between edge of upland vegetation to north of degraded tributary and the proposed subdivision.
Rehabilitation	Reconstruction of the degraded portion of the tributary to Darch Brook to create a habitat that provides for wetland flora and fauna, subdivision drainage and passive recreation.

The potential impacts of the proposal and their proposed management are summarised in Appendix 3.

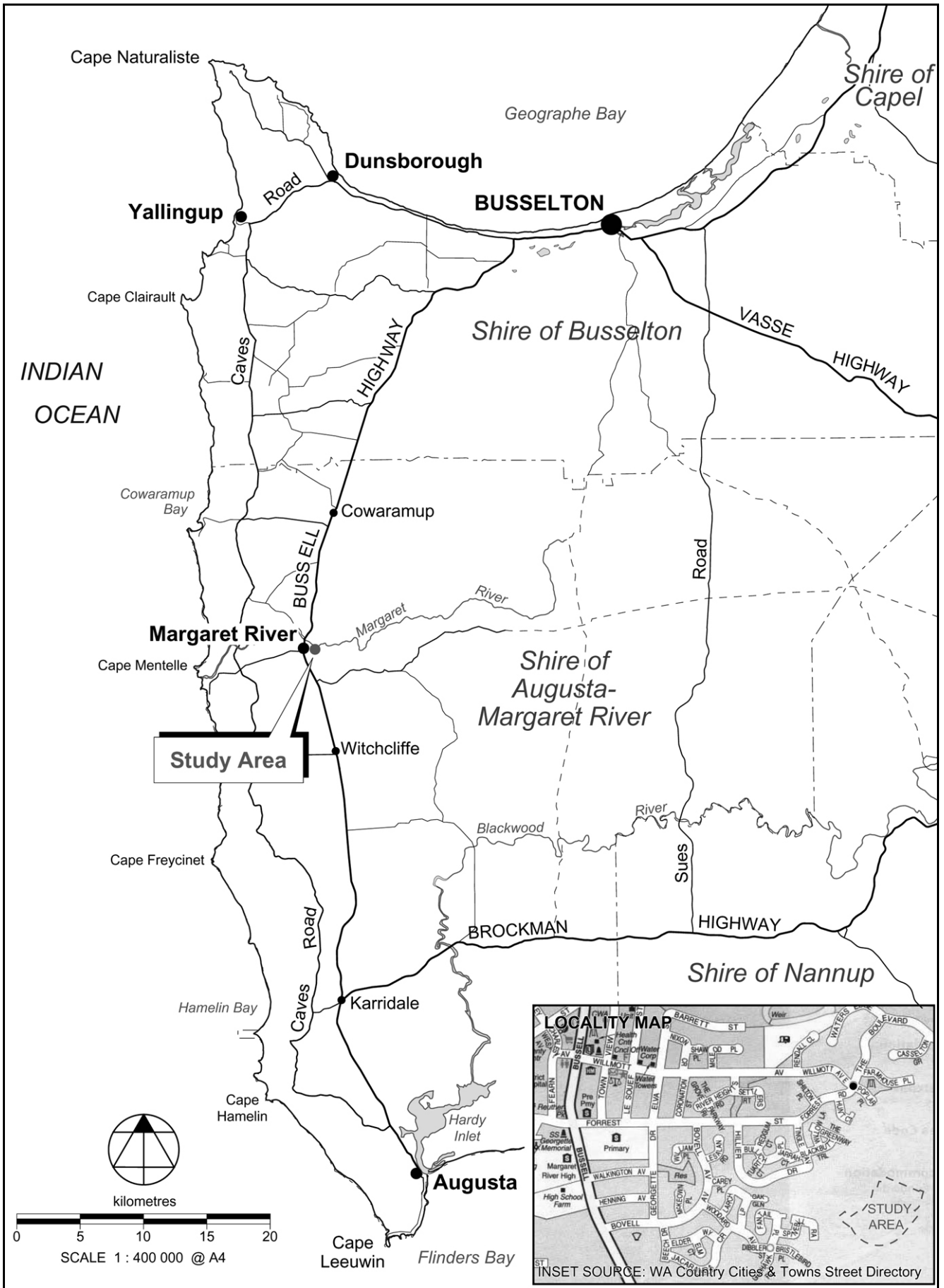


Figure 1: Regional Location (ATA Environmental, 2005)

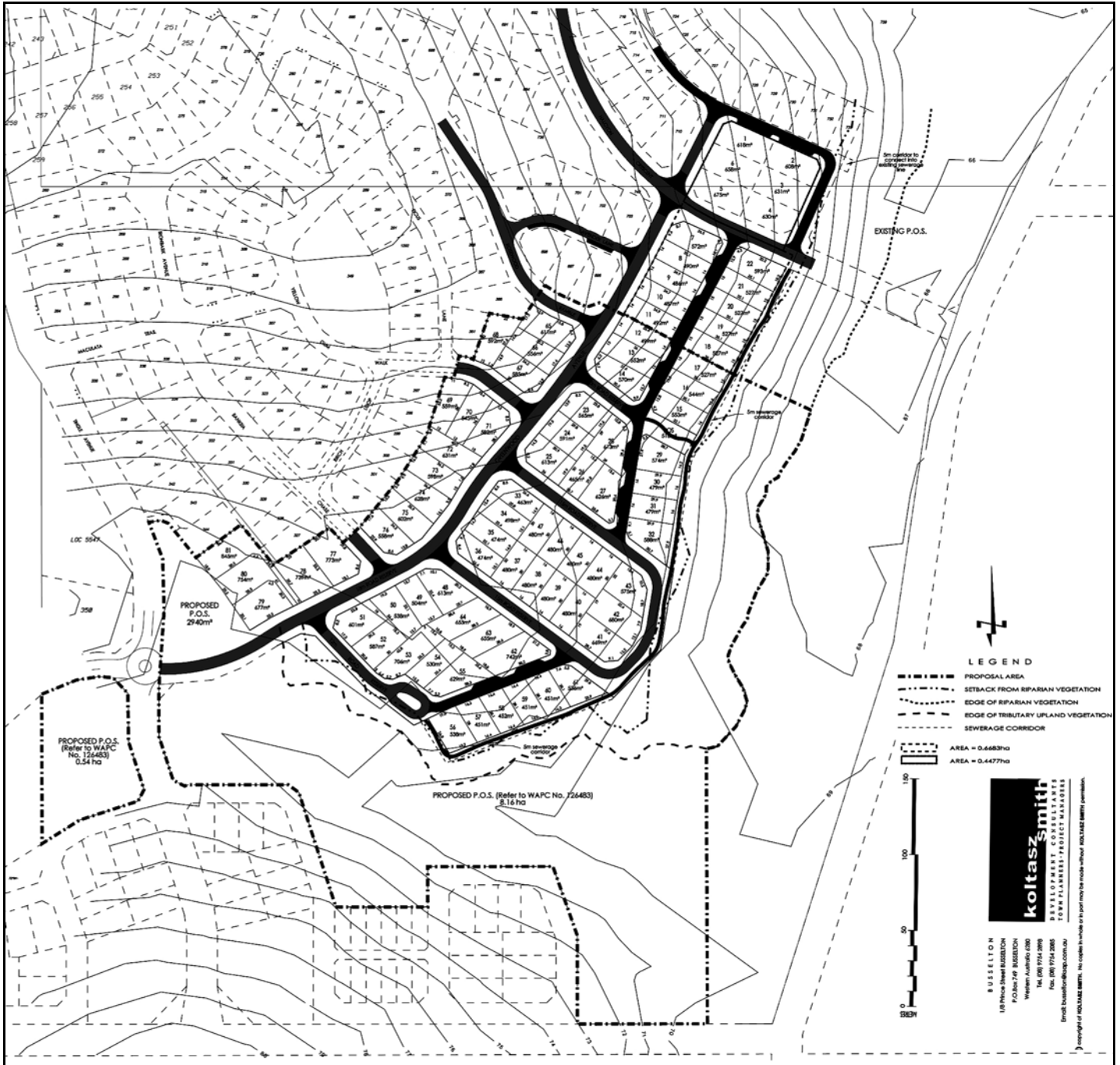


Figure 2: Proposal Location and environmental considerations

3. Relevant environmental factors and principles

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and the conditions and procedures, if any, to which the proposal should be subject. In addition, the EPA may make recommendations as it sees fit.

The identification process for the relevant factors selected for detailed evaluation in this report is summarised in Appendix 3. The reader is referred to Appendix 3 for the evaluation of factors not discussed below. A number of these factors, such as Declared Rare and Priority Flora, Fauna and Aboriginal Heritage, are very relevant to the proposal, but the EPA is of the view that the information set out in Appendix 3 provides sufficient evaluation.

It is the EPA's opinion that the following environmental factors relevant to the proposal require detailed evaluation in this report:

- a) Watercourses – Darch Brook and its tributary; and
- b) Vegetation – functions and values of the vegetation adjacent to Darch Brook and its tributary.

The above relevant factors were identified from the EPA's consideration and review of all environmental factors generated from the PER document and the submissions received, in conjunction with the proposal characteristics.

Details on the relevant environmental factors and their assessment are contained in Sections 3.1 and 3.2. The description of each factor shows why it is relevant to the proposal and how it will be affected by the proposal. The assessment of each factor is where the EPA decides whether or not a proposal meets the environmental objective set for that factor.

The following principles were considered by the EPA in relation to the proposal:

- (a) Precautionary Principle;
- (b) Principle of intergenerational equity; and
- (c) Principle of the conservation of biological diversity and ecological integrity.

The EPA has also provided other advice in relation to set backs from Darch Brook for any future residential subdivision proposals.

3.1 Watercourses

Description

The proposed subdivision is adjacent to Darch Brook and one of its tributaries, both of which flow into Margaret River approximately 900 metres to the north.

The water quality of Darch Brook and its tributary may be affected by input of nutrient enriched stormwater, increased sedimentation and the subsequent degradation of the riparian vegetation.

Submissions

Many submissions discussed impacts to Darch Brook and its tributary from clearing and potential edge effects associated with the residential subdivision. In particular that:

“The subdivision provides no stream buffer between the development and Darch Brook.”

Submissions also raised the adequacy of stormwater management measures and proposed rehabilitation of the tributary to Darch Brook. In particular that:

“Stormwater from the subdivision will place additional pressure on Darch Brook ... which flows directly to Margaret River.”

Assessment

The EPA’s environmental objective for this factor is to maintain or improve the integrity, ecological functions and environmental values of watercourses.

Separation between Subdivision and Watercourses

The proposal that was presented in the PER provided very little separation between the subdivision and the riparian vegetation, actually including clearing of some riparian vegetation. Native riparian vegetation provides food inputs and terrestrial habitat essential for animals and plants that live in land adjacent to watercourses.

If the understorey of the upland vegetation is allowed to become degraded and people seek closer access to the watercourse, it could be expected that weeds and erosion of the riparian zone will also occur. In commenting on the Riverslea proposal, the Terrestrial Ecosystems Branch of the Department of Environment recommended that a set back of 50 metres from Darch Brook would be required to protect wetland (riverine) vegetation to allow sustainable management.

The proponent was made aware of *Foreshore Policy 1: Identifying the Foreshore Area* (WRC, 2002) in April 2005 while developing the PER. This document explains that the fall-back to the nominal 30 metre set back is in most cases normal practice, often at the peril of the waterway, protecting insufficient foreshore areas, resulting in the loss of valuable habitat and the degradation of foreshore and waterway values. It recommends instead that the process for determining appropriate foreshore areas should be based on biological and physical criteria. The proponent was encouraged to use biological and physical criteria as the basis for determining the set back of the subdivision from the waterways.

To preserve the structural integrity of the ecosystem that exists adjacent to the waterways, which includes both riparian and upland vegetation, the EPA considered that the proponent needed to provide an appropriate set back for development and include measures for ongoing management.

Following receipt of the public submissions and discussions with the EPA, the proponent submitted a revised proposal that provides a 50 metre upland buffer between the edge of Darch Brook riparian vegetation and the proposed subdivision. With regard to the tributary to Darch Brook, the revised proposal provides a set back of at least 15 metres between upland vegetation to the north of the tributary and the proposed subdivision (Figure 2).

The EPA supports the revised proposal, which provides an increased set back from the watercourses, as the subdivision is considered an intensive development, which will result in increased pressure on the riparian zone. Available information indicates that Darch Brook is degrading as a result of land use pressures and development. The upland vegetation, including its understorey, will provide a buffer to the riparian zone from pressures of human activity and the introduction of weeds. The retention of a wider buffer increases the confidence that the overall integrity of this section of Darch Brook and downstream can be held at existing levels.

The reduced set back in relation to the tributary recognizes that there is limited existing upland and riparian vegetation remaining in this area. It is the EPA's view that the proposed set back from the tributary achieves the aim of retaining some upland vegetation as a buffer to the tributary, which will also operate as a compensating basin to manage stormwater if the proposal is implemented.

Stormwater Management

The tributary to Darch Brook is proposed to be rehabilitated into a natural sumpland/dampland and would be designed to assist in both containing and treating short term stormwater flows from the proposed subdivision flowing into Darch Brook.

Urban stormwater needs to be managed in accordance with the principles of water sensitive urban design and best practice drainage design as described in the *Stormwater Management Manual for Western Australia* (DoE, 2004) to:

- ensure that post development flows are maintained at pre - development rates in Darch Brook and its tributary; and
- protect the quality of stormwater discharges to the watercourses.

The EPA has recommended condition 6, which requires the proponent to prepare and implement a Stormwater and Watercourse Rehabilitation Management Plan. The Plan would provide the framework for the management of stormwater from the site, rehabilitation of the tributary to Darch Brook and the ongoing management of the foreshore areas of the watercourses in the proposal area.

The objectives of the Plan are to:

- ensure that post-development flows are maintained at pre-development rates in Darch Brook and its tributary;
- protect the quality of stormwater discharges to the watercourses;
- outline the requirements for successful rehabilitation of the tributary to Darch Brook; and
- protect the structural integrity of the ecosystem that exists adjacent to the waterways (including both riparian and upland vegetation) from impacts from the intensive pressures of the subdivision proposal.

Summary

Having particular regard to:

- (a) the revised proposal that provides a 50 metre upland buffer between the edge of Darch Brook riparian vegetation and the proposed subdivision which will buffer the riparian zone from pressures of human activity and the introduction of weeds;
- (b) the revised proposal that provides a set back of at least 15 metres between the edge of upland vegetation to the north of the tributary and the proposed subdivision; and
- (c) the recommended condition requiring that the proponent prepare and implement a Stormwater and Watercourse Rehabilitation Management Plan,

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

The EPA has also provided other advice in relation to set backs from Darch Brook for any future residential subdivision proposals.

3.2 Vegetation

Description

The proposed subdivision will involve the clearing of approximately 4.78 ha of 'very good' to 'excellent' quality upland vegetation and potential fauna habitat.

Submissions

Submissions raised the following issues regarding the vegetation of the site:

- loss of 'very good' to 'excellent' quality native vegetation;
- this is viewed as being the last remaining good quality vegetation in the East Margaret River area rich in flora, native birds and other animals; and
- loss of diverse flora – approximately 130 species of native plants identified.

Submissions raised the following issues regarding the functions and values of the vegetation:

- the vegetation provides a wildlife corridor, fauna linkage and greenbelt;
- local people value this bushland close to the townsite for a 'nature experience', community health, education, and cite it as typical of the reason they live there.

"The bushland is very valuable as a wildlife corridor between the proposed Bramley National Park and areas to the south-west of the townsite."

Assessment

The EPA's environmental objective for this factor is to maintain the abundance, diversity, geographic distribution and productivity of flora at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge.

Vegetation of the site

The vegetation in the proposed subdivision area is well represented at a regional level. It is comprised of vegetation characteristic of the Wilyabrup (W1) Vegetation Complex, of which there is about 45,000 ha remaining of an original extent of 73,000 ha, or 62% remaining (Mattiske, 1998).

Functions and values of the vegetation

Whilst not significant on a regional scale, the vegetation is in 'very good' to 'excellent' condition and is rich in flora and fauna species, including a diverse understorey, located adjacent to a watercourse. It is also important to members of the public in a 'social' sense, as detailed in submissions (Appendix 5).

As discussed in section 3.1 above, the proponent has revised the subdivision design to provide a 50 metre upland buffer between the edge of the riparian vegetation of Darch Brook and the proposed subdivision. The EPA considers the issue of Vegetation has been adequately addressed through the revised buffers, which will also retain the ecological linkages and structural components of the vegetation and understorey.

In its response to submissions, the proponent indicated that the existing informal walk trail along the edge of the Darch Brook riparian zone will be retained and possibly enhanced.

In order to ensure that these facilities are designed and managed so as to prevent significant impacts on the existing environmental values, the EPA recommends condition 6 to require the proponent to prepare and implement a Stormwater and Watercourse Rehabilitation Management Plan. The Plan will include details about the management of the foreshore area and the provision and alignment of recreational facilities.

Summary

Having particular regard to:

- (a) the vegetation in the proposed subdivision area is well represented at a regional scale with approximately 62% of the Vegetation Complex remaining (Mattiske, 1998); and
- (b) the revised proposal that provides a 50 metre upland buffer between the edge the riparian vegetation of Darch Brook and the proposed subdivision,

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor provided that the recommended condition requiring that the proponent prepare and implement a Stormwater and Watercourse Rehabilitation Management Plan to address, amongst other things, the management of the foreshore area and the provision and alignment of recreational facilities management, is made enforceable.

3.3 Relevant environmental principles

In preparing this report and recommendations, the EPA has had regard for the object and principles contained in section 4A of the *Environmental Protection Act (1986)*. Appendix 3 contains a summary of the EPA's consideration of the principles.

4. Environmental Conditions

Section 44 of the *Environmental Protection Act 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

4.1 Recommended conditions

Having considered the proponent's revised proposal and the information provided in this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by Greendene Development Corporation Pty Ltd to subdivide Locations 9002 and 9101 for residential purposes, is approved for implementation.

These conditions are presented in Appendix 4. Matters addressed in the conditions include the following:

- (a) that the proponent prepare and implement a Stormwater and Watercourse Rehabilitation Management Plan.

5. Other Advice

It is noted that the proponent has not included other uncleared land to the north of the subdivision (that it also owns) in its current proposal. The proponent does not have environmental, nor planning approval for the 0.67 ha area of vegetation immediately to the north of the proposed subdivision (Figure 2).

This area is comprised of similar vegetation to the proposal area and presents the same constraints on development with regard to set backs from Darch Brook. It is possible that the proponent may want to develop this land in the near future.

In order to encompass a holistic approach to development adjacent to Darch Brook it is recommended that the foreshore reserve be extended north, to the intersection of the previously constructed subdivision.

It is understood that the land to the east of Darch Brook is currently zoned Rural, however it is also recommended that the 50 metre set back from the edge of riparian vegetation associated with Darch Brook and the proposed subdivision should also apply to any future proposed subdivision in the vicinity.

6. Conclusions

The EPA has considered the proposal by Greendene Development Corporation Pty Ltd to subdivide Locations 9002 and 9101, approximately one kilometre east of the Margaret River townsite, for residential purposes.

The EPA notes that the proponent has revised the subdivision to provide a 50 metre upland buffer between the edge of the riparian vegetation of Darch Brook and the proposed subdivision, and a set back of at least 15 metres of upland vegetation to the north of the tributary and the proposed subdivision. The EPA is satisfied that this revised proposal which retains the riparian vegetation and an ecologically functioning

area of upland vegetation, provides confidence that the overall integrity of this section of Darch Brook and downstream can be held at existing levels.

The EPA has recommended that management of stormwater from the site, rehabilitation of the tributary to Darch Brook and the ongoing management of the foreshore areas of the watercourses in the proposal area be managed through the implementation of a Stormwater and Watercourse Rehabilitation Management Plan.

The EPA has also provided other advice regarding a portion of uncleared land (0.67 ha) to the north of the subdivision which is owned by the proponent. The proponent does not have environmental, nor planning approval for this area of vegetation which is comprised of similar vegetation to the proposal area and presents the same constraints on development with regard to set backs from Darch Brook. In order to encompass a holistic approach to development adjacent to Darch Brook the EPA has recommended that the foreshore reserve be extended north, to the intersection of the previously constructed subdivision.

The land to the east of Darch Brook is currently zoned Rural although it is understood that future development of this land is being contemplated. Without prejudicing the requirements for development that is likely to have a significant impact on the environment to be referred to the EPA and other necessary approvals processes, the EPA would expect that any future proposed development would also be set back 50 metres from the edge of riparian vegetation.

The EPA has concluded that the proposal is capable of being managed to meet its objectives, provided that there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4 and summarised in Section 4.

7. Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for Greendene Development Corporation Pty Ltd to subdivide Locations 9002 and 9101, approximately one kilometre east of the Margaret River townsite, for residential purposes;
2. That the Minister considers the report on the relevant environmental factors and principles as set out in Section 3;
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 4, and summarised in Section 4; and
4. That the Minister imposes the conditions and procedures recommended in Appendix 4 of this report.

Appendix 1

List of submitters

Organisations:

Cape to Cape Alliance
Department of Environment
Department of Indigenous Affairs
Department for Planning and Infrastructure
Leeuwin Environment
Margaret River Regional Environment Centre (Inc.)
Margaret River Street Tree Group
Shire of Augusta-Margaret River

Individuals

Ms Wendy Alpers	Ms Carroll Knudson
Mr David Ashe	Ms Jodie Lane
Ms Shell Bell	Mrs E M Leavesley
Ms Jan Berghan	Dr Louise Marsh
Ms Christine Berrill	Ms Justine Marshall
Mr Brad Black and Ms Sally Hepburn	Ms Ann Matei
Mr Brad Bowden	Mr John McBain
Mrs Cushla Bowyer	Mr Jamie McCall
Emeritus Professor SD Bradshaw	Ms Lara McCall
Mr Lance Brandes	Ms Verna McCartney
Mr Paul Breslin	Mr Andrew McColl
Ms Sadie Breslin	Mr Drew McKenzie
Mr Bob Bruce	Mr Kirke Montgomery
Mr W M Castleden	Mr Malcolm Mortimer
Ms Geraldine Clarke	Ms Irene Murphy
Ms Jan Clifford	Ms Eileen O'Hara
Ms Shelly Cullen	Mr Ian Overhen
Mr Stuart Dalglish	Ms Susannah Pope
Mrs Kaye Dexson	A Ramirez
Ms Natalie Dillon	Mrs Dee Reiher
Ms Alison Dorn	Andrew Rhodes, Samantha Borschmann & Hannah Rhodes
Mr Michael Dorn	Ms Deborah Rigby
Mr Barry Dufall	Dr Val Roche
Ms Janet Dufall	Mr Ken Rouw
Dr Peter Durey	Ms Jane Scott
Mr and Mrs Edgar	Lyn & Claudia Serventy
Margaret Francis and David Foreman	Mrs Tracy Skippings
Ms Wendy Franklin	Ms Stephanie Spence
Master Sean Gill	Ms Yvonne Suares
Ms Lynn Gill	Mr John Tate
Mrs Joyce Gill	Ms Marie Terese
Deslie Gillick	Bryan and Claire Timmons
Mr Rick Grenfell	V J Tribbeck
G Hangatee	Ilas & Karen Trom
Ms Jacqui Hardy	Ms Kathleen Tuffen
Ms Sophie Henrikson	Ms Kym Walker
Mr Linton Hodsdon	Ms Alison Walters
Ms Denise House	Ms Sally Wylie
Ms Jenni Howlett	Mr Ken Wylie
Ms Sharon Ioppolo	

Appendix 2

References

ATA Environmental (2005) *Riverslea Subdivision (Sussex Locations 9002 and 9101), Public Environmental Review*. Prepared for Greendene Development Corporation Pty Ltd, July 2005, Perth.

Department of Environment (2004) *Stormwater Management Manual for Western Australia*. Department of Environment, Perth.

Mattiske (1998) *Mapping of Vegetation Complexes in the South West forest region of Western Australia*. GIS Dataset. Custodian: Department of Conservation and Land Management.

Water and Rivers Commission (2002) *Foreshore Policy 1: Identifying the Foreshore Area*, Board Resolution – Bd 08/11/02, 50/02.

Appendix 3

Summary of identification of relevant environmental factors and principles

Identification of Relevant Environmental Factors and Principles

Preliminary Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
BIOPHYSICAL			
Vegetation	Clearing of approximately 6.3 ha (now reduced to 4.78 ha) of upland vegetation for the construction of the proposed subdivision.	Submissions raised the following issues: <ul style="list-style-type: none"> • loss of ‘Very Good’ to ‘Excellent’ quality native vegetation • this is the last remaining good quality vegetation in the East Margaret River Area • loss of diverse flora – approx. 130 species of native plants identified <i>“The bush is our heritage and this is the last area of very good bushland in East Margaret River with wonderful flora, native birds and other animals.”</i>	Considered to be a relevant environmental factor and is discussed in section 3.2 ‘Vegetation’
Declared Rare and Priority Flora	One Priority 3 flora species, <i>Gahnia scleroides</i> , occurs on the edge of the riparian zone to Darch Brook.	A number of submissions were concerned with the potential clearing of the Priority flora species, <i>Gahnia scleroides</i> . <i>“It is unclear whether <u>Gahnia scleroides</u> is in or on the boundary of the development.”</i>	The proposal does not involve clearing of the riparian vegetation associated with Darch Brook or the Priority listed flora species <i>Gahnia scleroides</i> . Factor does not require further EPA evaluation.
Fauna Habitat	Clearing of approximately 6.3 ha (now reduced to 4.78 ha) of potential fauna habitat.	Submissions raised the following issues: <ul style="list-style-type: none"> • the vegetation provides a wildlife corridor, fauna linkage, greenbelt <i>“The bushland is very valuable as a wildlife corridor between the proposed Bramley National Park and areas to the south-west of the townsite.”</i>	Considered to be a relevant environmental factor and is discussed in section 3.2 ‘Vegetation’
Fauna	The PER recorded finding: <ul style="list-style-type: none"> • 5 native mammal species • 3 introduced mammal species • 33 bird species • 4 species of amphibians • 7 reptile species. A Schedule 1 Threatened species, Baudin’s Black	Submissions raised the following issues: <ul style="list-style-type: none"> • likely impact on Baudin’s Black Cockatoo • adequacy of the fauna survey <i>“Inadequate detail is given on survey methods especially search for scats of Ringtails to allow a determination of presence or absence.”</i>	After receiving PER submissions, ATA Environmental carried out another site investigation on 5-6 October 2005. The additional survey was conducted specifically to qualify statements made in the PER, and was done during the breeding season for Baudin’s Black Cockatoo. The additional investigation of the site

Preliminary Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
	<p>Cockatoo (<i>Calyptorhynchus baudinii</i>), was recorded during the survey feeding on the fruit of Marri trees.</p> <p>A Priority 5 species, the Southern Brown Bandicoot (<i>Isodon obesulus fusciventer</i>), was caught near the dense vegetation along the creekline.</p>		<p>conducted in October 2005 found that there were no Baudin's Black Cockatoos observed nesting in hollows on the site.</p> <p>In areas where the understorey was more open, detailed searches were conducted for Western Ringtail scats. No Western Ringtail Possum scats were recorded during the February 2004 or October 2005 site investigations.</p> <p>The proposed 50 m set back from Darch Brook will provide some habitat area for the Southern Brown Bandicoot.</p> <p>Factor does not require further EPA evaluation.</p>
Surface water / Watercourses	<p>The proposed subdivision is adjacent to Darch Brook and one of its tributaries, both of which flow into Margaret River approx. 600m to the north.</p>	<p>Many submissions raised concern about impacts to Darch Brook and its tributary from clearing and potential edge effects associated with the residential subdivision.</p> <p><i>"The subdivision provides no stream buffer between the development and Darch Brook."</i></p>	<p>Considered to be a relevant environmental factor and is discussed in section 3.1 'Watercourses'</p>
Surface Water Quantity and Quality	<p>The water quality of Darch Brook and its tributary may be affected by input of nutrient enriched stormwater and increased sedimentation.</p> <p>The tributary to Darch Brook will be rehabilitated into a natural sumpland/dampland and will assist in both containing and treating short stormwater flows from the proposed subdivision flowing into Darch Brook.</p>	<p>Submissions raised concern about the implementation of the stormwater management measures and proposed rehabilitation of the tributary to Darch Brook.</p> <p><i>"Stormwater from the subdivision will place additional pressure on Darch Brook ... which flows directly to Margaret River."</i></p>	<p>Considered to be a relevant environmental factor and is discussed in section 3.1 'Watercourses'</p>

Preliminary Environmental Factors	Proposal Characteristics	Government Agency and Public Comments	Identification of Relevant Environmental Factors
SOCIAL SURROUNDINGS			
Aboriginal Heritage	Darch Brook, a tributary of Margaret River (Site ID 4495), is considered by the local Aboriginal community to be a place of significance.	Submissions raised concern that Darch Brook, as a recorded place of Aboriginal significance, would be affected by the proposal. <i>“Darch Brook is recorded as a place of Aboriginal significance and its protection is important.”</i>	A Section 18 clearance under the <i>Aboriginal Heritage Act 1972</i> has been granted by the Minister for Indigenous Affairs for the proposal area. In the event that any surface or sub-surface artefacts that may be of cultural significance are identified from the site during construction activities, the proponent will report their findings to the Department of Indigenous Affairs in accordance with the <i>Aboriginal Heritage Act 1972</i> . Factor does not require further EPA evaluation
Intrinsic/ Social Value of the Bushland	Clearing of approximately 6.3 ha (now reduced to 4.78 ha) of ‘very good’ to ‘excellent’ quality upland vegetation for the construction of the proposed subdivision.	Submissions have indicated that local people value this bushland close to the townsite for a ‘nature experience’, community health, education, and cite it as typical of the reason they live there. <i>“Bushland located at driving distance from the development is not a substitute for the passive recreation afforded by Excellent bush within walking distance.”</i>	Considered to be a relevant environmental factor and is discussed in section 3.2 ‘Vegetation’

PRINCIPLES		
Principle	Relevant Yes/No	If yes, Consideration
<p>1. The precautionary principle</p> <p>Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.</p> <p>In application of this precautionary principle, decisions should be guided by:</p> <p>(a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and</p> <p>(b) an assessment of the risk-weighted consequences of various options.</p>	Yes	<p>In considering this principle, the EPA notes that:</p> <ul style="list-style-type: none"> clearing has been reduced from 6.5 ha to 4.78 ha; and an upland buffer has been provided between the watercourses and the subdivision. <p>The EPA is satisfied that sufficient information is available to enable a decision to be made that the EPA's principles and objectives are unlikely to be compromised by the implementation of the proposal, subject to a number of conditions.</p>
<p>2. The principle of intergenerational equity</p> <p>The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.</p>	Yes	<p>In considering this principle, the EPA notes that:</p> <ul style="list-style-type: none"> the proponent intends to rehabilitate the tributary to Darch Brook. <p>The proposal is not considered to represent an unacceptable impact on the health, diversity and productivity of the environment for future generations.</p>
<p>3. The principle of the conservation of biological diversity and ecological integrity</p> <p>Conservation of biological diversity and ecological integrity should be a fundamental consideration.</p>	Yes	<p>In considering this principle, the EPA notes that:</p> <ul style="list-style-type: none"> the conservation status of Priority and Declared Rare Flora is unlikely to be impacted as a result of the proposal; representation of regionally important vegetation is unlikely to be impacted as a result of the proposal; and the conservation status of Priority and Scheduled fauna is unlikely to be impacted as a result of the proposal. <p>The proposal is not considered to represent an unacceptable impact on the conservation of biological diversity and ecological integrity.</p>

Appendix 4

Recommended Environmental Conditions

RECOMMENDED ENVIRONMENTAL CONDITIONS

Statement No.

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

RIVERSLEA RESIDENTIAL SUBDIVISION
(SUSSEX LOCATIONS 9002 AND 9101), MARGARET RIVER

Proposal: To subdivide an area of land (Locations 9002 and 9101) for residential purposes, approximately one kilometre east of the Margaret River townsite in the Shire of Augusta-Margaret River. The proposal is further documented in schedule 1 of this statement.

Proponent: Greendene Development Corporation Pty Ltd
(ACN 008 793 244)

Proponent Address: Level 2/47 Stirling Highway, NEDLANDS WA 6009

Assessment Number: 1463

Report of the Environmental Protection Authority: Bulletin 1224

The proposal referred to above may be implemented by the proponent subject to the following conditions and procedures:

1 Proposal Description

1-1 The proponent shall implement the proposal as documented and described in schedule 1 of this statement subject to the conditions and procedures of this statement.

2 Proponent Nomination and Contact Details

2-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal.

2-2 The proponent shall notify the Chief Executive Officer of the Department of Environment and Conservation (CEO) of any change of the name and address for the serving of notices or other correspondence within 30 days of such change.

3 Time Limit of Authorisation

- 3-1 The authorisation to implement the proposal provided for in this statement shall lapse and be void within five years after the date of this statement if the proposal to which this statement refers is not substantially commenced.
- 3-2 The proponent shall provide the CEO with written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement.

4 Compliance Reporting

- 4-1 The proponent shall submit to the CEO Compliance Reports in accordance with a schedule approved by the CEO.
- 4-2 The Compliance Reports shall be prepared in accordance with the compliance monitoring guidelines, and shall:
 - 1. describe and provide evidence of the status of the implementation of the proposal;
 - 2. include evidence of compliance with the conditions and procedures of this statement;
 - 3. provide a review of the effectiveness of corrective and preventative actions contained in the environmental management plans and programs;
 - 4. provide verifiable evidence of the fulfilment of requirements specified in the environmental management plans and programs;
 - 5. identify all confirmed non-conformities and non-compliances and describe the related corrective and preventative actions taken; and
 - 6. identify potential non-conformities and non-compliances and provide evidence of how these are being determined for corrective action.
- 4-3 The proponent shall make Compliance Reports publicly available on request.

5 Environmental Induction for Employees and Contractors

- 5-1 At all stages of the proposal from construction through to completion of all ground-disturbing activities, the proponent shall provide adequate environmental induction for all employees and contractors before they start work on the site.
- 5-2 The environmental inductions required by condition 5-1 shall address:
 - 1. statutory requirements for protection of the environment;
 - 2. relevant work procedures;
 - 3. environmental management measures;
 - 4. weed hygiene and control measures; and
 - 5. incident reporting requirements.

6 Water Quality

- 6-1 Prior to ground-disturbing activities, the proponent shall prepare a Stormwater and Watercourse Rehabilitation Management Plan to the requirements of the Minister for Environment on advice of the Environmental Protection Authority and the Department of Water.

This Plan shall provide the framework for the management of stormwater from the site, rehabilitation of the tributary to Darch Brook and the ongoing management of the foreshore areas of the watercourses in the proposal area.

The objectives of the Plan are to:

- ensure that post-development flows are maintained at pre-development rates in Darch Brook and its tributary;
- protect the quality of stormwater discharges to the watercourses;
- outline the requirements for successful rehabilitation of the tributary to Darch Brook; and
- protect the structural integrity of the ecosystem that exists adjacent to the waterways (including both riparian and upland vegetation) from environmental impacts of the subdivision.

This Plan shall address the following topics and for each topic develop appropriate performance criteria:

Stormwater Management

1. Urban stormwater to be managed in accordance with the principles of water sensitive urban design and best practice drainage design as described in the *Stormwater Management Manual for Western Australia* (Department of Environment, 2004).

Watercourse Rehabilitation

1. rehabilitation of the tributary to Darch Brook into a natural wetland;
2. plant species to be utilised in revegetation;
3. completion criteria;
4. a rehabilitation schedule including timing;
5. restoration and revegetation requirements;
6. management measures (such as weed management);
7. monitoring and maintenance of rehabilitated areas for at least five years following completion;
8. remedial actions; and
9. community involvement and consultation.

Foreshore Management

1. management of the foreshore area and development interface;
2. management of Darch Brook;
3. provision and alignment of recreational facilities, including limiting uncontrolled access to the foreshore area;
4. installation of signage; and
5. community involvement and consultation.

Monitoring and reporting

1. Monitoring and reporting of progress of the watercourse rehabilitation program and its effectiveness.
 - 6-2 The proponent shall implement the Stormwater and Watercourse Rehabilitation Management Plan required by condition 6-1.
 - 6-3 The proponent shall make the Stormwater and Watercourse Rehabilitation Management Plan required by condition 6-1 publicly available in a manner approved by the Department of Environment and Conservation.
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Schedule 1

The Proposal (Assessment No. 1463)

The main characteristics of the proposal are summarised in Table 1 below.

Table 1: Key Proposal Characteristics

Element	Description
Proposal	Creation of 65 residential lots
Area (including tributary, Public Open Space, and foreshore reserves)	12.3 hectares (approximately)
Area of disturbance	4.8 hectares (approximately) of clearing
Infrastructure	Roads within the subdivision and installation of a sewerage connection. A Dual/Multiple Use Path to be an interphase between the Darch Brook foreshore reserve and the subdivision.
Set backs: Darch Brook Tributary to Darch Brook	50 metre upland buffer between edge of Darch Brook riparian vegetation and the subdivision. Set back of at least 15 metres between edge of upland vegetation to north of degraded tributary and the subdivision.
Rehabilitation	Reconstruction of the degraded portion of the tributary to Darch Brook to create a habitat that provides for wetland flora and fauna, subdivision drainage and passive recreation.

Figures (attached)

Figure 1 – Regional Location.

Figure 2 – Proposal Location and environmental considerations

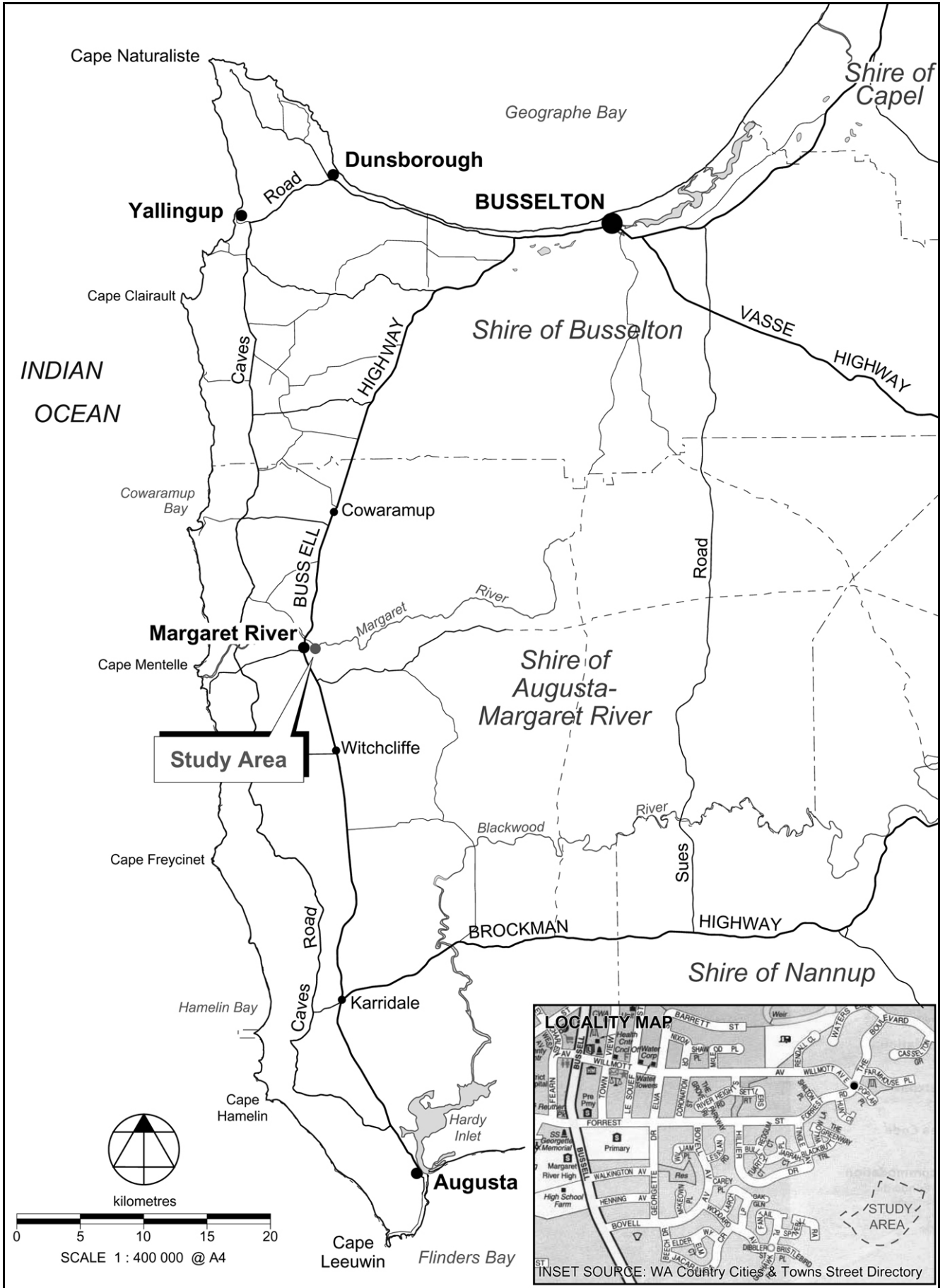


Figure 1: Regional Location

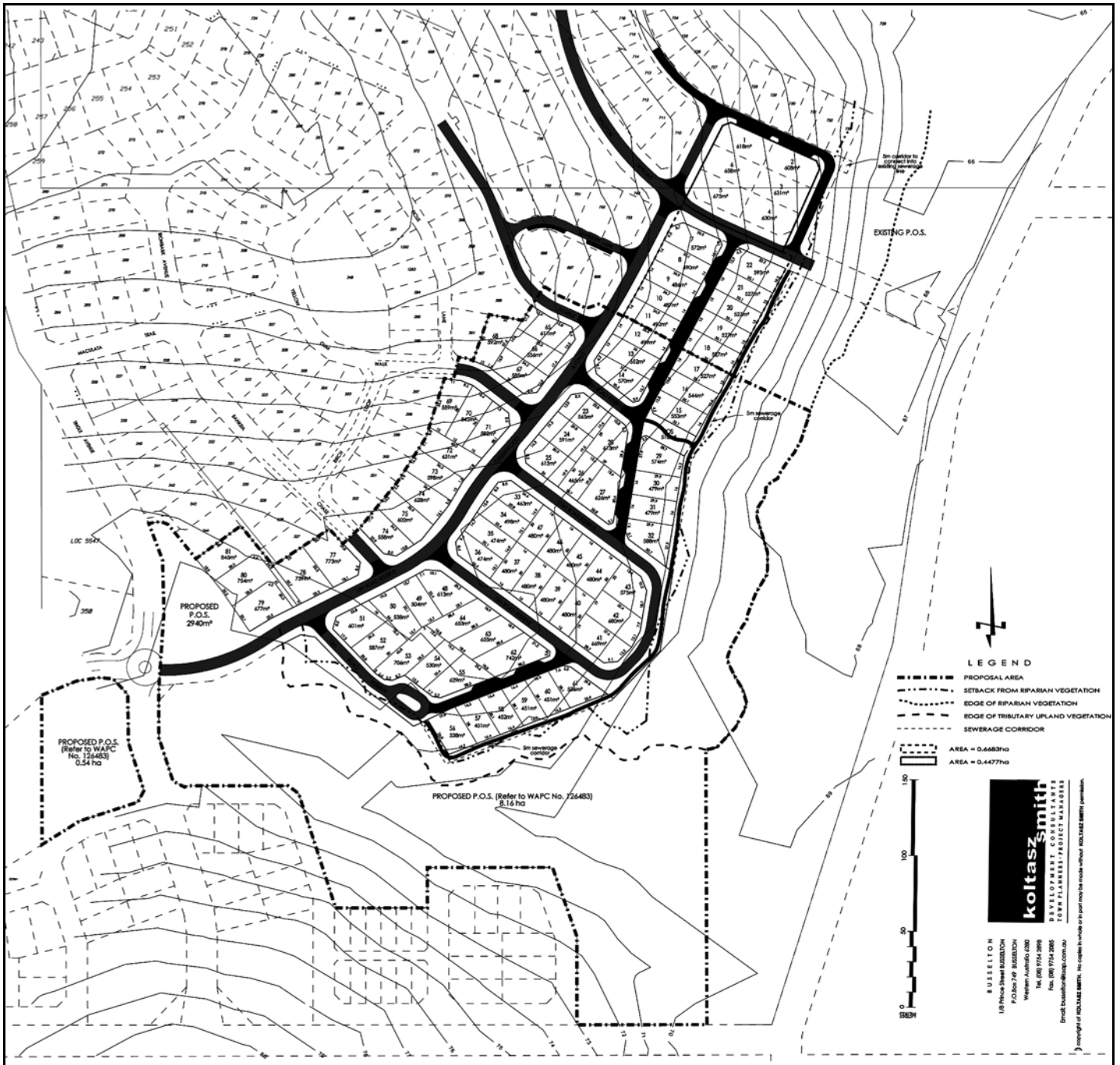


Figure 2: Proposal Location and environmental considerations

Appendix 5

Summary of Submissions and Proponent's Response to Submissions