



Report and recommendations of the Environmental Protection Authority



Metropolitan Region Scheme Amendment 1188/57 – Wellard Urban Precinct

Western Australian Planning Commission

Report 1500

January 2014

Environmental Impact Assessment Process Timelines

Date	Progress stages	Time (weeks)
29/3/2010	Level of Assessment set	
19/8/2010	Instructions issued	3
18/6/2013	Environmental Review Document Released for Public Comment	148
23/8/2013	Public Comment Period Closed	9
26/11/2013	Final Responsible Authority response to the issues raised	13
15/1/2014	EPA report to the Minister for Environment	6
20/1/2014	Publication of EPA report	3 days
3/2/2014	Close of appeals period	2

Timelines for an assessment may vary according to the complexity of the project and are usually agreed with the proponent soon after the level of assessment is determined.

In this case, the Environmental Protection Authority (EPA) met its timeline objective in the completion of the assessment and provision of a report to the Minister, noting that the Western Australian Planning Commission requested an extension from the Minister for Planning in order to finalise a response to submissions to the EPA.



15 January 2014

ISSN 1836-0483 (Print)
ISSN 1836-0491 (Online)
Assessment No. 1830

Summary and recommendations

The Western Australian Planning Commission's (WAPC) Metropolitan Region Scheme (MRS) Amendment 1188/57 proposes to rezone 70.37 hectares (ha) of land at Wellard East from 'Rural' to 'Urban Deferred' to facilitate urban development. The amendment will define the boundary between future urban development and Bollard Bulrush Swamp, which is protected under the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* (EPP Lakes) and mapped as a Conservation Category Wetland (CCW).

This report provides the Environmental Protection Authority's (EPA) advice to the Minister for Environment on the environmental factors, conditions and procedures relevant to Amendment 1188/57.

Section 48D of the *Environmental Protection Act 1986* (EP Act) requires the EPA to report to the Minister for Environment on the key environmental factors for Amendment 1188/57 and on the conditions and procedures to which the amendment 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 EP Act.

Key environmental factors and principles

The EPA decided that the key environmental factor relevant to Amendment 1188/57 that required detailed evaluation in the report is Inland Waters Environmental Quality (Bollard Bulrush Swamp).

The EPA's environmental objective for this factor is *to maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected.*

The following principles were considered by the EPA in relation to the proposed scheme amendment:

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

Conclusion

The area subject to Amendment 1188/57 is located in the suburb of Wellard, City of Kwinana, and is situated approximately 35 kilometres (km) south of Perth. The land is located on the eastern side of a Conservation Category Wetland (CCW); Bollard Bulrush Swamp. Approximately 1.3 ha of the CCW is located within the area subject to Amendment 1188/57. The amendment area is also bounded by urban development to the north and east, and the Peel Main Drain to the west and south. The majority of the amendment area has been previously cleared for rural purposes including large lot rural living.

Prior to the lifting of the 'Urban Deferred' zoning, the WAPC will require the preparation of a District Water Management Strategy (DWMS) that has been

approved by the Department of Water (DoW) and a bush fire hazard assessment approved by the Department of Fire and Emergency Services.

A Local Water Management Plan (LWMP) and an Urban Water Management Plan (UWMP) will also be required to be prepared at the local structure plan and subdivision application stages respectively. The DoW has advised that surface water and groundwater impacts can be managed through the preparation and implementation of these water management plans.

A 50 metre (m) wetland buffer has been proposed to protect the wetland from weed infestation and inappropriate access. The EPA notes that this is consistent with the WAPC draft *Guideline for the Determination of Wetland Buffer Requirements (2005)* and the EPA's *Guidance Statement No. 33 Environmental Guidance for Planning and Development (2008)*.

A Wetland Management Plan (WMP) will also be required to be prepared and implemented as a condition of subdivision by the WAPC. The WMP will detail the management of the impacts of the proposed development on the wetland, and its flora and fauna values. The WMP will facilitate the enhancement of the wetland core habitat, vegetation and function, including the reduction of weed species. The EPA considers that the preparation and implementation of a WMP in consultation with the Department of Parks and Wildlife (DPaW) and the City of Kwinana will ensure that the EPA's objective for the environmental quality of Bollard Bulrush Swamp will be met. The EPA also considers that the alignment of the proposed 'Urban Deferred' boundary around the wetland and the wetland buffer are adequate to protect the wetland function and wetland habitat (Figure 5).

When Amendment 1188/57 was originally referred to the EPA, urban development was proposed within a significant portion of the EPP Lakes boundary (Figure 3). The EPA considers that the appropriate procedure has been followed in revising the wetland mapping management category and modifying Amendment 1188/57 to rezone only the cleared land outside of the boundary of the CCW.

The EPA further considers that given the current rural land use practices within the amendment area and uncontrolled access to the wetland, it is unlikely that improvements to the wetland would be achieved under current conditions. Future urban development will provide the opportunity to exclude grazing and uncontrolled access, and allow the rehabilitation and recovery of the environmental values within the boundary of the CCW. The EPA also considers that the consolidation and rehabilitation of a central conservation area which encapsulates the wetland function area will provide a more cohesive vegetated area and habitat.

The EPA supports the DoW's advice that surface water and groundwater impacts can be managed through engineering and design in the preparation and implementation of future water management plans; the DWMP, LWMP and UWMP.

The EPA has, therefore, concluded that Amendment 1188/57 can be managed to meet the EPA's environmental objective for Inland Waters Environmental Quality without the requirement for environmental conditions, as the proposal has been substantially modified to reduce the impact on the Bollard Bulrush Swamp and impacts can be managed through future management plans.

Recommendations

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

1. That the Minister notes that the scheme amendment being assessed proposes to rezone the site from 'Rural' to 'Urban Deferred' under the Metropolitan Region Scheme.
2. That the Minister considers the report on the key environmental factor and principles as set out in Section 3.
3. That the Minister notes that the EPA has concluded that Metropolitan Region Scheme Amendment 1188/57 Wellard Urban Precinct East can meet the EPA's environmental objective for Inland Waters Environmental Quality.
4. That the Minister notes that the EPA has not included in this report "conditions and procedures to which Metropolitan Region Scheme Amendment 1188/57 should be subject, if implemented", because the EPA holds the view that the amendment as proposed can meet the EPA's environmental objective.
5. That the Minister notes the EPA's other advice presented in Section 4 in relation to a future Metropolitan Region Scheme amendment to reserve the wetland area, the rehabilitation of the Resource Enhancement Wetland area, and Acid Sulfate Soils.

Contents

	Page
1. Introduction	1
2. The scheme amendment	6
3. Key environmental factors and principles	7
3.1 Inland Waters Environmental Quality	7
3.2 Environmental principles	13
4. Other advice.....	14
4.1 Future Parks and Recreation Reserve MRS Amendment.....	14
4.2 Bollard Bulrush Swamp - Resource Enhancement Wetland section.....	14
4.3 Acid Sulfate Soils	14
5. Recommendations	14

Tables

Table 1: Key characteristics of proposed scheme amendment.....	6
--	---

Figures

Figure 1: Current MRS Amendment 1188/57 Area	3
Figure 2: MRS Amendment 1188/57 area as referred	4
Figure 3: MRS Amendment 1188/57 area as referred and wetland management categories	5
Figure 4: Current MRS Amendment 1188/57 Area and wetland management categories	12
Figure 5: Concept Structure Plan	13

Appendices

1. List of submitters
2. References
3. Identification of Key Environmental Factors and Principles
4. Summary of Submissions and Responsible Authority's Response to Submissions

1 Introduction

The Western Australian Planning Commission (WAPC), the Responsible Authority, has initiated Metropolitan Region Scheme (MRS) Amendment 1188/57 to rezone approximately 70.37 ha of land in Wellard from 'Rural' to 'Urban Deferred' (Figure 1). This amendment area is referred to as 'Wellard Urban Precinct East'.

Amendment 1188/57, covering 81.53 ha (Figure 2), was referred to the Environmental Protection Authority (EPA) on 2 March 2010. On 29 March 2010, the EPA set the level of assessment as *Scheme Assessed – Environmental Review*. Instructions concerning the scope and content required for the Environmental Review were issued to the WAPC on 30 April 2010 and the appeal period for the Instructions closed 17 May 2010. Appeals were received and upheld by the Minister for Environment and the final Instructions were issued on 19 August 2010. The Environmental Review document was then prepared and advertised concurrently with Amendment 1188/57 from 18 June to 23 August 2013. Twenty six (26) submissions were received from Government departments, members of the public and organisations.

The area subject to Amendment 1188/57 is located in the suburb of Wellard, City of Kwinana, and is situated approximately 35 km south of Perth. The site is located on the eastern side of a Conservation Category Wetland (CCW) called Bollard Bulrush Swamp. Approximately 1.3 ha of the CCW boundary is located within Amendment 1188/57. The amendment area is also bounded by urban development to the north and east, and the Peel Main Drain to the west and south. The majority of the amendment area has been previously cleared for rural purposes including large lot rural living.

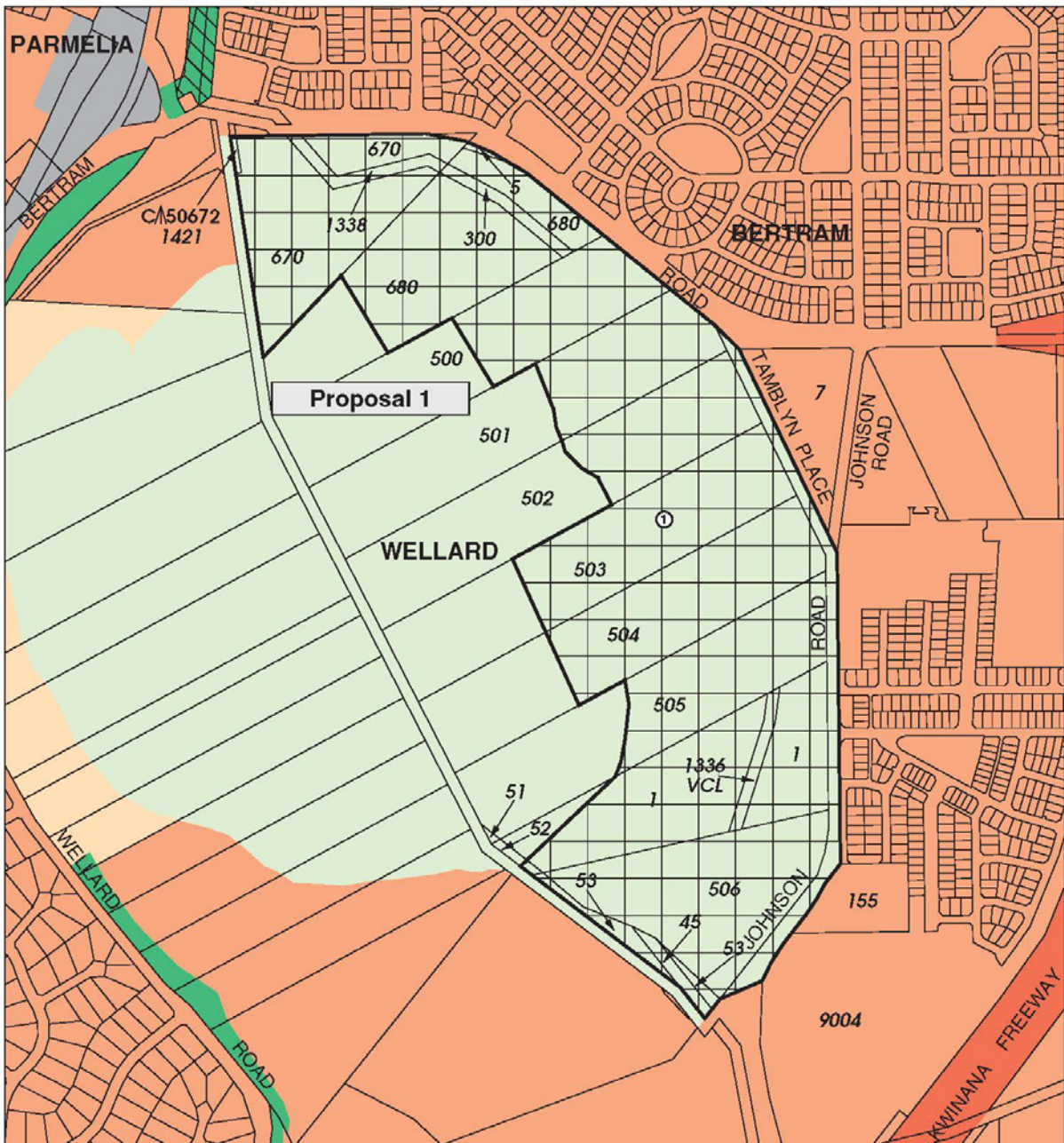
At the time of referral, Amendment 1188/57 originally proposed 'Urban Deferred' zoning over a significant portion of Bollard Bulrush Swamp which was mapped as a Resource Enhancement Wetland (REW) under the then Department of Environment and Conservation (DEC) *Geomorphic Wetlands Swan Coastal Plain* dataset, and protected under the *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992* (EPP Lakes) (Figure 3).

In 2012, on behalf of the EPA, the *Geomorphic Wetlands Swan Coastal Plain* dataset mapping over Bollard Bulrush Swamp was reviewed by the then Department of Environment and Conservation. The majority of the wetland was reclassified from a REW to a CCW. In 2013, Amendment 1188/57 was revised to reflect the updated wetland mapping, reducing the proposed 'Urban Deferred' zoning from 81.53 ha to approximately 70 ha, removing any proposed development from the wetland areas and reducing impacts to the EPP Lakes area (Figure 4).

In compiling this report, the EPA has considered the key environmental factors and principles associated with Amendment 1188/57, issues raised in public submissions, specialist advice from the departments of Water (DoW), Planning (DoP), and Parks and Wildlife (DPaW), the WAPC's response to submissions and the EPA's own research and expertise.

Further details of Amendment 1188/57 are presented in Section 2 of this report while Section 3 discusses the key environmental factor and principles for the proposed scheme amendment. Section 4 presents the EPA's other advice and Section 5 presents the EPA's recommendations.

A list of people and organisations that made submissions is included in Appendix 1. References are listed in Appendix 2 and Identification of key environmental factors and principles are listed in Appendix 3. Appendix 4 contains a summary of the public submissions and the Responsible Authority's responses. The summary of public submissions and the Responsible Authority's responses is included for information only and does not form part of the EPA's report and recommendations. The EPA has considered issues raised in public submissions when identifying and assessing key environmental factors and principles.



Wellard Urban Precinct (East) - proposed minor amendment
as advertised

26 February 2013

Figure 1

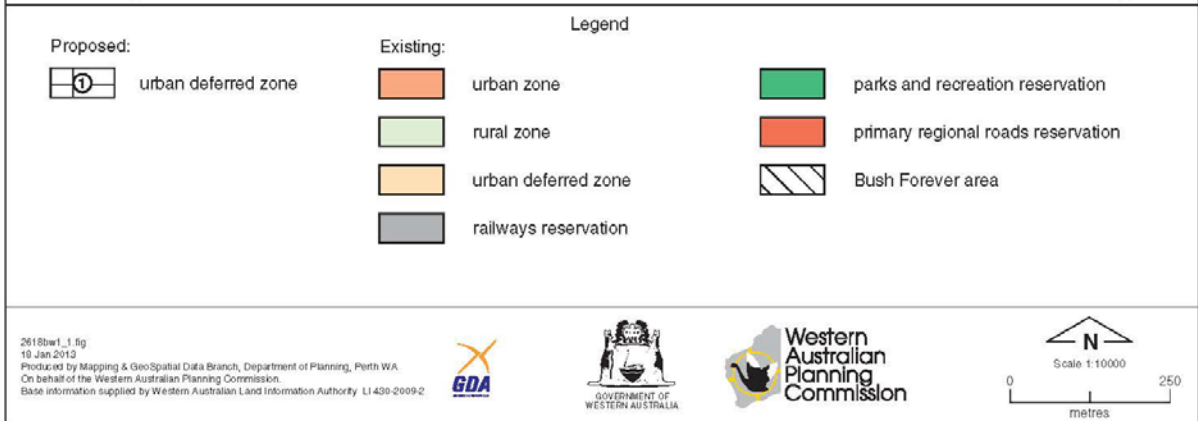
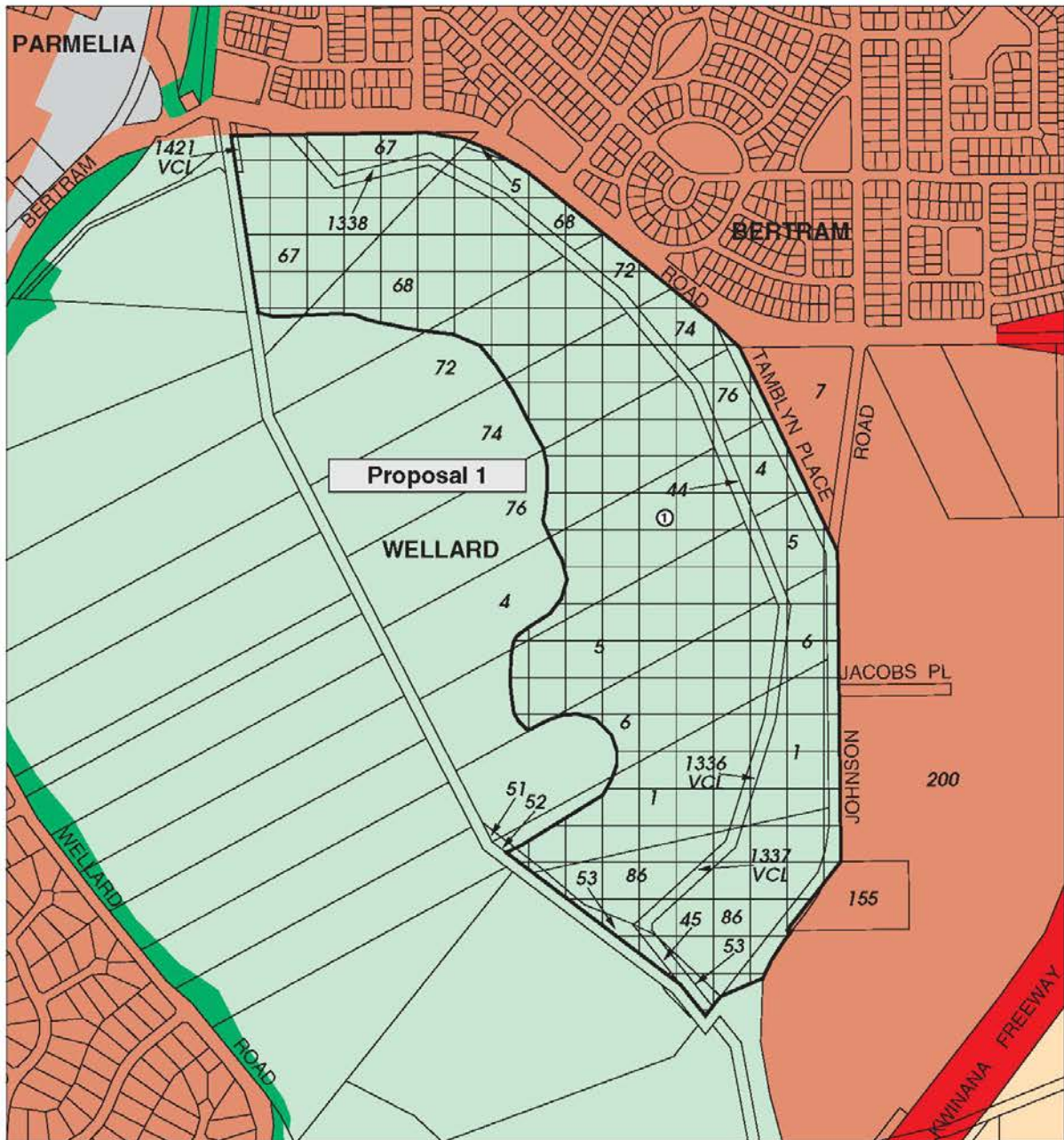


Figure 1: Current MRS Amendment 1188/57 Area



Wellard Urban Precinct (East) - proposed minor amendment
as advertised

23 February 2010

Figure 1

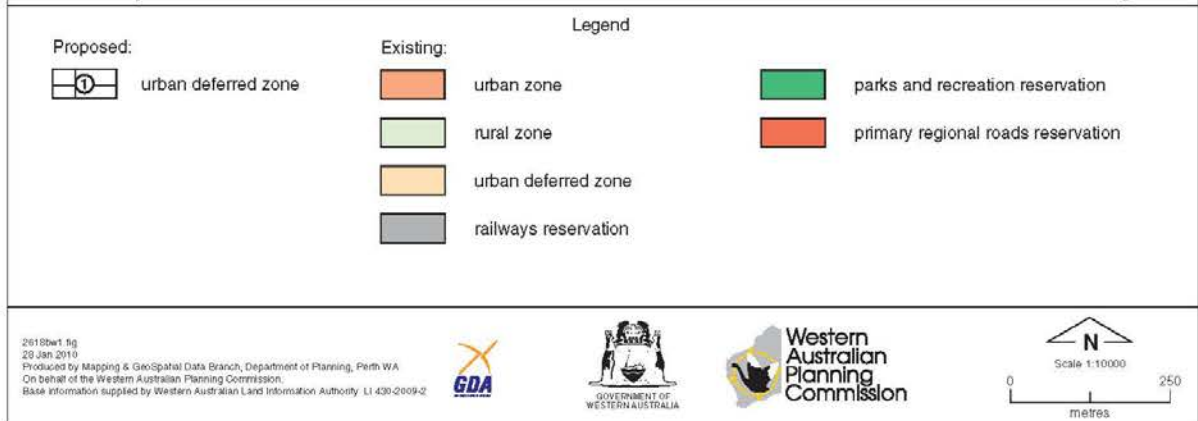


Figure 2: MRS Amendment 1188/57 area as originally referred

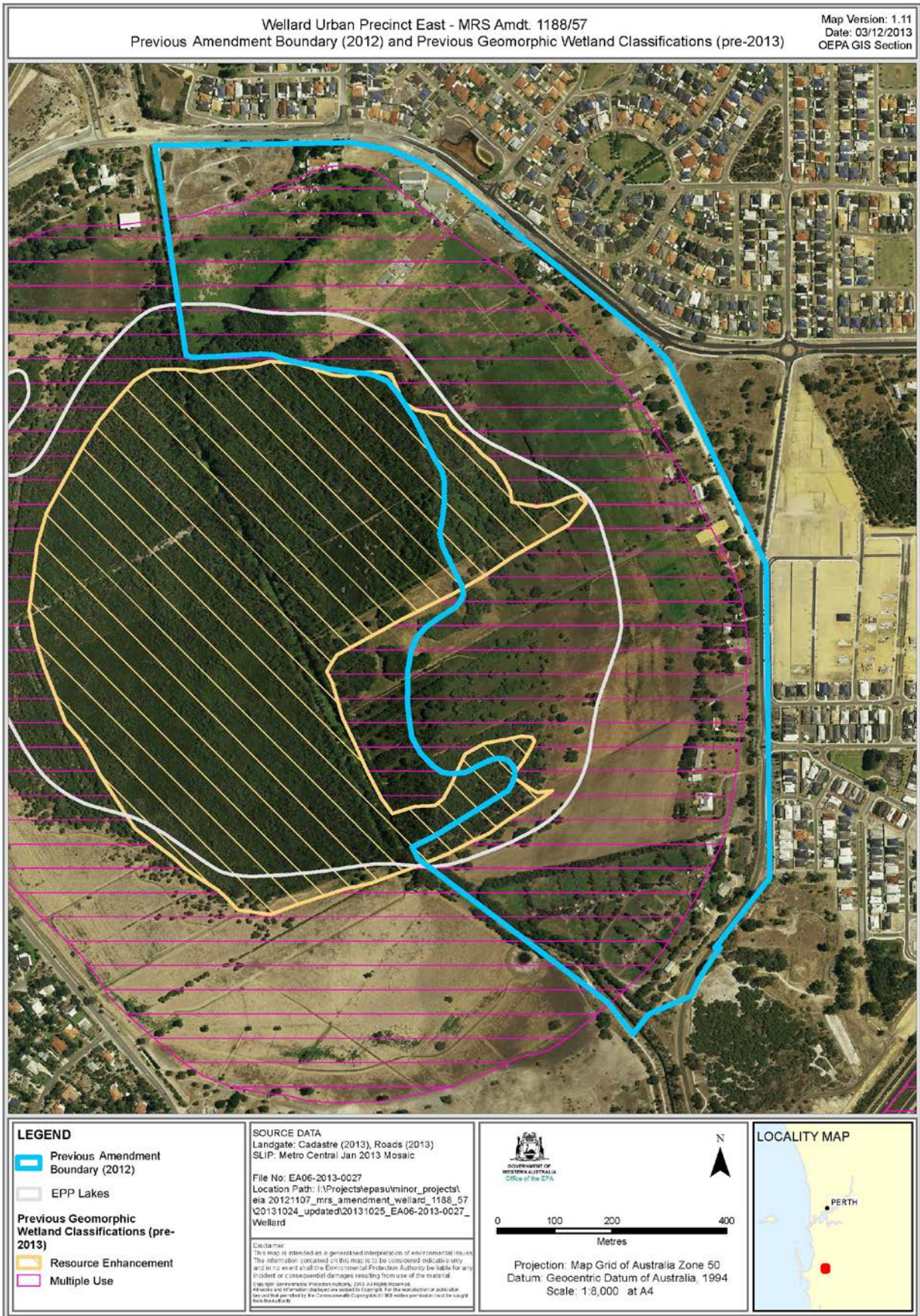


Figure 3: MRS Amendment 1188/57 area as referred and wetland management categories

2 The scheme amendment

The purpose of Amendment 1188/57 is to rezone 70.37 ha in Wellard from 'Rural' to 'Urban Deferred' under the MRS (Figure 1). The amendment area is largely privately owned, with the ownership being represented by the Wellard Landowners Group.

The site is currently zoned 'Rural' under both the MRS and the City of Kwinana's Town Planning Scheme No. 2. Amendment 1188/57 proposes to define the boundary between the proposed 'Urban Deferred' zone and the Bollard Bulrush Swamp area, which is to remain in the 'Rural' zone.

'Urban Deferred' zoning provides a strong indication that the land is suitable for urban purposes, although certain requirements have to be met before the WAPC will agree to the land being transferred to the 'Urban' zone. The amendment report states that the following issues are to be addressed prior to the lifting of 'Urban Deferment':

- a district water management strategy (DWMS) is to be approved for the site by the DoW; and
- a bush fire hazard assessment is to be undertaken for the site to the satisfaction of the Department of Fire and Emergency services.

Bollard Bulrush Swamp will remain under the 'Rural' zone in the MRS. The intent is for the proponent to cede Bollard Bulrush Swamp to the Crown free of cost as development progresses. Management of the wetland will initially be undertaken by the developer and it is expected that the responsibility will be assumed by the local authority or the DPaW.

A draft Concept Structure Plan (CSP) has also been prepared for the amendment area (Figure 5). This draft structure plan requires approval once the land has been rezoned and is subject to modification.

The main characteristics of Amendment 1188/57 are summarised in Table 1 below. A detailed description of Amendment 1188/57 is provided in Section 1 of the Environmental Review (ENV Australia, 2013)

Table 1 - Key characteristics of proposed scheme amendment

Element	Description
Urban Deferred Zone, Wellard.	70.37 ha. The CSP proposes residential, recreational and conservation land uses.

3 Key environmental factors and principles

Section 48D of the EP Act requires the EPA to report to the Minister for Environment on the key environmental factors for the scheme amendment and the conditions and procedures to which the scheme amendment should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

The EPA decided that the key environmental factor relevant to Amendment 1188/57 that required detailed evaluation in the report is the environmental quality of inland waters (Bollard Bulrush Swamp).

The above key environmental factor was identified from the EPA's consideration and review of all environmental factors (preliminary factors) generated from the Environmental Review document (ENV, 2013) and the submissions received, in conjunction with the scheme amendment characteristics and alternative approvals processes which ensure that the factors will be appropriately managed. On this basis, the EPA considers that the preliminary factors and other issues raised in the submissions do not require further evaluation by the EPA. The identification process is summarised in Appendix 3.

The key environmental factor is discussed in Section 3.1 of this report.

3.1 Inland Waters Environmental Quality

The EPA's environmental objective for this factor is *to maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected.*

Submissions on this factor related to the impact of Amendment 1188/57 on the wetland, retention of the whole EPP Lakes area, the adequacy of the wetland buffer, and the reservation of the wetland as a Parks and Recreation reserve in the MRS.

Bollard Bulrush Swamp lies to the west of the amendment area and largely outside the boundary of the amendment. This wetland is protected under the EPP Lakes, and mapped as a CCW and REW (Figure 4). Surface water exists seasonally adjacent to the site in Bollard Bulrush Swamp and the Peel Main Drain; an artificial drainage line which runs through Bollard Bulrush Swamp and forms part of the regional drainage network. Groundwater flow is expected to be generally south-westerly, towards the Peel Main Drain.

In 2012, the vegetation surveys undertaken for the Environmental Review indicated high conservation value within the wetland area. On behalf of the EPA, the Office of the EPA (OEPA) requested the then DEC to review the management categories assigned to Bollard Bulrush Swamp in the *Geomorphic Wetlands Swan Coastal Plain* dataset. The majority of Bollard Bulrush Swamp was reclassified and upgraded from a REW to a CCW.

The DPaW subsequently advised that a minor Geographic Information System (GIS) error occurred during the 2012 review of the wetland management category mapping. This resulted in 1.3 ha of Bollard Bulrush Swamp not being identified as CCW. The boundary of the Bollard Bulrush Swamp CCW was corrected by the DPaW in May 2013 to reflect the required boundary alignment. However, the boundary correction was done after the WAPC modified the amendment to comply

with the 2012 upgraded mapping and 1.3 ha area of CCW is situated within the amendment area. However, 1.09 ha of this area is within the 50 m wetland buffer, and 0.2 ha is within the area identified in the concept structure plan for future Public Open Space (Figure 5) and therefore will be protected from residential development.

The Environmental Review states that there will be a 252% increase in post-development recharge to the wetland. However, the assumptions behind this projection are not provided in the Environmental Review. Flood modelling undertaken by GHD (2010) indicates that changes in surface flows as a result of development are not anticipated to significantly alter flood levels in the wetland. GHD (2010) further advised that any groundwater level rises as a result of development are anticipated to be within the range of groundwater levels currently experienced as a result of flood events. With the appropriate drainage and groundwater control system, the effects of the development on the wetland water levels should be minimal.

The DoW has advised that significant water planning has been undertaken in this area through the *Jandakot Drainage and Water Management Plan* (DoW, 2009) and the water modelling undertaken in the Environmental Review. The DoW has further advised that additional infiltration associated with urbanisation is considered to be environmentally acceptable. Surface water and groundwater impacts can be managed through engineering and design in the preparation of the future water management plans.

Specifically, these plans are:

- District Water Management Plan (DWMS) required to be completed before the land is changed from 'Urban Deferred' to 'Urban', to be approved by the DoW with DPaW input if required.
- Local Water Management Strategy (LWMS) to be completed at the local structure planning stage and approved by the DoW and the City of Kwinana.
- Urban Water Management Plan (UWMP) to be completed at the subdivision stage and approved by the City of Kwinana on advice from the DoW.

The EPA notes that the management plans will address the following matters:

The District Water Management Plan:

- Design and management objectives.
- A summary of the pre-development environment including a summary of any previous studies; in particular the modelling work completed for this Environmental Review, and the analysis and management options contained within it.
- An analysis of potential development impacts and options for enhancing water conservation in future development at the site.
- A presentation of the site water balance and a discussion on fit-for-purpose water source planning, including allocation of water for different uses and any existing and required infrastructure.
- A water management strategy; including a presentation of the stormwater model and a discussion on the appropriate management of surface water, groundwater, wastewater and drinking water management and how to enhance water efficiency at the site.
- An implementation framework.

The Local Water Management Strategy:

- Principles and objectives of total water cycle management.
- Details of the proposed development.
- Design criteria.
- A description of the pre-development environment.
- Average Annual Maximum Groundwater Levels based on groundwater monitoring.
- Minimum floor levels to provide protection from the groundwater table and local flood levels.
- Description of the conceptual stormwater water modelling.
- Detail structural and non-structural controls for stormwater quality to be used in the development.
- An assessment of potential potable water conservation measures for the site.
- Guidance on future management of the site including requirements for monitoring, roles, responsibilities and construction.

The Urban Water Management Plan:

- A summary of the pre-development environment including a summary of previous studies.
- Design objectives for water management.
- Pre and post-development water balances and a discussion of how the potable water management strategies will be met.
- Summary of the stormwater design undertaken by project engineers to demonstrate that the design complies with Department of Water and Town of Kwinana requirements and accompanying engineer's drawings.
- A groundwater management plan to demonstrate protection of groundwater resources.
- Specific design information regarding engineering design and landscape architecture in the UWMP.
- Proposed nutrient management approaches, including both structural and non-structural controls.
- A plan for management of subdivision works.
- Design of a post-development monitoring programme.
- An implementation plan.

These water management plans will address the total water management of the site, providing a greater level of detail at each stage of the planning process. All development on site will also be connected to reticulated sewerage, removing any risk of sewage input into the wetland area.

The EPA notes that:

- these plans are routinely prepared as part of the usual planning process once the rezoning process has been completed, and
- requirements for post-development water quality monitoring and duration will be addressed through the DWMS process, to be approved by the DoW.

A 50 m wetland buffer is identified in the concept structure plan (Figure 5) to protect the wetland and wetland habitat from weed infestation and inappropriate access. The OEPA notes that this is consistent with the WAPC draft *Guideline for the Determination of Wetland Buffer Requirements* (2005) and the EPA's *Guidance Statement No. 33 Environmental Guidance for Planning and Development* (2008).

The preparation and implementation of a Wetland Management Plan (WMP) will also be required by the WAPC as a condition of future subdivision. The WMP will detail the management of the impacts of the proposed development on the wetland, and its flora and fauna values. The WMP will facilitate the enhancement of the wetland core habitat, vegetation and function, including the reduction of weed species. Details of landscaping and design interface solutions, such as protective fencing and creation of a hard edge to the agreed wetland area, will also be included in a WMP. The WMP will be prepared in consultation with the DPaW and the City of Kwinana.

The REW portion of Bollard Bulrush Swamp will also be included in the wetland enhancement works undertaken in the WMP.

A Construction Environmental Management Plan (CEMP) is also proposed to be prepared. The CEMP will address environmental issues such as protection of wetlands and fauna, reduction of noise pollution, dieback management and revegetation and rehabilitation of preserved areas of native vegetation during the construction phase of the site. CEMPs are not a requirement for development but are standard practice.

The EPA considers that, following the original referral of Amendment 1188/57 which proposed development within a significant portion of the EPP Lakes, the appropriate procedure has been followed in revising the wetland mapping management category and modifying the amendment to rezone only the cleared land outside of the wetland area.

The EPA is aware that the preparation of a WMP is a standard land development practice, and supports the future preparation of a WMP to facilitate rehabilitation of Bollard Bulrush Swamp. The EPA is satisfied that the proposed 'Urban Deferred' boundary around the wetland and the wetland buffer (Figure 4) are adequate to protect the wetland. Furthermore, provision of formal, controlled public access to the wetland will increase the amenity and recreation values available to the surrounding community. The EPA considers that the local community and associated organisations should be engaged in the preparation of the WMP, and involved in its implementation.

The EPA is of the view that, given the current rural land use practices within the amendment area and uncontrolled access to the wetland, it is unlikely that

improvements to the wetland would be achieved under current conditions, in the absence of any formal management. The future urban development will provide the opportunity to exclude grazing and uncontrolled access, and allow the rehabilitation and recovery of the environmental values within the wetland. Potential impacts posed by increased nutrient loading from residential fertiliser use can be addressed through local government education programs and incentives regarding appropriate fertilisers and plant species located near wetlands.

Furthermore, from 1 January 2013, the existing regulations on phosphorus in domestic-use garden fertiliser have been strengthened to reduce the concentration from 2.5 to 2 percent. The amount of phosphorus in all-purpose and lawn fertiliser is limited to one percent. Controlled release and processed organic fertilisers, such as 'blood and bone', composts and composted chicken manure-based products also need to comply with these requirements.

The EPA also notes that the WAPC *Jandakot Structure Plan* (JSP) was finalised in August 2007. The JSP provides a guide to future development of the Jandakot area and management of key environmental values. The proposed amendment zones the final urban cell proposed under the JSP and will complete the urbanisation of the Wellard locality. The EPA considers that, given the above context, MRS Amendment 1188/57 fits appropriately within the surrounding land uses and is consistent with previous EPA decisions.

The EPA also supports the proposal that the WMP will be implemented by the development company, and that the ongoing management of the wetland will be handed over to the City of Kwinana or the DPaW, depending on which agency agrees to future management responsibility for Bollard Bulrush Swamp.

Summary

Having particular regard to:

- a) the modification of Amendment 1188/57 to propose development outside of the CCW area, and reduce impacts to the EPP Lakes;
- b) the preparation of the future water management strategies and plans at relevant stages of planning;
- c) the proposed 50 m wetland buffer to protect the CCW wetland function area and wetland habitat; and
- d) the preparation of the WMP to facilitate the enhancement of the wetland core habitat, vegetation and function,

it is the EPA's opinion that Amendment 1188/57 can be managed to meet the EPA's objective for inland waters environmental quality without the requirement for environmental conditions.

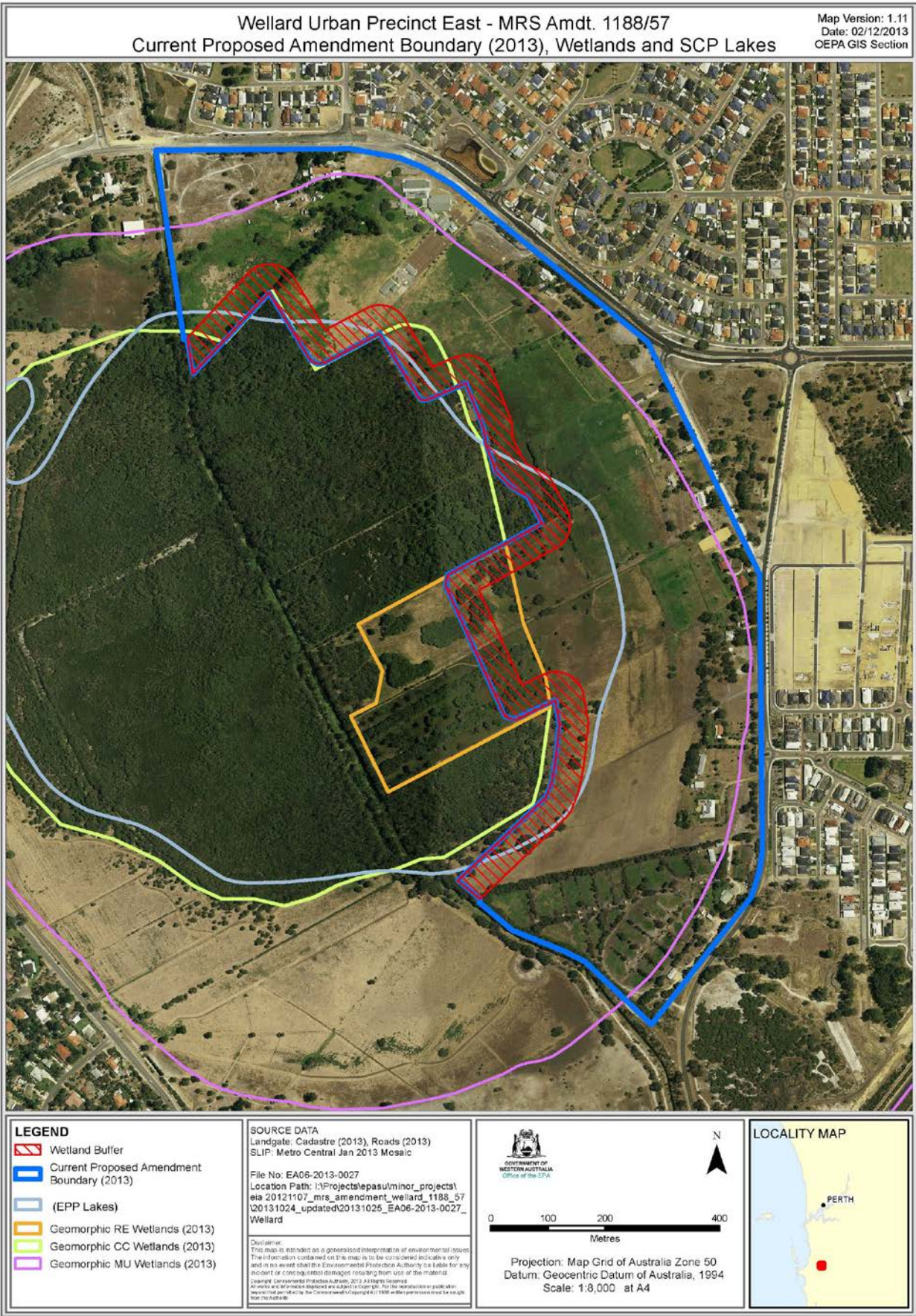


Figure 4: Current MRS Amendment 1188/57 Area and wetland management categories

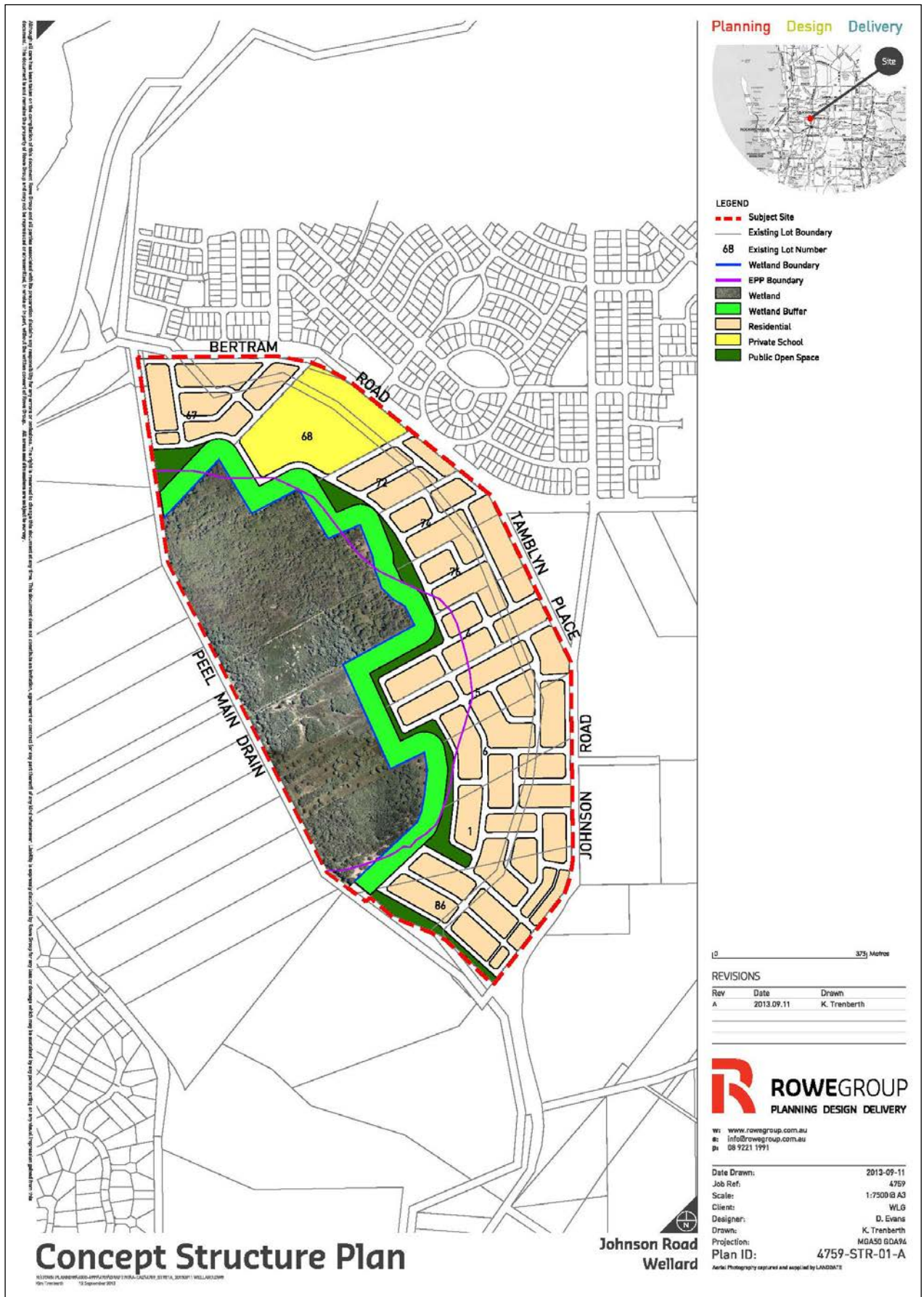


Figure 5: Concept Structure Plan

3.2 Environmental principles

In preparing this report and recommendations, the EPA has had regard for the object and principles contained in s4A of the EP Act. Table 2 contains a summary of the EPA's consideration of the principles.

4 Other advice

4.1 Future Parks and Recreation Reserve MRS Amendment

The EPA notes that Amendment 1188/57 does not address the reservation of the Bollard Bulrush Swamp as a whole. The EPA understands that the reservation of the wetland is a separate matter to this amendment and may be reserved as Parks and Recreation in the MRS under a future amendment.

The EPA would support the reservation of all of Bollard Bulrush Swamp as a Parks and Recreation reserve to provide a consolidated wetland conservation area, and a valuable community asset.

4.2 Bollard Bulrush Swamp - Resource Enhancement Wetland section

A small area of Bollard Bulrush Swamp mapped as a REW under the DPaW *Geomorphic Wetlands Swan Coastal Plain* dataset is proposed for development (Figure 4). This area is in a degraded to completely degraded condition and is considered to have limited fauna habitat value. The EPA notes that the habitat values of the balance of the REW will be retained and enhanced through the design, revegetation and management of the wetland interface. Revegetation will focus on creation of suitable habitats for Quenda, Cattle Egret and Eastern Cattle Egret.

The EPA expects that the portion of the REW within the wetland buffer be managed, restored and protected with the aim of achieving Conservation Category status.

4.3 Acid Sulfate Soils

The EPA notes that the amendment area also occurs within an area of high risk for Acid Sulfate Soils (ASS). With regard to ASS, the Environmental Review states that dewatering, soil disturbance, compaction or lateral displacement in areas of ASS during development will be avoided where possible. It is highly likely that fill will be required during development to achieve the required separation from groundwater levels, and to reduce flooding risk. If disturbance of ASS occurs during development, a compliant investigation and an ASS and Dewatering Management Plan is proposed as a condition of subdivision.

5 Recommendations

Section 48D of the EP Act requires the EPA to report to the Minister for Environment on the key environmental factors for the proposed scheme amendment and on the conditions and procedures to which the proposed scheme amendment should be subject, if implemented. The EPA is also required to have regard for the principles

set out in section 4A of the EP Act. In addition, the EPA may make recommendations as it sees fit.

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

1. That the Minister notes that the scheme amendment being assessed proposes to rezone the site from 'Rural' to 'Urban Deferred' under the Metropolitan Region Scheme.
2. That the Minister considers the report on the key environmental factor and principles as set out in Section 3.
3. That the Minister notes that the EPA has concluded that Metropolitan Region Scheme Amendment 1188/57 Wellard Urban Precinct East can meet the EPA's environmental objective for Inland Waters Environmental Quality.
4. That the Minister notes that the EPA has not included in this report "conditions and procedures to which Metropolitan Region Scheme Amendment 1188/57 should be subject, if implemented", because the EPA holds the view that the amendment as proposed can meet the EPA's environmental objective.
5. That the Minister notes the EPA's other advice presented in Section 4 in relation to a future Metropolitan Region Scheme amendment to reserve the wetland area, the rehabilitation of the Resource Enhancement Wetland area, and Acid Sulfate Soils.

Appendix 1

List of submitters

Organisations:

Beeliam Regional Park Community Advisory Committee
City of Kwinana
Department of Aboriginal Affairs
Department of Agriculture and Food
Department of Education
Department of Fire & Emergency Services
Department of Health
Department of Mines and Petroleum
Department of Parks and Wildlife
Department of State Development
Department of Transport
Department of Water
Main Roads Western Australia
Peel-Harvey catchment Council
Rowe Group on behalf of Wellard landowners Group
State Heritage Office
South West Aboriginal Land & Sea Council
Urban Bushland Council
Western Australian Police
Western Power
Wetlands Conservation Society
Wildflower Society of Western Australia

Individual:

Keil McCreery
Marinus and Jillian Van Asselt
Robyn Pickering

Appendix 2

References

DEC (2012) *Review of Wetland Mapping Displayed in the Geomorphic Wetlands Swan Coastal Plain Dataset for Bollard Bulrush Swamp, Wellard*, The Department of Environment and Conservation, 2012.

DoW (2009) *Jandakot Drainage and Water Management Plan*. Department of Water, 2010.

ENV Australia Pty Ltd (ENV) (2011) *Bollard Bulrush East Fauna Assessment*. Prepared for Wellard Landowners Group, 2011.

ENV Australia Pty Ltd (ENV) (2013) *Environmental Review Metropolitan Region Scheme Amendment 1188/57 Wellard Urban Precinct East*. Prepared for Wellard Landowners Group, 2013.

EPA (1992) *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992*. Environmental Protection Authority Bulletin, December 1992.

EPA (2006) *Guidance Statement No. 10 Level of Assessment for Proposals Affecting Natural Areas within the System 6 Region and Swan Coastal Plain Portion of the System 1 Region*. Environmental Protection Authority Bulletin, June 2006.

EPA (2008) *Guidance Statement No.33 Environmental Guidance for Planning and Development*. Environmental Protection Authority Bulletin, May 2008.

GHD (2010) *Bollard Bulrush Swamp Flood Modelling in ENV 2013 Environmental Review Metropolitan Region Scheme Amendment 1188/57 Wellard Urban Precinct East*. Prepared for Wellard Landowners Group, 2013.

Government of Western Australia (2000) *Bush Forever Volume 2: Directory of Bush Forever sites*. Department of Environmental Protection, Perth 2000.

WAPC (2005) draft *Guideline for the Determination of Wetland Buffer Requirements*. Western Australian Planning Commission.

WAPC (2007) *Jandakot Structure Plan*. Western Australian Planning Commission.

WAPC (2013) *Metropolitan Region Scheme Amendment 1188/57 Wellard Urban Precinct East Amendment Report*. Western Australian Planning Commission.

Appendix 3

Identification of Key Environmental Factors and Principles

Identification of Key Environmental Factors and Principles

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
BIOPHYSICAL			
Inland waters environmental quality		<p>Department of Water</p> <ul style="list-style-type: none"> • Significant water planning has been undertaken in this area through the Jandakot Drainage and Water Management Plan (DoW, 2009) and specifically to Bollard Bulrush through modelling presented in the report Wellard Urban Precincts East and West (GHD, 2010). • The proposed rezoning of the site to urban deferred is considered appropriate, subject to a District Water Management Strategy being prepared and approved prior to the lifting of urban deferment. <p>Department of Parks and Wildlife</p> <ul style="list-style-type: none"> • Further investigation is required to determine the boundaries of the wetland area to be retained and protected, including determination of the appropriate buffer distance. • Recommend that the boundary of the CCW (UFI 15866) be updated to reflect the revised 2013 mapping of the Geomorphic Wetlands Swan Coastal Plain dataset. • Recommend that the proposed Concept Plan be redesigned to ensure protection of the CCW (UFI 15866) and REW (UFI 15867) and a minimum 50 metre buffer. • Recommend that the proponent commits to fencing the outer edge of the buffer and ensuring a “hard edge” between the wetland and buffer development. • Recommend the proponent commits to the development and implementation of a Wetland Management Plan to the satisfaction of the OEPA and DPaW. 	<p>Considered to be a key environmental factor.</p>

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
		<ul style="list-style-type: none"> • Recommend that the proponent commits to development of a Construction Environmental Management Plan. • The DPaW would not be supportive of any infrastructure in the wetland or buffer that would potentially result in increased impacts to the wetland. • Recommend that the proponent present the surface water monitoring data prior to any development approval. • Recommend that the proponent commits to locating all new constructed drainage infrastructure outside of the CCW and REW and associated buffer. • Recommend the proponent commits to development of a surface water and ground water monitoring programme. • The DPaW should be consulted on the District and Local Water Management Strategies and the Urban Water Management Plan with regard to potential impacts to Bollard Bulrush Swamp. • Recommend that the proponent present the surface water monitoring data prior to any development approval. • Recommend that the proponent commits to locating all new constructed drainage infrastructure outside of the CCW and REW and associated buffer. • Recommend the proponent commits to development of a surface water and ground water monitoring programme. • The DPaW should be consulted on the District and Local Water Management Strategies and the Urban Water Management Plan with regard to potential impacts to Bollard Bulrush Swamp. 	

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
		<p><i>City of Kwinana</i></p> <ul style="list-style-type: none"> • The ER does not address the statement in the Jandakot Drainage and Water Management Plan which does not appear to support new urban development in the Bollard Bulrush Swamp area. • The ER does not explain what will be done to avoid the need for a buffer (greater than 50 metres for a CCW) that will give adequate protection from hydrological change to the wetland. • The ER states that a District Water Management Strategy (DWMS) will be prepared on lifting of urban deferment. Given the risks associated with the site it would be more appropriate to have a DWMS prepared before rezoning. • The ER states that water quality monitoring will be for three years post development. The Jandakot Drainage and Water Management Plan states that monitoring should be undertaken for at least five years. <p><i>Public and non-government organisations</i></p> <ul style="list-style-type: none"> • Inability of wetland impacts to be mitigated. • Bollard Bulrush swamp should be protected under Parks and Recreation reservation under the MRS. • The proposal excludes portions of the freehold lots which contain portions of Bollard Bulrush Swamp. • The wetland values need to be set in the context of the entire Bollard Bulrush Swamp. • Redefinition of the functional boundary of Bollard Bulrush Swamp. All of the CCW and REW should be protected. • The current proposed wetland buffer is inadequate and needs to be reviewed. • The ER states that a Wetland Management Plan will be 	

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
		<p>prepared at the subdivision stage. The Wetland Management Plan should be prepared at the Structure Plan process.</p> <ul style="list-style-type: none"> • No urban development within the EPP wetland boundary. • Hydric soils mapping should be undertaken for the whole of the site to assess the location of the buffer. • The ER has demonstrated that the surface water hydrology of the site will be significantly altered. • The ER does not state what contingency measures will be put in place if pre-development groundwater levels are significantly altered. • The ER does not demonstrate that the nutrient reduction targets can be met on site. • The ER does not aim to meet the Peel-Harvey Water Quality Improvement Plan phosphorus reduction target. • It is recommended that the Environmental Conditions to the scheme amendment state that Local Water Management Strategy and Urban Water Management Plans are to achieve a 38% reduction in phosphorous loads leaving the site. • The ER has not adequately addressed the current relationship between groundwater on the Site and flows in the Peel main Drain. • The post-development groundwater monitoring program as proposed in the ER will not be able to determine if the development will meet the objectives of the Water Quality Improvement Plan. • The Environmental Conditions attached to the amendment should require that all fill brought on the Site have a Phosphorous Retention Index of at least 15. 	

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
Flora and vegetation		<p><i>Department of Parks and Wildlife</i></p> <ul style="list-style-type: none"> • Recommend that a targeted flora survey for declared rare and priority flora known to occur in wetland habitats in the local area be undertaken in areas proposed for development. • Recommend that the proponent commits to the rehabilitation of the wetland conservation and buffer area, including locally native revegetation of degraded area and weed control as necessary. • Recommend the proponent considers revegetating the Public Open Space along the Peel Main Drain to create a wildlife corridor. <p><i>Public and non-government agencies</i></p> <ul style="list-style-type: none"> • The vegetation surveys have not been conducted correctly and do not reflect the vegetation condition correctly. • The amendment area should be resurveyed. • Bollard Bulrush Swamp should be fully rehabilitated and rezoned Parks and Recreation and be included in the Beeliear Regional Park as an important wetland. It is the last major wetland in the chain connecting the Beeliear Wetlands to the Rockingham lakes. It is important for supporting wildlife migration up and down the Swan Coastal Plain. • Not correct as proponents imply, that degraded wetland cannot be successfully restored. • The importation of soil on site for development also has the potential to cause changes to wetland vegetation. • Fencing off of the wetlands has shown to be successful in the regeneration of wetland understorey and eco-system functions. 	<p>The site consists of land that has been cleared and consistently grazed since the 1920s. ENV considers it “very unlikely that the subject site supports flora conservation significance or provides the habitat for conservation significant flora and therefore the potential for Threatened, declared rare or Priority Flora is low”.</p> <p>The areas of the site that contain remnant vegetation are being retained. Should Threatened, Declared Rare or Priority Flora occur within the remnant vegetation, then it will be retained and preserved.</p> <p>The proposed MRS amendment does not address the reservation of the retained wetland area. The reservation of this area is a separate matter to the current amendment.</p> <p>The Wetland Management Plan as identified on page 34 of the ER states “Details of landscaping and design interface solutions, such as protective fencing and creation of a hard edge to the agreed wetland area, will be also included in a Wetland Management Plan”.</p> <p>The Wetland Management Plan will be developed as a condition of subdivision in consultation with the DPaW and the City of Kwinana.</p> <p>Not considered to be a key</p>

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
			environmental factor. Factor does not require further EPA evaluation.
Terrestrial fauna		<p>Department of Parks and Wildlife</p> <ul style="list-style-type: none"> • Recommend that the proponent reassesses the habitat values of Bollard Bulrush Swamp. The ER states that the Melaleuca Dampland has a 'low' value. This is not supported by the information provided in the technical appendices. • Recommend that the proponent commits to a range of management and mitigation measures for potential impacts to conservation significant fauna, both with respect to the construction phase impacts and ongoing impacts. This could be addressed in the Wetland Management Plan. • Recommend the proponent considers the implementation of a "Cat Prohibited Area". 	<p>The site consists of land that has been cleared and grazed since the 1920s. The areas of the site that contain remnant vegetation that have habitat value will be retained. The value of the wetland providing habitat for Quenda has been identified and acknowledged. Revegetation will focus on creating appropriate habitat for significant species, including Quenda. The Wetland Management Plan will be prepared at the subdivision stage of the development, and addressing issues such as rehabilitation, weed and feral animal control. The <i>Cat Act 2011</i> has now come into effect, requiring owners to exercise more control in the movement of cats and increase sterilisation rates. A cat prohibition area can be further addressed at the local structure planning stage with input from the DPaW and the City of Kwinana. The Peel main drain will remain as a linkage for species utilising the area. Not considered to be a key environmental factor. Factor does not require further EPA evaluation.</p>

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
POLLUTION			
Terrestrial Environmental Quality	The proposal may disturb Acid Sulfate Soils (ASS).	<p>Public and non-government organisations</p> <ul style="list-style-type: none"> Believes the disturbance of ASS could lead to the acidification of the groundwater and wetlands, resulting in loss of biodiversity. <p>Town of Kwinana</p> <ul style="list-style-type: none"> The ER provided is inadequate to provide confidence that the risk of ASS are able to be satisfactory mitigated. 	<p>Acid Sulfate Soils will be identified and managed consistent with the DoP and WAPC 2008b <i>Acid Sulfate Soils Planning Guidelines</i> and DEC 2013 <i>Identification and Investigation of Acid Sulfate Soils and Acidic Landscapes</i>.</p> <p>These processes require ASS to be assessed at the LSP stage. If ASS are identified then additional investigations and management plans will be required. Management plans will be required as a condition of subdivision.</p> <p>This process is used to effectively manage ASS in Western Australia.</p> <p>Not considered to be a key environmental factor.</p> <p>Factor does not require further EPA evaluation.</p>
OTHER			
Heritage	Potential impact on Aboriginal heritage sites and European heritage values.	<p>Department of Aboriginal Affairs</p> <ul style="list-style-type: none"> The area does not intersect with the boundaries of any known Aboriginal heritage sites or places. Previous heritage surveys over areas in close proximity to Wellard Urban precinct (East) have Identified Aboriginal Cultural material within a sub-surface context. <p>South West Aboriginal Land & Sea Council</p> <p>Not identified any Registered Aboriginal Heritage Sites within the vicinity of the amendment.</p>	<p>The Department of Aboriginal Affairs recommends prior to any development occurring prospective developers should refer to the States Cultural Due Diligence Guidelines.</p> <p>The <i>Aboriginal Heritage Act 1972</i> protects Aboriginal heritage sites and materials.</p> <p>Not considered to be a key environmental factor.</p>

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
		<p>State Heritage Office</p> <ul style="list-style-type: none"> •No comment. 	<p>Factor does not require further EPA evaluation.</p>
<p>Landforms</p>	<p>Potential Impact on landform and biodiversity.</p>	<p>Department of Mines and Petroleum</p> <p>The agency's environmental geological map for Rockingham indicates that the land in its present form may be unsuitable for residential development. The underlying clayey silt and high water table of the area, as mapped by this agency, suggest that the land is prone to flooding and will not absorb liquid waste.</p>	<p>The Department of Water, the agency responsible for flooding matters, has not raised any objections to the development.</p> <p>Hydrological investigations have identified that some areas of the site could be subject to waterlogging or inundation during an average winter (Appendix F of Environmental Review). Appropriate management of this issue will be addressed in the District Water Management Strategy (DWMS). The DWMS will be prepared to support the rezoning of the site from 'Urban Deferred' to 'Urban' under the MRS. The DWMS will be consistent with Planning Bulletin 92: <i>Urban Water Management</i> (WAPC 2008) and <i>Better Urban Water Management</i> (WAPC and DPI 2008a) and will address protection of infrastructure and assets from high water tables under peak groundwater level conditions. The DWMS will include:</p> <ul style="list-style-type: none"> • assessment of pre- and likely post-development groundwater and surface water levels • assessment of the need for groundwater control

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
			<ul style="list-style-type: none"> • potential outlet locations and invert levels of outlets for groundwater control systems. <p>The DWMS will require approval by Department of Water prior to rezoning to 'Urban' under the MRS.</p> <p>The Local Water Management Strategy (LWMS) will be prepared at the Local Structure Plan (LSP) stage and will address:</p> <ul style="list-style-type: none"> • refinement of post-development groundwater levels • fill requirements (including existing and likely final surface levels) to address waterlogging and flooding requirements • areas in which subsoil drainage is to be utilised or excluded from use because of environmental sensitivities. <p>The LWMS will require approval by Department of water and City of Kwinana prior to the LSP being approved.</p> <p>Urban Water Management Plans (UWMPs) will be required at the subdivision stage. The UWMPs will include:</p> <ul style="list-style-type: none"> • confirmation of final surface levels and post-development groundwater levels

PRELIMINARY ENVIRONMENTAL FACTORS	AMENDMENT COMPONENT WITH POSSIBLE IMPACT	GOVERNMENT AGENCY AND PUBLIC COMMENTS	IDENTIFICATION OF KEY ENVIRONMENTAL FACTORS
			<ul style="list-style-type: none"> detailed design of subsoil drainage system, including design and potential impacts near sensitive environments. <p>As the development will be connected to reticulated sewerage, disposal of liquid waste will not occur on site and is consequently not an issue.</p> <p>Not considered to be a key environmental factor.</p> <p>Factor does not require further EPA evaluation.</p>

PRINCIPLES		
Principle	Yes/No	Consideration
1. The precautionary principle <i>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.</i> <i>In the application of the precautionary principle, decisions should be guided by —</i> (a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and (a) an assessment of the risk-weighted consequences of various options.	Yes	

<p>2. The principle of intergenerational equity <i>The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.</i></p>		
	Yes	
<p>3. The principle of the conservation of biological diversity and ecological integrity <i>Conservation of biological diversity and ecological integrity should be a fundamental consideration.</i></p>		
	Yes	
<p>4. Principles relating to improved valuation, pricing and incentive mechanisms (1) <i>Environmental factors should be included in the valuation of assets and services.</i> (2) <i>The polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance or abatement.</i> (3) <i>The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes.</i> (4) Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.</p>		
	No	
<p>5. The principle of waste minimisation All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.</p>		
	Yes	

Appendix 4

Summary of Submissions

and Responsible Authority's Response to Submissions

