



Swan and Canning Rivers Management Act 2006

PART 5

DETERMINATION OF DEVELOPMENT APPLICATION

FILE NUMBER : 2015-3240
APPLICANT : Rockway Pty Ltd
APPLICANT'S ADDRESS : Attn: Robert Auguste
Rockway Pty Ltd
PO Box 1208
SOUTH PERTH WA 6951
LANDOWNER : Western Australian Planning Commission (Lot 36), Sonia
Shanxu (Lot 8)
LAND DESCRIPTION : Lot 36 Phillip Street and Lot 8 River Avenue, Maddington
DEVELOPMENT : Establishment of a stormwater drainage swale and batter
VALID FORM 1 RECEIVED : 11 September 2015
DETERMINATION : **APPROVAL WITH CONDITIONS**

The application to commence development in accordance with the information received on 11 September 2015 is APPROVED subject to the following conditions:

1. Approval to implement this decision is valid for two (2) years from the date of the approval. If substantial on-site works have not commenced within this period, a new approval will be required before commencing or completing the development.

Prior to the commencement of works

2. The applicant shall notify the Department of Parks and Wildlife in writing not less than seven (7) days prior to the commencement of works (see **Advice Note 1**).
3. Prior to commencement of works, the applicant shall submit detailed engineering drawings showing the exact design and location of the drainage swale and the batter, to the satisfaction of the Department of Parks and Wildlife.
4. At least 30 days prior to the commencement of works, a Construction Environmental Management Plan shall be submitted to, and approved by the Department of Parks and Wildlife (see **Advice Note 2**).
5. At least 30 days prior to the commencement of works, a Foreshore Management Plan shall be submitted to, and approved by the Department of Parks and Wildlife on advice from the City of Gosnells (see **Advice Note 3**).

During works

6. All works shall be implemented in accordance with the detailed engineering drawings, Construction Environmental Management Plan and Foreshore Management Plan approved under **Conditions 3, 4 and 5**.

7. All fill and landscaping materials shall be clean, uncontaminated, and dieback disease free in accordance with the definition of 'clean fill' outlined in the Department of Environment Regulation's *Landfill Waste Classification and Waste Definitions 1996 (As amended December 2009)*.
8. The applicant shall ensure that no damage to the foreshore, riverbank, or waterway (including infrastructure) occurs beyond the scope of the approved works. Should any inadvertent damage occur, the applicant is required to notify the Department of Parks and Wildlife within 48 hours.
9. On completion of the batter, uniform fencing is to be constructed along the top of the batter, to the satisfaction of Department of Parks and Wildlife, on advice from the Department of Planning and the City of Gosnells (see **Advice Note 4**).

On completion of works

10. Upon completion of the works, all waste materials, equipment and machinery shall be removed and the site cleaned-up to the satisfaction of the Department of Parks and Wildlife.

Ongoing

11. The applicant is responsible for the ongoing maintenance of the vegetation, including weed control, associated with the swale, batter and other revegetation areas for two years following completion of works.

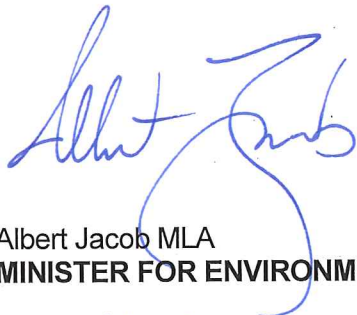
ADVICE TO APPLICANT

1. Notification of commencement of work and plans can be emailed to rivers.planning@dpaw.wa.gov.au.
2. The Construction Environmental Management Plan required under **Condition 4** shall describe how the proposed works will be managed to minimise environmental impacts and should address, but not be limited to:
 - site access;
 - on-site storage and bunding of materials and equipment;
 - machinery and refuelling, noting that no refuelling shall take place within the Development Control Area;
 - identification and protection of established vegetation;
 - excavation and any stockpiling of soil;
 - waste management;
 - dust management;
 - protection of the river from inputs of debris, litter, fill, rubbish or other deleterious material;
 - sediment management during construction;
 - erosion control and contingencies;
 - public access and safety;
 - parking for contractors; and
 - complaints and incidents.

Where relevant, the plan should also include timeframes and responsibilities for tasks identified.

3. The Foreshore Management Plan required under **Condition 5** shall include, but not be limited to:
 - removal of weeds from Lot 36, part Lot 8, and Lots 123 and 4078;
 - revegetation of Lot 36, part Lot 8 and Lot 123, using local native species;
 - planting densities of least:
 - Six sedge or reed plants per m² within the swale.
 - 500 sedge or herb plants per 100m² and 50 shrub plants per 100m² and 5 tree plants per m² on the batter.

- 500 sedge or herb plants per 100m² and 50 shrub plants per 100m² and 5 tree plants per m² within adjacent revegetation areas.
4. In regard to **Condition 9**, the permanent boundary fence shall be consistent with the City of Gosnell's fencing requirements and align with the adjacent boundary fence on Lot 203. The Department of Parks and Wildlife notes that boundary fencing is also a requirement under Condition 21 (and advice note 3) of the subdivision approval for Lots 14 and 35 (WAPC reference 148458).
 5. The applicant is advised that it is an offence under the *Swan and Canning Rivers Management Regulations 2007* to destroy, pull up, cut back or injure any tree, shrub or perennial plant that is on land within the Development Control Area, except with the approval of the Department of Parks and Wildlife or unless otherwise exempt by the Regulations. Should any clearing be required a clearing permit application would also need to be lodged with the Department of Environment Regulation.
 6. The applicant is advised that sediments must not be discharged into the Development Control Area and/or the Canning River, in accordance with the *Environmental Protection (Unauthorised Discharge) Regulations 2004*. The Department Environment Regulation may be contacted on (08) 6467 5000 or <http://www.der.wa.gov.au/>.



Albert Jacob MLA
MINISTER FOR ENVIRONMENT; HERITAGE

Date: 14.4.16

DEPARTMENT OF PARKS AND WILDLIFE REPORT

PROPOSAL	:	Establishment of a stormwater drainage swale and batter at Lot 36 Phillip Street and Lot 8 River Avenue, for residential development on Lots 14 and 35 Phillip Street and Lot 8 River Avenue, Maddington.
LOCATION	:	Lot 36 Phillip Street and Lot 8 River Avenue, Maddington
APPLICANT	:	Rockway Pty Ltd
LANDOWNER	:	Western Australian Planning Commission (Lot 36), Sonia Shanxu Chen (Lot 8)
LOCAL GOVERNMENT	:	City of Gosnells
MRS CLASSIFICATION	:	Parks and Recreation
LG CLASSIFICATION	:	Parks and Recreation, Town Planning Scheme No. 6
DECISION TYPE	:	Part 5, <i>Swan and Canning Rivers Management Act 2006</i> – Ministerial Determination
ATTACHMENTS	:	1. Location map 2. Aerial photo of subject land 3. Location of drainage swale and batter
RECOMMENDATION	:	APPROVAL WITH CONDITIONS

REPORT

1.0 INTRODUCTION

- 1.1 The Department of Parks and Wildlife (Parks and Wildlife) has received an application from Rockway Pty Ltd to build a stormwater drainage swale and batter within the Development Control Area (DCA) adjacent to two subdivisions: Lots 14 and 35 Phillip Street Maddington (Ref. 148458) and Lot 8 River Avenue, Maddington (Ref. 149864) (**Attachments 1 and 2**). The subject land is reserved for Parks and Recreation (P&R).
- 1.2 The proposal involves (**Attachment 3**):
- the construction of a drainage swale (5m wide and approximately 75m long) through the foreshore, which will convey treated water from the development to the Canning River;
 - the construction of a batter (a 1 in 5 slope and approximately 20m long) for the proposed bio-retention/detention basin and the proposed public road (i.e. Prosperity Drive); and

- proposed revegetation and weed control of the swale, batter and adjacent foreshore areas.
- 1.3 The proposed development is to occur on land with the DCA and therefore the proposed works require an approval under Part 5 of the *Swan and Canning Rivers Management Act 2006* (SCRM Act).
 - 1.4 The Director General of Parks and Wildlife has prepared this report in accordance with Section 76 of the SCRM Act.

2.0 CONSULTATIONS

City of Gosnells

- 2.1 The City did not provide a formal submission as it had already considered the establishment of a stormwater basin and drainage swale under the Urban Water Management Plan (UWMP) for Lots 14 and 35 and approved the plan.
- 2.2 The City has previously indicated agreement to a future management order over the site at Lot 36 and part Lot 8 (i.e. P&R area), on the condition that weed management and revegetation be undertaken before the management order takes effect. However, there is no condition of subdivision that requires weed management and revegetation of these areas (i.e. the foreshore reserve).

Western Australian Planning Commission

- 2.3 The Western Australian Planning Commission (WAPC), as the land owner of Lot 36, did not object to the establishment of a drainage swale, subject to four conditions:
 - Any works impacting on Lot 36 during construction are remediated once construction has been completed to the satisfaction of WAPC.
 - A foreshore management plan should accompany the construction of the swale and resultant drainage for the whole of Lot 36. Any drainage entering the foreshore reserve should be clean, at predevelopment flow rate and not result in any erosion to the foreshore reserve.
 - Ongoing management of the swale on Lot 36 will be undertaken by the developer until such time as the City of Gosnells takes management of the Public Open Space as per conditions 19 and 20 of Subdivision Approval WAPC 148458.
 - All retaining to be undertaken with appropriate civil engineering and geotechnical reports as per condition 21 of Subdivision Approval WAPC 148458.

Department of Planning

- 2.4 The Department of Planning (DoP) did not have any additional comments on the potential impacts on the biodiversity values of Bush Forever site No. 246, which covers Lot 36 and part Lot 8.

Swan River Trust

- 2.5 In accordance with section 75(3A) of the SCRM Act 2006, the Trust considered the draft report at its meeting on 9 February 2016. The Trust resolved to recommend its approval of the report to the Director General of Parks and Wildlife.

3.0 PUBLIC COMMENT – SUBMISSIONS ON DRAFT REPORT

- 3.1 In accordance with the requirements of Part 5 of the SCRM Act 2006 a copy of the draft report and proposed recommendation has been provided to the applicant, the local government and WAPC. A copy was also published on the Parks and Wildlife website for a period of two (2) weeks between 17 February 2016 and 2 March 2016 with an invitation for public submissions.
- 3.2 Three (3) submissions were received, being from the applicant, City of Gosnells and Department of Planning on behalf of the WAPC.
- 3.3 Parks and Wildlife has considered the submissions and recommends that Condition 5 and associated advice note No. 3, which relate to the requirement for a Foreshore Management Plan, be modified. The relevant condition and advice note has been updated, as recommended. The issues raised in the submissions are discussed in Sections 3.4 – 3.11 below.

Rockway Pty Ltd

- 3.4 A copy of the *Bushfire management plan – Lots 14 & 35 Phillip Street Maddington* (BPP Pty Ltd 2015) was provided.
 - Parks and Wildlife notes the Bushfire management plan for the adjacent private development.
- 3.5 The applicant objects to directions for work other than on Lot 36.
 - As the applicant is utilising the public foreshore reserve to manage stormwater discharge and to accommodate basin and road batters from its adjoining private developments, Parks and Wildlife considers that a requirement for works on Part Lot 8 and Lots 123 and 4078 to be reasonable.

City of Gosnells

- 3.6 The City of Gosnells supports the content and intent of the draft report and provided the following comments in relation to sections 6.4 and 6.12 of the draft report (now sections 7.4 and 7.12 of the final report) to address the construction of the swale and road batter:
 - It is recommended that jute matting be used as a sacrificial base upon which cement-jointed rock pitching with small pockets to accommodate appropriate vegetation is installed.
 - Rock pitching should be of sufficient 'roughness', including the installation of riffles, to dissipate the energy of water flow down the batter.
 - Frequent riffle intervention at between 5-10m apart is recommended along the length of the drainage swale below the batter to further slow water flow to reduce erosion and the probability of water creating a path outside of the swale. Frequency of riffles should be greater along the top section which runs down the 1:5 batter.
 - Entry point of the swale into the Canning River should be widened to allow for slower water dispersal into the river.
 - Planting within the swale should cover the entire swale, and not just the sides (this is not clear in the details provided).
 - Parks and Wildlife notes the above comments, which should be included into the Foreshore Management Plan. The Foreshore Management Plan shall be referred to the City for advice.

- 3.7 Parks and Wildlife informally consulted the City of Gosnells in regard to the road batter on part Lot 8. The City of Gosnells, provided in principle support and additional comments:
- The batter of the road at the edge of the subdivision will intrude into the P&R reserved land. The batter will be required to be fully erosion-proofed and revegetated by the developer. This is not an offset, but part of the required works to stabilise the batter.
 - The balance of Lot 123 and part Lot 8 will be required to be revegetated and managed as per adjacent Lot 36. This is an offset for the developer's use of public lands.
 - Given that the lands will ultimately be managed by the City through vesting, the revegetation works must comply with City Policy 6.2.2 and associated guidelines.
 - Parks and Wildlife agrees with the City's comments and has updated Condition 5 and advice note No. 3.
- 3.8 The City of Gosnells confirmed that the City will accept a future management order for part Lot 8 and Lot 36. Lot 123 already has a management order in favour of the City.
- Parks and Wildlife notes the above information.

Department of Planning

- 3.9 DoP had no objections to the text and conditions in the draft report.
- 3.10 DoP requested consideration of fencing within and adjacent to the site for public safety and management of the river foreshore. Specifically, it would prefer fencing along the boundary at the top of the batter to be consistent with City of Gosnells required fencing (and in line with fencing on the adjacent lots 202 and 203), as well as retention or replacement of fencing along River Ave.
- Parks and Wildlife supports the DoP's recommendation for fencing at the top of the batter, for reasons of protecting the proposed revegetation on the batters and for public safety. A condition requiring fencing has been included.
- 3.11 Parks and Wildlife also informally consulted the DoP in regard to the road batter on part Lot 8. DoP supports the City in its requests for revegetation of part Lot 8 and Lot 123, which includes the detention basin on Lot 123.
- Parks and Wildlife notes the above comment.

4.0 RELEVANT POLICIES AND PLANS

- ◆ State Planning Policy 2.10 – *Swan-Canning River System*
- ◆ SRT/D2 – *Access Pathways and Cycle Access*
- ◆ SRT/D4 - *Stormwater Management*
- ◆ SRT/EA1 - *Conservation, Land Use and Landscape Preservation*
- ◆ SRT/EA2 - *Foreshore Reserves*
- ◆ SRT/EA3 – *Flood Prone Land*

5.0 ENVIRONMENTAL AND PLANNING CONSIDERATIONS

- ◆ Stormwater management
- ◆ Flood prone land
- ◆ Vegetation management
- ◆ Public access
- ◆ Foreshore protection
- ◆ Maintenance and monitoring

6.0 BACKGROUND

6.1 Policy SRT/D4 outlines that applications for the use of land in the DCA for stormwater management from new or existing residential developments, will only be supported if (among other things):

- the proposal will improve the ecological value of the foreshore reserve and waterway and will result in a demonstrable community benefit;
- the subject site is in close proximity to the urban development that is the source of the stormwater;
- the reasons that stormwater cannot be managed on the development site are provided and the need to locate the stormwater management system in the DCA is justified; and
- the proposal includes a demonstrable commitment to improve the quality of water entering the river system from the development site.

Subdivision – Lot 14 and 35 Phillip Street

- 6.2 The subdivision approval (Reference 148458) for Lots 14 and 35 Phillip Street was granted by the WAPC on 13 May 2014, subject to conditions.
- 6.3 The subdivision approval included three conditions relevant to drainage. Condition 8 requires the preparation and approval of an UWMP, in consultation with the Department of Water (DoW) and the Swan River Trust (now Department of Parks and Wildlife). Condition 9 requires that the works are to be undertaken in accordance with the approved UWMP (or where no plan exists, to the satisfaction of the WAPC). Condition 9 also requires that stormwater is contained on-site or appropriately treated and connected to the local drainage systems.
- 6.4 The UWMP approved by the City of Gosnells (the City) on 17 February 2015 on the advice of DoW and Parks and Wildlife, proposed drainage of Lots 14 and 35 into a bio-retention/detention basin and then through a drainage swale. The proposed batter, associated with the basin, and the drainage swale are located within Lot 36.

Subdivision – Lot 8 River Avenue

- 6.5 The subdivision approval (Reference 149864) for Lot 8 River Avenue was granted by the WAPC on 22 August 2014, subject to conditions.
- 6.6 The subdivision plan depicts a public road, 'Road 2' (known as Prosperity Drive) adjacent to the DCA. Subsequent engineering drawings for the subdivision depict the public road and a shared path adjacent to the DCA and the associated batter wholly within the DCA.

- 6.7 Advice note 2 on the subdivision approvals states that *“if there is an intent to use the Parks and Recreation reserve/Development Control Area for drainage and/or fire management purposes, or to accommodate any hard infrastructure, approval will need to be sought in accordance with Part 5 of the Swan and Canning Rivers Management Act 2006 whereby a Foreshore Management Plan will be required to be prepared and submitted with such an application.”*

7.0 DISCUSSION

Stormwater management

- 7.1 Policy *Stormwater Management* (SRT/D4) indicates that applications for the use of the public DCA for stormwater management from private development will only be approved where every practicable attempt has been made to manage the 1 year, 1 hour ARI event as high in the catchment and as close to the source as possible.
- 7.2 The applicant's subdivision plans include a bio-retention/detention basin within the subdivision site (Lots 14 and 34 Phillip Street, Maddington) and drainage infrastructure. The approved UWMP proposes that *the 1 year and 5 year rainfall runoff from the roads and lots are conveyed to the proposed bio-retention/detention basin and discharge at pre-development rate into the Canning River* [via an outlet and weir structure, and drainage swale in the P&R area]. The basin also proposes *to detain the flow up to 1 in 100 year ARI event and discharge at pre development rate up to 1 in 100 year ARI event*. The 1 in 1 year ARI event will also be managed in roadside bio-gardens within the subdivision area.
- 7.3 The proposed drainage swale within the DCA is to convey flows from the bio-retention/detention basin to the river at predevelopment flow rates. Given that the 1 year, 1 hour ARI events are adequately managed within the subdivision site, this approach is consistent with Policy SRT/D4.
- 7.4 The drainage swale is to include an erosion control area (1m length of stone pitching) immediately downslope of the discharge outlet to prevent erosion within Lot 36 and a vegetated swale body. This is consistent with Policy SRT/D4, which requires overflows to the river to be across vegetated surfaces. The vegetated drainage swale is designed to stabilise soil, intercept sediments and slow the flow rate of water.
- 7.5 It is expected that the drainage swale will further improve the quality of stormwater exiting the bio-retention/detention basin prior to entering the Canning River, while also enhancing the existing environmental values through the planting of native vegetation.
- 7.6 The site of the proposed development at Lot 36 Phillip Street and Lot 8 River Avenue Maddington, the adjacent subdivision sites, or the surrounding lots in the local area are not registered as known or potential contaminated sites.

Flood prone land

- 7.7 Almost all of the subject foreshore area is mapped as being part of the Canning River floodway. However, the swale and batter are not expected to impede the flow of water during flood events, therefore there are no concerns with the proposal with regard to flooding.

Vegetation management

- 7.8 Policy *Conservation, Land Use and Landscape Preservation* (SRT/EA1) states that the maintenance and restoration of natural vegetation is to be promoted and the retention and reinforcement of existing native vegetation is actively

encouraged. Vegetation within the bio-retention/detention basin and drainage swale is integral to water quality and flow management.

- 7.9 Approximately half of Lot 36 is mapped as a conservation category wetland and floodway. In addition, the foreshore reserve, which includes Lot 36 and part Lot 8, forms part of Bush Forever site 246.
- 7.10 The foreshore reserve consists mostly of introduced grass species and only limited native vegetation present as fringing vegetation along the Canning River.
- 7.11 No native vegetation is proposed to be removed as part of the works.
- 7.12 The applicant has submitted some plans that provide an outline of the proposed revegetation and landscaping of the swale and batter and the adjacent area, which should be developed further and consolidated into a Foreshore Management Plan (FMP) as a condition of approval.
- 7.13 The FMP should focus on managing weeds and integrating the swale and batter into the surrounding P&R reserve. As the applicant is utilising the public foreshore reserve to manage stormwater discharge and accommodating a batter from its adjoining private developments, this approach is considered reasonable.
- 7.14 Local native species are to be used for the revegetation of the swale and the batter. Planting on the batter will soften its visual impact onto the landscape.
- 7.15 Given the foreshore reserve consists mostly of introduced grass species, it requires extensive weed management.

Public access

- 7.16 Policy *Access Pathways and Cycle Access* (SRT/D2) states that pathways are to be located, designed and constructed with due regard for the environmental and community values, public safety, community enjoyment, landscape conservation and regional planning.
- 7.17 A 2m wide footpath along Prosperity Drive and adjacent to the foreshore reserve has been prepared as part of the adjacent subdivisions and will provide access along the foreshore. Additional formal foreshore access is therefore not required as part of the application.

Foreshore protection

- 7.18 The applicant prepared a Sediment and Erosion Control Management Plan (Galt Environmental 2015) for the adjacent residential development, which outlined erosion control measures for the management of sediments. One such measure was the construction of a 160m long sediment fence in an approximately north-south direction within the foreshore reserve to prevent any sediment discharging to the Canning River during subdivision works.
- 7.19 A construction environmental management plan is required to identify potential impacts from the works within the foreshore reserve (i.e. swale and batter) and outline management measures to prevent such impacts.

Management and monitoring

- 7.20 To ensure adequate management of the drainage swale, the WAPC has requested that the applicant be required to manage drainage swale until such time as the management is taken over by another authority.
- 7.21 The applicant's preliminary plans outline a commitment to maintain and monitor the revegetation areas prior to handover to another authority and the City of Gosnells has indicated a willingness to take on long-term management.
- 7.22 Ongoing management and monitoring details will be addressed through a FMP.

Conclusion

- 7.23 The proposed works are consistent with an approved UWMP and engineering designs associated with the approved residential subdivisions (WAPC 148458 and 149864).
- 7.24 The proposed swale and revegetation of the foreshore area will provide an improved outcome for public amenity, water quality and the Canning River, and therefore it is recommended that the proposal be approved, subject to appropriate conditions and advice.

7.0 RECOMMENDATION – APPROVAL WITH CONDITIONS

That the Director General of the Department of Parks and Wildlife advises the Minister for Environment that the Rockway Pty Ltd proposal to establish a drainage swale and batter in Lot 36 Phillip Street and Lot 8 River Avenue, Maddington, as described in the application received on 11 September 2015 be approved, subject to the following conditions:

1. Approval to implement this decision is valid for two (2) years from the date of the approval. If substantial on-site works have not commenced within this period, a new approval will be required before commencing or completing the development.

Prior to the commencement of works

2. The applicant shall notify the Department of Parks and Wildlife in writing not less than seven (7) days prior to the commencement of works (see **Advice Note 1**).
3. Prior to commencement of works, the applicant shall submit detailed engineering drawings showing the exact design and location of the drainage swale and the batter, to the satisfaction of the Department of Parks and Wildlife.
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On completion of works

10. Upon completion of the works, all waste materials, equipment and machinery shall be removed and the site cleaned-up to the satisfaction of the Department of Parks and Wildlife.

Ongoing

11. The applicant is responsible for the ongoing maintenance of the vegetation, including weed control, associated with the swale, batter and other revegetation areas for two years following completion of works.

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FINAL REPORT ENDORSED

Signed: _____

Jim Sharp
Director General

Date: _____

24-3-16

Attachment 1

Legend

- Swan River Trust Development Control Area (2014)
- Swan River Trust Riverpark boundary (2012) - where it deviates from the Development Control Area
Note: Unless otherwise defined, the Riverpark coincides with the Development Control Area (red line).
- Local Government Authority boundary
- Cadastre
- Bridge
- Note: The area above the high water mark or the 1:100 year flood level (which ever is applicable) on the bridge alignment, is excluded from the Development Control Area and Riverpark.
- Parks and recreation reserve
- Waterway
- Railway

N

0 500 1,000

Metres

SCALE 1: 15,000 (MGA Zone 50)

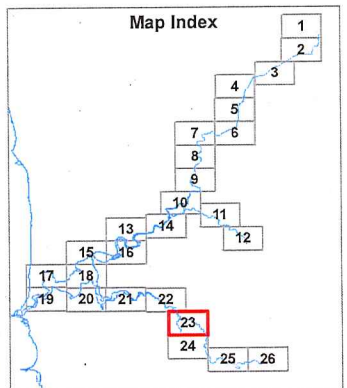
The Development Control Area (DCA) managed by the Swan River Trust may be described as comprising the waters of: the Swan River upstream of the Fremantle Port Authority boundary; the Avon River to its confluence with Moonidine Brook; the Helena River to the lower diversion dam on the river; the Southern River to Allen Road crossing and the Canning River to its confluence with Stinton Creek. The DCA includes the area reserved under clause 12 of the Metropolitan Region Scheme for "waterways" and lands adjoining those waters that are reserved as "parks and recreation."

The Riverpark managed by the Swan River Trust may be described as comprising all of the above, excluding freehold land in private ownership.

The Swan Canning Riverpark does not include any private property within the meaning of that term in regulation 2 of the Swan and Canning Rivers Management Regulations 2007.

Subject land

City of Gosnells



DEPOSITED PLAN
47465

SHEET 23 OF 25
VERSION 5

Department of Parks and Wildlife
SWAN RIVER TRUST
Landgate
DCA GAZETTED 27 JUNE 2014

Attachment 2



LEGEND

- Swan River Trust Development Control Area
- ~ Rivers
- Cadastre
- Road Centrelines
- Perth Metropolitan Area
- Central 15cm Orthomosaic - Landdate 2014



Scale 1:1713
 (Approximate when reproduced at A4)
 Geocentric Datum Australia 1994
 Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Prepared by: gracep
 Prepared for:
 Date: 21/01/2016 4:35:41 PM

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



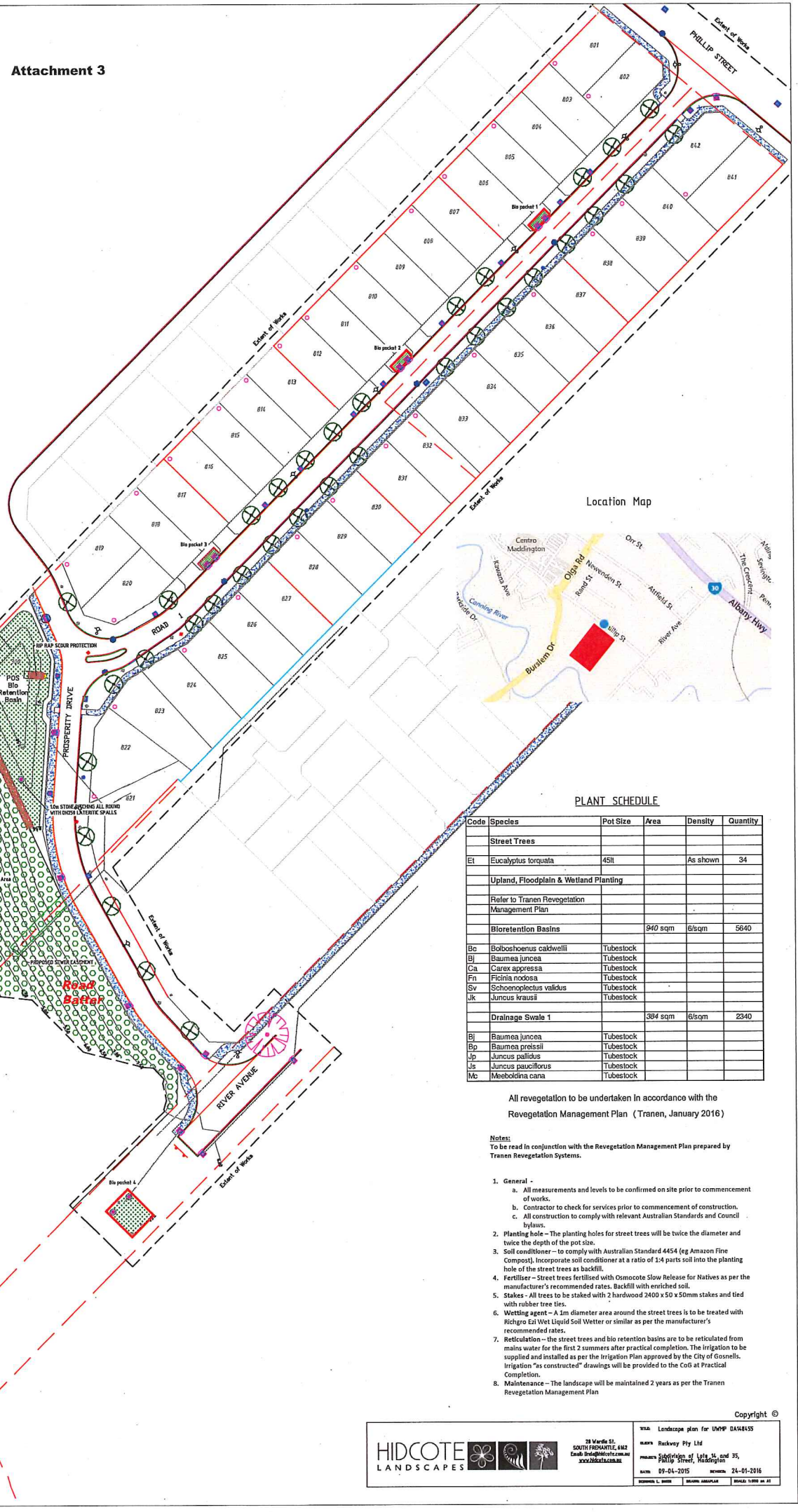
* Project Data. This data has not been quality assured. Please contact map author for details.



Attachment 3

LEGEND:

- BIO RETENTION BASINS
- UPLAND PLANTS
- FLOODPLAIN PLANTS
- DRAINAGE SWALE
- WETLAND
- TREES
- PROPOSED SIDE ENTRY PIT
- PROPOSED BUBBLEUP
- PROPOSED MANHOLE
- PROPOSED COMBINED SEP
- PROPOSED CULVERT
- SUBSOIL RISING SHAFT
- 1.0m STONE PITCHING
- STONE PITCHING
- PROPOSED FOOTPATH
- EXISTING TREE
- STREET LIGHT



Location Map



PLANT SCHEDULE

Code	Species	Pot Size	Area	Density	Quantity
Street Trees					
E1	Eucalyptus torquata	45L		As shown	34
Upland, Floodplain & Wetland Planting					
Refer to Tranen Revegetation Management Plan					
Bioretention Basins			940 sqm	6/sqm	5640
Bc	Bolboshoenus cactwellii	Tubestock			
Bj	Baumea juncea	Tubestock			
Ca	Carex appressa	Tubestock			
Fn	Ficinia nodosa	Tubestock			
Sv	Schoenoplectus validus	Tubestock			
Jk	Juncus kraussii	Tubestock			
Drainage Swale 1			384 sqm	6/sqm	2340
Bj	Baumea juncea	Tubestock			
Bp	Baumea pressillii	Tubestock			
Jp	Juncus pallidus	Tubestock			
Js	Juncus pauciflorus	Tubestock			
Mc	Mesoboldia cana	Tubestock			

All revegetation to be undertaken in accordance with the Revegetation Management Plan (Tranen, January 2016)

Notes:

To be read in conjunction with the Revegetation Management Plan prepared by Tranen Revegetation Systems.

1. General -
 - a. All measurements and levels to be confirmed on site prior to commencement of works.
 - b. Contractor to check for services prior to commencement of construction.
 - c. All construction to comply with relevant Australian Standards and Council bylaws.
2. Planting hole - The planting holes for street trees will be twice the diameter and twice the depth of the pot size.
3. Soil conditioner - to comply with Australian Standard 4454 (eg Amazon Fine Compost). Incorporate soil conditioner at a ratio of 1:4 parts soil into the planting hole of the street trees as backfill.
4. Fertiliser - Street trees fertilised with Osmocote Slow Release for Natives as per the manufacturer's recommended rates. Backfill with enriched soil.
5. Stakes - All trees to be staked with 2 hardwood 2400 x 50 x 50mm stakes and tied with rubber tree ties.
6. Wetting agent - A 3m diameter area around the street trees is to be treated with Richgro Ezi Wet Liquid Soil Wetter or similar as per the manufacturer's recommended rates.
7. Reticulation - the street trees and bio retention basins are to be reticulated from mains water for the first 2 summers after practical completion. The irrigation to be supplied and installed as per the Irrigation Plan approved by the City of Gosnell. Irrigation "as constructed" drawings will be provided to the CoG at Practical Completion.
8. Maintenance - The landscape will be maintained 2 years as per the Tranen Revegetation Management Plan

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DATE: 09-04-2015 REVISION: 24-01-2016

PROJECT: Subdivision of Lots 54, 55 and 35, Phillip Street, Maddington

CLIENT: Rakevay Pty Ltd

DESIGNER: Landscape plan for UMPP DAMLESS