



Swan and Canning Rivers Management Act 2006

PART 5

DETERMINATION OF DEVELOPMENT APPLICATION

FILE NUMBER : 2016/1907
APPLICANT : Pindan Pty Ltd
APPLICANT'S ADDRESS : Attn: Jordan Ennis
Pindan Pty Ltd
PO Box 93
BELMONT WA 6984
LANDOWNER : State of Western Australia, Reserve 26452
LAND DESCRIPTION : Lot 12133 Bernley Drive, Viveash (Reserve 26452, foreshore)
DEVELOPMENT : Drainage and landscaping works at Lot 12133 Bernley Drive, Viveash, associated with the subdivision and development of Lots 1 and 206 Winston Crescent and Lots 210-213 Bernley Drive, Viveash
VALID FORM 1 RECEIVED : 3 May 2015
DETERMINATION : **APPROVAL WITH CONDITIONS**

The application for development of drainage and landscaping works, as described in the information received on 3 May 2016, and the supplementary information received on 17 August 2016, at Lot 12133 Bernley Drive Viveash 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.
2. Approval is subject to the proponent implementing the works in accordance with the Viveash Stage 2 Reg Bond Reserve and Billabong Foreshore Management Plan (Essential Environmental, 17 August 2016).

Prior to the commencement of works

3. 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**).
4. Should the Engineering Detailed Design and Foreshore Footpath drawing No. 295-3/13 Rev A (Viveash Stage 2 Reg Bond Reserve and Billabong Foreshore Management Plan, Essential Environmental, 17 August 2016) be amended, the applicant shall submit detailed engineering drawings showing the exact design and location of the biofiltration basin, swale and pathway, to the satisfaction of the Department of Parks and Wildlife.
5. 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**).

During works

6. All works shall be implemented in accordance with the Viveash Stage 2 Reg Bond Reserve and Billabong Foreshore Management Plan, (Essential Environmental, 17 August 2016), amended detailed engineering drawings (if applicable) and Construction Environmental Management Plan approved under **Conditions 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.

On completion of works

9. 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

10. The applicant is responsible for the ongoing maintenance of vegetation, including weed control, associated with the biofiltration basin, swale, interface between the biofiltration basin and billabong, the billabong, the pathway and other revegetation areas for three years following completion of works.

ADVICE TO APPLICANT

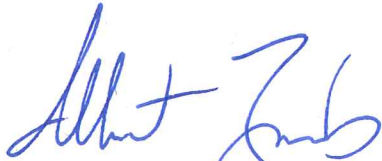
1. Notification of commencement of work and plans can be emailed to rivers.planning@dpaw.wa.gov.au.
2. The Construction Environmental Management Plan required under **Condition 5** shall describe how the proposed works will be managed to minimise environmental impacts and should address, but not be limited 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 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 may need to be lodged with the Department of Environment Regulation.

4. The applicant is advised that sediments must not be discharged into the Development Control Area and/or the Swan 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: 20.10.16

DEPARTMENT OF PARKS AND WILDLIFE REPORT

PROPOSAL	: Drainage and landscaping works at Lot 12133 Bernley Drive, Viveash, associated with the subdivision and development of Lots 1 and 206 Winston Crescent and Lots 210-213 Bernley Drive, Viveash.
LOCATION	: Reserve 26452, Lot 12133 Bernley Drive, Viveash
APPLICANT	: Pindan Pty Ltd
LANDOWNER	: State of Western Australia
LOCAL GOVERNMENT	: City of Swan
MRS CLASSIFICATION	: Parks and Recreation
LG CLASSIFICATION	: Regional Reserve - Parks and Recreation, Town Planning Scheme No. 17
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 and landscaping works
RECOMMENDATION	: APPROVAL WITH CONDITIONS

REPORT

1.0 INTRODUCTION

- 1.1 The Department of Parks and Wildlife (Parks and Wildlife) has received an application from Pindan Pty Ltd (Pindan) to build a biofilter and conduct associated landscape works within the Development Control Area (DCA) on Reserve 26452, Lot 12133 Bernley Drive, Viveash adjacent to a residential subdivision at Lots 1 and 206 Winston Crescent and Lots 210-213 Bernley Drive, Viveash (Viveash Stage 2 development) (**Attachments 1 and 2**). The subject land is reserved for Parks and Recreation (P&R) under the Metropolitan Region Scheme.
- 1.2 The land-use is Public Recreation, under Management Order of the City of Swan, and is a Class C Reserve.
- 1.3 The drainage and landscape works (the proposal) involves (**Attachment 3**):
 - the construction of a biofiltration system with a total footprint area of 731m² in the foreshore reserve, which will treat stormwater runoff from Pindan's Viveash Stage 2 development and an area of Viveash currently discharging stormwater directly to Reg Bond Billabong and the Swan River. The biofiltration system includes:

- a swale upstream of the Reg Bond Billabong and Biofiltration basin. The swale will facilitate both movement and water quality treatment of runoff flows generated during small events from the Viveash Stage 2 development and adjacent residential area. A headwall and scour pad comprised of limestone rock pitching will be constructed at the piped inlet. The perimeter of the swale zone will be mulched, and the swale area will be weeded and revegetated;
 - a biofiltration basin which will collect and store runoff discharged from the swale. It will provide water quality treatment to runoff flows before filtration into the groundwater system and discharge to the adjacent Reg Bond Billabong. The perimeter of the basin will be mulched, and the basin area will be weeded and revegetated;
 - removal of grass and weeds from the interface between the basin and billabong, revegetation, and the perimeter mulched; and
 - weeding and revegetation of the existing billabong.
 - construction of new disabled access pathway connecting Bernley Drive to the existing pathway to the north of the proposed biofilter; and
 - Replacement of the two existing piped outlets directing low flows into the foreshore reserve and billabong from the Stage 2 development and the existing Bernley Drive drainage system with one piped outlet discharging into the biofiltration system. The two existing piped outlets will be sealed, decommissioned and left as “stranded” assets.
- 1.4 Part of the proposed works (Reg Bond Billabong) is within a Bush Forever site (No. 302 – Swan River and Jane Brook, Ashfield to Upper Swan).
- 1.5 Works are proposed to commence immediately upon approval and will be completed before revegetation works are undertaken in August 2017.
- 1.6 The proposal is consistent with the Viveash Stage 2 Urban Water Management Plan (UWMP) which was required as a condition of the Western Australian Planning Commission (WAPC) approval number 153103.
- 1.7 The proposed development is to occur on land within the DCA and therefore requires approval under Part 5 of the *Swan and Canning Rivers Management Act 2006* (SCRM Act).
- 1.8 The Director General of Parks and Wildlife has prepared this draft report in accordance with Section 75 of the SCRM Act.

2.0 CONSULTATIONS

City of Swan

- 2.1 The City of Swan (the City) has previously approved the UWMP, and the Foreshore Management Plan, and will be responsible for the ongoing maintenance of the biofiltration basin, swale and landscaping after 3 years post construction. The City has been integral in the development of the management plans to ensure it is satisfied with the proposed works and management strategies. The City therefore recommended unconditional approval through the formal consultation process.

Swan River Trust

- 2.2 In accordance with section 75(3A) of the SCRM Act 2006, the Trust considered the draft report at its meeting on 13 September 2016. The Trust resolved to recommend its approval of the report to the CEO of Department of Parks and Wildlife.

Department of Aboriginal Affairs

- 2.3 The Department of Aboriginal Affairs (DAA) confirmed that the subject land is not within the boundary of any sites under the *Aboriginal Heritage Act 1972* (AHA) as currently mapped on the Register of Aboriginal Sites (the Register). *DAA 3720 Blackadder & Woodbridge Ck* and *DAA 3759 Jane Brook* are not within the relevant area. The sites have a 'closed' site status as they are culturally sensitive sites. This means that the boundary of the site as mapped on the Register is masked by a larger boundary so that the location of the place is protected.
- 2.4 *DAA 3720 Blackadder & Woodbridge Ck* is, however, in close proximity to the subject land. The site should be protected from indirect impacts as a result of the proposed activity, including disturbance caused by changes to the drainage.
- 2.5 The works are within *DAA 4004 Roxton Street*. The Aboriginal Cultural Material Committee assessed this location on the basis of the information available to it at the time and decided that this reported location did not meet, or no longer meets, the criteria of section 5 of the AHA and therefore is not a site under the AHA.
- 2.6 The proposed works are also in close proximity to *DAA Brentford Avenue* and the applicants should be careful to contain its activities so that there are no indirect impacts to the surrounding area.
- 2.7 Artefactual material has been recorded within the relevant area. If the applicant discovers any heritage features or has any additional information about the above listed Aboriginal heritage places, this information must be reported under section 15 of the AHA.
- 2.8 DAA advises that the sites are protected whether or not they are entered on the Register. It should be noted that there may be Sites to which the AHA applies that are yet to be identified and are therefore not in DAA records, and these sites are still afforded protection under the AHA.
- 2.9 DAA recommends that developers familiarise themselves with the State's Cultural Heritage Due Diligence Guidelines.
- 2.10 DAA recommends that developers meet with a DAA officer prior to any survey work being undertaken to discuss the most appropriate approach to this work.

Department of Water

- 2.11 The Department of Water (DoW) advises that the Swan River Flood Study shows that the subject site is not affected by flooding during major river flows, with the 1 in 100 AEP flood level expected to be 6.85 m AHD.
- 2.12 Based on DoW's floodplain development strategy for the area, proposed development (i.e. filling, building, etc.) is considered acceptable with respect to major flooding. However, a minimum habitable floor level of 7.35 m AHD is recommended to ensure adequate flood protection.
- 2.13 Based on the available survey information, the general natural surface level of the subject land is greater than ~ 11.0 m AHD.

3.0 PUBLIC COMMENT – SUBMISSIONS ON DRAFT REPORT UNDER SECTION 75 OF THE SCRM ACT

- 3.1 In accordance with the requirements of Part 5 of the SCRM Act a copy of the draft report and proposed recommendation was provided to the applicant, the City and other referral agencies. A copy was also published on the Parks and Wildlife website for a period of 14 days between 16 and 30 September 2016 with an invitation for public submissions.
- 3.2 At the close of the public comment period, no submissions had been received.

4.0 RELEVANT POLICIES AND PLANS

- ◆ State Planning Policy 2.9 – *Water Resources*
- ◆ State Planning Policy 2.10 – *Swan-Canning River System*
- ◆ Swan-Canning Water Quality Improvement Plan
- ◆ Corporate Policy Statement No. 42 - *Planning for Land Use, Development and Permitting Affecting the Swan Canning Development Control Area*
- ◆ Corporate Policy Statement No. 45 - *Planning For Miscellaneous Structures And Facilities In The Swan Canning Development Control Area*
- ◆ Corporate Policy Statement No. 49 - *Planning for Stormwater Management Affecting the Swan Canning Development Control Area*
- ◆ SRT/A3 - *Pesticide Use Within The Swan Canning Riverpark*

5.0 ENVIRONMENTAL AND PLANNING CONSIDERATIONS

- ◆ Stormwater management
- ◆ Water quality management
- ◆ Acid sulfate soils
- ◆ Ecological value and health
- ◆ Public benefit
- ◆ Flood prone land
- ◆ Use of fill
- ◆ Pathway
- ◆ Pesticide use
- ◆ Maintenance and monitoring

6.0 BACKGROUND

- 6.1 Planning Solutions (Aust) Pty Ltd on behalf of Pindan, applied for approval for the subdivision of Lots 1 and 206 Winston Crescent, and Lots 210, 211, 212, and 213 Bernley Drive, Viveash. The subdivision proposed to create 75 residential lots (Lots 500-574) and two Public Open Space (POS) lots (Lots 300 and 301), of which seven lots and one POS lot would share a boundary with the DCA.
- 6.2 The WAPC granted approval for the subdivision on 4 May 2016, subject to conditions (Reference 153103).

- 6.3 Essential Environmental on behalf of Pindan, prepared a UWMP in accordance with WAPC approval 153103, to establish water management objectives for the subdivision and justify the construction of a biofiltration basin, swale and landscaping within the adjoining foreshore reserve for the management of stormwater from the subdivision.
- 6.4 In June 2016, Essential Environmental submitted a Foreshore Management Plan in accordance with WAPC approval 153103, to provide an overview of the appropriate management strategies for the proposed biofiltration system, to ensure that the environmental, cultural and social values, attributes and functions of the foreshore reserve are conserved as part of the Viveash Stage 2 development.
- 6.5 Approval of the June version of the Foreshore Management Plan by the City and Parks and Wildlife allowed work to commence on the Viveash Stage 2 private residential development. Parks and Wildlife requested that a staged approach for the clearance of conditions of the WAPC approval be undertaken, requiring approval of a second, more comprehensive Foreshore Management Plan before the release of remaining title lots of the Viveash development.
- 6.6 The *Viveash Stage 2 Reg Bond Reserve & Billabong Foreshore Management Plan*, submitted by Essential Environmental on behalf of Pindan to Parks and Wildlife in on 17 August 2016, is intended to meet the requirements of Parks and Wildlife and supports the Part 5 development application. The document details the proposed biofiltration basin, swale and landscaping works, the proposed management of environmental assets, the implementation of management strategies and the maintenance of the infrastructure post-works.

7.0 DISCUSSION

Stormwater Management

- 7.1 Corporate Policy Statement No. 49 – *Planning for Stormwater Management* (Policy 49) indicates that stormwater runoff from constructed impervious surfaces generated by 1 year, 1 hour average recurrence interval events (ARI) (approximately a 15 mm rainfall depth on the Swan Coastal Plain) should be retained and/or detained at the runoff source (on lots and in road reserves) as much as practical.
- 7.2 The proposal provides consideration to stormwater management within the subdivision, however the soil types present in the subdivision are highly impermeable and unsuitable for the use of infiltration systems.
- 7.3 The proposal discusses detention systems that could be used within the site, at a cost to both the City and future lot-purchasers, both for installation and maintenance of these systems which would be a considerable future burden.
- 7.4 The proponent considered indirect connection of lots, with roof and hardstand runoff able to enter the street drainage system via overland flow with no direct piped connection provided. The City has indicated this type of connection is problematic in the area and is not desirable.
- 7.5 The subdivision works has allowed for lots to be provided with a connection that includes a small amount of retention capacity and a ‘weep hole’, where they can be located within the sand fill.
- 7.6 Given that drainage and subdivision design provides a limited amount of on-site retention of stormwater, the application proposes that stormwater run-off from lots

and road reserves generated in small events to be collected and conveyed via a piped drainage system that will discharge to a biofiltration basin upstream of the Reg Bond Billabong, within the foreshore reserve.

- 7.7 The first 15mm flush of stormwater from the subdivision will be directed to the biofiltration basin for treatment and removal of nutrients. An overland path will be provided to allow the biofiltration basin to overtop into the Reg Bond Billabong once its capacity has been exceeded.
- 7.8 The proposed biofiltration basin would also treat stormwater from other catchments with existing housing along Bernley Drive that currently flows into the billabong or directly into the river.
- 7.9 The total catchment served by the biofiltration basin is 12.8 ha, with a connected impervious area of 8.1 ha. The footprint of the basin is 664 m², with the swale and associated infrastructure an additional 67 m², totalling 731 m². The extended detention depth is 450 mm, with a 15 mm rainfall event detention volume of 288.4 m³, which has been modelled to drain from the system within three days.
- 7.10 Stormwater modelling indicates that there is no discharge to the Swan River during stormwater events up to and including 15 mm of rainfall depth. The first 15 mm of stormwater runoff into the biofiltration basin is treated prior to discharge into the Reg Bond Billabong where it will be retained.

Water Quality Management

- 7.11 Consistent with Corporate Policy Statement 49 – *Planning for Stormwater Management* (Policy 49), the proposal includes a water quality treatment train designed to meet the water quality management objectives of the catchment. High nutrient concentrations have been identified within the billabong, which may contribute to algal blooms.
- 7.12 The proposed works includes a biofilter to provide improvements to water quality of existing discharges to the billabong and the Swan River. The biofilter will be vegetated with local native species to enhance nutrient management and biodiversity conservation within the foreshore reserve. The vegetation will be established at a density of 6-9 plants per m² within the Biofiltration system (basin and swale) and in the interface between the basin and billabong.
- 7.13 The biofiltration system is designed to remove 55% of phosphorus and 76% of nitrogen from stormwater from the subdivision and additional catchment area, and reduce the nutrient export to below the current predicted export rate.
- 7.14 The proposal has addressed construction management activities and the reduction of sand drift and erosion, and the control of sediment, so that stormwater treatment and storage systems are not compromised and sediment is not mobilised to the river system during and post-construction.

Acid Sulfate Soils

- 7.15 The site of the proposed Biofiltration system is identified as having a moderate to high risk of acid sulfate soils (ASS) within 3 m of the soil surface.
- 7.16 An ASS investigation has been undertaken which found that no ASS were found and no further investigation and/or ASS management is required during construction of the biofiltration system. Self-assessment has been conducted, and an intrusive site investigation has been undertaken. The investigation concluded that there are no acid sulfate soils in the area of proposed construction.

Ecological Value and Health

- 7.17 Policy 49 indicates that applications for the use of land in the DCA for stormwater management from adjoining or nearby urban development will only be supported if the proposal will improve the ecological value of the foreshore and the river system.
- 7.18 The biofiltration system will improve water quality entering the Reg Bond Billabong, and the Swan River, by reducing the nutrient export by directing stormwater flow into a biofilter.
- 7.19 Landscaping works will include the planting of native vegetation and the removal of turf, which will improve the regional ecological linkages of the foreshore and river system, and provide additional habitat for native fauna. The biofiltration system basin will act as a buffer for the downstream billabong and Swan River from weeds, rubbish and sediment.
- 7.20 The ecological value of the area is further supported by the removal of grass and the planting of native species, as well as weed control, within the swale area upstream of the Reg Bond Billabong and Biofiltration basin. The interface between the basin and the billabong will have grass and weeds removed, and will be planted with native species. Additional weeding and revegetation will be undertaken within the billabong to assist nutrient uptake and improve environmental health and biodiversity.
- 7.21 Policy 42 indicates proposals are to promote the maintenance and restoration of natural vegetation, with the encouragement of the retention of existing native vegetation as a means of protecting linkages and natural vegetation corridors. Proposals should avoid the removal or fragmentation of native vegetation, where possible.
- 7.22 Existing native vegetation within the proposal area will be retained, with the exception of four immature native trees in the location of the swale. The removal of the trees is considered to be offset by the overall improvement of the foreshore reserve's natural ecosystem associated with the removal of dominant exotic grasses, revegetation using local species, and improvement in water quality flowing into the billabong and Swan River.
- 7.23 Local native species are to be used for the revegetation of the swale and the batter.

Foreshore protection

- 7.24 The applicant provided erosion and sedimentation management strategies within the foreshore management plan, which outlined erosion control measures for the management of sediments. Measures included access controls, temporary sedimentation traps, staging of works, mulching and stockpile management to prevent any sediment discharging to the Swan River during the planned works.
- 7.25 A Construction Environmental Management Plan (CEMP) is required to identify potential impacts from the works within the foreshore reserve. The CEMP should outline management measures to prevent such impacts and will be a condition of approval.

Public Benefit

- 7.26 Policy 49 indicates that applications for the use of land in the DCA for stormwater management from adjoining or nearby urban development will only be supported if the proposal will result in a demonstrable community benefit; the proposal will not

unacceptably affect the amenity of the area; and the use of the DCA for stormwater management in the location will not unacceptably impede the use of the foreshore for public access, recreation and conservation.

- 7.27 In this case, the proposed subdivision site has unsuitable soil for infiltration (Guildford Formation clay with very low permeability), so treatment of the first flush on site was not feasible. The applicant has provided information to support the contention that the proposal will result in a desirable community benefit, will not unacceptably affect the amenity of the area, and will not impede the use of the foreshore. The option to treat stormwater from the existing Bernley Drive drainage system in the biofiltration system would provide an improvement in ecological value to the foreshore.
- 7.28 Policy 42 indicates that the proposal must make provisions for public access and enjoyment of the Swan Canning river system including its foreshores in a manner that is consistent with the multiple use of the DCA and the preservation of the values of the land itself.
- 7.29 The foreshore reserve is used by the public as it provides social and recreational amenity for the community, including public walk and cycle trails that link it to other nearby parks and reserves. The development of the biofiltration system provides additional recreational opportunities within the foreshore reserve through the inclusion of a new, disabled access path to the foreshore and river around the biofiltration system. The biofiltration system itself will provide another area of interest within the reserve and further opportunities for public interaction.

Flood Prone Land

- 7.30 Policy 42 indicates all development proposed within the flood fringe is to be designed to minimise damage during a major flood event. Development within the flood fringe is to comply with a minimum habitable floor level of 0.5 metres above the relevant 100-year ARI flood level to provide protection from flooding.
- 7.31 DoW advises that the Swan River Flood Study shows that the subject site is not affected by flooding during major river flows with the 1 in 100 AEP flood level expected to be 6.85 m AHD.
- 7.32 Based on DoW's floodplain development strategy for the area, the proposed development (i.e. filling, building, etc.) is considered acceptable with respect to major flooding.

Use of Fill

- 7.33 Policy 42 indicates that any fill and/or topsoil being brought onto a development site in, or immediately adjacent to, the DCA is to be certified clean (as defined by the Department of Environment Regulation's *Landfill Waste Classification and Waste Definitions 1996/2009*), uncontaminated, and free from rubble, weeds and plant disease.
- 7.34 Approximately 262 m³ of Gin Gin Loam soil media will be sourced from Red Hill Quarry in Gidgegannup. Imported media will be appropriately managed to ensure it is clean and weed-free upon deposition, and can be enforced through a condition of approval.

Pathway

- 7.35 SRT Policy 45 – *Planning for Miscellaneous Structures and Facilities* (Policy 45) indicates that facilities are to be safe, provide convenient access, and construction

materials and colours of pathways and boardwalks should be selected to complement the local character of the river system. Further, Policy 45 indicates that the relevant vested authority supports the pathway construction.

- 7.36 The new pedestrian path is supported by the City and considered to complement existing access paths installed by the City throughout the Swan Regional Riverside Park. The path will be constructed according to City standards to complement existing pathways and the local environment.

Pesticide Use

- 7.37 SRT Guideline SRT/A3 – *Pesticide use within the Swan Canning Riverpark* indicates that foreshore land managers need to be aware that pesticides, including herbicides, readily bind to soil particles, and are subsequently transported in runoff receiving water bodies, The sediment-laden runoff could have an adverse impact on the ecological functions of the river system, particularly fish and aquatic life.
- 7.38 Foreshore land managers should follow applicable guidelines to ensure that pesticides are used in the most effective manner possible with regard to (i) timing of applications (season, time of day, climate and growth stage of the weed), (ii) location, and (iii) type of pesticide used.
- 7.39 Appropriate chemical and manual control methods will be used for the weed program. Chemical use will be undertaken in line with the guidelines, including the use of Glyphosate based non-selective contact herbicide to control annual and broad leafed weeds and some grasses; MCPA based selective herbicide to control a variety of weeds found in turf including Bindii (Onehunga), clover and capeweed; and Fluasifop based selective, post-emergence herbicide used to control annual and perennial weed grasses in garden beds and bushland.

Management and monitoring

- 7.40 To ensure adequate management of the biofiltration system, the applicant will manage the biofiltration system, including erosion, sediment and rubbish monitoring and maintenance, inspection and harvesting of native vegetation when fully grown, surface water quality monitoring, weed monitoring and control works, infill planting, and inspections and maintenance of pathway, until such time as the management is taken over by the City.
- 7.41 The applicant's plans outline a commitment to maintain and monitor the biofiltration basin, swale, interface between the biofiltration basin and billabong, the billabong, and the pathway for a period of three years prior to handover to the City.
- 7.42 Ongoing management and monitoring details have been addressed through the foreshore management plan.

8.0 CONCLUSION

- 8.1 The proposed works are consistent with an approved UWMP.
- 8.2 The proposed biofiltration system, weed management, revegetation and pathway in the foreshore area will provide an improved outcome for public amenity, water quality and the Swan River, and therefore it is recommended that the proposal be approved, subject to appropriate conditions and advice.

9.0 RECOMMENDATION – APPROVAL WITH CONDITIONS

That the Director General of the Department of Parks and Wildlife advises the Minister for Environment that the Pindan Pty Ltd proposal to conduct drainage and landscaping works at Lot 12133 Bernley Drive, Viveash received on 3 May 2016 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.
2. Approval is subject to the proponent implementing the works in accordance with the Viveash Stage 2 Reg Bond Reserve and Billabong Foreshore Management Plan (Essential Environmental, 17 August 2016).

Prior to the commencement of works

3. 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**).
4. Should the Engineering Detailed Design and Foreshore Footpath drawing No. 295-3/13 Rev A (Viveash Stage 2 Reg Bond Reserve and Billabong Foreshore Management Plan, Essential Environmental, 17 August 2016) be amended, the applicant shall submit detailed engineering drawings showing the exact design and location of the biofiltration basin, swale and pathway, to the satisfaction of the Department of Parks and Wildlife.
5. 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**).

During works

6. All works shall be implemented in accordance with the Viveash Stage 2 Reg Bond Reserve and Billabong Foreshore Management Plan, (Essential Environmental, 17 August 2016), amended detailed engineering drawings (if applicable) and Construction Environmental Management Plan approved under **Conditions 4 and 5**.
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On completion of works

9. 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

10. The applicant is responsible for the ongoing maintenance of vegetation, including weed control, associated with the biofiltration basin, swale, interface between the biofiltration


basin and billabong, the billabong, the pathway and other revegetation areas for three years following completion of works.

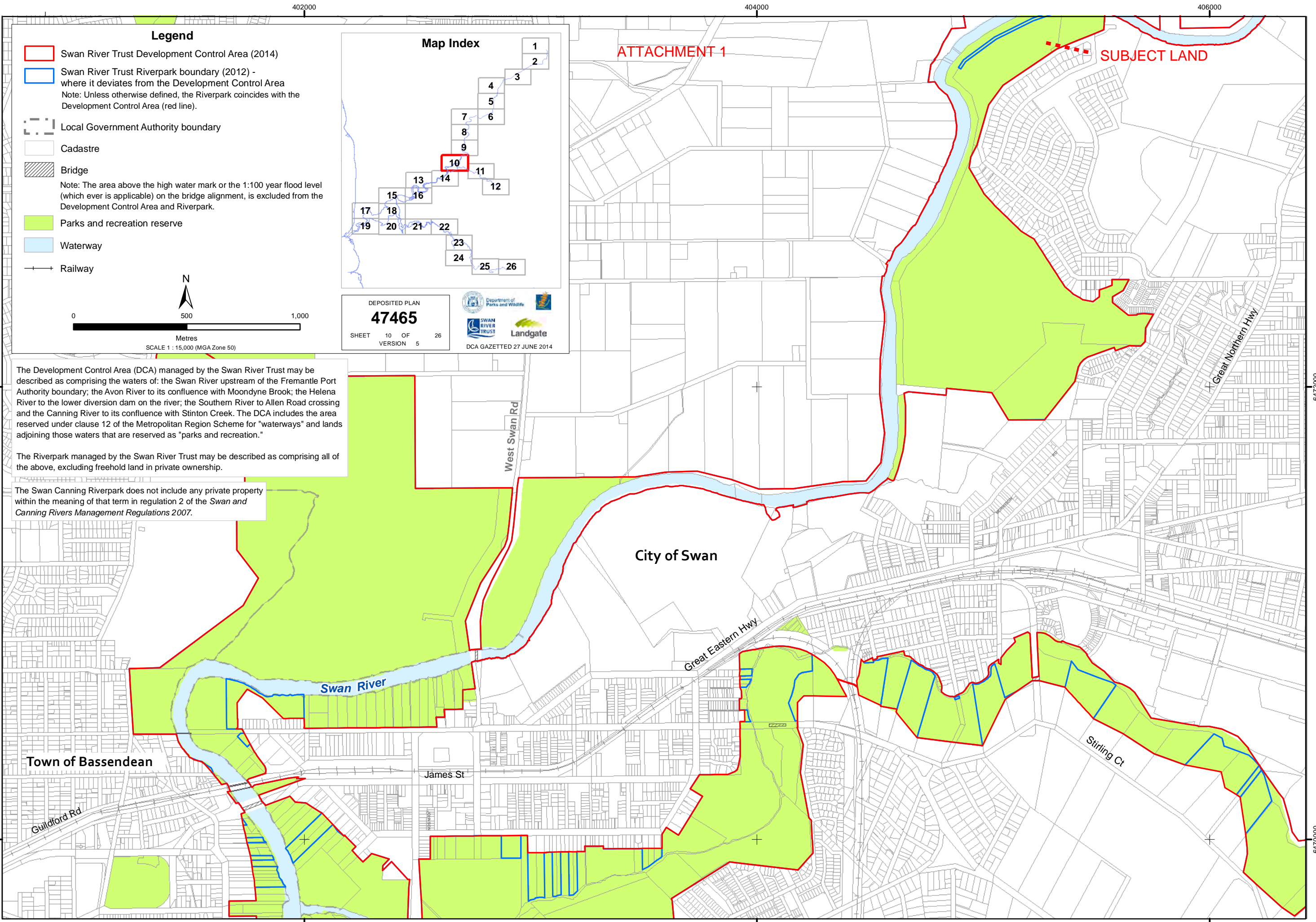
ADVICE TO APPLICANT

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

3. 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 may need to be lodged with the Department of Environment Regulation.
4. The applicant is advised that sediments must not be discharged into the Development Control Area and/or the Swan 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/>.

FINAL REPORT ENDORSED	
Signed: 	Date: <u>7.10.16</u>
Peter Dans Acting Director General	



ATTACHMENT 1

SUBJECT LAND

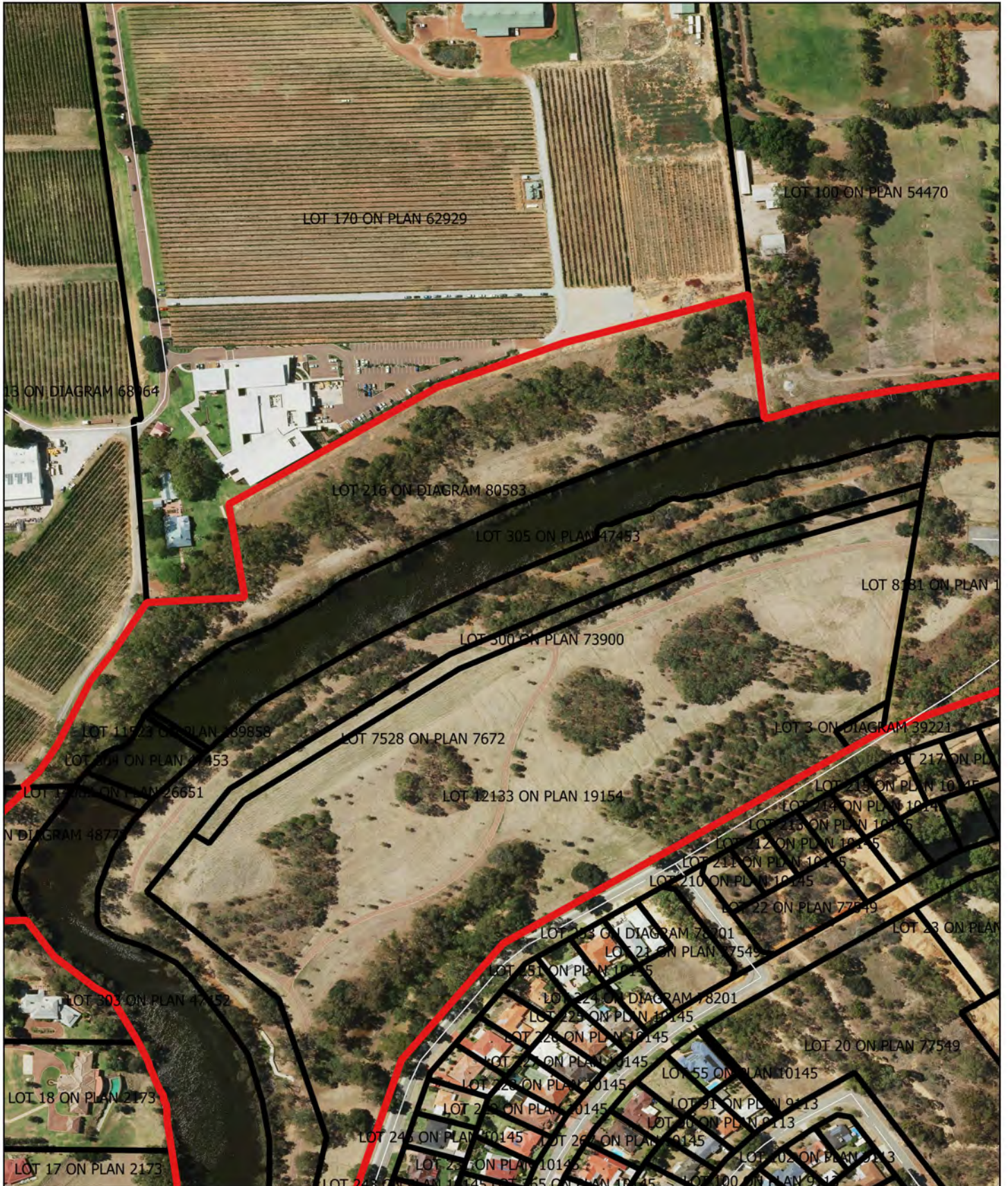
The Development Control Area (DCA) managed by the Swan River Trust may be described as comprising the waters of: the Swan River upstream of the Fremantle Port Authority boundary; the Avon River to its confluence with Moondyne Brook; the Helena River to the lower diversion dam on the river; the Southern 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*.

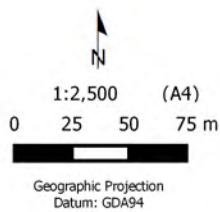
Development Control Area and Riverpark Map 10

Attachment 2



Legend

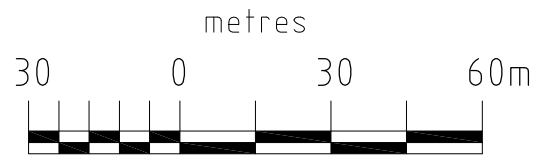
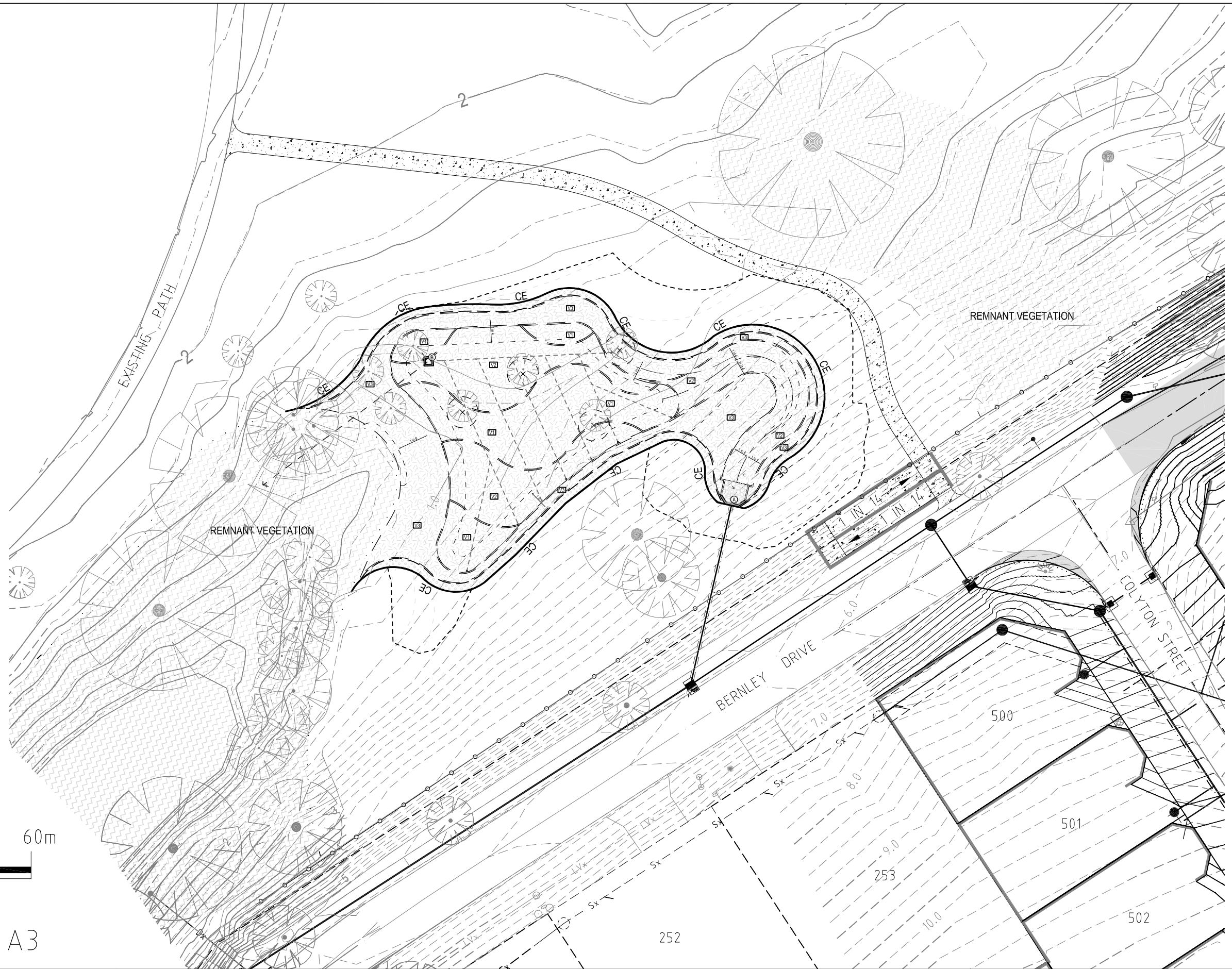
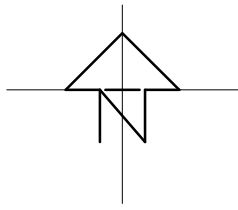
 Swan River Trust - DCA
 Perth Outer Cadastre (Land Parcels)



Produced by CW,
 Department of Parks and Wildlife



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1:1500

scales quoted apply to original drawing scale

A3

FILE	J295	DESIGN	PGF
REVISION NO	A	SURVEY DATUM	AHD
WAPC No.	153103	SCALE	1:1500
REV	AMENDMENTS	DATE	
A	ISSUED FOR INFORMATION	11.7.16	

THIS PLAN IS NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED

DRAWN PGF

CHECKED

EDGE
CONSULTING ENGINEERS
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