

# HENLEY BROOK AVENUE EXTENSION – STAGE 3

---

## CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Prepared for: City of Swan

Report Date: 3 July 2025

Version: 1

Report No. 2025-904

The logo for PGV Environmental is located at the bottom of the page. It features the letters 'PGV' in a large, bold, white sans-serif font. Below 'PGV', the word 'ENVIRONMENTAL' is written in a smaller, white, all-caps sans-serif font. The background of the bottom half of the page is a vibrant orange with a subtle, curved white line and a fine, radial texture.

# Contents

---

Contents .....	i
List of Attachments .....	iii
<b>1 INTRODUCTION .....</b>	<b>1</b>
1.1 Background .....	1
1.2 Scope of Works .....	1
<b>2 EXISTING ENVIRONMENT .....</b>	<b>2</b>
2.1 Topography .....	2
2.2 Geology and Soils .....	2
2.3 Hydrology .....	3
2.3.1 Groundwater .....	3
2.3.2 Surface Water .....	3
2.4 Vegetation.....	4
2.4.1 Vegetation Description.....	4
2.4.2 Vegetation Condition.....	5
<b>3 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN.....</b>	<b>6</b>
3.1 Site access .....	6
3.2 Dust Management .....	6
3.2.1 Objective.....	6
3.2.2 Site Classification.....	6
3.2.3 Timing .....	6
3.2.4 Hours of Operation.....	6
3.2.5 Advisory Notices .....	6
3.2.6 Speed Limits.....	7
3.2.7 Access Roads.....	7
3.2.8 Stripped and Stockpiled Soil .....	7
3.2.9 Water Carts.....	7
3.2.10 Stabilisation .....	7
3.2.11 Monitoring.....	7
3.2.12 Complaints Management.....	7
3.3 Surface Water Management.....	8
3.3.1 Stormwater.....	8
3.3.2 Erosion and Sedimentation .....	8

3.4	Spills Management.....	9
3.5	Emergency Response Plan .....	9
3.6	Dieback.....	10
3.6.1	Dieback Status .....	10
3.6.2	Dieback Management.....	10
3.7	Landscaping.....	11
3.8	Induction .....	11
4	SUMMARY OF MANAGEMENT PLAN.....	13
5	REFERENCES .....	15

## List of Attachments

---

### Tables

- Table 1: Land Degradation Risk Categories
- Table 2: Emergency Contact Information
- Table 3: Summary of Management Plan

### Plates

- Plate 1: Wetland Mapping

### Figures

- Figure 1: Site Location
- Figure 2: Site Boundary and Topography

### Appendices

- Appendix 1: Drainage Design

# 1 INTRODUCTION

---

## 1.1 Background

The City of Swan is in the process of extending Henley Brook Avenue south of Gnangara Road. Stages 1 and 2 have either been built, are under construction or have approval for construction. The Stage 3 proposed works will further extend the road to just south of Park Street (Figure 1).

The northern part of the Stage 3 works is within two private properties (Lot 78 Brooklands Drive and Lot 65 Park Street) while the southern part is within an unmade part of the road reserve (Figure 2). A small portion of road reserve at the corner of Henley Street and Georgeff Street is also included in this assessment. The Stage 3 works area is referred to as the 'site' throughout this report.

The widening and extension work will result in the clearing of some native vegetation. An application for a clearing permit will be submitted to the Department of Water and Environmental Regulation (DWER).

PGV Environmental was commissioned by the City of Swan to prepare a Construction Environmental Management Plan (CEMP) to be implemented during works to manage the impact of the proposed road works.

## 1.2 Scope of Works

The CEMP has been prepared to manage the relevant environmental factors and includes the following:

- Dust management procedures to manage the impacts of potential wind erosion;
- Management of surface water during clearing and construction to prevent waterlogging, water erosion and offsite impacts on surrounding wetland areas;
- Road design and stormwater controls to manage nutrients, sediment and petroleum;
- An emergency response plan for any potential spills during clearing and construction;
- Hygiene protocols to prevent the spread of dieback disease and other soil-borne pathogens; and
- Landscaping strategies to be used in the road reserve.

## 2 EXISTING ENVIRONMENT

### 2.1 Topography

The site ranges in elevation from 31-37m Australian Height Datum (AHD) with the highest point being just north of Park Street (Figure 2). The small triangular portion of road reserve is at an elevation of around 32m AHD.

### 2.2 Geology and Soils

The site is mapped on the Bassendean Dune System and consists of very low relief, leached, grey siliceous Pleistocene sand dunes, intervening sandy and clayey swamps and gently undulating plains (Bolland, 1998). These soils are very leached, infertile and mildly acidic (DPIRD, 2023).

The soil phases mapped on the site are:

- Bassendean, Jandakot Phase (212Bs\_Ja) which is associated with low, gently sloping dunes on Aeolian sands. The soils are described as grey sand over pale yellow sands generally underlain by humic and iron podzols;
- Bassendean Yanga Phase (Bassendean) Phase (212Bs\_Ya) which are located on poorly drained flats on alluvial deposits. The soils are semi-wet soils, yellow-brown shallow sands and grey deep sandy duplexes and are usually associated with dense *Melaleuca* scrub; and

The Land Degradation Risk Categories of the soil phases are outlined in Table 1.

**Table 1: Land Degradation Risk Categories**

Soil Type	Wind Erosion	Water Erosion	Subsurface Acidification	Flood Risk	Waterlogging	Phosphorus Export Risk
212Bs_Ja	50-70% of map unit has a high to extreme wind erosion risk	<3% of map unit has a high to extreme water erosion risk	>70% of map unit has a high subsurface acidification risk or is presently acid	<3% of the map unit has a moderate to high flood risk	<3% of map unit has a moderate to very high waterlogging risk	>70% of map unit has a high to extreme phosphorus export risk
212Bs_Ya	10-30% of map unit has a high to extreme wind erosion risk	<3% of map unit has a high to extreme water erosion risk	>70% of map unit has a high subsurface acidification risk or is presently acid	<3% of the map unit has a moderate to high flood risk	>70% of map unit has a moderate to very high waterlogging risk	10-30% of map unit has a high to extreme phosphorus export risk

Source – DPIRD, 2023

## **2.3 Hydrology**

### **2.3.1 Groundwater**

The site is on the Perth Surficial Swan and Mirrabooka aquifer. Groundwater is at 27mAHD (DWER, 2023), which is between 4m and 10m below the surface.

### **2.3.2 Surface Water**

A Multiple Use Palusplain is mapped over the northern end of the site (UFI 13396).

The wetland in this location is highly modified and cleared of native vegetation.

Plate 1: Wetland Mapping (National Map, 2023)



## 2.4 Vegetation

### 2.4.1 Vegetation Description

The northern southern part of the site is cleared apart from one Marri tree. The southern part of the site is mostly cleared but contains some regrowth native vegetation, primarily *Adenanthos cygnorum* (Woolly Bush), *Acacia saligna* (Orange Wattle) and one *Banksia attenuata* tree. A few native shrubs and occur in the northern half.

The vegetation in the central part of the site is remnant native vegetation in Completely Degraded condition. The vegetation is almost all scattered trees with one small patch of native shrubs. The trees are mostly *Eucalyptus todtiana* and *Banksia menziesii* with a few *Banksia attenuata*, *B. ilicifolia* and *Nuytsia floribunda*.

### **2.4.2 Vegetation Condition**

The vegetation condition of throughout the site is in Completely Degraded condition, according to the condition scale of Keighery (1994) published in Bush Forever (Government of Western Australia, 2000).

## **3 CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN**

---

### **3.1 Site access**

Access to the site will not be possible for the public during road construction. Temporary fences around the boundary of the road works areas will be installed. The new road is anticipated to remain closed until the entire section to Park St is completed so fencing arrangements will remain until the road is opened. The fence will be inspected weekly to ensure its function and placement are maintained. Contractor access points will only be from the northern extension of Henley Brook Avenue and from Park Street.

Fencing will be inspected weekly to ensure it is intact and repairs undertaken as needed as soon as possible after any damage has been reported.

#### **Management Measures**

- M1** Fencing to be erected around to site to prevent public access
- M2** Access to the site to be from existing roads
- M3** Weekly inspections of fencing and timely repair of any damage

### **3.2 Dust Management**

#### **3.2.1 Objective**

To prevent offsite impacts of dust from wind erosion prone soils.

#### **3.2.2 Site Classification**

The site is graded as Classification 2 – Low Risk in accordance with the *A Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites Remediation and other Related Activities* (DEC, 2011) as per the Site Classification Assessment Chart for Uncontaminated Dust.

#### **3.2.3 Timing**

The soil types on the site have a risk of wind erosion and therefore can have a risk of producing dust. The works are proposed to be undertaken in winter and therefore the risk of dust being produced is lowered due to the wet soils at that time of the year. Works may extend into summer at which time management measures as contained in the CEMP will be employed.

#### **3.2.4 Hours of Operation**

No works will be carried out after 5:00pm or before 7:00am Monday to Friday and not at all on Sundays or public holidays. Work will only be undertaken on Saturdays unless required.

#### **3.2.5 Advisory Notices**

Advisory notices are not required for Classification 2 sites, however residents of properties adjoining the road have been made aware of the intended works. A letter will be sent two weeks prior to commencement advising of the timing and extent of works.

### **3.2.6 Speed Limits**

Low speeds will be maintained during construction in the road reserve to minimise dust generation. Signage will be erected to indicate appropriate travelling speeds.

### **3.2.7 Access Roads**

Access roads are sealed and are not likely to cause an increased nuisance dust issue. If excessive dirt from operations is spilt onto roads that then create significant dust, the management of the dust will be the same as in the areas of active works.

### **3.2.8 Stripped and Stockpiled Soil**

Topsoil will not be stripped in high wind or adverse conditions. Any stockpiles that are generated will be managed in accordance with Guidelines (DEC, 2011) and the contractor will:

- Locate stockpiles in sheltered areas where possible.
- Limit the height and slope of the stockpiles to reduce wind pick up;
- Orient stockpiles lengthwise into the wind so they offer the minimum cross-sectional area to prevailing winds;
- Stabilise stockpiles with mulch or hydromulch if stockpiles are producing nuisance dust; and
- Limit activity to the downwind side of the stockpile.

### **3.2.9 Water Carts**

The soil will be kept damp whilst machinery is working by use of a water cart. The water cart will be kept onsite at all times and will be able to commence watering within 12 hours during the working week and 48 hrs over weekends of a reported dust complaint.

### **3.2.10 Stabilisation**

Approved hydro-mulching equipment will be instructed to be deployed by the City in the event of sustained dust generation from soil piles or exposed banks.

### **3.2.11 Monitoring**

Dust will be monitored by visual observation from the construction site and stockpiles. Installation of dust monitoring equipment is not proposed due to the low risk of dust being an issue.

### **3.2.12 Complaints Management**

The contractor will be notified of any dust related complaint by either the complainant, the Department of Water and Environment Regulation (DWER) or the Local Authority. In the event that justifiable complaint is received, there will be a set protocol to be followed:

1. The site supervisor is informed of the complaint;
2. The site supervisor will contact the appropriate manager;
3. Upon verification of the legitimacy of the complaint the site supervisor will identify the source for the complaint and if possible provide an immediate solution;
4. If an immediate solution is not available the site supervisor will liaise with the manager to develop possible solutions;
5. Works that create dust will be ceased on-site until a solution can be implemented;

6. Upon the implementation of any solution site supervisor will report to the manager; and
7. The complainant will be informed of the actions taken and asked for feedback.

All complaints, actions and outcomes will be recorded and maintained for auditing for the duration of the construction period.

### **Management Measures**

- M4** No works will be carried out after 5:00pm or before 7:00am Monday to Saturday and not at all on Sundays or public holidays
- M5** Low speed limits to be implemented on the site and signage installed at access points
- M6** Stockpiles to be located in sheltered areas, lengthways to prevailing winds with limited height and slope
- M7** Stabilise stockpiles with mulch or hydromulch if stockpiles are producing nuisance dust
- M8** Water carts to be present in dry conditions
- M9** Complaints register to be set up by the contractor
- M10** All complaints, actions and outcomes will be recorded and maintained for auditing for the duration of the construction period
- M11** Visual monitoring for dust to be undertaken during works

## **3.3 Surface Water Management**

### **3.3.1 Stormwater**

The construction of the road may create areas where surface run-off is exacerbated during construction works. Stormwater will be captured in temporary drainage swales and infiltrated within the road footprint.

### **Management Measures**

- M12** Stormwater runoff during construction to be managed in temporary swales

### **3.3.2 Erosion and Sedimentation**

All road batters will be constructed to the specified grade and will be stabilised as soon as possible after construction. Any steep road batters (>1 in 4) will be stabilised with Jute mats or vegetated in accordance with a Landscape Management Plan with stone pitching in areas of surface water overflow to prevent erosion.

During construction any stockpiles showing evidence of water erosion will be stabilised with mulch or hydromulch.

Monitoring of stockpiles, newly contoured land, and batters will be undertaken to inspect for signs of water erosion. Inspections will be undertaken on a weekly basis or after significant rainfall greater than the 1/1 ARI (16 mm in 15 minutes).

### **Management Measures**

- M13** Batters to be constructed to specified grades
- M14** Batters greater than 1:2 to be stabilised as soon as possible after construction
- M15** Batters greater than 1:2 to be vegetated and stone pitching to be used in stormwater overflow areas
- M16** Stabilise stockpiles showing signs of water erosion with mulch or hydromulch
- M17** Areas of open soil will be inspected weekly or after a 1/1 ARI rainfall event for signs of water erosion or sedimentation

### **3.4 Spills Management**

Refuelling machinery will need to take place on-site daily using a fuel trailer located within the compound. Refuelling on site will be undertaken on a sealed or bunded surface within the compound and construction vehicles will not be left unattended when refuelling.

To mitigate the risk of localised spill of hydrocarbon or other contaminant during construction the following will be undertaken:

- All portable toilets will be located in flat areas and managed by an appropriate contractor;
- No hydrocarbons or other hazardous materials will be stored outside of the compound; and
- A spill kit will be available at the site compound and any hydrocarbon spills will be cleaned up appropriately.

### **Management Measures**

- M18** Refuelling on site shall be undertaken on a sealed or bunded surface within the compound and never left unattended during refuelling.
- M19** Portable toilets to be placed on level ground.
- M20** A spill kit will be available at the site compound.

### **3.5 Emergency Response Plan**

An Emergency Response Plan as per WQPN 10: *Contaminant spills – Emergency response plan* will be implemented. In the event of a serious emergency at the site, the following procedure will be followed:

1. Stop work.
2. All personnel shall leave the work zone and return to the emergency assembly area.
3. Await further instructions from the Construction Contractor and/or appointed representative.

Personnel will not return to the work area unless advised to do so by the Construction Contractor or an appointed representative. The Construction Contractor will notify the relevant service as to the details regarding any emergency as outlined in Table 4.

**Table 2: Emergency Contact Information**

Name	Contact Number
Ambulance / Police / Fire Brigade	000
Department of Environment Regulation Pollution Response Services (24/7)	1300 784 782
Wildcare helpline	(08) 9474 9055
City of Swan	(08) 9267 9267

Records will be kept of any incidents, accidents, hazardous situations, unusual events and unsafe health exposures and the corrective action taken. Emergency procedures and contact telephone numbers will be available on site at all times at a central location.

### Management Measures

**M21** Emergency procedure to be available on-site and followed if an emergency occurs

**M22** Reporting of any emergencies as required

## **3.6 Dieback**

### **3.6.1 Dieback Status**

There are very few native plants remaining in the road reserve and as such the area is deemed to be 'Uninterpretable' for dieback.

### **3.6.2 Dieback Management**

*Phytophthora* Dieback (*Phytophthora cinnamomi*) is a soil-borne pathogen that infects the roots of vulnerable species, limiting the roots ability to take up water, thereby weakening or killing the host plant. The spores of *Phytophthora* Dieback are transported by water and in soil. In sloping areas *Phytophthora* dieback spreads quickly in surface and sub-surface water flows. It spreads slower up-slope and on flat ground because it is restricted to movement by root-to-root contact.

Hygiene management procedures will be implemented on the site with signage erected at all access points to the development area. The signs should include the following procedures:

- Vehicle inspection protocols to ensure the vehicle is free from soil/organic material prior to entry and exit;
- Brush down of contaminated vehicles and machinery in dry weather
- Wash down of contaminated vehicles and machinery used in clearing with suitable disinfectant such as bleach dilution, methylated spirits or an approved product such as Phytoclean during wet weather.

The spread of *Phytophthora* Dieback is more prevalent in the winter months when the soil is wet and overland flows can spread the disease quickly. Initial clearing works will be scheduled as much as possible in drier conditions when the development areas are not waterlogged or have flowing water down drainage channels.

To prevent transfer of potentially infected soil into adjoining areas there will be no access to the adjoining areas outside of designated access points and no soil will be pushed into these areas. Earthworks will ensure that no contours are created that drain surface water from the development area to outside of the road reserve. Stockpiles of soil and mulch will be located and oriented as per the dust management plan (Section 3.2).

All soils or mulch to be imported to the site during works will be disease and pathogen free. All plants used for landscaping will be free of dieback. Any building materials will be free from soil.

### **Management Measures**

**M23** Soil in the construction footprint of grades greater than 1:2 will be stabilised so it is not prone to water erosion and being washed into adjoining areas.

**M24** The following hygiene protocols will be followed:

- Vehicle inspection protocols to ensure the vehicle is free from soil/organic material prior to entry and exit;
- Brush down of contaminated vehicles and machinery in dry weather
- Wash down of contaminated vehicles and machinery used in clearing with suitable disinfectant such as bleach dilution, methylated spirits or an approved product such as Phytoclean during wet weather.

**M25** There will be no soil pushed to the outside of the road footprint

**M26** All imported landscaping and revegetation materials (i.e. soil, mulch, seedlings) brought onsite will be weed and certified dieback free.

**M27** Imported pipes, stone pitching materials and other construction materials are to be free of mud and soil.

## **3.7 Landscaping**

The verges and median islands will be mulched and planted with trees. As Henley Brook Avenue will allow speeds greater than 50km/hr the trees will not be suitable for black cockatoo habitat as trees will be too close to the road. This is consistent with the 'Keep Carnabys Flying Project'.

### **Management Measure**

**M28** Verges and median islands will be mulched and planted with trees.

## **3.8 Induction**

The Construction Environmental Management Plan will be supplied by the Construction Superintendent to contractors on the site and the induction will address all management procedures and requirements outlined in this plan.

**Management Measure**

**M29** CEMP to be provided as part of Induction Package

## 4 SUMMARY OF MANAGEMENT PLAN

Table 3 outlines the management actions as contained in the CEMP

**Table 3: Summary of Management Plan**

Factor	No.	Management Action
Access	<b>M1</b>	Fencing to be erected around to site to prevent public access
	<b>M2</b>	Access to the site to be from existing roads
	<b>M3</b>	Weekly inspections of fencing and timely repair of any damage
Dust Management	<b>M4</b>	No works will be carried out after 5:00pm or before 7:00am Monday to Saturday and not at all on Sundays or public holidays
	<b>M5</b>	Low speed limits to be implemented on the site and signage installed at access points
	<b>M6</b>	Stockpiles to be located in sheltered areas, lengthways to prevailing winds with limited height and slope;
	<b>M7</b>	Stabilise stockpiles with mulch or hydromulch if stockpiles are producing nuisance dust
	<b>M8</b>	Water carts to be present in dry conditions
	<b>M9</b>	Complaints register to be set up by the contractor
	<b>M10</b>	All complaints, actions and outcomes will be recorded and maintained for auditing for the duration of the construction period
Stormwater	<b>M11</b>	Visual monitoring for dust to be undertaken during works
	<b>M12</b>	Stormwater runoff during construction to be managed in temporary swales
Erosion and Sedimentation	<b>M13</b>	Batters to be constructed to specified grades
	<b>M14</b>	Batters greater than 1:2 to be stabilised as soon as possible after construction
	<b>M15</b>	Batters greater than 1:2 to be vegetated and stone pitching to be used in stormwater overflow areas
	<b>M16</b>	Stabilise stockpiles showing signs of water erosion with mulch or hydromulch
	<b>M17</b>	Areas of open soil will be inspected weekly or after a 1/1 ARI rainfall event for signs of water erosion or sedimentation
Spills Management	<b>M18</b>	Refuelling on site shall be undertaken on a sealed or bunded surface within the compound and never left unattended during refuelling
	<b>M19</b>	Portable toilets to be placed on level ground
	<b>M20</b>	A spill kit will be available at the site compound
Emergency Response Plan	<b>M21</b>	Emergency procedure to be available on-site and followed if an emergency occurs
	<b>M22</b>	Reporting of any emergencies as required

Factor	No.	Management Action
Dieback	<b>M23</b>	Soil in the construction footprint of grades greater than 1:2 will be stabilised so it is not prone to water erosion and being washed into adjoining areas.
	<b>M24</b>	The following hygiene protocols will be followed: <ul style="list-style-type: none"> <li>• Vehicle inspection protocols to ensure the vehicle is free from soil/organic material prior to entry and exit;</li> <li>• Brush down of contaminated vehicles and machinery in dry weather</li> <li>• Wash down of contaminated vehicles and machinery used in clearing with suitable disinfectant such as bleach dilution, methylated spirits or an approved product such as Phytoclean during wet weather.</li> </ul>
	<b>M25</b>	There will be no soil pushed to the outside of the road footprint
	<b>M26</b>	All imported landscaping and revegetation materials (i.e. soil, mulch, seedlings) brought onsite will be weed and certified dieback free.
	<b>M27</b>	Imported pipes, stone pitching materials and other construction materials are to be free of mud and soil.
Landscaping	<b>M28</b>	Verges and median islands will be mulched and planted with trees.
Induction	<b>M29</b>	CEMP to be provided as part of Induction Package

## 5 REFERENCES

---

- Bolland, M. (1998) *Soils of the Swan Coastal Plain*. Department of Agriculture. Bunbury, Western Australia.
- Department of Environment and Conservation (DEC) (2011) *A Guideline for Managing the Impacts of Dust and Associated Contaminants from Land Development Sites, Contaminated Sites Remediation and other Related Activities*. Perth, Western Australia
- Department of Environmental Protection (DEP) (1996) *Land Development Sites and Impacts on Air Quality - A Guideline for the Prevention of Dust and Smoke Pollution from Land Development Sites in Western Australia* Perth Western Australia.
- Department of Primary Industries and Regional Development (DPIRD) (2023) Natural Resource Management Shared Land Information Platform. Accessed June 2023 <http://maps.agric.wa.gov.au/nrminfo/framesetup.asp> Government of Western Australia, Perth.
- Department of Water and Environmental Regulation (DWER) (2006) Water Quality Protection Note 44 *oads near sensitive water resources* Government of Western Australia, Perth.
- Department of Water and Environmental Regulation (DWER) (2007) Water Quality Protection Note 83 *Infrastructure corridors near sensitive water resources* Government of Western Australia, Perth.
- Department of Water and Environmental Regulation (DWER) (2008) Brochure *Construction depots near sensitive water resources* Government of Western Australia, Perth.
- Department of Water and Environmental Regulation (DWER) (2009) Water Quality Protection Note 84 *Rehabilitation of disturbed land in public drinking water source areas* Government of Western Australia, Perth.
- Department of Water and Environmental Regulation (DWER) (2013a) Water Quality Protection Note 29 *Mechanical servicing and workshops* Government of Western Australia, Perth.
- Department of Water and Environmental Regulation (DWER) (2013b) Water Quality Protection Note 28 *Mobile mechanical servicing and cleaning* Government of Western Australia, Perth.
- Department of Water and Environmental Regulation (DWER) (2018) Water Quality Protection Note 56 *Tanks for fuel and chemical storage near sensitive water resources* Government of Western Australia, Perth.
- Department of Water and Environmental Regulation (DWER) (2020) Water Quality Protection Note 10 *Contaminant spills — emergency response plan* Government of Western Australia, Perth.
- Emerge (2020) *Henley Brook Structure Plan Local Water Management Strategy* Perth, Western Australia

Environmental Protection Authority (EPA) (2000) *Guidance Statement No. 18 Prevention of air quality impacts from land development sites*. Perth Western Australia.

Government of Western Australia (2000) *Bush Forever - Keeping the Bush in the City. Volume 2: Directory of Bush Forever Sites*. Perth, Western Australia.

Landgate (2023) Historical Aerial Photography Accessed June 2023  
<https://www.landgate.wa.gov.au/bmvf/app/mapviewer/> Government of Western Australia,

Monash University (2014) *Vegetation Guidelines for Stormwater Biofilters within Southwest of Western Australia* Melbourne Victoria

National Map (2023) Map-Based Access to Spatial Data from Australian Government Agencies  
<http://nationalmap.gov.au/#wa> Accessed June 2023 Government of Australia

Waste Authority (2018) *Roads to Reuse: Product Specification - recycled road base and recycled drainage rock* Perth, Western Australia

# FIGURES

**APPENDIX 1**  
**Drainage Design**