



EPA Referral Supporting Document

Neerabup Resource Recovery Precinct – Stage 1



Prepared for the City of Wanneroo

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Executive Summary

The City of Wanneroo (the City) is located approximately 39 kilometres north of Perth CBD. The City currently relies on nearby Tamala Park Landfill for the City's waste management. However, Tamala Park Landfill is anticipated to close in the near future. There is a recognised shortage of alternative local waste processing infrastructure within the Perth's northern corridor where the City is located. This leaves the City with an impending need to consolidate residual waste for transportation to facilities primarily located in the southern Perth metropolitan area. The City is now progressing with the development of its long-term waste management strategy through the establishment of the Neerabup Resource Recovery Precinct (NRRP).

Stage 1 of the NRRP (the Proposal) will consist of a community recycling centre (CRC), waste transfer station (WTS), and a materials recovery facility (MRF) to provide essential recycling and waste services for the City's ratepayers and the boarder northern region. The proposed infrastructure will reduce haulage distances, improve diversion rates, and support the City's transition away from reliance on Tamala Park landfill.

The CRC will include a Reuse Shop, Recycling Drop-off Area, and a Residual Waste Drop-off Facility as well as a waste education centre within the Administration office. The CRC aims to increase diversion from landfill by providing the community with accessible and comprehensive recycling and reuse services. Key benefits of the CRC include:

- Alignment with the Waste Hierarchy and the Waste Avoidance and Resource Recovery Strategy 2030 (WARR Strategy);
- Increased recovery of reusable and recyclable materials;
- Reduced environmental impacts;
- Enhanced community services and accessibility;
- Improved operational safety and efficiency;
- Job creation; and
- Reduced incidence of illegal dumping.

The WTS will function as a local consolidation point for residual waste (and potentially kerbside collected organics) prior to haulage to downstream treatment or disposal facilities. Key benefits of the WTS include:

- Efficient aggregation of waste;
- Reduced haulage distances and emissions;
- Continued access to waste services post-Tamala Park landfill closure; and
- Job opportunities.

The MRF will provide centralised processing of commingled recyclables within the northern suburb. The MRF will have capacity to accept both commingled recyclables from across the northern suburb for sorting into clean recycling streams in preparation to downstream reprocessors. Key benefits of the MRF include:

- Increased resource recovery rates;
- Lower emissions from transport; and
- Creation of local jobs and training opportunities.

This referral document has been prepared to support the referral to the EPA for the NRRP Stage 1 infrastructure including the WTS, MRF and CRC and its associated infrastructure. The objectives of this document are to:

- Provide a background and overview of the project and planning process;
- Outline the project planning tasks undertaken to date;
- Summarise the community consultation activities undertaken and key outcomes;
- Describe the current conditions on, and surrounding, the NRRP;
- Describe the proposed design and operations of the NRRP;
- Identify any relevant EPA Factors associated with the NRRP proposal; and
- Outline environmental engineering and management measures to ensure that all potential impacts are managed to appropriate standards.

The key environmental factors associated with the NRRP Stage 1 development are limited to the following:

- Land - Flora and Vegetation, Terrestrial Environmental Quality and Terrestrial Fauna;
- Water – Inland Waters;
- Air – Air Quality and Greenhouse Gas Emissions;
- People – Social Surroundings

The City and its team of consultants have devised a comprehensive suite of environmental engineering and management measures that will ensure that all facilities delivered as part of the NRRP Stage 1 works will be implemented to modern, best practice standards.

After consideration and mitigation strategies for the EPA's Environmental Factors that were deemed relevant to the proposed works, there will be minimal negative impacts on the surrounding environment, proving them insignificant. Therefore, the City believes the Project does not warrant further consideration through the environmental impact assessment process.

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1 Introduction

The City of Wanneroo (the City) is located approximately 39 kilometres north of Perth Central Business District. There is a recognised shortage of local resource recovery and waste processing infrastructure within the Perth's northern corridor where the City is located. The City is currently utilising the ReCycle facility in Canning Vale for the processing of its commingled recycling collections. The City currently relies on nearby Tamala Park Landfill for the City's waste disposal requirement. However, Tamala Park Landfill is anticipated to close in the near future. This leaves the City with an impending need to consolidate residual waste for transportation to facilities primarily located in the southern Perth metropolitan area.

The City is now progressing with the development of its long-term waste management strategy through the establishment of the Neerabup Resource Recovery Precinct (NRRP) on Lot 600, 570 Wattle Avenue, Neerabup (the Site). NRRP Stage 1 (the Proposal) will consist of the following infrastructure (the Proposed Infrastructure):

- Community Recycling Centre (CRC): to provide residents with a safe and accessible location to drop off household items for reuse, recycling, or appropriate disposal;
- Waste transfer station (WTS): to consolidate the City's kerbside collection services (including residual, greenwaste), and potentially other local governments, for bulk transport to recovery facilities in the southern Perth metropolitan area;
- Materials recovery facility (MRF): to accept and process co-mingled recyclables from the City and surrounding local government, kerbside collections for downstream reprocessing;
- Supporting infrastructure including:
 - Shared weighbridge;
 - Access roads and services areas;
 - Surface Water and Leachate Management System (SWLMS).
 - Administration Centre and Workshop; and
 - Security (Closed Circuit Television [CCTV], fencing, etc).

Together, the Proposed Infrastructure will reduce haulage distances, improve diversion rates, and support the City's transition away from reliance on Tamala Park landfill.

In 2024, the City prepared a Master Plan for the NRRP that assessed the short and long term resource recovery and waste management services and infrastructural requirements. As part of these works, the Stage 1 infrastructure elements (CRC, WTS and MRF) were identified as the key priorities which the City has been actively working on their delivery including community consultation, approvals and design works.

Within the NRRP Master Plan potential future resource recovery and waste land uses were identified and potential land parcels identified including:

- a potential future Waste to Energy facility within a land parcel to the west of the Stage 1 facilities; and
- the development of services lots for future private sector purchase or leasing for small to medium scale recovery facilities within the northern portion of the Site.

It is important to note that the City' is only seeking approval for the Stage 1 Proposed Infrastructure at this stage. Currently there is little need or demand for these future developments at NRRP. This is particularly relevant for the potential WtE facility as the current modelling works suggest that there is insufficient capacity for a third WtE in Perth to cater for municipal solid waste for nearly two decades.

Therefore, the City sole focus has been on the delivery of the NRRP Stage 1 infrastructure. All further development at NRRP will be subject to their own feasibility assessments as well as approval processes.

1.1 Proposal Description

NRRP Stage 2 will include the construction and operation of the CRC, WTS, and MRF. Table 1-1 provides a summary of the Proposal.

Table 1-1: Proposal Summary Table

Proposal Title	Neerabup Resource Recovery Precinct – Stage 1
Proponent Name	City of Wanneroo
Short Description	The City of Wanneroo is proposing the construction of NRRP Stage 1 to provide essential recycling and waste services to its rate payers and the wider northern suburb communities. It is well recognised that there is a significant lack of recycling and waste processing infrastructure in the northern suburbs, including within the DWER's State Waste Infrastructure Plan. This will be further exasperated with the impending closure of Tamala Park landfill. NRRP Stage 1 includes a Community Recycling Centre (CRC), Waste Transfer Station (WTS) and Materials Recovery Facility (MRF). The CRC will provide residents with a safe and accessible location to drop off household items for recycling or appropriate disposal. The WTS will consolidate residual waste from the City's kerbside collection services, and potentially other local governments, for bulk transport to recovery facilities in the southern Perth metropolitan area. The MRF will accept and process co-mingled recyclables from the kerbside collections for downstream reprocessing. This proposal will also include all associated supporting infrastructure including a shared weighbridge, access roads and service areas, Surface Water and Leachate Management Systems (SWLMS), Admin Centre and Workshop and security. The WTS and the CRC will be owned and operated by the City, while the MRF will be delivered by a private proponent under a lease and Recycling Processing Agreement with the City.

The following subsections detail each main component proposed for the NRRP.

1.1.1 Community Recycling Centre

The CRC will provide a place for residence to drop-off various waste types for recycling or further disposal. When residents first enter the Site, they will enter onto a loop road to take them around the various facilities. The Free Drop-Off Area will include the Reuse Shop, Recycling Drop-Off Hardstand, Household Hazardous Waste (HHW) Shed and free Recyclables Drop-Off. The Paid Drop-Off Area will include Paid Bulky Recyclables Drop-Off, Greenwaste Bunker and Residual Waste Drop-Off. More details about the CRC infrastructure can be found in Section 5.4 of the EAMP. The CRC aligns with the waste hierarchy, aiming to increase diversion from landfill by providing the community with accessible and comprehensive recycling and reuse services. The Administration Building at the CRC also includes a Waste Education Centre. Benefits of the CRC include:

- Alignment with the Waste Hierarchy and the Waste Avoidance and Resource Recovery Strategy 2030 (WARR Strategy);
- Increased recovery of reusable and recyclable materials;
- Reduced environmental impacts;
- Enhanced community services and accessibility;
- Improved operational safety and efficiency;
- Job creation; and
- Reduced incidence of illegal dumping.

1.1.2 Waste Transfer Station

The WTS building consists of three key areas. These areas are the unloading/tipping area, waste storage bunker area, and bulk load out area. This building will allow kerbside collection vehicles to unload waste where waste will either be transferred to the proper stockpile or to the transfer trailer. Stockpiled waste will not remain within the WTS for extended periods to mitigate odour and reduce attraction of vermin or feral animals. More details about the WTS infrastructure can be found in Section 5.3 of the EAMP. The WTS key benefits include:

- Efficient aggregation of waste;
- Reduced haulage distances and emissions;
- Continued access to waste services post-Tamala Park landfill closure; and
- Job opportunities.

1.1.3 Material Recovery Facility

The MRF will accept commingled kerbside recyclables that are processed and consolidated via a baling system in preparation to down stream markets. Once enough waste is stored, the material will be transferred offsite by a third-party contractor. More details about the MRF infrastructure can be found in Section 5.5 of the EAMP. The MRF key benefits include:

- Increased resource recovery rates;
- Lower emissions from transport; and
- Creation of local jobs and training opportunities.

1.1.4 Commissioning and Management

Commissioning of the WTS is expected to commence in late 2027, followed by the CRC in mid-2028 and the MRF in late 2028. Residual waste will be consolidated at the WTS for transport to one of the two WtEs in the southern Perth Metropolitan Area

To meet the immediate needs of the City, an interim WTS in Wangara will be used until the permanent WTS and MRF are constructed and operational at the NRRP. These facilities will reduce transport costs and emissions, improve local waste handling efficiency, and provide residents with accessible, fit-for-purpose infrastructure. This will ensure that household waste can be managed responsibly, marking a critical step in addressing the City's long-term resource recovery and waste management needs.

The City will develop, own, and operate the CRC and WTS, including all associated supporting infrastructure and environmental responsibilities. In contrast, the MRF will be delivered by a private

proponent under a lease and Recycling Processing Agreement with the City. The private operator will fund, construct, and operate the MRF and will be responsible for meeting all relevant regulatory, performance, and environmental compliance obligations. Environmental approvals for all three facilities are being sought concurrently as outlined within Section 1.3.

1.2 Proponent Details

The City of Wanneroo is the Project Proponent and is responsible for the overall delivery of NRRP Stage 1. The City's nominated Project Manager is Christopher Forde with contact details provided below:

Email: Christopher.Forde@wanneroo.wa.gov.au
Phone: 08 9405 5951

1.3 Approvals Process

To establish the infrastructure at the NRRP, several key legislative approvals have been identified and considered throughout the development of the Project. The key environmental approvals are shown in Table 1-2 and outlined in the following sections.

Table 1-2: Key approvals required for the Project or Proposal

Process	Approval Authority	Status
Works Approval and Licence	DWER - State	Works Approval Submitted in February 2025 which includes Time Limited Operations. Works Approval currently under assessment by the DWER.
Vegetation Clearing Permit	DWER - State	The MRF area is covered by Clearing Permit 6359/3 issued in 2015. Clearing Permit 11059/1 issued in January 2026 covers the remaining areas of the NRRP Stage 1 area. This is currently under appeal with the Appeals Convenor.
Referral under the Environmental Protection and Biodiversity Conservation Act	Department of Climate Change, Energy, Environment and Water (DCCEEW) - Federal	The City and Talis have consulted with relevant officers of DCCEEW with a referral to be submitted in June 2026.
Planning Approval	City of Wanneroo - State	The City is set to submit a Development Approval application in June 2026 for the MRF facility as this will be delivered by a private service provider under a lease agreement with the City. All remaining infrastructure of NRRP Stage 1 will be delivered under a public works exemption.

To maximise the efficiency of the approvals process, the City as sought to run all approval processes concurrently.

The City has adopted a Public Works Exemption, as contained within the Planning and Development Act 2005, in relation to the planning requirements for the WTS and CRC however will seek Development Approval for the MRF as it will be delivered by a private contractor arising from tender process run by the City.

This EPA referral has been prepared to address the relevant Factors for Environmental Decision-making (FEDS) considered by the Department of Water and Environmental Regulation (DWER) under Part V of the Environmental Protection Act 1986. The environmental risks associated with the proposal have been assessed and management measures are proposed to ensure impacts are as low as reasonably practicable.

1.4 Purpose and Scope of Document

This EPA Referral document (the Report) has been provided to the EPA to support the referral of the NRRP under Section 38 of the *Environmental Protection Act 1986* (EP Act). The objectives of this document are to:

- Describe the current conditions on, and surrounding, the Site;
- Describe the proposed design and operations of the NRRP Stage 1 proposal;
- Identify any potential environmental impacts associated with the NRRP Stage 1 proposal;
- Outline environmental engineering and management measures to ensure that all potential impacts are managed to appropriate standards; and
- Summarise the community consultation activities undertaken and key outcomes.

To satisfy the purpose of this document, the following scope has been devised:

- Section 1: Introduction;
- Section 2: Project and Site Information;
- Section 3: Environmental Attributes;
- Section 4: Social Attributes;
- Section 5: EPA Factors and Objectives;
- Section 6: Holistic Impact Assessment; and
- Section 7: Conclusion.

2 Project and Site Information

2.1 Project Stakeholder Engagement

The City has included the community in the consultation process through presentations/ workshops, a Frequently Asked Questions Report, and a comment period. The consultation aims to ensure the residents and stakeholders are well informed about the planned development, have the opportunity to provide feedback and can meaningfully contribute to shaping the final design and delivery of the project.

2.2 Project Location and Surrounding Land Uses

The Site is located at Lot 600 on deposited plan 302260 at 570 Wattle Avenue, Neerabup, adjacent to the Neerabup Industrial Area, approximately 39 km north of the Perth CBD. It is zoned 'Public Purpose – Special Use (Energy Generation)' under the City's District Planning Scheme and is owned and managed by the City. Access to the Site is provided via Trandos Road, which intersects with Old Yanchep Road and connects to major traffic routes like Joondalup Drive and Mitchel Freeway.

The location of the Site is shown in Figure 1 in Appendix B.

The Stage 1 Proposed Infrastructure will be constructed within the southeastern portion of Lot 600 (the Stage 1 Development Area) which spans 9.3 hectares (ha). The Stage 1 Development Area has been established with consideration of multiple easements related to utility services, pipelines, and power infrastructure, as well as environmental constraints, which are discussed in Section 3.7. A Clearing Permit for the Stage 1 Development Area was obtained from the DWER Native Vegetation Branch and is currently under appeal with the Office of the Appeals Convenor. The required clearing on Site is discussed in Section 3.7.

The extent of the Stage 1 Development Area is shown in Figure 2 while the easements are shown in Figure 3 in **Error! Reference source not found..** The site layout is shown in Drawing C-500 found in Appendix C.

Land to the south and southwest is zoned 'General Industry,' with the Neerabup Power Station located immediately adjacent to the south on the opposite side Trandos Road. Lots to the west, east and north are zoned 'Regional Open Space,' while land further north is zoned 'State Forests.' The Site is bounded to the northeast by Wattle Park (a Type 3R reserve) and to the northwest by the Wanneroo International Kartway.

Talis Consultants (Talis) has engaged with the City's Town Planning officers. The Proposed Infrastructure is consistent with the intended land use for Lot 600 and is compatible with the surrounding zoning and development context. For the WTS and CRC planning approval the City will use a Public Works Exemption which is consistent with the Planning and Development Act 2005. The City engaged with relevant representatives of the Western Australia Planning Commission on this approach.

Planning approval will be required for the MRF, with the City planning to submit this in in June 2026.

The zoning in and around the Site is shown in Figure 4 in Appendix B.

2.3 Project Separation Distances

The WA Environmental Protection Authority's (EPA's) Guidance Statement No. 3 – Separation Distances between Industrial and Sensitive Land Uses 2005 (Guidance Statement 3) contains the recommended minimum separation distances between industrial activities, including waste management facilities and sensitive land uses.

Sensitive land uses are defined as those that are sensitive to industrial emissions and include residential developments, schools, hospitals, shopping centres and other public areas and buildings. The recommended minimum separation distances between sensitive land uses and the proposed industry activities are shown in Table 2-1.

Table 2-1: EPA Recommended Separation Distances from the Proposed Industry Activities

Category	Industry	Impacts					Recommended Separation Distance (m)
		Gaseous	Noise	Dust	Odour	Risk	
62	Solid waste depot		✓	✓	✓		200
57	Used tyre storage			✓		✓	100-200, depending on size

The closest sensitive receptor to the Site is a rural residential dwelling located approximately 960 m north of the Site boundary, along Old Yanchep Road (Residence No. 1). All other surrounding receptors are located at greater distances and well beyond the recommended buffer. The nearest residential area is Carramar located 1.8km to the south of the Site's boundary.

The proposed development complies with the EPA's recommended separation distances. Potential impacts from odour, noise and dust will be managed through best-practice design and operational controls, as described in within 5.

The sensitive receptors are shown in Figure 5 in Appendix B.

3 Environmental Attributes

The following sections outline the environmental aspects of the Site that have been considered throughout the Project's development including climate, topography, geology, flora and fauna, groundwater, and hydrogeology. The information has been collected through desktop assessments, site surveys, and intrusive site investigations.

3.1 Climate

The local climate is characterised by hot, dry summers and mild, wet winters, with low to moderate and highly variable annual rainfall, predominantly occurring during the winter months. The average monthly rainfall, the mean maximum and mean minimum temperatures and pan evaporation from 1994 to 2024 are provided in Table 3-1. This data has been sourced from SILO, which is a database of Australian climate data from 1889 to the present that is hosted by the Queensland Department of Environment and Science (DES). SILO constructs datasets from observational data obtained from BOM, using mathematical interpolation techniques to infill gaps in time series and construct spatial grids.

Table 3-1: Monthly Climate Statistics Summary from 1994 – 2024

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Rainfall (mm)	13	14	18	35	92	129	151	119	75	39	24	8	716
Mean Evaporation (mm)	303	257	221	138	91	64	65	80	107	163	218	280	1985
Mean Max Temp (°C)	31.3	31.6	29.4	25.7	22.0	19.1	18.1	18.6	20.2	22.8	26.1	29.0	24.5
Mean Min Temp (°C)	17.6	18.1	16.7	13.9	11.3	9.6	8.9	8.8	9.6	11.0	13.5	15.8	12.9

The average annual rainfall recorded at the Site since records began is 716 mm, with the minimum and maximum values ranging from 8 mm and 151 mm per month, respectively. The average annual potential evaporation rate is approximately 1,985 mm, which is nearly three times the average annual rainfall and occurs at higher rates during the warmer, drier months of the year.

The wind direction ranges from easterly to northerly in the morning (9am), changing direction to south-westerly to westerly in the afternoon (3pm). Winds at the Site are typically moderate in the morning and the afternoon. The wind rose for morning and afternoon winds can be seen in Diagram 3-1. The provided Wind data was recorded at Pearce RAAF (Station Number: 009053), approximately 21km to the east.

Rose of Wind direction versus Wind speed in km/h (02 Nov 1940 to 10 Aug 2023)

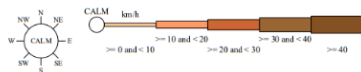
Custom times selected, refer to attached note for details

PEARCE RAAF

Site No: 009053 • Opened Jan 1937 • Still Open • Latitude: -31.6669° • Longitude: 116.0189° • Elevation 40m

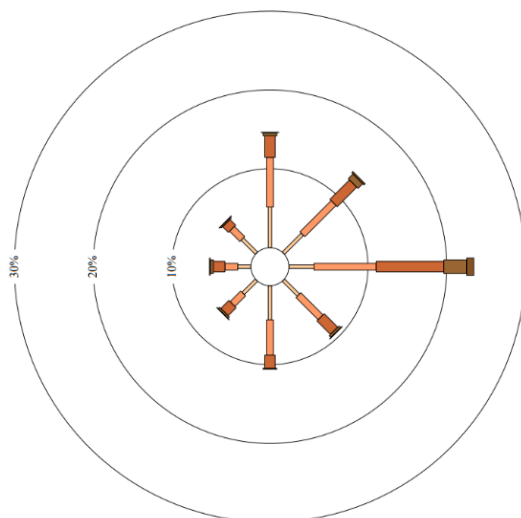
An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



9 am
20387 Total Observations

Calm 12%



Rose of Wind direction versus Wind speed in km/h (02 Nov 1940 to 10 Aug 2023)

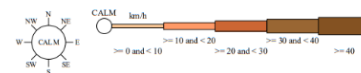
Custom times selected, refer to attached note for details

PEARCE RAAF

Site No: 009053 • Opened Jan 1937 • Still Open • Latitude: -31.6669° • Longitude: 116.0189° • Elevation 40m

An asterisk (*) indicates that calm is less than 0.5%.

Other important info about this analysis is available in the accompanying notes.



3 pm
19267 Total Observations

Calm 4%

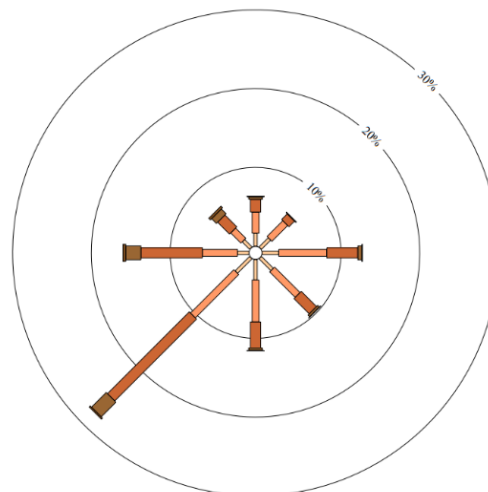


Diagram 3-1: 9am (left) and 3pm (right) Wind Rose for Pearce RAAF

3.2 Topography

The topography across the Site is flat, with elevations ranging from 56 metres Australian Height Datum (mAHD) in the south-western corner, to 44mAHD on the eastern border of the Site. Within the Stage 1 Development Area, the topography is between 45 to 46mAHD.

The topography for the Site is shown in Figure 6 in Appendix B.

3.3 Geology

Based on the published regional geology (1:50,000 Department of Mines and Industry Regulation and Safety Map of Muchea 2020), Lot 600 is located within an area of sand with a majority of Karrakatta Sand Grey phase and small parts of Karrakatta Sand Yellow phase in the south-west part of the Site.

The surface geology at the Site is shown in Figure 7 in Appendix B.

3.4 Acid Sulfate Soils

Acid Sulfate Soils (ASS) are naturally occurring soils that contain iron sulphide (iron pyrite) minerals that, if disturbed and exposed to air (i.e., by excavation, dewatering, or drainage), can be oxidised resulting in release of acidity and potentially causing adverse environmental impacts.

ASS risk mapping considers existing geomorphological, geological, and hydrogeological information to develop broad scale mapping for regions of the State for planning purposes. ASS risk mapping data generated by the DWER shows that the Site is not located in an ASS rated area. The closest ASS risk

area is mapped alongside the eastern Site boundary intersecting with the northeastern boundary of Lot 600 and mapped as 'high to moderate risk'. Therefore, while it may be unlikely that ASS is present in the Stage 1 Development Area, any ASS encountered will be managed in accordance with the DWER's guidelines on 'Treatment and management of soil and water in acid sulfate landscapes' (June 2015).

The ASS mapping surrounding the Site is shown in Figure 8 in Appendix B.

3.5 Hydrogeology

Lot 600 is situated within the Gngangara Groundwater System, specifically in the Wanneroo Proclaimed Groundwater Area and borders to the Gngangara Proclaimed Groundwater Area in the north, as pictured in Figure 9 in Appendix B.

The anticipated maximum depth to groundwater varies from 18 metres below ground level (mbgl) in the southwestern corner to 4mbgl on the eastern border of Lot 600. Within the Stage 1 Development Area, groundwater is expected to occur at depths between 4 and 7 mbgl. The groundwater contour lines, detailed in Figure 9 in Appendix B, are based on publicly available data from the DWER from 2021.

3.6 Surface Water

Lot 600 is in the Swan Avon Lower Swan catchment and partially intersects the Lake Pinjar geomorphic wetland in the east. No drainage lines or other hydrological features intersect the survey area of Lot 600.

The Public Drinking Water Source Area Gngangara Underground Water Pollution Control is located 250m north of the site boundaries. A significant stream connected to Lake Pinjar extending 250 meters from Site alongside the eastern Site boundary.

The Surface Water around Lot 600 is shown in Figure 10 in Appendix B.

3.7 Flora and Vegetation

Lot 600 has been subject to the below flora and vegetation surveys over time:

- Eco Logical Australia (ELA) 2013 – *Targeted Flora and Fauna Assessment Lot 4 Flynn Drive Neerabup*; and
- Ecoscape Australia (Ecoscape) 2021 – *Neerabup Industrial Area Environmental Assessments – Portion 2*.

A total of four vegetation types have been recorded from within the survey area, the two detailed below are from within the Stage 1 area:

- EtLMW: *Eucalyptus tottiana* and *Nuytsia floribunda* mid mallee woodland; and
- MpMW: *Melaleuca preissiana* and *Eucalyptus rudis* subsp. *rudis* mid woodland.

Within the entirety of the Stage 1 Development Area, the vegetation condition is classified as Degraded or previously cleared. The main factor affecting vegetation condition was disturbance from weeds and vehicles as evidenced by the number of vehicle tracks observed within the area (Ecoscape, 2021).

The vegetation types are shown in Figure 11 while vegetation condition is detailed in Figure 12 in Appendix B.

3.7.1 Threatened and Priority Ecological Communities

In WA ‘Threatened Ecological Communities’ (TECs) are naturally occurring assemblages of plants and animals listed by Parks and Wildlife, and endorsed by the Minister for Environment, as being threatened with extinction by human activity, or in danger of being destroyed or significantly modified by development and other pressures (EPA, 2016). They fall within one of the following categories, collapsed, critically endangered, endangered or vulnerable.

Priority Ecological Communities (PECs) are ecological communities that are under consideration for listing as a TEC, but do not yet meet the criteria. The PECs are placed into a Priority Rating between 1-5 that ranks the PEC based on known occurrences, threats and management of the community.

The DBCA database search within Lot 600 revealed TECs present within approximately half of the Stage 1 Development Area. The location of TECs is provided in Figure 13 in Appendix B.

The vegetation recorded from within the Stage 1 area is not deemed representative of any known State listed TEC or PEC (Ecoscape, 2021).

3.7.2 Environmentally Sensitive Areas

Environmentally Sensitive Areas (ESAs) are declared in Environmental Protection (Clearing of Native Vegetation) Regulations 2004 as areas that cover any and/or all the following conservation significant areas:

- A declared World Heritage property as defined in section 13 of the *Environment Protection and Biodiversity Conservation Act 1999*;
- An area that is included on the Register of the National Estate, because of its natural heritage value under the *Australian Heritage Council Act 2003*;
- A defined wetland and the area within 50 metres of the wetland;
- The area covered by vegetation within 50 metres of rare (threatened) flora, to the extent to which the vegetation is continuous with the vegetation in which the rare (threatened) flora is located;
- The area covered by a TEC;
- A Bush Forever site listed in “Bush Forever” Volumes 1 and 2 (2000), published by the WA Planning Commission, except to the extent to which the site is approved to be developed by the WA Planning Commission;
- The areas covered by the following policies:
 - The Environmental Protection (Gnangara Mound Crown Land) Policy 1992 - available from EPA website. This policy has been repealed;
 - The Environmental Protection (Western Swamp Tortoise) Policy 2002 - refer to the “EPP 2003 Western Swamp Tortoise Policy Boundary”;
- The areas covered by the lakes to which the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 applies. This policy has been repealed;
- Protected wetlands as defined in the Environmental Protection (Southwest Agricultural Zone Wetlands) Policy 1998. This policy has been repealed; and

- Areas of fringing native vegetation in the policy area as defined in the Environmental Protection (Swan and Canning Rivers) Policy 1998. This policy has been repealed.

Multiple ESAs surround the Site have been identified. On the eastern Site boundary, a bush forever area borders the Site without intersecting it, as well as a conservation category wetland area which partially intersects the eastern boundary. As shown in Figure 12, this area has been historically cleared in regard to a gas pipeline within the eastern boundary of Lot 600. Additionally, as shown in Figure 14, while the Stage 1 Development Area is intersecting the 50m boundary of the conservation area, the design of the Proposed Infrastructure has been defined to avoid any encroachment into the actual conservation area. This commitment was included in the Clearing Permit submitted to the DWER Native Vegetation branch in March 2025.

The ESA's and state forest areas within and surrounding the Site are shown in Figure 13 while the Wetland is shown in Figure 14 in Appendix B.

3.7.3 Threatened and Priority Flora

No threatened or priority flora species listed under the EPBC Act, BC Act or are considered as a priority by DBCA have been recorded from within the Stage 1 area by any surveys (Ecoscape, 2021 and ELA 2013).

The desktop assessment undertaken by Ecoscape (2021) identified four conservation listed taxa as 'Possible' occurring pre-survey. Post-survey their likelihood of occurrence was downgraded to 'Unlikely' due vegetation condition, grazing pressures, weed abundance and other disturbances (*ibid*).

The threatened and priority flora species surrounding Lot 600 is detailed in Figure 15 in Appendix B.

3.8 Fauna

Lot 600 has been subject to the below flora and vegetation surveys over time:

- Eco Logical Australia (ELA) 2013 – *Targeted Flora and Fauna Assessment Lot 4 Flynn Drive Neerabup*;
- Ecoscape Australia (Ecoscape) 2021 – *Neerabup Industrial Area Environmental Assessments – Portion 2*
- Western Environmental 2025 – *Lot 600, Old Yanchep Road and Orchid Road Neerabup*; and
- Talis Consultants 2026 – *Targeted Black Cockatoo Habitat Survey*.

The pre-survey desktop assessment undertaken by Ecoscape (2021) indicated that, based on habitat requirements, the following species were considered to have a high likelihood of occurring in the area:

- Carnaby's Cockatoo;
- Forest Red-tailed Black Cockatoo;
- Quenda; and
- Western Brush Wallaby.

No evidence of the Quenda or Western Brush Wallaby were found (Ecoscape, 2021).

Black Cockatoo foraging habitat is limited within the area due to the combination of flora species (Ecoscape, 2021 and Western Environmental 2025). Trees suitable for breeding by Black cockatoos

were surveyed by Talis across the proposed clearing area. Each tree was assessed for the potential to provide breeding habitat for the Black Cockatoo species (Forest Red-tailed Black Cockatoo, and Carnaby's Cockatoo) as per Commonwealth and Bamford Consulting Ecologists guidelines. Talis' Target Black Cockatoo Survey was commissioned by the City due to differences in the number of potential black cockatoo breeding trees reported in both the Ecoscape and Western Environmental reports which identified 3 and 34 trees respectively.

Twenty-two potential breeding trees were located within the proposed development area (Talis, 2021), They have a diameter at Breast Height of > 50 cm, however all lack hollows and have therefore been assigned a Bamford Class of 5 (*ibid*). Up to sixteen trees are proposed to be cleared with six retained (Drawing C-005 in Appendix C).

The threatened and priority fauna in and around the area are detailed in Figure 16 in Appendix B.

3.9 Bushfire Prone Areas

The Department of Fire and Emergency Services (DFES) has developed Bushfire Prone Areas mapping to identify land in WA that has the potential to be impacted by bushfires. Additional planning and building requirements may apply to new developments within a Bushfire Prone Area. A further assessment of bushfire risk may also be required to ensure future developments in Bushfire Prone Areas are safer.

Along with proper ventilation and safe practices around the Site, A bushfire Emergency Plan and Bushfire Risk Management Plan will be developed. General fire suppression equipment, infrastructure, and buffers will be implemented around the Site, which will include a fire wash water available on-site if necessary.

As shown in Figure 17 in Appendix B the entirety of the Site is located within a bushfire prone area. Fire management is discussed further in Section **Error! Reference source not found.** of the EAMP in Appendix D.

4 Social Attributes

The social attributes on and surrounding the Site include Native Title, Aboriginal Heritage, European Heritage, and Mining Tenements and are discussed in the following sections.

4.1 Native Title

Under Australian Law, Native Title is a form of land title that recognises the unique connections Aboriginal groups have to the land. Native Title exists where Aboriginal people have maintained a traditional connection to their land and waters, since sovereignty, and where acts of government have not removed it.

A search of National Map (nationalmap.gov.au) indicates that Native Title does not exist within the Site and in the surrounding area as shown in Figure 18 in Appendix B.

4.2 Aboriginal Heritage

Aboriginal Heritage sites (registered or not) are protected under the *Aboriginal Heritage Act 1972* (AH Act) and the *Aboriginal Cultural Heritage Act 2021* (ACH Act). An Aboriginal Heritage Site under Section 5 of the AH Act is defined as:

(a) any place of importance and significance where persons of Aboriginal descent have, or appear to have, left any object, natural or artificial, used for, or made or adapted for use for, any purpose connected with the traditional cultural life of the Aboriginal people, past or present;

(b) any sacred, ritual, or ceremonial site, which is of importance and special significance to persons of Aboriginal descent;

(c) any place which, in the opinion of the Committee, is or was associated with the Aboriginal people and which is of historical, anthropological, archaeological, or ethnographical interest and should be preserved because of its importance and significance to the cultural heritage of the State;

(d) any place where objects to which this Act applies are traditionally stored, or to which, under the provisions of this Act, such objects have been taken or removed.

A search for relevant Aboriginal Heritage sites was conducted using the Department of Aboriginal Affairs (DAA) online Aboriginal Heritage Inquiry System (AHIS). Reported Aboriginal Heritage sites are categorised according to the assessment status of each place under the Aboriginal Heritage Act, as listed in Table 4-1.

Table 4-1: Aboriginal Heritage Site Assessment Categories

Category	Sub- Category	Assessment Status	Protected under the AH Act
Registered Aboriginal Site	N/A	Site has been assessed as meeting Section 5 of the AH Act	Yes
Other Registered Place	Lodged	Information has been received. Assessment has not been completed to determine if a site meets Section 5 of the AH Act	Yes (temporary)
	Stored Data/Not a Site	Site has been assessed as not meeting Section 5 of the AH Act	No

The results of the search indicated two Aboriginal Cultural Heritage (ACH) Places close to Lot 600:

- The lodged place Lake Neerabup, ID number 3693, classed as culturally sensitive and located approximately 2km west of the current prescribed premises boundary;
- The registered heritage place Honey Possum Site, ID number 3503, classed as not culturally sensitive and located approximately 2.3km west of the current prescribed premises boundary.

The Heritage sites are shown in Figure 18 in Appendix B

4.3 European Heritage

To protect cultural heritage places in WA, the Heritage Council maintain a list of places that are either 'Statutory Listings' or 'Other Listings and Surveys.' Statutory Listings are heritage places that can affect or may affect the use and development of land and buildings, and Other Listings and Surveys include heritage places that do not have any effect on the use and development of land and buildings (HC, 2017).

A search of the Government of WA Heritage Council's inHerit online database indicated that there are no European Heritage sites located within the Site. The closest European Heritage site, Albert Thomas House, is located over 2km east of the Site as shown in Figure 18 in Appendix B.

5 EPA Factors and Objectives

A review of the potential significant environmental factors was undertaken according to the EPA's *Statement of Environmental Principles, Factors and Objectives* (SEPFO) (EPA, 2016). The SEPFO document states that the terms “‘significant impact’ and ‘significant effect’ are not defined in the EP Act. Therefore, the ordinary or everyday meanings of these terms apply.”

The Site's environmental attributes and the potential impacts were considered in relation to the EPA's factors and objectives. These were also discussed with the EPA officers during the scoping meeting. The factors and objectives and their relevance to the Project are detailed in Table 5-1.

Table 5-1: EPA Factors and Objectives

Theme	Factor	Objective	Relevance	Comment
Sea	Benthic Communities and Habitats	To protect benthic communities and habitats so that biological diversity and ecological integrity are maintained.	No	The Site is located approximately 9.8km (as the crow flies) from the coast. The EPA factors associated with the 'Sea' are not considered to be relevant to the NRRP due to this distance.
	Coastal Processes	To maintain the geophysical processes that shape coastal morphology so that the environmental values of the coast are protected.	No	
	Marine Environmental Quality	To maintain the quality of water, sediment, and biota so that environmental values are protected.	No	
	Marine Fauna	To protect marine fauna so that biological diversity and ecological integrity are maintained.	No	
Land	Flora and Vegetation	To protect flora and vegetation so that biological diversity and ecological integrity are maintained.	Yes	NRRP Stage 1 will involve clearing. Refer to Section 5.2.
	Landforms	To maintain the variety and integrity of distinctive physical landforms so that environmental values are protected.	No	NRRP Stage 1 will not result in changes to existing landforms. Refer to Section 5.2.5
	Subterranean Fauna	To protect subterranean fauna so that biological diversity and ecological integrity are maintained.	No	No subterranean fauna communities and species recorded within or surrounding the Site. Refer to Section 3.7

Theme	Factor	Objective	Relevance	Comment
	Terrestrial Environmental Quality	To maintain the quality of land and soils so that environmental values are protected.	Yes	There is inherent risk of contamination associated with site operations. Refer to Section 5.3.
	Terrestrial Fauna	To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.	Yes	NRRP Stage 1 will involve clearing as well as operational risks to fauna values. Refer to Section 5.4.
Water	Inland Waters	To maintain the hydrological regimes of groundwater and surface water so that environmental values are protected.	Yes	Waste acceptance and processing operations can present risks to hydrological regimes. Refer to Section 5.5.
Air	Air Quality	To maintain air quality and minimise emissions so that environmental values are protected.	Yes	On-site operations pose the greatest risk to air quality through odour production. This risk is mid-level on site and decreases to low-level and minimal on a local and wider scale, respectively. Refer to Section 5.6.
	Greenhouse Gas Emissions	To reduce net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change.	Yes	Waste infrastructure and will generate greenhouse gas emissions. Refer to Section 5.7.
People	Social Surroundings	To protect social surroundings from significant harm.	Yes	The Site is located adjacent to environmentally sensitive receptors (as defined by the EPA) to the north and east. The Site also has no high heritage, cultural or social significance as outlined in Section 4. An Environmental Noise Impact and Odour Assessments have been undertaken and concluded that NRRP Stage 1 is predicted to have low level risks at offsite receptors. These assessments are provided in Error! Reference source not found.. Refer to Section 5.8.
	Human Health	To protect human health from significant harm.	No	Waste infrastructure can present risks to human health, particularly site workers

Theme	Factor	Objective	Relevance	Comment
				however these are not deemed to be significant.

The factors that have been identified as relevant to the Project are discussed further in the following subsections, which outline existing guidance documentation, environmental baseline information, relevant proposal activities, impacts and mitigation and overall environmental outcomes for each applicable factor.

5.1 EPA Mitigation Hierarchy

The EPA's mitigation hierarchy was applied to each relevant factor to ensure that the potential impacts of the Project are either avoided or reduced as practicably as possible. The EPA applies the following mitigation hierarchy as part of its assessment of a project's impact on the relevant environmental factors:

1. 'Avoid' – avoid the adverse environmental impact altogether. This may include reducing the footprint or changing the location of the footprint to avoid areas with high environmental values.
2. 'Minimise' – limit the degree or magnitude of the adverse impact. This may include reducing the footprint or carefully selecting technologies, processes (such as re-use of waste products) and management measures (such as bunding or dust and noise control measures) to reduce the impact.
3. 'Rehabilitate' – repair, rehabilitate or restore the impacted site as soon as possible. Adequate rehabilitation information is integral to the mitigation hierarchy to ensure early identification of knowledge gaps and risk as well as development of criteria and research to meet objectives.
4. 'Offset' – undertake a measure or measures to provide a compensatory environmental benefit or reduction in environmental impact to counterbalance significant adverse environmental impacts from implementation of a proposal. The measure(s) are taken after all reasonable mitigation measures have been applied and a significant environmental risk or impact remains. Offsets are not appropriate for all proposals and will be determined on a proposal-by-proposal basis.

Given the selected location of site and activities to be conducted on site, many environmental and social impacts can be avoided. Where impacts could not be avoided, several management measures were developed to 'minimise' the potential adverse impacts to relevant environmental and social values. These measures are discussed further in the following subsections.

5.2 Flora and Vegetation

The EPA factor 'Flora and Vegetation' is considered relevant to the Project.

EPA Objective: To protect flora and vegetation so that biological diversity and ecological integrity are maintained.

5.2.1 Existing Guidance Documentation

The following existing guidance documentation applies to the management of this factor with regard to the Project:

- Environmental Protection Authority 2016, Environmental Factor Guideline: Flora and Vegetation; and
- Environmental Protection Authority 2016, Flora and Vegetation Surveys for Environmental Impact Assessment.

5.2.2 Environmental Baseline Information

A desktop assessment and site survey of the flora and vegetation was undertaken at the Site. The following environmental baseline information is relevant to this factor:

- Vegetation is classified as degraded or previously cleared due to disturbance from weeds and vehicles as well as historical clearing;
- Two vegetation types were recorded from within the NRRP Stage 1 area, they are not representative of any known TEC or PEC or any other significance; and
- No threatened or priority flora have been recorded from within the NRRP Stage 1 area or are considered likely to occur. The closest known threatened flora locations are over 2km away to the southeast and northwest of the Site.

5.2.3 Relevant Proposal Activity

The key relevant activities to this factor are:

- Clearing of vegetation for construction of NRRP Stage 1;
- During operation, vehicles and waste accepted may result in introduction/spread of weeds or diseases being brought to the Site; and
- Emissions impacting on surrounding vegetation.

5.2.4 Impacts and Mitigation

As a result of clearing for construction of the Site, there would be direct impacts to the flora located within the Site's footprint. However, due to the degraded nature of the vegetation on the Site and the good to very good condition of the vegetation in the neighbouring areas, the vegetation within the Site's area is considered low significance. The clearing footprint has been minimised to only what is required for essential infrastructure, internal roads, and services. As part of the designs works, avoidance and minimisation principles were adopted resulting in design changes to reduce the clearing required.

As outlined within Section 3, numerous surveys have been undertaken at the Site including:

- Eco Logical Australia (ELA) 2013 – *Targeted Flora and Fauna Assessment Lot 4 Flynn Drive Neerabup*; and
- Ecoscape Australia (Ecoscape) 2021 – *Neerabup Industrial Area Environmental Assessments – Portion 2*.

NRRP Stage 1 areas is covered in two clearing permits including:

- CPS 6359/3 issued in 2015 and includes the MRF facility of Stage 1; and

- CPS 11059/1 issued in 2026 and includes the WTS and CRC facilities of Stage 1 and is currently under appeal with the Appeal's Convenor.

The City will adopt a range of additional measures to further minimise the impact of the clearing activities:

- All clearing will be undertaken in accordance with the relevant approvals including the DWER's Clearing Permits
- The clearing footprint has been minimised to only that required for essential infrastructure, internal roads and services; and
- No clearing will occur within the boundary of the wetland conservation area.

5.2.5 Environmental Outcomes

While some mitigation measures are appropriate, the City considers that there are unlikely to be any significant impacts to 'Flora and Vegetation' from development of the Project. Based on the baseline information, design specifications, and proposed mitigation measures, it is not anticipated that 'Flora and Vegetation' is a significant environmental factor warranting further assessment. Therefore, the EPA's objective for 'Flora and Vegetation' can be met.

5.3 Terrestrial Environmental Quality

The EPA factor 'Terrestrial Environmental Quality' is considered relevant to the Project.

EPA Objective: To maintain the quality of land and soils so that environmental values are protected.

5.3.1 Existing Guidance Documentation

The following existing guidance documentation applies to the management of this factor with regard to the Project:

- Environmental Protection Authority 2016, Environmental Factor Guideline: Terrestrial Environmental Quality (2016);
- AS31000:2009 Risk Management-Principles and Guidelines;
- National Environment Protection (Assessment of Site Contamination) Measure 1999, amended 2013.

5.3.2 Environmental Baseline Information

The following environmental baseline information is relevant to this factor:

- Acid Sulfate Soils (ASS) are considered 'high to moderate risk' along the eastern Site boundary intersecting the northeastern boundary of Lot 600; and
- Soil is composed of mostly Karrakatta Sand Grey Phase and small parts of Karrakatta Sand Yellow Phase in the southwest part of the Site.

5.3.3 Relevant Proposal Activity

The key relevant activities to this factor are:

- Seepage from the leachate collection system, resulting in contamination to the terrestrial environment; and
- During operations of the NRRP, vehicle movements that may result in introduced flora and/or weeds being brought to site.

5.3.4 Impacts and Mitigation

Surface water run-off will be generated as a result of precipitation and storm events, which has the potential to cause flooding within the Site and result in damage to infrastructure. As a part of the management plans for stormwater, a rainwater collection and storage system will be implemented to catch stormwater from the WTS, Residual Waste Drop-off, and administration centre roofs. This water will be used locally for landscaping irrigation, toilet flushing, and the truck wash bay.

There is also the potential for this surface water run-off to become contaminated if it comes into contact with waste. The key areas for leachate generation at the Site include the WTS and greenwaste area of the CRC.

The majority of leachate at the WTS will be generated when the floors are routinely cleaned to minimise potential odour emissions. All water that comes into contact with the waste and floor of the WTS is designated as leachate, drained and stored within the underground leachate tank adjacent to the rear of the WTS that will be emptied as needed. The general waste collected at the CRC's Residual Waste Drop-off Facility is deposited within bins that are covered with a canopy, preventing contact with stormwater. All HHW accepted at the Site will be stored within a fully enclosed building.

Two surface water ponds will be located adjacent to both the WTS and MRF, one lined and one unlined. In the event of a fire, the valve between the lined and unlined ponds will be closed which in turn will back up within the drainage system at the Site. The collected fire wash water within the lined pond will then be removed by a qualified contractor.

The greenwaste bunker is constructed with a bunded, graded hardstand, designed to direct all stormwater runoff and wash waters via the sloped surface to the adjacent evaporation pond. Consistent with the overall SWMS, the greenwaste pond is designed to a 1-in-100-year AEP storm event to allow for first flush approach prior to overtopping into an infiltration basin.

If not appropriately managed, contaminated water and leachate could be released into the surrounding environment. This may impact vegetation outside of the facility and cause contamination. Uncontrolled release of contaminated surface water could result in adverse impacts to downstream ecosystems and users of surface water resources. The City will therefore implement stormwater and leachate management measures to ensure appropriate treatment and/or discharge, where relevant. The overall SWMS has been designed to contain and control surface water runoff from a 1-in-100-year AEP storm event, with allowance for 140mm rainfall over a 24hr period.

The proposed stormwater and leachate management measures include:

- Implementation of the Stormwater and Leachate Management Plan (SWLMP), provided in **Error! Reference source not found.**;
- Clean surface water runoff will be diverted into infiltration basins;
- The WTS and MRF are fully enclosed buildings that will minimise the generation of leachate;
- The floors of the WTS have been designed with a fall to allow water to flow towards collection points and divert potential leachate to a containment tank below ground;

- The hardstand of the green waste bunker will be bunded and graded to direct all runoff into a sump, which is connected via a pipe to a lined evaporation pond for containment and management;
- The external perimeter of all buildings and areas that hold waste will slope away from any doors or waste storage areas to prevent stormwater ingress;
- The installation of a permanent canopy within CRC's Residual Waste Drop-off Facility to cover all bins will minimise leachate generation;
- HHW will be stored in a fully enclosed building, thereby avoiding interaction with stormwater;
- The installation of a stormwater pit and pipe network surrounding the MRF and WTS will divert surface water run-off to lined ponds prior to flowing into stormwater infiltration basins. Cut off valves on these ponds will contain fire wash water within the MRF and WTS facilities to minimise the discharge into the environment;
- All the remaining areas of the site will include pit and pipe network to capture and divert stormwater to infiltration basins;
- All bins containing residual waste will be kept in good condition to mitigate any leakages;
- The installation of a permanent canopy within the Recycling Drop-off Area to prevent rainfall entering bins and mixing with recyclables;
- All stormwater engineering features will be inspected regularly, and maintenance works scheduled appropriately;
- The road surfaces across the Site will be delineated with kerbs and will utilise suitable slope gradients to direct the flow of surface water to the Site's surface water management system; and
- Weather will be monitored on a daily basis.

These management measures will allow the City to effectively manage stormwater and leachate at the Site. A Residual Risk Assessment provided in Section 10 of the EAMP determined the overall residual risk following implementation of the surface water and leachate management systems would be 'low'.

5.3.5 Environmental Outcomes

Based on the baseline information, design specifications, and proposed management measures, it is not anticipated that 'Terrestrial Environmental Quality' is a significant environmental factor warranting further assessment. Therefore, the EPA's objective for 'Terrestrial Environmental Quality' can be met.

5.4 Terrestrial Fauna

The EPA factor 'Terrestrial Fauna' is considered relevant to the Project.

EPA Objective: To protect terrestrial fauna so that biological diversity and ecological integrity are maintained.

5.4.1 Existing Guidance Documentation

The following existing guidance documentation applies to the management of this factor with regard to the Project:

- Environmental Protection Authority 2016c, Technical Guidance: Terrestrial Fauna Surveys;
- Environmental Protection Authority 2016, Environmental Factor Guideline: Terrestrial fauna (2016);
- Commonwealth Department of the Environment, Water, Heritage, and the Arts: Survey guidelines for Australia's threatened birds (2010); and
- Department of Agriculture, Water and the Environment (DAWE) (2022) Referral Guideline for 3 WA Threatened Black Cockatoo Species.

5.4.2 Environmental Baseline Information

The following environmental baseline information is relevant to this factor:

- One fauna habitat type (Degraded Woodland (*Eucalyptus tottiana*, *Melaleuca preissiana*, *Eucalyptus rudis*) has been recorded from within the NRRP Stage 1 area;
- Twenty-one potential future Black cockatoo breeding trees have been recorded from within the NRRP Stage 1 area of these up to 16 trees are proposed for clearing;
- Foraging habitat for Black Cockatoos is limited and restricted to isolated trees of foraging species; and
- No other conservation-listed species were recorded.

This is displayed on Figure 20.

5.4.3 Relevant Proposal Activity

The key relevant activities to this factor are:

- Clearing of fauna habitat for the construction works;
- Collection of waste that could result in the attraction of feral animals;
- Fauna mortality through vehicle collisions; and
- Restrictions of natural movements of fauna.

5.4.4 Impacts and Mitigation

To mitigate the impacts of clearing at the Site, the following management measures will be adopted:

- All clearing will be limited to the areas approved by the DWER and potentially the Federal Government's DCCEEW;
- Clearing activities will be unidirectional to allow local fauna to escape and 6 potential future Black Cockatoo breeding trees are being retained through design amendments (Drawing C-005 in Appendix C).
- 30 potential black cockatoo habitat tree species to be planted within the NRRP Stage 1 area as detailed within the Landscaping Plan (Landscape Drawing in Appendix C). This includes

12 trees within the designated area specified within the Clearing Permit from the DWER to plant 6 such trees, and then another 18 elsewhere across the Site.

These management measures along with the revegetation efforts will help minimise impacts to the Black Cockatoos that could be found within the Site boundaries.

5.4.5 Environmental Outcomes

Based on the baseline information and proposed management measures, it is not anticipated that 'Terrestrial Fauna' is a significant environmental factor warranting further assessment. Therefore, the EPA's objective for 'Terrestrial Fauna' are met.

5.5 Inland Waters

The EPA factor 'Inland Waters' is considered relevant as the establishment of waste acceptance and storage infrastructure can result in impacts to groundwater quality through potential seepage from the WTS, MTF, CRC, leachate evaporation ponds, or contaminated surface water.

EPA Objective: To maintain the hydrological regimes and quality of groundwater and surface water so that environmental values are protected.

5.5.1 Existing Guidance Documentation

The following existing guidance documentation applies to the management of this factor with regard to the Project:

- EPA Statement of Environmental Principles, Factors and Objectives (2016);
- EPA Environmental Factor Guideline: Inland Waters (2018);
- EPA Victoria Environmental Protection Agency, Hydrogeological Assessment (Groundwater Quality) Guidelines (VEPA, 2006);
- EPA Instructions on how to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans (2016);
- AS31000:2009 Risk Management - Principles and Guidelines;
- Australian Standard (AS) 1729:1993 Geotechnical Site Classification;
- DoW - WQPN 52: Stormwater management at industrial sites;
- DoW - WQPN 30: Groundwater Monitoring Bores;

5.5.2 Environmental Baseline Information

The following baseline information is relevant to this factor:

- A wetland conservation area that partially intersects the eastern boundary of the site; and
- Groundwater beneath the site.

5.5.3 Relevant Proposal Activity

The key relevant activities to this factor are:

- Construction and operation of a waste acceptance and processing facilities;
- Construction and operation of the stormwater and leachate management systems.

5.5.4 Impacts and Mitigation

The potential impacts to the wetlands and groundwater may occur through the discharge of stormwater and leachate from the Site. To minimize the seepage of leachate, there will be stormwater ponds and a leachate management system that will capture and store stormwater and leachate. The overall surface water management system has been designed to contain and control surface water runoff from a 1-in-100-year AEP storm event, with allowance for 140mm rainfall over a 24hr period.

The proposed stormwater and leachate management measures include:

- Implementation of the Stormwater and Leachate Management Plan (SWLMP), provided in **Error! Reference source not found.**;
- Clean surface water runoff will be diverted into infiltration basins;
- The WTS and MRF are fully enclosed buildings that will minimise the generation of leachate;
- The floors of the WTS have been designed with a fall to allow water to flow towards collection points and divert potential leachate to a containment tank below ground;
- The hardstand of the green waste bunker will be bunded and graded to direct all runoff into a sump, which is connected via a pipe to a lined evaporation pond for containment and management;
- The external perimeter of all buildings and areas that hold waste will slope away from any doors or waste storage areas to prevent stormwater ingress;
- The installation of a permanent canopy within CRC's Residual Waste Drop-off Facility to cover all bins will minimise leachate generation;
- HHW will be stored in a fully enclosed building, thereby avoiding interaction with stormwater;
- The installation of a stormwater pit and pipe network surrounding the MRF and WTS will divert surface water run-off to lined ponds prior to flowing into stormwater infiltration basins. Cut off valves on these ponds will contain fire wash water within the MRF and WTS facilities to minimise the discharge into the environment;
- All the remaining areas of the site will include pit and pipe network to capture and divert stormwater to infiltration basins;
- All bins containing residual waste will be kept in good condition to mitigate any leakages;
- The installation of a permanent canopy within the Recycling Drop-off Area to prevent rainfall entering bins and mixing with recyclables;
- All stormwater engineering features will be inspected regularly, and maintenance works scheduled appropriately;
- The road surfaces across the Site will be delineated with kerbs and will utilise suitable slope gradients to direct the flow of surface water to the Site's surface water management system; and

- Weather will be monitored on a daily basis.

These management measures will allow the City to effectively manage stormwater and leachate at the Site. Further details on these systems can be found in the SWLMP in Appendix D.

5.5.5 Environmental Outcomes

Based on the baseline information, design specifications, and proposed mitigation measures, it is not anticipated that 'Inland Waters' is a significant environmental factor warranting further assessment. Therefore, the EPA's objective for 'Inland Waters' can be met.

5.6 Air Quality

The EPA factor 'Air Quality' is considered relevant to the Project as the movement of vehicles and other processes throughout waste acceptance and storage can produce emission and odours that affect air quality.

EPA Objective: To maintain air quality and minimise emissions so that environmental values are protected.

5.6.1 Existing Guidance Documentation

The following existing guidance documentation applies to the management of this factor with regard to the Project:

- National Environment Protection Ambient Air Quality Measure; and
- Environmental Protection Authority (2016) Environmental Factor Guideline: Air Quality (2020).

5.6.2 Environmental Baseline Information

The following environmental baseline information is relevant to this factor:

- Odour impact assessment completed by Environmental Air Quality indicated that on-site odour impacts from the WTS and the CRC's Residual Waste Drop Off Area and Greenwaste Bunker were considered mid-level, local off-site impacts were considered low-level, and wide scale off-site impacts were considered minimal; and
- Commingled recyclable waste from kerbside collections will pose no risk of malodour generation; and
- Generation of dust emissions from the construction of the NRRP Stage 1 infrastructure; and
- Generation of dust emissions from the acceptance, storage and transportation of recycling and waste materials from the Site.

5.6.3 Relevant Proposal Activity

The key relevant activities to this factor are:

- Acceptance, handling, storage, transport, loading and unloading of recycling and waste materials.

5.6.4 Impacts and Mitigation

The majority of the proposed activities at the Site will not generate odour emissions including the MRF and the majority of the CRC activities. The key odour emission sources will be generated from of the storage residual waste accepted at the WTS and the Residual Waste Drop-off Facility within the CRC and the greenwaste bunker. Due to the Site's relative isolation, the potential for offsite receptors to be impacted by odour is considered to be low, and therefore the main receptors likely to be impacted by odour will be onsite, such as Site staff and users.

Regardless, an Odour Impact Assessment conducted by Environmental & Air Quality Consulting Pty Ltd (EAQ) was undertaken to perform a detailed analysis that describes *"the processes, odour emission sources, controls and responses in ameliorating potential odour impacts and the pathway(s) for emissions to impact receivers by an analysis of local meteorological trends and problematic conditions."* The assessment, which is provided in **Error! Reference source not found.**, found that onsite impacts were mid-level, offsite impacts on a local scale were low-level, and offsite impacts on a wider scale were minimal. The assessment also concluded that uncontrolled odours released to the environment may only occur in exceptional, rare circumstances. Additionally, the assessment concluded that commingled recyclable waste from kerbside side collections will pose no risk of malodour generation from the MRF within the NRRP.

To minimise the generation of odours the following management measurements will be implemented:

- Greenwaste stockpile will be monitored and managed to ensure these areas do not generate excessive odours;
- Covering of waste loads during transportation of waste materials to, within and from the Site;
- Residual waste from the Residual Waste Drop-off Facility will be removed within a 48 hour period and taken to the WTS;
- Areas around the Site will be cleaned regularly to ensure good housekeeping standards are maintained;
- The WTS will be a fully enclosed building designed to comply with modern, best practice standards and will include:
 - mechanical ventilation system that will achieve 4 air exchanges per hour;
 - roller doors that will only be opened when necessary to minimise fugitive emissions;
- A clean floor policy will be implemented, with no putrescible waste retained overnight or on weekends;
- The floor of the WTS will be swept and washed down as required to limit odour emissions;
- A complaints register will be maintained to ensure that the community can express their comments or concerns regarding the operations of the Site;
- Odour levels across the Site will be continuously monitored by staff and action taken, if required; and
- The City will also ensure that the key procedures nominated in of the Odour Impact Assessment are incorporated.

It is anticipated that these odour management measures will enable the City to appropriately manage potential odour impacts onsite and offsite.

Activities at the Site have the potential to generate dust, with the possibility of impacts to nearby vegetation, reducing amenity and health impacts. Dust may also be generated through clearing, construction and material processing activities. The key activities that will generate dust include the removal of vegetation and topsoil during site clearing, earthworks during construction and the movement of vehicles and machinery throughout the Site. During operations, the transport, material handling and processing of recycling and waste materials may also generate dust. Due to the relative isolation of the Site, the potential for impacts offsite are considered extremely low, with dust impacts restricted to surrounding bushland, Site staff and users.

To manage potential impacts arising from dust, a number of factors were considered including separation distances, clearing, construction, operational and post closure activities, waste types accepted and treatment processes. A summary of the key management measures to be implemented include:

- Vehicles to maintain a maximum speed of 10 km/hr unless otherwise signed;
- All internal roads will be sealed to mitigate dust generated through the movement of vehicles in and out of the facility;
- All roads within the CRC will be sealed and maintained;
- All works and receipt of waste will cease during periods of strong winds;
- Waste will be covered at all times during transport;
- All kerbside collected recycling and residual waste will be contained to the MRF and WTS respectively; and
- A water cart will be utilised on the long-term stockpiling area as required.

It is anticipated that the implementation of these management measures will be sufficient to manage potential impacts from dust at the Site.

5.6.5 Environmental Outcomes

Based on the baseline information, design specifications, and proposed mitigation measures, it is not anticipated that 'Air Quality' is a significant environmental factor warranting further assessment. Therefore, the EPA's objective for 'Air Quality' can be met.

5.7 Greenhouse Gas Emissions

The EPA factor 'Greenhouse Gas Emissions' is considered relevant to the Project as waste acceptance and storage can result in impacts to air quality due to generation of odours from the natural decomposition of putrescible waste and the generation gases that can contribute to climate change. In addition, the operation of vehicles will result in emissions that will contribute to climate change.

EPA Objective: To reduce net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change.

5.7.1 Existing Guidance Documentation

The following existing guidance documentation applies to the management of this factor with regard to the Project:

- EPA (WA) – Guidance Statement 3: Separation Distances between Industrial and Sensitive Land Uses (June 2005); and
- Environmental Protection Authority (2016) Environmental Factor Guideline: Greenhouse Gas Emissions (2024).

5.7.2 Environmental Baseline Information

The following environmental baseline information is relevant to this factor:

- The Site meets all required separation distances specified within the EPA Guidance State 3: Separation Distances between Industrial and Sensitive Land Uses (June 2005).

5.7.3 Relevant Proposal Activity

The key relevant activities to this factor are:

- Vehicle movement across the Site associated with construction and regular operations; and
- Purchase and use of power from the power grid.

5.7.4 Impacts and Mitigation

Vehicle movement across the Site will produce emissions that will contain greenhouse gases (GHG). There are also emissions associated with the purchase of power during construction that result from the initial energy generation. However, the GHG emissions should not be excessive and should not have major effects on the surrounding environment.

5.7.5 Environmental Outcomes

Based on the baseline information, design specifications, and proposed management measures, it is not anticipated that 'Greenhouse Gas Emissions' is a significant environmental factor warranting further assessment. Therefore, the EPA's objective for 'Greenhouse Gas Emissions' can be met.

5.8 Social Surroundings

The EPA factor 'Social Surroundings' is considered relevant as the establishment of NRRP Stage 1 may cause impacts to amenity from the generation of noise, dust and odour during construction and commissioning. The Site may also have economic, landscape and visual impacts, which may need to be assessed. The Social Surroundings of the Site include Aboriginal Heritage, Native Title, European Heritage, and Mining tenements and are discussed in the following sections.

EPA Objective: To protect social surroundings from significant harm.

5.8.1 Existing Guidance Documentation

The following existing guidance documentation applies to the management of this factor with regard to the Project:

- Aboriginal Heritage Act 1972;
- Aboriginal Cultural Heritage Act 2021;

- Environmental Protection Authority (2016) Environmental Factor Guideline: Social Surroundings (2023);
- EPA (WA) – Guidance Statement 3: Separation Distances between Industrial and Sensitive Land Uses (June 2005);
- DWER’s Guidance Statement: Risk Assessments (February 2017);
- Environmental Protection (Noise) Regulations 1997; and
- DWER’s Guideline: Odour Emissions (June 2019).

5.8.2 Environmental Baseline Information

The following baseline information is relevant to this factor:

- The Site meets all required separation distances outlined in the EPA’s Guidance Statement 3; and
- The Environmental Noise Assessment completed by Talis indicates that Site activities meet the required noise levels according to the Environmental Protection (Noise) Regulations 1997.

5.8.3 Relevant Proposal Activity

The key relevant activities to this factor are:

- Construction of NRRP Stage 1;
- Operations of NRRP Stage 1 activities including the acceptance, storage and transportation of recyclables and waste materials; and
- Vehicle movement to and across the Site associated with regular operations.

5.8.4 Impacts and Mitigation

The City has commissioned a range of specialist studies and adopted a range of engineering and management measures to mitigate the potential risks to social surrounds as listed below;

- Social values were assessed within the initial Master Plan including separation distance to sensitive receptors and deemed supportive of the proposed NRRP Stage 1 development;
- The Odour Impact Assessment determined found that onsite impacts were mid-level, offsite impacts on a local scale were low-level, and offsite impacts on a wider scale were minimal; and
- The Environmental Noise Impact Assessment concluded that the NRRP is predicted to comply with the assigned noise levels at all times of the day under worst case conditions.

5.8.5 Environmental Outcomes

Based on the baseline information, design specifications, and proposed mitigation measures, it is not anticipated that ‘Social Surroundings’ is a significant environmental factor warranting further assessment; and therefore, the EPA’s objective for Social Surroundings can be met.

6 Holistic Impact Assessment

The holistic impact assessment considers the connections and interactions between the overall impact of the proposal and the environment. The Proposed Infrastructure at the NRRP is not anticipated to result in a significant or unacceptable cumulative impact. Given the proposed management controls, the operation of NRRP Stage 1 is not anticipated to result in significant impacts to:

- Flora and Vegetation;
- Terrestrial Environmental Quality;
- Terrestrial Fauna;
- Inland Waters;
- Air Quality;
- Greenhouse Gas Emissions; and
- Social Surrounds.

The City seeks to begin the Stage 1 development in late 2026 given all related approvals are secured by the City. Once Stage 1 is complete, the City will manage the Site in accordance with its licence conditions and management plans. In conclusion, from a holistic perspective, the Project is not anticipated to result in significant environmental impacts and can be managed appropriately under Part V of the EP Act.

7 Conclusion

Following the assessment of all the gathered studies, data, and feedback, it is in the City's view that the construction and operation of the CRC, WTS and MRF can be achieved in a manner that ensures that any potential environmental or social impacts will be controlled to an appropriate standard. The development of the Project will provide the City with modern, better practice facilities that align with the Waste Management Hierarchy to encourage the reuse and recovery of materials and increase diversion of materials from landfills. The proposal will aid the City in the development of its long-term waste management strategy through the establishment of NRRP Stage 1 infrastructure.

The key environmental factors associated with the NRRP Stage 1 development are limited to the following:

- Land - Flora and Vegetation, Terrestrial Environmental Quality and Terrestrial Fauna;
- Water – Inland Waters;
- Air – Air Quality and Greenhouse Gas Emissions;
- People – Social Surroundings

The City and its team of consultants have devised a comprehensive suite of environmental engineering and management measures that will ensure that all facilities delivered as part of the NRRP Stage 1 works will be implemented to modern, best practice standards.

After consideration and mitigation strategies for the EPA's Environmental Factors that were deemed relevant to the proposed works, there will be minimal negative impacts on the surrounding environment, proving them insignificant. Therefore, the City believes the Project does not warrant further consideration through the environmental impact assessment process.

APPENDIX A

Site Investigations Reports

Environmental Air Quality 2025 - Odour Impact Assessment

Talis Consultants 2025: Environment Noise Assessment

Eco Logical Australia (ELA) 2013 – *Targeted Flora and Fauna Assessment Lot 4 Flynn Drive Neerabup;* and

Ecoscape Australia (Ecoscape) 2021 – *Neerabup Industrial Area Environmental Assessments – Portion 2.*

Western Environmental 2025 – *Lot 600, Old Yanchep Road and Orchid Road Neerabup;* and

Talis Consultants 2026 – *Targeted Black Cockatoo Habitat Survey.*

APPENDIX B

Figures

- Figure 1: Site Locality
- Figure 2: Development Area
- Figure 3: Easements
- Figure 4: Zoning
- Figure 5: Sensitive Receptors
- Figure 6: Topography & Soils
- Figure 7: Surface Geology
- Figure 8: Acid Sulfate Soils
- Figure 9: Groundwater
- Figure 10: Surface Water
- Figure 11: Vegetation Units
- Figure 12: Vegetation Condition
- Figure 13: TECs, ESAs & Reserves
- Figure 14: Wetlands Extent
- Figure 15: Threatened and Priority Flora
- Figure 16: Threatened and Priority Fauna
- Figure 17: Bushfire Prone Areas
- Figure 18: Heritage
- Figure 19: Clearing Area
- Figure 20: Fauna Habitat

APPENDIX C

Drawings

Drawing C-500: WTS, MRF and CRC Concept Layout

Darwing C-005: Eucalypt Tree Clearing and Retention

Landscaping Plan

APPENDIX D

Site Management Plans

Stormwater and Leachate Management Plan

Environmental Assessment and Management Plan (without Appendices)



Assets | Engineering | Environment | Noise | Spatial | Waste

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