

Buronga Landfill Expansion

Amendment Report

Wentworth Shire Council

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Ref: 202597R07



Building exceptional
outcomes together



Document History and Status

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Glossary and Abbreviations

Abbreviation/Term	Definition
BAM	Biodiversity Assessment Method
BDAR	Biodiversity Development Assessment Report
BHCC	Broken Hill City Council
BSC	Balranald Shire Council
CDSC	Central Darling Shire Council
Cth	Commonwealth of Australia
DPIE	NSW Department of Planning Industry and Environment
Environmental Impact Statement (EIS)	The environmental impact statement prepared to support the application for the Project
EPA or NSW EPA	New South Wales Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPL	Environment Protection Licence
FERF	Front End Recycling Facility
Landfill Guideline	Refers to the Environmental Guidelines: Solid Waste Landfills (EPA, 2016)
LEMP	Landfill Environmental Management Plan. This document details the operations of the landfill and presents the management and monitoring requirements based on the site's risk
LFG	Landfill Gas
m AHD	Metres Australian Height Datum
m bgl	Metres below ground level
MRCC	Mildura Rural City Council
Project	Buronga Landfill Expansion Project as described in the EIS
Proponent	The person or entity seeking approval for a State significant project or acting on an approval for a State significant project, including any associated entities that have been engaged to assist with project delivery. For this Project the Proponent is Wentworth Shire Council
SEARs	The Planning Secretary's Environmental Impact Assessment Requirements for the preparation of an EIS for the Project
SEPP	State Environment Planning Policy
State significant development (SSD)	Development projects which have State significance due to their size, economic value or potential impacts assessed and approved under part 4.1 of the EP&A Act



Abbreviation/Term	Definition
Submission	A written response from an individual or organisation, which was submitted to the DPIE during the public exhibition of the EIS
Submission Report	This report which has been prepared to respond to issues raised in the submissions
TfNSW	Transport for New South Wales
tpa	Tonnes per annum
Tonkin	Tonkin Consulting PTY LTD
WSC	Wentworth Shire Council



Executive Summary

Wentworth Shire Council (WSC) provides waste collection and management services to its residents. The Buronga Landfill is the largest disposal facility within the WSC council area and closest to the largest population centre in the Western region. It covers 124 ha comprising three main Lots, two being crown land where the existing landfill is located and one owned by WSC, where the proposed expansion is located. The site has been used as a landfill since the 1930's and currently holds Environment Protection Licence 20209.

The proposed development is to expand the waste management services provided by WSC at Buronga Landfill to:

- Increase recycling
- Provide upgraded facilities
- Safeguard waste management facilities
- Become a regional waste management facility

The scope of the project consists of expanding the resource recovery facilities within the short term and developing additional disposal facilities on an as needs basis. By consolidating the waste management, WSC is aiming to meet the NSW Government targets for recycling by providing better economies of scale for managing these facilities. In becoming a regional waste management facility, the proposed development will retain Buronga as a medium-sized landfill with an increase in waste acceptance up to 100,000 tpa and improve resource recovery facilities to reduce the proportion going to landfill.

Within the EIS, it was demonstrated that the site is suitably located with most potential impacts being managed or mitigated by standard operating procedures for landfills. A key item to investigate further was the management of biodiversity which will be impacted by clearing to construct new landfill cells and the intersection of the entrance with Arumpo Road. Whilst there were no concerns with native fauna at the site, the proposed development was refined during the EIS process to minimise the impact to vegetation, commence works on the south-western side in the area of greatest disturbance and the area which will assist in screening southern neighbours from any potential noise impacts, improve stockpile areas and provide additional fire-fighting tanks to reduce bushfire risks and improve the Arumpo Road intersection and provide shoulder sealing.

Following exhibition of the EIS, no public comments were received. Submissions were only received from government departments requesting clarifications which were grouped into categories and subcategories.

In response to the submissions received the following amendment has been made:

- The application has been reduced to apply for development consent for Stages 1A-1D. The entire footprint which includes the potential future cells 1E, 1F and Stage 2, are referred to within this document to ensure that the current proposal can accommodate future expansion, if required and subsequently approved in the future.

No further amendments are proposed. In response to the remaining submissions received the following summarises the categories and responses:

- Justification for the quantity of waste and need for a regional waste facility
 - Based on the population projections to 2050 and the current waste generation rates, it is likely that the Buronga facility could receive up to 100,000 tonnes per year of waste. By co-locating improved resource recovery facilities with the landfill the aim is to increase recycling rates; however standard metrics for likely increases are not available to provide estimates of increased rates.
 - RAMJO identified that sub-regional facilities need to be investigated for Western NSW and has provided a letter of support as has Mildura Rural City Council. Buronga is unique placed on arterial roads with links to recyclers in Adelaide and Melbourne and near the largest growth centre of Mildura.



- Further details on the design and operation of the resource recovery and landfill facilities
 - Design and operation of the facility will be controlled by the EPL. Control and limits on waste entering the site, engineering design requirements and monitoring and rehabilitation requirements are all included in the EPL and best practice guidance developed by EPA.
 - Rehabilitation will use endemic trees, shrubs and groundcover to reinstate vegetation and habitat once the landfill cells are completed. Council has provisions for rehabilitation within their balance sheet as required by Australian Accounting Standards
- Provision of Information not provided in EIS
 - Landowners consent from Crown Lands has been obtained for the southern road corridor to enable construction of the FERF. There were no conditions of consent that have affected the proposed development.
 - The DPI- Ag SEARs was not included in the original SEARs request provided. As a result, a Land Use Conflict Risk Assessment was not completed. This has now been corrected and has concluded that the proposed development is compatible with the surrounding agricultural and mining land uses.
 - MEG's requirements were not completed in accordance with all their requirements and hence this has now been corrected. No further comments on the proposed development were received from any of the mining stakeholders contacted.
 - A detailed landscaping plan has been provided which lists the species proposed to be planted on the landfill final landform. There are no specific zones or variation in the species proposed as the landform is similar across the site.
 - Additional engagement with government regulators did not raise further issues than those already received in the submission responses
- Additional Studies on Environmental and Social Impacts
 - The additional studies have not materially altered the risks identified in the EIS and there are no additional management or mitigation measures proposed with the exception of an additional measure for noise.
Modelling using the worst-case scenario found that if crushing and grinding operations were undertaken concurrently then the noise levels at the nearest receptor may be exceeded. As a result the additional measure is to limit crushing or grinding to only one of these activities at one time.

Overall, as concluded in the EIS, the expansion of the Buronga Landfill is an effective solution that will provide a long term, secure repository for the recycling of waste and disposal of residual material for the region. The balance of impacts and benefits favour the public interest as:

- There is a genuine need and want for regional waste management facilities in Western NSW
- The site is an existing landfill and meets NSW EPA siting requirements
- Aggregation of waste management improves recycling opportunities
- Recycling waste locally creates more employment locally than disposal
- Consolidation improves economies of scale and value for money for rate payers
- The potential impacts from the proposed development can be managed through standard landfill best management practice.

For these reasons, we endorse the expansion of the Buronga Landfill as proposed within the EIS and herein.



1 Introduction

1.1 Project Context

Wentworth Shire Council (WSC) provides waste collection and management services to its population with its waste facilities comprising the Buronga Landfill, Wentworth Transfer Station, Dareton Transfer Station and three small rural facilities at Ellerslie, Pomona and Pooncarie. The Buronga Landfill (the site) at 258 Arumpo Road, Buronga is located 4.75 km north of the town of Buronga and over 2.5 km north-west of the Murray River. The site occupies Lot 197 and 212 of DP756946 and Lot 1 DP1037845 and is zoned SP2 (Infrastructure) for the purpose of waste or resource management facility. Environment Protection Licence 20209 (EPL) issued by NSW Environment Protection Authority for the scheduled activity of waste disposal currently allows the site to accept up to 30,000 tonnes of general solid waste per year. The current site layout is shown in Appendix A, Figure 3 (which replaces EIS Figure 3).

The proposed development (the Project) is to expand the waste management services provided by WSC at the Buronga Landfill to secure a dedicated location for waste management activities into the future. The existing Buronga landfill is the largest site and is located near to the major towns of Wentworth, Dareton, Gol Gol and Buronga. By co-locating the recycling and disposal facilities, WSC aims to increase current recycling rates to meet NSW Government targets, provide surety in planning for waste management facilities for rate payers into the future and provide better economies of scale for managing these facilities. The specific project objectives are:

- improve recycling in the region to assist in achieving the NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021) targets of 80% average recovery rate from all waste streams and tripling plastics recycling by 2030;
- provide best practice facilities for the residents which comply with the requirements of NSW EPA, as described in Environmental Guidelines: Solid Waste Landfills (NSW EPA, 2016) and consider the recommendations in the Handbook for Design and Operation of the Rural and Regional transfer Stations (NSW DEC, 2006);
- safeguard provision of waste management service for the region into the future;
- provide a service to surrounding local government areas to improve recycling and environmentally responsible waste management throughout the region.

1.2 Assessment Steps

The previous steps in the assessment are summarised in

Table 1.1 Key Project Milestones

Date	Milestone	Key Changes to Proposal
October 2020	Request for SEARs	
November 2020	SEARs Received	
January 2022	EIS Submitted	Recycling infrastructure upgrades included as part of development Layout changed to reduce impact to ecological communities and ensure separation to aboriginal artefacts
February – March 2022	EIS Exhibited	



Date	Milestone	Key Changes to Proposal
April 2022	Response to Submissions Received	No public responses to the submission were received. Eleven government agencies provided further advice (Appendix B). It was identified that DPIE did not provide the SEARs advice from Department of Primary Industries
May to September 2022	Additional liaison with Government stakeholders	Update to BDAR required due to changes in ecological communities SIDRA modelling requested by TfNSW
7 September 2022	Submission of Submission Report	Additional information provided, including LUCRA to address DPI's SEARs comments. This report was not formally accepted by DPIE.
September to December 2022	Additional liaison with DPIE	Agreed reduction in extent of landfill development as part of this application. The option to apply at a later date for further development of the site as a landfill or other waste management infrastructure has been retained by WSC.
February 2023	Submission of Amendment Report	Response includes response to submission as well as amendment of the proposal to request approval for the resource recovery facilities (unchanged from original) and an amendment to reduce the request for approval to Stages 1A to 1D. The associated infrastructure remains unchanged. Text, drawings and the BDAR have been updated to reflect reduction in areal extent of proposal. Further consultation with Biodiversity Conservation Trust is still required once consent is obtained to accurately reflect the final development proposed.

1.3 Project Description and Amendment

The Project is to be staged over the next 38 years [a reduction from the original application for 120 years] and comprises:

- upgrading the existing recycling infrastructure to provide a dedicated recycling facility, community resource recovery area and bulking up areas to improve recycling rates and economics of recycling over the next 5 years. A detailed description of the proposed changes is provided below. This remain unchanged from the original application and is shown in Appendix A Figure 6.
- constructing new landfill cells to the north of the existing landfill area, increasing the landfill footprint from 13 ha to approximately 32 ha not including recycling areas or ancillary infrastructure. The expansion is proposed to be undertaken in four stages (Stages 1A to 1D) with each stage providing 3-5 landfill cells (refer to Appendix A Figure 7). This is the only aspect of the original proposal which has changed. Originally, it was proposed to expand a 50 ha area in eleven substages (refer to EIS Figure 9).
- increasing approved maximum waste volumes from 30,000 tonnes per annum to 100,000 tonnes per annum. Current waste acceptance from within WSC is nearing the limit of 30,000 tonnes per annum. It is also proposed to accept waste from the surrounding NSW local government areas (LGAs), such as Balranald, Central Darling and Murray River and from interstate councils such as Mildura and Renmark-Paringa. The combination of increased waste quantities and improved resource recovery facilities is likely to increase the total quantity of waste accepted at Buronga to nearer 100,000 tpa. This remain unchanged from the original application.



Following discussions with DPIE, the original application for development of landfill Stages 1 and 2 has been reduced to Landfill Stages 1A to 1D to provide a practical timeframe for approval. The works undertaken herein consider the potential for the site to be completely developed but this application is only for Stages 1A to 1D. If further development is proposed in the future, another application for development consent will be required at that time.

1.4 Format of Report

This amendment report also provides a response to submission received on the EIS. The document has been set out as follows:

- Analysis of Submission
- Action Taken Since Exhibition
- Amendment Description, including the impact of the amendment on the strategic context and statutory context
- Submission Responses – Justification
- Submission Responses – Project
- Submission Responses – Procedural
- Submission Responses –Environment and Social, including any change in impacts from the amendment
- Updated Project Justification, including consideration of the amendment submission responses



2 Analysis of Submissions

The application for SSD and EIS were exhibited from Tuesday 22 February until 21 March 2022. On 14 February 2022, Tonkin, on behalf of WSC, emailed the community stakeholders consulted during the process, to advise that the EIS had been submitted to DPIE along with the link to the project.

On 23 March 2022, DPIE notified WSC that no public submission responses were received during the exhibition period. Eleven government agencies, including DPIE, provided further advice. It was identified that the SEARs advice from Department of Primary Industries was not provided with the original SEARs advice but was provided with the Submission Responses. Also, the SEARs advice from Regional NSW Mining, Exploration and Geoscience required further action. As a result, these two Government agencies have not yet been provided the application and EIS for further advice.

2.1 Breakdown of Submissions

The following government agencies provided further advice:

- Department of Planning, Industry and Environment: Industry Assessments (DPIE)
- Department of Planning and Environment: Biodiversity and Conservation Division, South West Branch (DPE BCD)
- Department of Planning and Environment: Crown Lands, Western Region (Crown Lands)
- Department of Planning and Environment: Western Region, Local and Regional Planning Team (DPE WR)
- Department of Planning and Environment: Water (DPE Water)
- Fire & Rescue NSW, Operational Liaison and Special Hazards Unit (FRNSW)
- Heritage NSW
- NSW EPA, Western Region (EPA)
- NSW Rural Fire Service, Development Assessment & Planning (RFS)
- Transport for NSW, Development Services West (TfNSW)
- Water NSW

All advice was received from State Government agencies from head office or regional divisions. In addition, the SEARs advice has been received from:

- NSW Department of Primary Industries: Agriculture, Land Use (DPI-Ag)
- NSW Department of Regional NSW – Mining, Exploration & Geoscience (MEG), Land Use

The advice received has been categorised into four categories with several subcategories, as described below. The number of advice statements for each category from each government agency is summarised in Table 2.1. It is noted that in a number of cases the advice provided by DPIE also included the comments provided by the other agencies and hence there is overlapping of advice between the agencies. Also, advice provided by four agencies (DPE Water, EPA, FRNSW, RFS and Heritage) was to provide recommendations for conditions of consent. The submissions register is provided as Appendix B.

The categories and subcategories are:

- Justification: This loosely aligns to Section 2 of the EIS and has been divided into two subcategories for advice related to:
 - Historical Use
 - Demand for the Project



- Project details and design: This loosely aligns to Section 3 of the EIS and is divided into five subcategories for advice related to:
 - General project information such as overall capacity of the facility in terms of tonnages received and/or diverted
 - General design requirements that relate to the recycling areas as well as the landfill
 - Landfill design requirements, including more description of the landfill, leachate management and drainage and groundwater considerations in design
 - Operation of the facility including additional detail on operational hours, landfill gas (LFG), water supply and employment
 - drawing and layout additional details
 - costs used for the capital investment value
- Procedural matters: These are areas which were not included in the EIS and need to be addressed to enable complete assessment of the proposed development. This is divided into three subcategories for advice related to:
 - Statutory obligations in obtaining landowners consent for the development to proceed
 - SEARS, which are the specific requirements in the SEARS which were not included in the EIS
 - Engagement where additional consultation with stakeholders has been requested to be undertaken
- Environmental and social: This section aligns to Section 6 of the EIS and is divided in the same seven subcategories, being:
 - Air quality
 - Traffic and Access
 - Soil and Water
 - Hazard Analysis
 - Bushfire
 - Biodiversity
 - Heritage
 - Noise
 - Social impact
 - Visual amenity

The issues raised were not beyond the scope of the project, noting that some issues raised were related to conditions of consent to ensure that the detailed design works and operational matters are conducted in accordance with approvals.

Table 2.1 Categorisation of Advice Received

Category	Subcategory	Agency	Advice (no.)
Justification	Historical Use	DPIE	2
	Demand	DPIE	5
		DPE WR	2
Project details and design	General	DPIE	4
	Facility Design	FRNSW	8
	Landfill Design	DPIE	10
		DPI – Ag	3
		DPE Water	2
	Operations	DPIE	10
		EPA	4
		NSWFR	13
DPI – Ag		3	



Category	Subcategory	Agency	Advice (no.)
	Drawing and layouts	DPIE	9
		DPE Water	1
	Costs	DPIE	4
Procedural matters	Statutory	DPIE	6
		Crown Lands	1
	SEARS	DPIE	7
		Crown Lands	1
		DPI – Ag	10
	Engagement	MEG	5
		DPIE	2
Environmental and social	Air quality	DPI Ag	1
		DPIE	4
		TfNSW	8
		DPIE	6
	Traffic	DPI Ag	1
		DPIE	3
	Soil and Groundwater	Water NSW	3
		DPIE	3
	Hazards	DPIE	2
	Bushfire	NSW RFS	1
	Biodiversity	DPIE	1
		DPE BCD	6
		DPI Ag	3
	Heritage	Heritage NSW	5
	Noise	DPIE	4
Social Impact	DPIE	1	
Visual Amenity	DPIE	2	



3 Action Taken Since Exhibition

The actions undertaken since exhibition have consisted of:

- Engaging archaeologist, Landskape, to complete and submit an Aboriginal Site Impact Recording Form to AHIMS with respect to site 46-3-0192.
- Requesting and receiving a proposal from Landskape to prepare a Heritage Management Plan if the project is approved.
- Engaging air quality specialists, Vipac, to undertake further air quality assessments and respond to advice.
- Engaging acoustic engineers, Sonus, to undertake further modelling and respond to advice.
- Engaging ecologist, Pinion Advisory, to undertake additional surveys and respond to advice.
- Engaging quantity surveyor, Capsice, to update costings and respond to advice.
- Engaging architects, Grieve Gillet Anderson, to provide sightline drawing.
- Consulting with government agencies and interested mining parties.
- Preparing a Land Use Conflict Risk Assessment in according with DPI- Agriculture's guidelines.
- Preparing a Landscaping Plan.
- Engaging planners, Golsworthy, to submit a request for Crown consent and respond to advice.
- Liaising with and gaining support from RAMJO and Mildura Rural City Council.
- Preparing a water balance for the site, including modelling leachate and stormwater.
- Providing additional clarity around the project details and design including the provision of additional drawings.
- Updating the mitigation measures as appropriate. The updated mitigation table is provided as Appendix C.
- Reduce the extent of the application to cover Stages 1A to 1D only. The potential for further development in the future is still considered within the proposal to demonstrate that it can be accommodated.



4 Amended Project

4.1 Strategic Context

The strategic context of the proposed development has not altered from the EIS. The *Waste Avoidance and Resource Recovery Act 2001 (NSW)* (WARR Act) provides the hierarchy for waste being avoidance, resource recovery and finally disposal. The avoidance of waste is outside the scope of this proposal; however the proposed development at the Buronga Landfill will increase resource recovery by expanding and improving the resource recovery facilities and providing additional points during the handling of waste that materials may be recovered.

The proposed development aligns with the *NSW Waste and Sustainable Materials Strategy 2014 Stage 1: 2021-2027* as follows:

- increasing recovery to 80%: construction of a Front End Recycling Facilities (FERF) for zero cost waste, such as paper, cardboard, steel, etc.; constructing easily dedicated areas with all-weather access for recyclables (concrete, bricks, soil, green waste, tyres); providing opportunities to recover more recyclables by sorting residual waste in the Residual Drop Off Area prior to transport to the landfill. These opportunities for resource recovery do not currently exist at Buronga Landfill.
- significantly increase the use of recycled content by government and industry: increased recovery provides a larger volume of materials, construction of dedicated areas assists in keeping separated wastes “clean” and the provision of all -weather haul roads increases the opportunity for recyclables to be included in Council or private industry development projects which can use waste fill (e.g. clean soil or crushed concrete, bricks etc.) or organic amendments (i.e. mulched green waste).
- reduce organic waste to landfill by 50%: providing a dedicated, all-weather area for green waste which is accessible to the general public as well as commercial contractors. The improvement in facilities is likely to result in an uptake by local residents as it will be easier to access and use.

As waste volumes continue to grow, infrastructure and services will need to keep pace. WSC needs to ensure it has the capacity to meet its critical future needs. As WSC supports the transition to a circular economy, it must also plan to continue to provide a way to safely manage residual waste into the future so that it can protect the environment and the health of the community. The expanded landfill facilities are to provide best practice regional waste facilities in line with Action 7.6 of the *Regional Waste Strategy 2017-2021*.

4.2 Description

The original scope of the resource recovery facilities remains unamended as does its proposed operation. The amendment to the proposal was to reduce the proposed footprint of the Buronga Landfill from Stages 1 and 2 to Stages 1A-1D. This reduced the estimated timeframe for the development from over 100 years to less than 40 years and reduces the vegetation clearing required for this amended proposal. There are no other amendments to the potential magnitude of impacts related to air, traffic, soil and groundwater, hazards, bushfire, biodiversity, cultural heritage, noise, social impact or visual amenity. This reduction in footprint also does not alter the need for additional stormwater, leachate and landfill gas facilities as the facility progressively expands. A summary of the amended project is provided in Table 4.1

Table 4.1 Amended Project Summary Table

Element	Original Project	Amended Project
Entrance Upgrades	New turns as described in Traffic Impact Assessment	Unchanged



Element	Original Project	Amended Project
Front End Recycling Facility	Shed after entrance and before weighbridge for drop off of zero cost wastes (e.g. paper, cardboard, ferrous and non-ferrous metals)	Unchanged
Resource Recovery Area, Residual Drop Off and Storage Areas	As shown in Figures in Appendix A	Unchanged
Waste Accepted (tonnes per annum)	Up to 100,000	Unchanged
Landfill		
Increased Footprint (ha)	50	20
Longevity (years)	>120	38
Cell development	Stages 1A to 1F and Stages 2A to 2E	Stages 1A to 1D. Further stages will require further approval
Cell design	As per Landfill Guidelines	Unchanged
Rehabilitation	Phytocap with endemic native species	Unchanged
Associated Infrastructure	Haul roads and leachate, stormwater and LFG systems	Unchanged

4.3 Statutory Context

The facility is proposed to accept waste from other LGAs and would have the ability to accept > 75,000 tpa of putrescible waste; however, this is estimated to be < 65,000 tpa in the next 30 years. The proposed expansion would have the capacity to receive approximately 4 million tonnes in Stage 1A to 1D. The proposed activity is a State significant development as specified under Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011 (NSW)* as, if approved, it is proposed to:

- become a regional landfill by accepting waste from other LGAs
- have the ability to accept > 75,000 tonnes per annum of putrescible waste
- have the capacity to receive more than 650,000 tonnes of waste over its site life

As identified during the EIS phase, the amended development remains a State Significant Development.

4.4 Further Consultation

No further consultation has been undertaken specifically on the amended proposal as this amendment reduces the landfill footprint and timeframe and hence further comment from stakeholders was considered unlikely.



5 Submission Response - Justification

5.1 Historical Use

DPIE Comment:

History of use of the site

Prior to approving any expansion, the Department must ascertain that the existing landfill has been operating consistently with the planning controls applicable during its history of operation. In this regard, the following information is required:

- *A complete history of the zoning of the site and permissible use of the land for waste management*
- *A copy of the Council approval and assessment report for the borrow pits (DA15/54)*

- *A complete history of the zoning of the site and permissible use of the land for waste management*

James Golsworthy Consulting has reviewed the history of the site.

According to anecdotal evidence the site was first used for waste disposal in 1934. In 1967, the Local Government Gazettal notes Reserve No. 86496 (which contains part of the site being Lot 197 DP 756946) was trusted to WSC under the *Public Trusts Act 1897* (NSW) for use in landfilling. The reservation is listed on the Crown Plan and noted as being undertaken on 3 November 1967. Similarly Lot 212 DP756946 was made part of the same reserve which was notified on (as listed on the plan) 31 October 1975. The title plans are presented in Appendix D.

Prior to introduction of the *Wentworth Local Environment Plan 2011* (2011 LEP), the land had historically been zoned for primary production purposes. Upon introduction of the 2011 LEP the land (along with Lot 1 DP 1037845) was zoned SP2 Infrastructure (waste or resource recovery facility).

From inception of the use in 1934 until 2011, the waste facility was operated by WSC. Through the period of 2011-2015 the facility was operated by a private contractor on behalf of WSC. Since 2015 WSC has operated the facility.

The earliest and only Development Application for the land was in 2015 (DA15/134). The consent was issued for the establishment of borrow pits to gather soil for the use in association with the operation and capping of the existing landfill. A copy of DA15/134 is provided as Appendix D.

The site is licenced by the NSW EPA under the *Protection of the Environment Operations Act 1997*, with WSC holding Environment Protection Licence 20209. The current EPL was issued 5 April 2013 and was most recently varied on 24 November 2017. The site is operated under the conditions required by this licence, as well as by the LEMP. The licence sets out operational procedures protecting human health and the environment from impact by the operations at the Buronga Landfill.

The land is appropriately zoned for use as a waste management facility.

- *A copy of the Council approval and assessment report for the borrow pits (DA15/54)*

A copy of the notice of determination and development application for the borrow pits is provided as Appendix D. The correct application is DA15/134.

This existing approval is over a portion of the land proposed for the Buronga Expansion and the investigations undertaken and conditions of consent have bearing upon the current development approval.



A Statement of Environmental Effects (SEE) was prepared for the development of the borrow pits which notes the main impacts are from removal of soil, clearing of vegetation, potential for discovery of aboriginal heritage items and dust. A flora assessment found no vegetation species, populations or communities of local, regional or state significance were observed within the area proposed (approximately in the location of Stage 1). A site inspection was conducted by an archaeologist and two members of the Barkindji community. The western side was noted as being open cleared land affected by grazing and burrowing animals whilst the eastern side was noted as being highly disturbed by former quarrying operations (loam extraction) and motorbike riders. One aboriginal item was found, an artefact scatter which required an Aboriginal Heritage Impact Permit (AHIP) to be obtained, which was subsequently obtained.

The main mitigation measures proposed to address these potential impacts were to:

- Soil: Train staff in soil conservation and management, supervise earthworks, extract borrow material as required, extract on days of suitable conditions (no rain or high winds)
- Vegetation: Measures proposed were to mark the area to indicate no go zones, keep on-site list of threatened species and check trees for fauna prior to removal
- Cultural heritage: Obtain AHIP, follow contingency plan for accidental discovery
- Air quality: cease operations if severe wind conditions are present

A number of other standard mitigation measures were also recommended.

The borrow pit has targeted already cleared areas to the north of the landfill (Figure 1). A haul road has been provided for safe access as recommended in the SEE. Topsoil has been stripped from the eastern side of the borrow for use as daily cover. The deeper pit was used to extract clay for construction of the current landfill cell. The heritage item was located to the south of the deeper excavation, further discussion on this item is provided in Section 8.7.



Figure 1 LIDAR Image of Buronga Landfill (Source: MetroMap)



5.2 Demand

DPIE Comment:

Demand for regional waste facility

The Department seeks additional information on how the size of the landfill and the 120-year timeline has been determined and whether the scale of the landfill is justifiable. Furthermore, the EIS needs to respond to the potential need to progressively increase the capacity of the community recycling facility relative to the capacity of the landfill having regard to the anticipated increase in diversion of waste from landfill during the proposed life of the landfill. In this regard, please submit the following information:

- *Detailed projections showing how the waste disposal amount of 100,000 tpa has been determined*
- *Evidence demonstrating the demand for a regional waste facility (e.g. memorandum of understanding or letter of support from neighbouring councils)*
- *Justification for the size of the recycling facility relative to the size of the landfill having regard to the waste hierarchy that seeks to reduce, reuse, recover and use landfill as last resort*
- *Consideration of the Regional Waste Strategy 2017-2021 prepared by RAMROC of which Wentworth Shire Council is a member*
- *Update / correction of the Direction numbers in the Far West Regional Plan 2036*

DPE WR Comment:

- *Updated Far West Regional Plan 2036 numbering errors*
- *Request additional information on justifying the demand for regional scale facility and 100,000 tonnes/year limit*

- *Detailed projections showing how the waste disposal amount of 100,000 tpa has been determined*
- *Request additional information on justifying the demand for regional scale facility and 100,000 tonnes/year limit*

The quantity of waste received by the facility is a major factor in defining the potential impact from the proposed development. If the waste receipt is higher than predicted in the EIS then the facility will be undersized and the impact to neighbours and the environment could be significantly higher; it is also important for Council to ensure that this approvals process will provide the sized facility required for the longer management of waste in the region without having to repeat it. It is also important to ensure that the facility does not receive significantly lower quantities of waste than predicted or the facility will be oversized and be a waste of ratepayers' money.

With respect to the sizing of landfills, the EPA Landfill Guidelines define small rural landfills as receiving < 20,000 tpa of waste and large landfills as receiving > 100,000 tpa of waste. Buronga is currently licenced to dispose of 30,000 tonnes of waste so the proposed development will still retain the landfill as a medium sized landfill (i.e. 20,000 – 100,000 tpa).

In line with the NSW Government's Waste and Sustainable Materials Strategy and Victorian Government's Circular Economy Policy, this proposal seeks to support the cross-border region to:

- Embrace and drive efforts towards the principles of a circular economy to achieve strong environmental and economic outcomes, through processing waste and resources within the local region of participating Councils.
- Lead and remain at the forefront of waste management innovation and service delivery.
- Achieve best service outcomes and value for each of the Council's local government areas and their respective local communities.



Buronga and Mildura are separated by the River Murray in a similar manner to Albury-Wodonga. Mildura is the regional service centre for the area and currently operates its own landfill in Mildura. The Mildura Landfill is nearing completion and there are no other landfills currently operating within its LGA. This landfill is also poorly sited being located across the road from the hospital and within an expanding residential area. The closest landfill to Mildura is Buronga Landfill and it provides safe and easy transport access. Mildura's other options are to transport waste further to Horsham or Echuca where larger landfills are available but this would be at significantly increased cost or to develop a new landfill but the lead time on this would be decades and would be difficult to justify to residents, regulators and economically given the proximity and potential size of the Buronga Landfill.

NSW EPA provides detailed reports of the kerbside waste collection, including the quantity of kerbside waste disposed. For WSC the kerbside waste was reported 3,580 tonnes in 2019/20 (Table 5.1). Based on the NSW Waste and Sustainable Material Strategy 2014 Stage 1: 2021-2027 (DPIE, 2021) target of a 10% reduction in waste generated per person by 2030, the projected waste for disposal from kerbside in WSC in 30 years is approximately 4,700 tpa due to population growth. For the surrounding LGAs, it is expected that only the waste for disposal will be transported to Buronga Landfill, with the current sorting and recycling activities undertaken at the local waste transfer stations continuing, as depicted schematically in Figure 2. In 2019/20, over 54,000 tonnes of waste was disposed by LGAs around WSC (Table 5.1). Assuming a 10% reduction in waste generation rates, it is estimated that this will increase to a total of 64,000 tpa by 2050 in WSC and surrounding LGAs.

Table 5.1 Projected Waste Estimates Assuming 10% Reduction in Waste Generation but no Increase in Diversion (Recycling)

Local Government Area	ABS 2021	Total Waste Disposed from Kerbside (tonnes in 2019/20)	Residual Waste Generation Rate with 10 % reduction (kg/person/wk)	Estimated Population in 2050 ^c	Waste for Landfill (tonnes/yr)
Balranald	2,208	220	1.7	1,797	161
Broken Hill	17,588	10,095	9.9	16,964	8,763
Central Darling	1,725	931	9.3	1,163	565
Mildura	56,972	37,688 ^a	11.4	73,061	43,498
Murray River	12,850	2,231	3.0	18,934	2,959
Renmark Paringa	9,783	3,228 ^b	5.7	11,385	3,381
Wentworth	7,453	3,580	8.3	10,880	4,704
TOTAL		57,973			64,031
Additional waste received at Buronga Landfill		23,030	6.2 ^d		27,006
Recycling Received at Buronga Community Recycling Centre in 2020-21		6,300	1.7 ^d		7,388
TOTAL POTENTIAL WASTE IN REGION		90,373			98,424



Local Government Area	ABS 2021	Total Waste Disposed from Kerbside (tonnes in 2019/20)	Residual Waste Generation Rate with 10 % reduction (kg/person/wk)	Estimated Population in 2050 ^c	Waste for Landfill (tonnes/yr)
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^a Mildura quantity is the total waste disposed to landfill as reported MRCC Annual Report 2019-2020

^b Renmark waste generation rates is sourced from the regional estimated presented by GISA in "South Australia Kerbside Performance Report 2018-19"

^c Linear extrapolation from 2016 and 2021 census numbers

^d Assumes a 10% reduction in waste generation and sourced from Mildura and Wentworth

The waste disposal estimates do not allow for increases in diversion rates and hence provide a conservative estimate of waste for disposal. For example, the recent introduction of the green waste and food organics bin in Mildura is likely to result in a significant reduction on the quantity of waste for disposal. Also, WSC records (presented in EIS Table 3.4) show that an additional 23,000 tonnes was received as construction and demolition waste and commercial and industrial waste and a further 6,300 tonnes was received at the existing community recycling centre in 2020/21. The additional waste includes mixed wastes streams from domestic sources, tyres, etc., a significant proportion of which may be diverted from landfill by improving facilities to allow sorting.

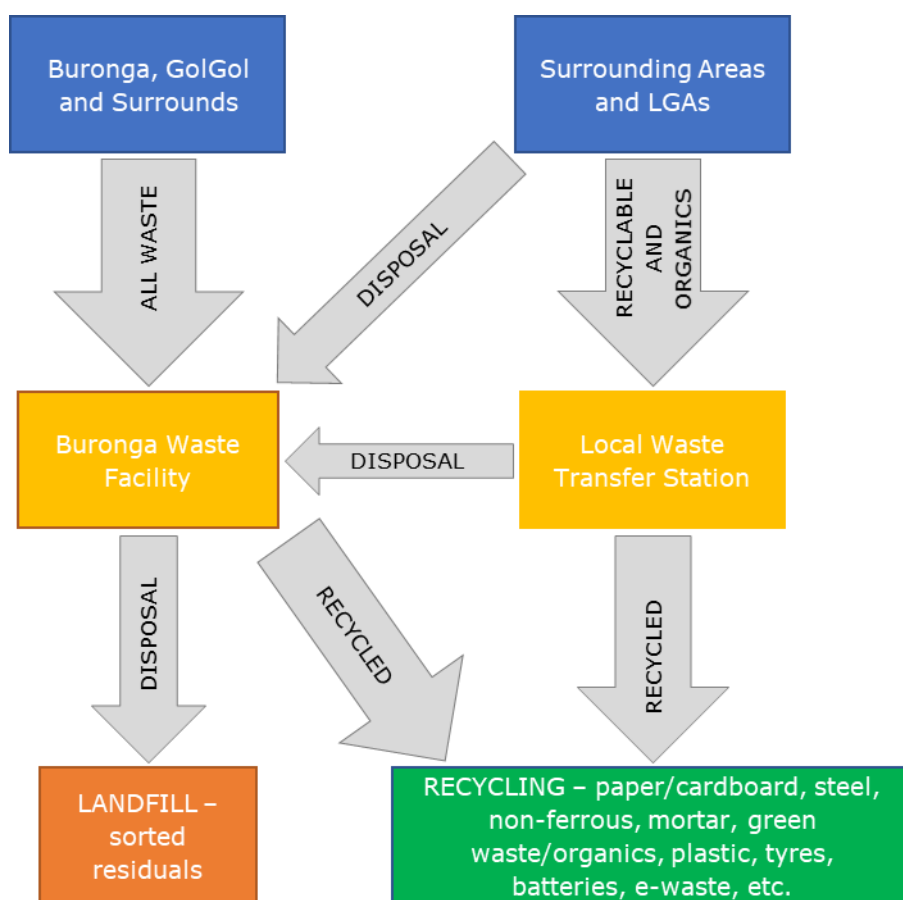


Figure 2 Schematic Representation of Waste Sources and Destinations



The combined total of the kerbside waste for disposal (64,000 tpa) which may be directed from other LGAs combined with the other wastes received at the Buronga Landfill results in a total waste projected to be received at the facility by 2050 of around 100,000 tonnes. The actual volume is likely to be less than this as the estimates have assumed that waste for disposal from other LGAs is all received at Buronga and that there is no reduction due to improved diversion. The 100,000 tonnes was assumed as a conservative estimate to indicate the maximum scale of operation for approval purposes.

- *Evidence demonstrating the demand for a regional waste facility (e.g. memorandum of understanding or letter of support from neighbouring councils)*

In ensuring that the proposed development is a regional facility, it is necessary to demonstrate that the development has support from neighbouring Councils. A letter of support from RAMROC (now RAMJO) has been received and is presented in Appendix E. The Mayor & General Manager of WSC and the Mayor and Chief Executive Officer of MRCC have met on 4 occasions from January to September 2022 and on the agenda of each meeting has been discussions around future Regional Waste Management needs. A letter of support from Mildura Rural City Council is also presented in Appendix E.

Whilst located in separate States, Mildura & Wentworth are one region, one community (similar to Albury/Wodonga, Echuca/Moama etc). The project will secure the long-term waste disposal and resource recovery needs of the Mildura/Wentworth region for the long term. The current Mildura site has a few considerable constraints that inhibits its ability to expand its current footprint. These constraints include but are not limited to the following:

- situated next to an environmentally sensitive wetland
- urban encroachment from neighbouring golf course and housing development
- the current public hospital for the Mildura/Wentworth Region is situated directly across the road from the site

Mildura Rural City Council (MRCC) is a member of the Loddon-Mallee Waste and Resource Recovery Group. The group released a long-term Waste and Resource Recovery Plan in 2017. As part of that plan MRCC was required to identify future waste and resource recovery infrastructure needs for the its Local Government Area. No new infrastructure has been planned for or identified in the long-term focus of the plan. When the current site reaches the end of its useful life, MRCC will be required to transport their waste outside of the Mildura/Wentworth region if it is unable to identify a suitable site within the Mildura/Wentworth region to effectively dispose of its residual waste.

That is where this proposal becomes a win/win situation for the Mildura/Wentworth region. It means the waste stays within the region which is beneficial from environmental and financial perspectives. It keeps jobs within the region, caters for the expansion of existing resource recovery infrastructure, which is a key action in MRCC's Waste and Resource Recovery Strategy 2022 to 2026 and allows the Buronga landfill and subsequently WSC greater opportunity to develop financial autonomy and reduce the average cost per tonne to manage waste & recycling materials. This is a win for the residents as this will result in lower annual domestic waste management charges for the ratepayers of both Councils.

- *Justification for the size of the recycling facility relative to the size of the landfill having regard to the waste hierarchy that seeks to reduce, reuse, recover and use landfill as last resort*

Over the next 20 years, New South Wales waste volumes are forecast to grow from 21 million tonnes in FY2021 to nearly 37 million tonnes in FY2041. NSW has developed the Waste and Sustainable Material Strategy 2041 – Stage 1 2021-2027 which has specific targets on reducing waste and increasing recycling as discussed in EIS Section 2.4.1.

To align with the targets, WSC needs strategies to reduce the volume of waste generated; reuse, repair and recycle what can't be avoided; and make sure there is capacity to safely dispose of the material



cannot be recycled. WSC currently recycles about 2/3 of waste and the ambition is to continue to increase that proportion. WSC also needs to provide safe and adequate disposal options for the material that cannot be recycled. The challenge is to manage this material to avoid the worst of its impacts.

Rural and regional communities have specific challenges regarding access to safe disposal options. As trucks need to travel long distances to collect small amounts of waste, some waste services can be cost-prohibitive for regional Councils. While systems are put in place to reduce the amount of waste, continued population growth and societies current consumption habits will still result in an increase in waste going to landfill. The proposed Buronga Expansion is being developed to maximise the opportunities to recycle waste with a focus on waste generated within the surrounding towns by improving and expanding facilities. In particular, increased opportunities to recycle the 23,000 tonnes of commercial and industrial waste and construction and demolition waste will dramatically assist in reducing the waste being disposed to landfill. Recycling at greater distance from Buronga, such as in Wentworth, and in the surrounding LGAs will continue to be undertaken locally at waste transfer stations, as depicted in Figure 2. The expanded landfill facilities are to provide best practice regional waste facilities in line with Action 7.6 of the *Regional Waste Strategy 2017-2021* (refer below).

As waste volumes continue to grow, infrastructure and services will need to keep pace. WSC needs to ensure it has the capacity to meet its critical future needs. NSW already has a network of waste and resource recovery infrastructure, but it needs to be expanded and modernised to meet the challenge of developing a circular economy. A strong pipeline of infrastructure investment is needed to maintain and improve capacity to collect, sort, process and dispose of waste. As WSC supports the transition to a circular economy, it must also plan to continue to provide a way to safely manage residual waste into the future so that it can protect the environment and the health of the community.

- *Consideration of the Regional Waste Strategy 2017-2021 prepared by RAMROC of which Wentworth Shire Council is a member*

WSC is a member of the RAMJO Waste Group (formerly RAMROC) and RAMJO has provided a letter of support for the proposed Buronga expansion (Appendix E). The Regional Waste Strategy 2017-2021, has a number of areas where the consideration of future planning is encouraged, including:

- Section 4.7:

“To support practices and resource recovery at existing waste management facilities across the Region, member council’s need to plan for the future in order to transition towards a sustainable waste management system. The infrastructure required to provide the necessary resource recovery and waste management services needs to be strategically identified and implemented across all member council’s”

- Action 7.5 – Landfill Rationalisation

“Prepare a Regional Waste Disposal Strategy to determine the most cost-effective long term landfilling options across the region. Option should consider regional and sub-regional facilities.”

- Action 7.6 – Sub-Regional Facilities

“Identify suitable locations for long-term regional or sub-regional best practice infrastructure and understand the requirements to secure these facilities for long-term waste management purposes.”

Waste management infrastructure planning is a critical component in transitioning to a sustainable waste management system. Its success will be measured by an improved environmental performance, the consolidation of several waste facilities and an increase in the establishment of resource recovery infrastructure. The planning will also need to be adaptable, flexible and provide the member councils with the opportunity to implement best practice infrastructure. Consequently, the successful implementation of waste management infrastructure planning will:

- Reduce the average cost per tonne to manage waste & recycling materials
- Increase resource recovery processing capacity



- Increase compliance at waste management facilities
 - Present member councils with greater opportunity to develop financial autonomy
 - Increase the recoverable material collected and reduce the material for disposal
 - Identify, secure and safeguard best practice, long-term waste management facilities
-
- *Update / correction of the Direction numbers in the Far West Regional Plan 2036*
 - *Updated Far West Regional Plan 2036 numbering errors*

In EIS Section 4.1.1.2, an error in referencing has been made. Paragraph 3 notes Direction 23 as managing rural communities but Direction 29 Manage Rural Residential Development is the correct direction. Also Direction 26, which is noted as enhancing cross border strategies, should refer to Direction 21: Strengthen Communities of interest and cross-regional relationships as the correct direction. The other content remains the same.



6 Submission Response - Project

6.1 Project General

DPIE Comment:

Development description - general

- *It is currently unclear from the EIS what portion of the total waste (100,000 tonnes per annum (tpa)) would be received directly at the recycling facility versus what would be sent directly to the landfill. We therefore require confirmation of the proportion or ratio of recyclable versus landfill waste anticipated over the proposed life of the landfill.*
- *Also, clarification is required of whether residuals (non-recyclables) from the recycling facility would be sent to the landfill. If so, please provide details of expected amounts of waste in tpa.*
- *Please ensure that the EIS and appendices are all based on a total of 100,000 tpa waste receipt, being the maximum annual waste receipt (worst-case scenario). Please include an explanation of all assumptions used in the modelling and assessment of the development's impacts.*
- *A clear description is required of the current operations of, and proposed changes to, the community recycling facility. This should include the existing and proposed capacity in tpa and how this facility would accommodate future increases in the proportion of waste diverted from landfill over time in line with government policies and strategies.*

- *It is currently unclear from the EIS what portion of the total waste (100,000 tonnes per annum (tpa)) would be received directly at the recycling facility versus what would be sent directly to the landfill. We therefore require confirmation of the proportion or ratio of recyclable versus landfill waste anticipated over the proposed life of the landfill.*

Based on current diversion rates the approximate proportion of total waste that is likely to be received at the recycling facility is 10% of total waste with the remainder reporting for disposal. This does not consider the potential for updated recycling facilities and government initiatives to encourage more recycling from local residents. A literature search to quantify the likely increase did not find any metrics to apply. Discussions with industry peers has also suggested the increase is highly variable depending on the community and the facilities and no "rule of thumb" is available.

As noted above and shown in Table 5.1 and represented in Figure 2, the increase in waste received is predominantly expected to be in waste for disposal as recycling will continue at local waste transfer stations to retain product value locally and reduce haulage costs with only the residuals being transported to Buronga. The centralisation of waste disposal facilities will assist in providing best management for the local and regional community and minimise the environmental impact whilst providing economies of scale for the increasing costs of landfilling.

- *Also, clarification is required of whether residuals (non-recyclables) from the recycling facility would be sent to the landfill. If so, please provide details of expected amounts of waste in tpa.*

Residual from the recycling facility will be sent to the landfill. Future estimates are not able to be provided as there are no standard metrics to enable this extrapolation. For drop off recycling, NSW EPA reports a range of disposal percentages from 0 to 100% with a mean of 4%. Different reporting, methods of operation and facilities available will skew the reported figures. The FERF and RRC are proposed to be placed near the weighbridge and staff amenities which increases the supervision and limits the potential for residuals to contaminate recyclable materials.

The only available estimates are from current records for Buronga Landfill. In 2020/21, 145 tonnes of residuals were transferred from other waste transfer stations, suggesting that it is a relatively small



proportion of sorted wastes (< 2%). A similar quantity of waste was transferred in 2019/20 demonstrating that this is likely to be representative of current operations.

- *Please ensure that the EIS and appendices are all based on a total of 100,000 tpa waste receipt, being the maximum annual waste receipt (worst-case scenario). Please include an explanation of all assumptions used in the modelling and assessment of the development's impacts.*

The EIS and appendices are based on 100,000 tpa received at the site (refer to specific sections below and attached appendices). The exception is the cell development and rehabilitation which are based on the quantity of waste disposed and not the total waste received. The disposal quantities were assumed to be 60,000 tpa which is slightly less than that shown for 50 years' time in Table 5.1. Given the waste quantities to be received on site are not known as contracts are not yet being negotiated, this is considered a conservative estimate.

- *A clear description is required of the current operations of, and proposed changes to, the community recycling facility. This should include the existing and proposed capacity in tpa and how this facility would accommodate future increases in the proportion of waste diverted from landfill over time in line with government policies and strategies.*

Community Recycling Centre Current Operations

In 2015/16 a community recycling centre (CRC) was constructed at Buronga Landfill partially funded by a grant from round 3 of the "Waste Less Recycle More Initiative" by NSW EPA. The grants were targeted at constructing CRCs to accept problematic wastes from households, as listed in Table 6.1.

Table 6.1 CRC Wastes and Capacity

Waste	Capacity	2020/21 Quantities
Paints (oil and water based)	Two x 1 m ³ stillage	Not reported
Motor oils	3 m ³ (3000L) lockable shed	3000 Litres
Cooking, hydraulic and transmission oils	1 m ³ stillage	Not reported
Household single use batteries		Not reported
Car batteries (lead acid)	48 battery	40 batteries
Fluorescent and compact florescent lighting (mercury containing lamps)	0.5 m ³ stillage	Not reported
Gas cylinders (including fire extinguishers)	72 -80 gas bottle capacity and approx. 100 extinguishers	No reported
Aerosols	200 L capacity	Not reported
Plastic, glass, paper and cardboard	Five x 45 m ³ skip bins	Plastic = 600 m ³ Paper/cardboard = 600 m ³
Drum muster	50 m ³ cage	Not reported
Polystyrene	Five x 0.5-1 m ³ boxes	Not reported

The CRC is currently accessed via the weighbridge, requiring all vehicles, domestic and commercial, to be weighed prior to accessing the site. Cars for the CRC are then directed to the two-car undercover

CRC (Figure 3, top left) with the waste motor oil shed adjacent (Figure 3 right). Cars then drive past the skip bins for recyclables (glass, plastic, paper/cardboard) and drum muster (Figure 3, bottom left) to the storage areas for green waste, steel, concrete before returning to the existing public waste acceptance area before returning to the weighbridge to exit. These facilities are shown on EIS Figure 3.

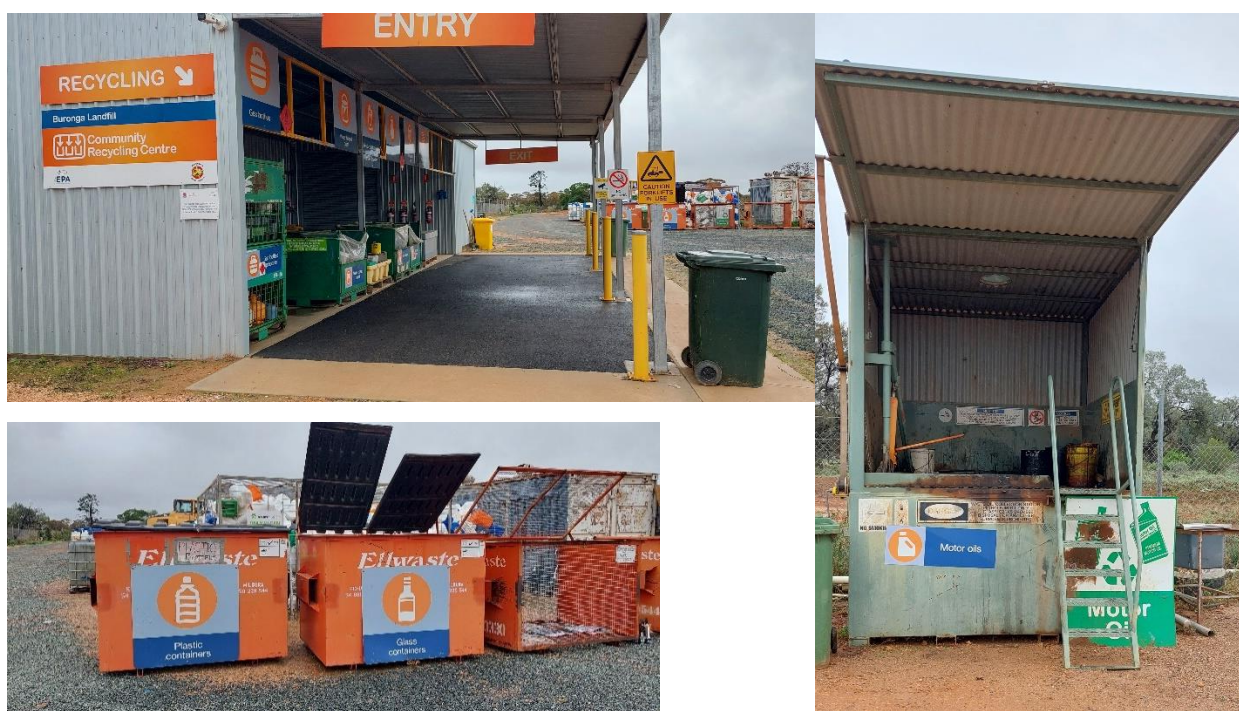


Figure 3 Buronga Landfill CRC with Two Bay Recycling Shed (top left), Motor Oil recycling shed (right) and Recyclables and Drum Muster (bottom left)

Upgraded Facilities - FERF and RRA

The upgraded facilities are proposed for two main reasons:

- Separate domestic and commercial customers to limit the potential for accidents in line with best practice work, health and safety for landfill sites;
- Improve the customer experience and encourage recycling with expansion of the drum muster drop off.

The proposed upgrade to these facilities will include a Front-End Recycling Facility (FERF) and Resource Recovery Area (RRA). The FERF, which accepts only non-levied wastes, has been placed before the weighbridge to encourage domestic customers to separate recyclable materials and other items (excluding e-waste) which may be resold or has value by making access fast and easy. Similarly, the new larger drum muster facility (> 300 m²) has been placed adjacent to the FERF to also improve the customers experience and encourage recycling (EIS Figure 5). The waste accepted at the FERF and DrumMUSTER will be aggregated and quantities (either weight, volume or number) recorded prior to removal from site. A similar method is currently used for material accepted at the existing community recycling facility.

Other items for recycling/disposal will require domestic customers to enter over the weigh bridge and pay fees as appropriate. Following the weighbridge, domestic customers are separated from commercial customers, heading north past the existing CRC. The CRC is relatively new and hence has sufficient capacity for most waste receptacles able to accommodate a year of disposals; noting that this



can vary significantly from year to year. To ensure that expansion may be possible in the future, the RRA has been located north of the CRC.

The RRA is for domestic customers to separate and drop off larger items which can be recycled, comprising green waste, construction and demolition waste and waste tyres. The existing facilities allow domestic customers to access the larger storage areas to the north so this expansion will separate the domestic customers from commercial customers using these busier areas. On-site machinery can access these bays from the rear (north) of the building to retain separation with domestic customers and reduce the potential for accidents.

Once all recyclable materials have been removed, domestic customers can then drop off residuals to the residual drop area prior to exiting the site. All customers will be required to exit via this area to encourage separation of non-recyclable items. Additional recycling stillages will be placed in this area for customers to recycle any items missed prior to this point. The residuals are dropped onto a large concrete floor where a front end loader sort through the waste and remove any recyclables uncovered and load the residuals into site trucks to be taken to the landfill tipping face. This area has the potential to be expanded in the future to the north and south. Expansion in the future may involve establishing additional recycling facilities for FOGO or local material recovery facilities for separating the kerbside recycling bins as the economics of larger scale recycling operations and markets open for these commodities.

Following the residuals drop off area, domestic customers combine with commercial customers to leave the facility.

The upgrades proposed will reduce conflict between commercial and domestic customers and provides covered drop off areas to encourage the use of the facility and recycling.

Upgraded Facilities – Storage Area

The storage area will also be improved. These areas will be accessed by commercial customers and on-site machinery. The stockpile areas have room for access by fire vehicles and comply with the buffer areas required for storage of potentially flammable wastes. The areas have been sized to enable storage of unprocessed and processed waste ready to be sent to recycling.

The proposed design will also improve the environmental outcomes by collecting stormwater runoff. The current informal stockpiles of received materials will be replaced with dedicated areas with a hardstand base and stormwater collected and directed to a stormwater basin. Runoff from the green waste stockpile area will firstly be collected in a sump to enable retention of lighter fractions. By dedicating specific areas, this will also limit encroachment into the adjacent vegetated areas.

6.2 Facility Design

FRNSW Comment:

Following a review of the EIS report FRNSW provides the following recommendations for your consideration:

- 1) *FRNSW recommend that Consent authorities issue as a condition on the development consent that the requirements of Clause E1.10 and E2.3 of the NCC be complied with to the satisfaction of FRNSW and NSW Department of Planning, Industry and Environment, achieved through either providing an acceptable solution or through direct consultation with FRNSW.*
 - a) *The waste facility is to provide safe, efficient and effective access for emergency vehicles as detailed in FRNSW guideline - Access for fire brigade vehicles and firefighters . Aerial appliance access is to be provided if the facility is located within a fire district covered by an aerial appliance.*



- b) *The waste facility is to have a fire hydrant system installed appropriate to the risks and hazards for the facility. FRNSW recommends a fire hydrant system designed and installed to Australian Standard AS 2419.1-2017 and have an enhanced standard of performance appropriate to special hazards.*
- c) *The waste facility is to have an automatic fire sprinkler system installed if the building has a floor area greater than 1000 m² or contains 200 m³ or more of combustible waste material. FRNSW recommends the fire sprinkler system be installed to Australian Standard AS 2118.1-2017.*
- d) *The waste facility is to have a fire detection and alarm system installed appropriate to the risks and hazards identified for each area of the facility. FRNSW recommends a fire detection and alarm system installed to Australian Standard AS 1670.1-2015 Fire detection, warning, control and intercom systems – system design, installation and commissioning.*
- e) *Buildings containing combustible waste material are to have an automatic smoke hazard management system appropriate to the potential fire load and smoke production rate installed within the building.*
- f) *The waste facility is to have effective and automatic means of containing fire water run-off, with primary containment having a net capacity not less than the total hydraulic discharge of the worst-case fire scenario. The total hydraulic discharge is the discharge from both the fire hydrant system and automatic fire sprinkler system for a duration of four hours. Failure to contain fire water run-off can result in pollution of the environment and require a protracted hazardous materials response.*
- g) *The owner is encouraged to engage a fire safety engineer or other suitably qualified consultant to develop a performance design specific to the facility and its operations. The performance-based design should consider all possible fire scenarios.*
- h) *The occupier/operator is to develop an emergency plan for the waste facility to AS 3745-2010 Planning for emergencies in facilities. An external consultant should be engaged to provide specialist advice and services in relation fire safety planning and developing an emergency plan.*

It is essential for the detailed design of the Buronga facility to reduce the potential for fires to occur, minimise the potential for fires to grow and maximise the opportunities for fires to be quickly and efficiently extinguished. To this end, we endorse this condition being part of the condition of consent and will engage a fire safety engineer or other suitably qualified consultant to develop a design specific to the operations and consult with FRNSW.

Incorporated within the concept design are haul roads around the storage areas and landfill cells which can accommodate fire brigade vehicles. A new water tank to the north of the site will also be constructed with a compliant access track for fire vehicles.

6.3 Landfill Design

6.3.1 Description

DPIE Comment:

Development description – landfill

- *Area(s) subject to land clearing in square metres or hectares*



- Clarification of the extent of the historic unlined landfill proposed to be overlaid/‘piggybacked’ by the new lined landfill cells, the likelihood of disturbing any existing contaminated land, and details of how the interface between existing and proposed cells would be treated
- Existing, Stage 1 and Stage 2 landfill capacity in cubic metres
- Detailed description of construction phases – in particular: - Initial construction activities (e.g. land clearing, demolition or relocation of structures, earthworks, construction of internal roads, ponds) and timeframe for each activity - Ongoing construction activities (e.g. capping, rehabilitation, progressive landfill cell creation, extension of roads and drainage infrastructure, additional ponds, etc) and timeframe for each activity
- Maximum gradients of side batter slopes as a %
- Intended ultimate land use upon closure of landfill

DPI – Agriculture Comment:

Land Stewardship

- Describe the final proposed land use and landform.
- Detail the proposed rehabilitation and decommissioning/closure measures to achieve this land use including the expected timeline for the rehabilitation program.
- Outline the monitoring and mitigation measures to be adopted for rehabilitation remedial actions.

- Area(s) subject to land clearing in square metres or hectares

The project (comprising Stages 1A to 1D) will require approximately 17.5 ha of land to be cleared outside for the Stage 1A to 1D cells, supporting infrastructure and the front end recovery facility, subject to detailed design. Of this area, approximately 25 ha has been cleared due to historical activities on site, including the existing landfill. Within the existing consent area, 14 ha of native vegetation will be cleared and an additional 4 ha outside the existing development consent for the borrow pits.

- Clarification of the extent of the historic unlined landfill proposed to be overlaid/‘piggybacked’ by the new lined landfill cells...

Areas of the historic unlined landfill that are not yet at or near the proposed final landform levels and require additional filling will be piggyback lined in accordance with the requirements of the *Environmental Guidelines: Solid waste landfills* and as agreed with the EPA. Figure 4 shows the approximate extent of historic unlined landfill that will require piggyback lining.

The depth of the historic landfill is unknown, however the site Landfill Environmental Management Plan (LEMP) (GHD, 2012) states that “it is understood that the majority of landfilling in this area (the historic unlined landfill) occurred above the natural ground level, with minor excavation to approximately 3 m in some areas”. The lowest point of the landfill toe is at 36.5 m AHD. Based upon this, the current height of the landform crest of 56 m AHD, and the LEMP the waste in the unlined landfill is expected to be no greater than 23 m deep. According to the design documentation, the existing lined cell has an invert of approximately 35 m AHD within the sump, with a maximum filling depth of approximately 21 m due to the cell being located near the edge of the final landform.

The final extent of piggyback liner will be determined during detailed design and will be influenced by the surface levels of the existing landfill at the time of design, slope stability assessments, settlement assessments and regulatory requirements and best practice at the time of design.

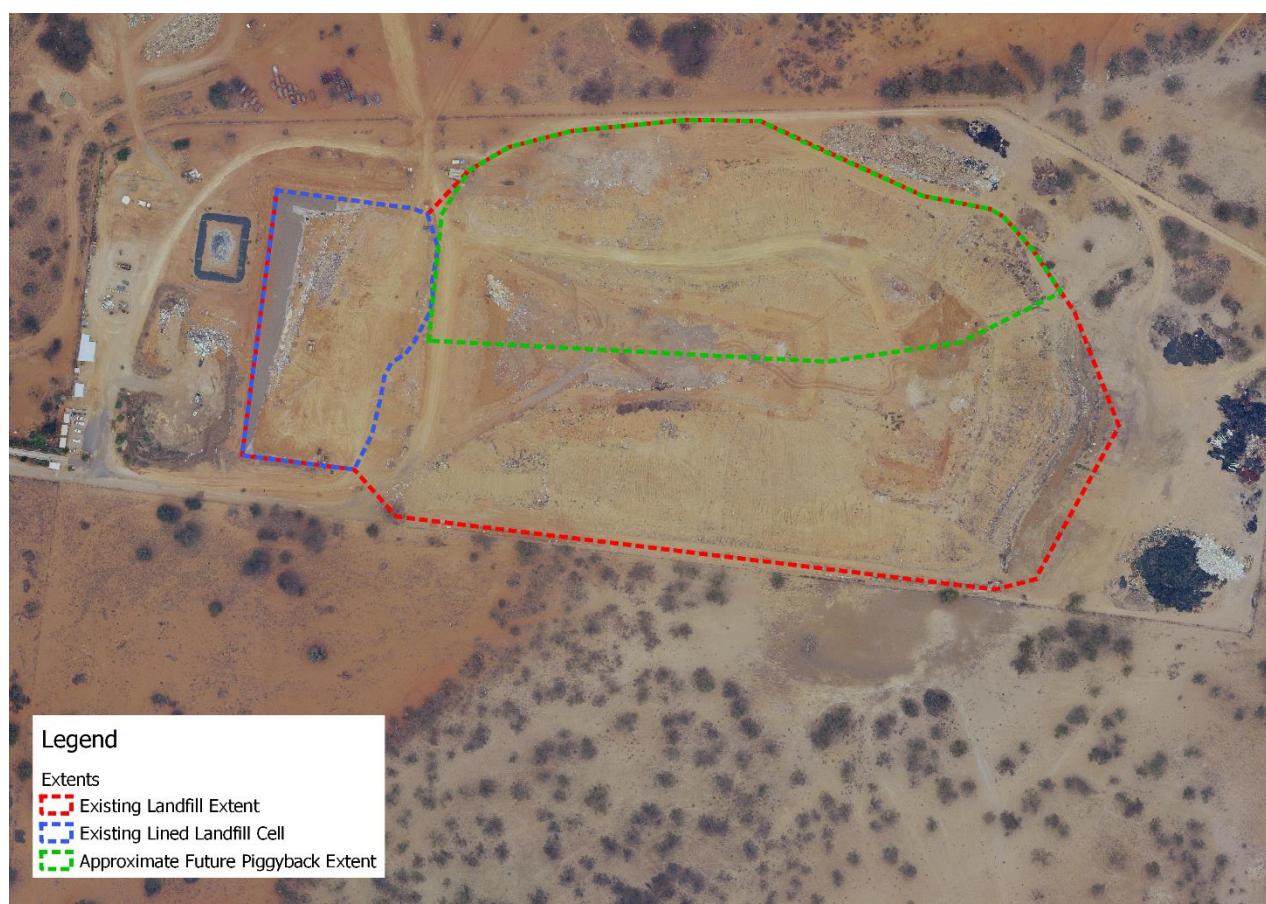


Figure 4 Extent of Existing Landfill and Future Piggyback Liner

- *...,the likelihood of disturbing any existing contaminated land,...*

During construction of the piggyback liner disturbance of the surface of the existing landfill will be required to facilitate construction of the piggyback liner above it. It is possible that localised cut and fill of the waste face will be required to achieve appropriate levels and grades for construction of the piggyback liner.

The design of the piggyback liner will be developed to minimise the disturbance required and to minimise any uncovering and exhumation of existing waste. Disturbance of the existing surface shall be addressed in the construction contractor’s construction environmental management plan (CEMP) to address potential risks associated with disturbance of potentially contaminated material including surface water and landfill gas controls if these are determined to be required. Safety associated with disturbance of potentially contaminated material shall be addressed in the contractors WHS plan.

Any exhumation or exposure of existing landfilled waste will require approval from NSW EPA who are the regulator for the environment protection licence for the site. Any potential approval will require a formal plan to be prepared detailing the proposed exposure and/or exhumation of waste and the appropriate environmental and safety controls that will be put into place during this work occurring.

- *... and details of how the interface between existing and proposed cells would be treated*

The base and sideliner of the new cells will interface with the sideliner of the existing lined cell at the site. The sideliner of the existing cell consists of the following profile, from the bottom up:



- Prepared subgrade
- Earthen layer (Engineered fill to support the overlying geosynthetics)
- Geosynthetic clay liner (GCL)
- 2.0 mm double sided textured HDPE geomembrane
- Cushion geotextile
- 300 mm drainage aggregate
- Separation geotextile

The liner terminates in an anchor trench at the crest of the northern batter slopes. The future cells will interface with the existing lined cell along the northern extent of the cell and the liners of both existing and future cells will be connected to provide a continuous barrier and leachate collection system in this area. The connection into the future lining system will be determined during detailed design, the final configuration of the connection will depend on the final design levels and liner profile used in the future landfill cells.

Depending on the extent of landfilling against the sideline of the existing landfilled cell disturbance of the existing waste mass may be required. If any disturbance or exhumation of waste is required during the construction of the interface connection between a future cell and the existing lined cell, the same safety and environmental controls as discussed above will be implemented during construction.

Where the underlying landfill proposed for filling above is unlined (i.e. the full extent of the existing landfill except the known existing lined cell) a 'piggyback' lining system will be installed as agreed with the EPA to provide a barrier to leachate infiltration from the newly placed waste into the existing waste mass.

During progressive cell development, connections between base liners of adjacent cells will be made to create a continuous barrier system below the new lined cells of the landfill within each stage.

- *Existing, Stage 1 and Stage 2 landfill capacity in cubic metres*

The total capacity of the existing landfill is unknown as there is no design documentation for the majority of the historical landfill. As identified above, the majority of historical landfilling is believed to have occurred above the natural ground level, with minor excavation to up to 3 m below ground level in some places. The lowest point of the toe of the existing landfill is approximately 36.5 m AHD and based upon the deepest extent of the landfill, the waste placement is expected to extend to 33.5 m AHD or above. A volume calculation between the site survey within the existing landfill area and a flat level of 33.5 m AHD estimates a maximum of 1,450,000 m³ of material possibly placed in the existing landfill footprint. Alternatively, if the underside of waste was consistent with the lowest level of the toe of the existing landfill at 36.5 m AHD the volume would be approximately 1,055,000 m³. Based upon this analysis it is expected that the volume of the historical landfill is in the order of 1,000,000 m³. The design model for the current lined landfill cell provides approximately 160,000 m³ of landfill airspace, of which, approximately 105,000 m³ has been filled.

Based upon the concept baseliner level and concept top of cap, there is a total of 3.3 million m³ of airspace in Stages 1A to 1D. There is also approximately 470,000 m³ of airspace remaining between the top of cap and existing surface within the existing landfill area, some of which will be filled following piggyback liner construction and some that will become part of the cap volume. This volume will not be confirmed until detailed design of the piggyback liner is completed. Subsequent stages are no longer part of this Project.

A breakdown of the estimated airspace and expected life of each stage and substage is shown in Table 6.2. This estimate is based on the expected disposal tonnages (Table 5.1) and the 2020 calculated density from the Buronga Landfill. The size of each cell within the substages will be adjusted during



detailed design based upon waste receipt rates expected during each cell's operation to limit the size of the active cell and facilitate faster rehabilitation, which in turn limits the LFG emission and leachate generation.

Table 6.2 Estimated Airspace for Each Substage and Expected Life

Stage	Airspace (m ³)	Life (Years)
1A	923,477	10.6
1B	792,427	9.0
1C	790,159	9.0
1D	797,711	9.1
Total	3,303,774	37.8

Notes: Life is based on 64,000 t waste/annum at a density of 0.733 t/m³

Table 6.2 supersedes Table 3.5 of the EIS. Minor adjustments have been made to ensure sufficient space exists for haul roads and service around the landfill footprint. The airspace that will be realised above the existing landfill following construction of the PBL is not included in Table 6.2.

- *Detailed description of construction phases – in particular: - Initial construction activities (e.g. land clearing, demolition or relocation of structures, earthworks, construction of internal roads, ponds) and timeframe for each activity - Ongoing construction activities (e.g. capping, rehabilitation, progressive landfill cell creation, extension of roads and drainage infrastructure, additional ponds, etc) and timeframe for each activity*
- *Detail the proposed rehabilitation and decommissioning/closure measures to achieve this land use including the expected timeline for the rehabilitation program.*

Construction will occur progressively throughout the life of the site with staged construction of landfill cells and supporting infrastructure as well as regular staged rehabilitation of filled landfill cells. Design of the first stage of road and cell construction will occur in FY 2022/2023. Specific timing of the proposed construction phases is not known at this stage of the project as the progressive development of the landfill will be dependent on waste receipt rates at the site over time. Initial construction activities at the site are expected to commence during FY 2023/2024 and consist of the following activities:

- Upgrade of Arumpo Road intersection consisting of:
 - Detailed design by independent consultants and approval by Council
 - Construction by contractors
- Construction of first new landfill cell in Stage 1A to provide continuing disposal capacity as the capacity of the new facility nears exhaustion. This is expected to include the following activities:
 - Finalisation of landfill cell design following consultation with NSW EPA
 - Land clearing within the footprint of the cell and access roads
 - Construction of access roads to the location of the new cell to be determined during detailed design
 - Earthworks to achieve design levels across the cell footprint including within the existing landfill footprint to facilitate piggyback liner construction
 - Construction of landfill cell liner and leachate collection system including pipework to transfer leachate to existing pond
 - Stormwater controls to manage stormwater within the footprint of the new cell
- Construction of FERF and RRA consisting of:
 - Stripping and grubbing within the footprint of the proposed structures, access roads and ponds
 - Construction of hardstand areas for proposed storage of scrap metal, tyres, inert C&D waste, drum muster, roro bin storage, residual waste drop off area and green waste
 - Construction of roads and signage within RRA and waste acceptance areas
 - Construction of structures proposed for resource recovery shed, site office & amenities, and FERF
 - Construction of RRA stormwater basin and swales



- Capping of the southern batter of the existing landfill to begin progressive rehabilitation consisting of:
 - Finalisation of proposed cap design following consultation with NSW EPA
 - Earthworks to prepare the existing cover surface to form a suitable subgrade for the construction of the landfill cap
 - Construction of the final cap profile supported by NSW EPA
 - Construction of stormwater controls to manage runoff from the capped area
 - Revegetation of the capped area with appropriate native vegetation to be determined during detailed design
- Upgraded stormwater facilities consisting of:
 - Stripping and grubbing within the footprint of proposed stormwater controls
 - Construction of stormwater ponds required to manage stormwater flows during operation of landfill cell, FERF and RRA. Construction of the north western and/or southern ponds may be required at this time depending on the location of the first landfill cell constructed. This will be determined during detailed design.

Ongoing construction activities will occur regularly as a part of the progressive development of the landfill. The timing of these construction campaigns is not known as they will be dependent on the rate of waste disposal at the facility. These construction activities are generally expected to consist of the following:

- Progressive landfill cell construction including:
 - Finalisation of landfill cell design following consultation with NSW EPA
 - Land clearing within the footprint of the cell and access roads
 - Construction of access roads to the location of the new cell to be determined during detailed design if required.
 - Earthworks to achieve design levels across the cell footprint including within the existing landfill footprint to facilitate piggyback liner construction for Stage 1A cells.
 - Construction of landfill cell liner and leachate collection system including ring main pipework to transfer leachate to existing pond
 - Stormwater controls to manage stormwater within the footprint of the new cell as require
- Progressive capping and rehabilitation of completed landfill areas including:
 - Finalisation of proposed cap design following consultation with NSW EPA
 - Earthworks to prepare the existing cover surface to form a suitable subgrade for the construction of the landfill cap
 - Construction of the final cap profile supported by NSW EPA
 - Construction of stormwater controls to manage runoff from the capped area
 - Revegetation of the capped area with appropriate native vegetation to be determined during detailed design.
- Progressive extension of access roads including detailed design and construction of the access roads.
- Progressive construction of drainage infrastructure including:
 - Progressive development of drains and swales to direct stormwater flows to basins as required
 - Construction of additional stormwater basins as the development of the site progresses
- Construction of additional leachate ponds including:
 - Finalisation of proposed design following consultation with NSW EPA
 - Stripping and grubbing of proposed pond location
 - Earthworks to form basin subgrade
 - Construction of proposed basin lining system
 - Extension of leachate ring main to transfer leachate to the new pond
- Installation of new firefighting tank once substage 1D is commencing development
- Maximum gradients of side batter slopes as a %

Best management practices are that final slopes of the landfill are between 5% and 20%. The lower limit is to minimise the risk of water ponding and increasing infiltration whereas the maximum gradient is to minimise erosion and facilitate easy maintenance. During the after-care period, the maintenance can require the repair of the cap surface, weed spraying, mowing and other operations which are easier and safer to perform on slopes of < 20%.



In accordance with best practice, the side batter slopes of the final landform and landfill cap (permanent external landfill batters) will have maximum slopes of 20% (1V:5H). Internal (temporary) landfill batter slopes will be determined during detailed design.

- *Intended ultimate land use upon closure of landfill*
- *Describe the final proposed land use and landform.*

It is intended that following closure, the site will be rehabilitated and revegetated for an ultimate land use of passive open space. The ultimate use upon closure impacts the long-term impact of the proposed development on land use and the type of final capping and rehabilitation most suited to the intended use.

The final proposed landform is described in EIS Section 3.9.1. The final landform has been designed as a series of parallel east-west oriented hills to be sympathetic to the regional dunal landforms and utilising endemic vegetation.

- *Outline the monitoring and mitigation measures to be adopted for rehabilitation remedial actions.*

The environmental monitoring is described in EIS Section 3.8 and is in accordance with best management practices outlined in the Landfill Guidelines and detailed in the LEMP for the site. Prior to closure of the facility, i.e. once the facility is no longer operational, the LEMP will be replaced with a Landfill Closure Plan (refer to EIS Section 3.9). This plan details the continued management and monitoring of the site until it is stable and the EPL can be surrendered; this is typically 30-50 years after closure.

6.3.2 Leachate Management and Drainage

DPIE Comment:

Leachate management and drainage

The Department seeks clarification of leachate management and drainage system, including:

- *Details of the surface and stormwater management system and assessment of potential surface water impacts for the landfill and community recycling facility*
- *Amended drainage plan showing drainage lines consistent with the north-south orientation of Stage 2 landfill cells*
- *Details of how the new landfill cells in Stage 1 would connect to the existing leachate pond, which would be used until such time as the new leachate pond and service alignment are constructed*
- *Details of the capacity of the existing leachate pond, including approximate service life remaining and likely timing of the construction and use of the proposed new leachate pond and service connections*

- *Details of the surface and stormwater management system and assessment of potential surface water impacts for the landfill and community recycling facility*

The stormwater management plan has retained the full extent of the proposed landfill development (Stages 1 and 2). This will ensure if future landfill development is undertaken, there is adequate provision for and siting of infrastructure. All three stormwater ponds will be required for Stages 1A to 1D and will be located within the envelopes shown; however, the stormwater infrastructure will require detailed design to confirm sizing and is typically staged along with the landfill cell development and closure.



The governing methodology for the surface and stormwater management system is to detain potentially sediment laden runoff generated from the disturbed areas in a series of sediment basins. Runoff is to be discharged once a suitable level of water treatment is achieved. External catchments that are not subject to land disturbing activities have been identified. Runoff generated from these catchments is to be directed around the active recycling centre works area.

The topography of the site and surrounding landscape was reviewed to define the internal and external catchments. For the catchments within the site, the design contours for the landfill caps and existing site survey were used. To define the external catchments, DEM data (obtained from ELVIS) was used to generate contours of the surrounding area. Where external catchments are identified, bunds have been proposed to ensure runoff from these external catchments is directed away from disturbed areas of the site. As such, there are no external catchments draining to the stormwater treatment systems managing runoff from the disturbed areas of the site. The resulting catchment plan is shown in Figure 5.

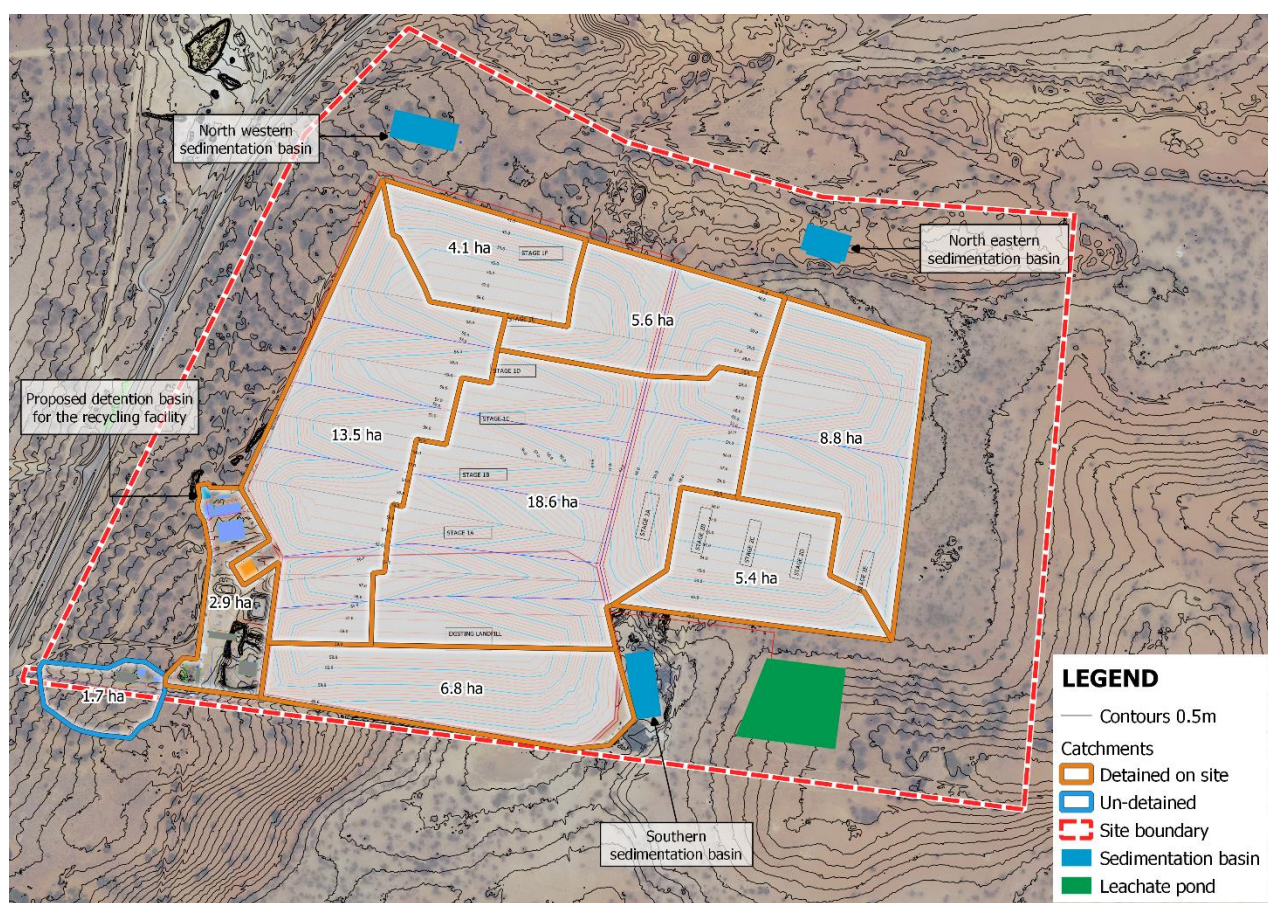


Figure 5 Catchment Plan

Bunds are proposed along external alignment of the haul roads. These bunds direct external catchments (clean water) around the disturbed areas and into existing natural depressions in the surrounding landscape. Details of the bunds will be finalised in detailed design.

The catchment plan shows all but one of the catchments will have runoff detained on site. That one small catchment around the FERF will directly discharge runoff to Arumpo Road. The concrete hardstand of the FERF will be designed to grade toward a central location to prevent flows outside the footprint. Collected water will evaporate or be conveyed to the leachate pond. Roof runoff from all sheds will be collected in rain water tanks to allow reuse. Runoff from all other catchments will be conveyed via grass



lined swales towards sedimentation basins. These were sized based on Managing Urban Stormwater: Soils and Construction guideline or “The Blue Book” (Landcom, 2004), as provided in the EIS.

An additional sediment basin has also been proposed on the western portion of the site to detain runoff generated by the recycling facility. Overflows from this basin are directed via a grass lined swale towards the north western basin. This catchment consists of the haul road leading into the landfill, the proposed resource recovery area and storage areas. To ensure that the runoff from this catchment is treated prior to discharge, a grass-lined swale is proposed, to allow for infiltration and nutrient uptake.

Preliminary sizing of the grass-lined swales has been conducted using DRAINS. The model was run using the sub-catchments as shown in Figure 5 for the 20-year ARI (5% AEP) rainfall event. Based on the modelling results, a typical swale sizing is obtained and described below:

- Batters – 1V:5H
- Depth – 0.5 m
- Base width – 1 m

It should be noted that the sizing of the grass-lined swales as well as the swale surface treatment is to be finalised during detailed design. The concept drainage plan showing the proposed alignment of the grass-lined swales is provided in Figure 6.

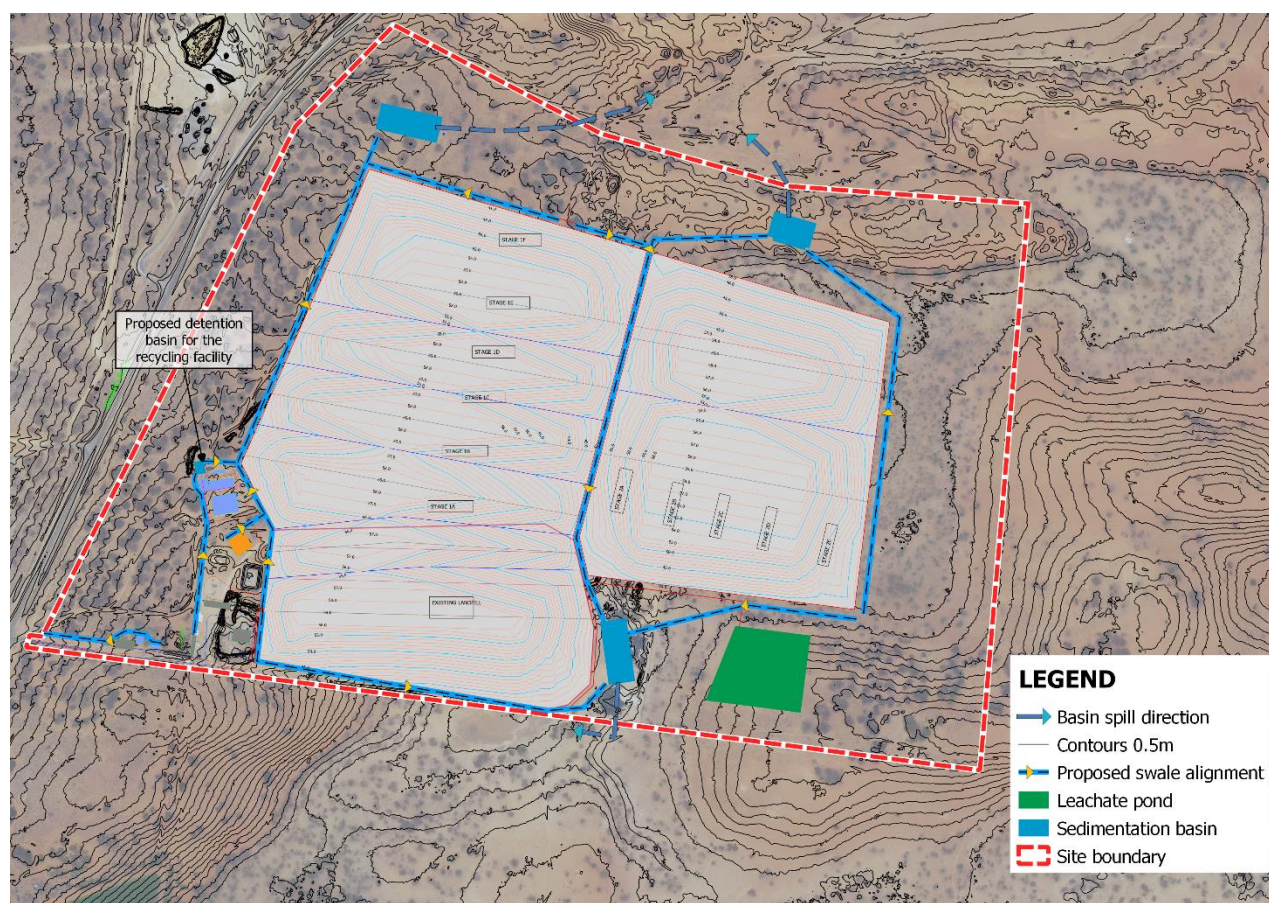


Figure 6 Drainage Plan

Figure 6 also shows the proposed sedimentation basin spill directions. The spill directions have been determined to allow the overflows from the basin to spill towards the natural watercourses and depressions in the surrounding landscape. Spillway design for the basins will be finalised in detailed design.



According to Volume 2B of 'The Blue Book', the sediment retention basins are designed based on the soil type used for waste cover and capping. In the absence of site-specific data, type D soils (i.e. dispersive soils) have been assumed. As such, Type D sediment retention basins are designed for the site to be conservative. As per Table 6.1 and Table 6.2 in Volume 2B of 'The Blue Book', type D sediment retention basins to be designed for nominated five-day duration 90th percentile event, with an indicative average annual sediment basin overflow frequency of 2-4 spills per year.

To assess whether the sedimentation basins achieve the spill frequency requirements, a water balance model was constructed using MUSIC modelling software. The MUSIC model was based on 100 years of rainfall data, obtained from the Irymple station (BoM station number 76015). The average annual rainfall observed is approximately 275 mm/year. Monthly average evapotranspiration rates were obtained from the BoM database. The monthly evapotranspiration rates ranged between 53 mm to 321 mm, with an average rate of 175 mm.

Using the catchment plan shown in Figure 5, lumped catchments were configured for all the capped landfill areas in MUSIC for the generation of runoff into each sedimentation basin. Given the presence of the impervious liner for each of the landfill caps, groundwater seepage was ignored. Also, the soil storage capacity and field capacity for the lumped catchments draining towards the sedimentation basins were modified based on the rehabilitated state of the landfill caps. This resulted in an approximate rainfall-runoff ratio of 0.15. It should be noted that water reuse for activities such as dust suppression, truck washdowns, and toilet flushing, were not considered as part of the water balance modelling conducted.

The configuration of the MUSIC model is shown in Figure 7 below.

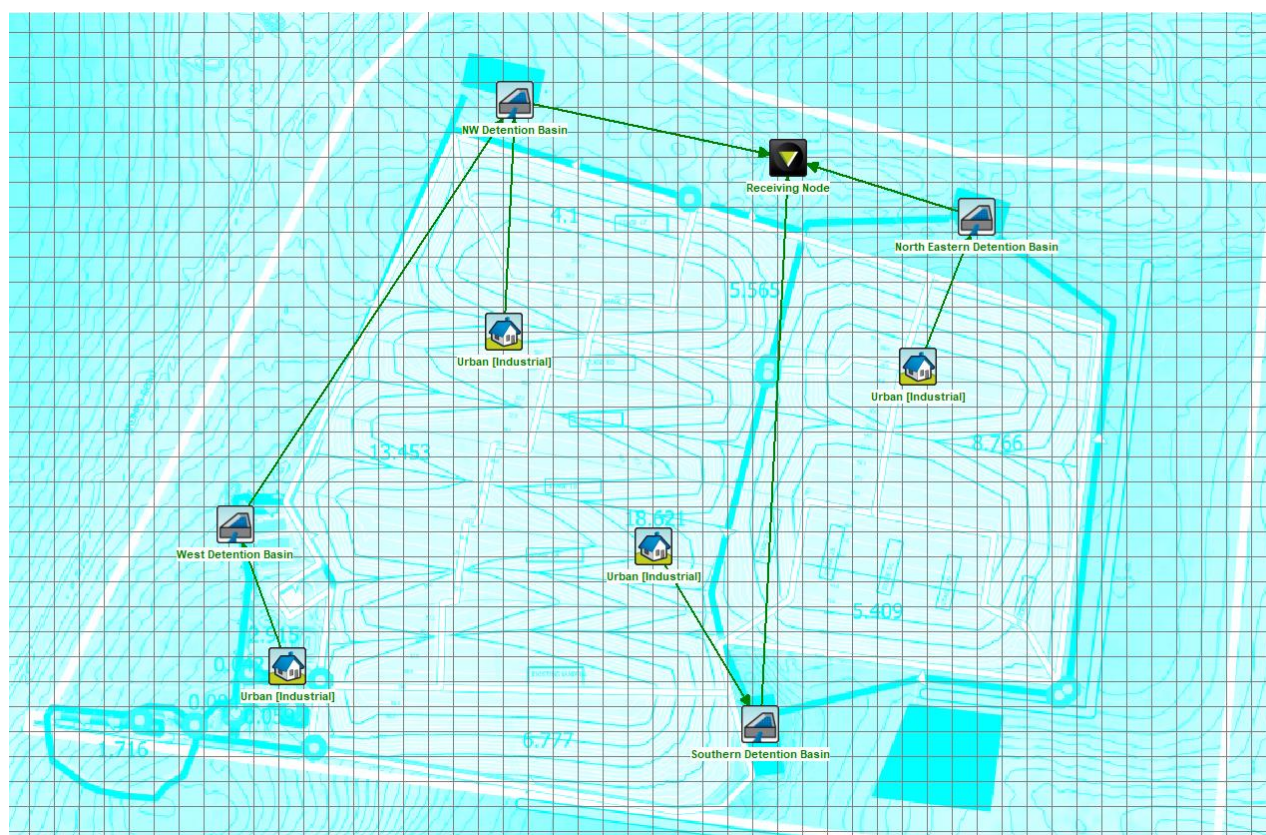


Figure 7 MUSIC Model for Water Balance Modelling of Sedimentation Basins

Based on the results obtained from the water balance model, the average number of spills per year in each of the basins is as follows:



- North western basin: 0.81 spills per year
- North eastern basin: 0.96 spills per year
- Southern basin: 2.72 spills per year

The results show that the north western and north eastern sedimentation basins on average spill less than once per year, while the southern basin will spill approximately 3 times per year. This satisfies the criteria outlined in 'The Blue Book', whereby the acceptable average number of spills per year is between 2-4 spills.

- *Amended drainage plan showing drainage lines consistent with the north-south orientation of Stage 2 landfill cells*

Stage 2 has now been excluded from this application; however a response is provided.

The drainage plan is for stormwater drainage and hence needs to be consistent with the final landform and not the cell orientation. Whilst the cells are being filled, any rain falling within the cell will be in contact with waste and hence is considered leachate and directed to the leachate ponds from the cell sump and via pipework to the leachate evaporation ponds. The stormwater design is for the interim and final landforms where the waste is covered by soil and any runoff is not in contact with the waste so remains "clean".

The stormwater drainage lines are consistent with the final landform which is an east-west orientation. The cells are in a north-south orientation as this is operationally efficient but this does not dictate the final landform.

- *Details of how the new landfill cells in Stage 1 would connect to the existing leachate pond, which would be used until such time as the new leachate pond and service alignment are constructed*

Stage 1 landfill cells will include an engineered liner layer and leachate collection system. Leachate will be collected in the leachate collection system and pumped from the cells, discharging into the existing leachate pond.

It is expected the new cells will use a similar pump system to the existing lined landfill cell which utilises a pneumatic bore pump commonly used in landfill applications. Leachate is pumped directly from the sump into the leachate pond through pipework laid on or near the surface. This pipe is placed over the surface of the batter into the leachate pond and discharged into the pond. The new Stage 1 landfill cells will discharge in a similar manner through poly pipes laid along the surface into the pond until new leachate ponds and a permanent leachate ring main are established at the site. The detailed design for the leachate collection will form part of the cell detailed design, which is to be submitted to EPA for in principal support before it is constructed.

- *Details of the capacity of the existing leachate pond, including approximate service life remaining and likely timing of the construction and use of the proposed new leachate pond and service connections*

The existing leachate pond was constructed in 2017 and includes an engineered lining system to contain leachate within the basin. The basin is 30 m wide by 40 m long with a total depth of 1.6 m. When operated at a depth of 1.3 m to provide 300 mm freeboard, the maximum capacity of the pond approximately 1,180 m³. When the pond is filled to freeboard level the surface area of the leachate is 1,075 m². The original design documentation does not specify the designed service life of the leachate pond.

The pond is lined with the following profile, from the bottom up:

- Compacted subgrade



- Geosynthetic Clay Liner
- 300 mm Compacted Clay Liner
- 2.0 mm smooth HDPE Geomembrane

In this configuration, the HDPE geomembrane provides the primary barrier to leachate infiltration into the base of pond.

HDPE geomembranes deteriorate over time through several mechanisms; those most relevant to the degradation of a HDPE geomembrane in an exposed leachate pond application include ultraviolet light (UV) exposure, oxidation, and chemical exposure. According to a white paper published by the Geosynthetic Institute¹ the life of a HDPE geomembrane in an exposed application in an arid climate is predicted to exceed 36 years based upon the data available at the time of publication.

Based upon this, it is expected that the HDPE geomembrane in the pond will be serviceable for at least 36 years. This assumes that no physical damage to the pond liner occurs (e.g. during maintenance or from animals entering the pond) or that any physical damage is remediated when it occurs. As the pond was constructed in 2017, it is expected that the life of the pond extends to at least 2053. Once the HDPE geomembrane is life expired, decommissioning of the pond or replacement of the HDPE geomembrane will be required.

A high-level estimation of leachate generation and disposal has been made to assess when new leachate ponds will be required to increase the leachate disposal capacity at the site. Additional ponds will need to be constructed when the leachate generation of the landfill exceeds the disposal capacity of the existing pond. This assessment has been made based upon assumed infiltration factors into the waste and assumed evaporation from the pond.

According to data from the Mildura Airport climate station, the mean annual rainfall is 285.4 mm and the mean annual pan evaporation is 2,185 mm. Assuming that the evaporation from the pond is 80% of the pan evaporation, the annual evaporation from the pond (the leachate disposal capacity) is approximately 1,540 m³.

Leachate generation has been estimated using approximate infiltration factors for daily cover, interim cover and final cover. The final cover generation has been adopted from the Landfill Guidelines requirement for a phytocap to restrict infiltration into the waste to 5% of the mean annual rainfall. The daily cover and interim cover infiltration factors have been adopted based on experience with previous landfills in similar climates to the Buronga Landfill. The infiltration factors and corresponding leachate generation for each cover type are shown in Table 6.3 below. In a semi-arid area, these infiltration factors are likely to be an overestimate due to the high evaporative demand.

Table 6.3 Leachate Generation Factors

Cover Type	Infiltration Factor	Leachate Generation (mm)
Daily Cover	25%	71
Interim Cover	10%	29
Final Cover	5%	14

To estimate the generation of leachate during the site's operation, the catchment areas contributing to the leachate collection system were adopted. The areas contributing to the leachate collection system will be all future cells and the existing lined cell. For the purposes of the assessment, it was assumed that Stage 1A would be developed into four cells of equal size. The areas are:

¹ Koerner, R.M., Hsuan, Y.G. and Koerner, G.R. (2011). *GRI White Paper #6, Geomembrane Lifetime Prediction, Unexposed and Exposed Conditions*, 8 February 2011, Geosynthetic Institute, Folsom, PA, USA.



- Existing Lined Cell – 14,350 m²
- Stage 1A including Piggyback Liner – 85,600 m² (Four cells of 21,400 m²)

For the purposes of estimating leachate generation, it was assumed that 1,000 m² of the active area is covered with daily cover at any time during operation with the remainder of the active area under interim cover. It has been assumed that the existing lined cell is capped when Stage 1A begins operation. The historic landfill has not been included in this assessment as it is unlined and has no leachate collection system. Using these assumptions, the staging shown in Table 6.4 below has been adopted. The leachate generation shown in Table 6.3 has been applied to these areas to estimate the leachate generation.

Table 6.4 Staging and Estimated Leachate Generation

Phase	Active Cells	Capped Cells	Estimated Areas at Each Phase (m ²)					Leachate Generated (m ³ /yr)
			Active	Daily	Interim	Final	Total	
0	Existing	-	14,400	1,000	13,400	0	14,400	460
1	1A1	Existing	21,400	1,000	20,400	14,400	35,800	860
2	1A1 – 1A2	Existing	42,800	1,000	41,800	14,400	57,200	1,470
3	1A1 – 1A3	Existing	64,200	1,000	63,200	14,400	78,600	2,080
4	1A1 – 1A4	Existing	85,600	1,000	84,600	14,400	100,000	2,700

As shown above, the disposal capacity of the existing leachate pond is approximately 1,540 m³. Based upon the estimated leachate generation shown in Table 6.4, this capacity will be sufficient until Phase 3, i.e. when the third cell in Stage 1A is constructed (assuming that the cells in Stage 1A are of equal size) and only the existing landfill cells have final cover, i.e. are rehabilitated. Based upon this, it is expected that there is sufficient disposal capacity provided by the existing leachate pond for the first cell constructed in Stage 1A. It is expected that this cell will be approx. one quarter of the footprint of Stage 1A overall to provide disposal capacity for a similar amount of waste to the current waste acceptance rate at the site. Prior to the construction of any subsequent cells, the need for construction of new leachate basins shall be confirmed once exact cell footprints are established during detailed design. Also, it is expected that additional leachate generation data will be available to provide more accurate modelling inputs or to calibrate the model.

It is proposed that the construction of the first cell in Stage 1A will occur in or around FY 2023/2024 (approx. 12 to 24 months from now). It is assumed that subsequent cell construction campaigns will occur every two to four years, and hence it can be assumed that the second and third cells in Stage 1A will be constructed between four and eight years following the construction of the first cell. It is therefore expected that the new leachate pond will be required within 5 - 10 years from now.

It is proposed to decommission the existing leachate pond once the first new pond is constructed. As identified above, it is expected that the existing leachate pond has in excess of 30 years of service life remaining and hence it is expected that the existing leachate pond will remain serviceable until a new pond/ponds are constructed at the site to replace this existing infrastructure.



6.3.3 Groundwater

DPE Water Comment:

Groundwater:

Recommendation – Post Approval :

If during the detailed design phase, the proponent determines that the construction of the landfill cells would intercept and take groundwater during construction of the lined cells, the proponent should:

- *Undertake an assessment according to the requirements of the Aquifer Interference Policy 2012.*
- *Account for any groundwater take and obtain a water licence as required.*

Noted and agreed. Please refer to further details in Section 8.3 on the potential to intersect groundwater during cell construction. The water source for the site is the Mourquong Irrigation Pipeline and there is no intention of using groundwater as a water source for the site. If this changes in the future, any interference with groundwater or taking of groundwater would be undertaken in compliance with the relevant legislation at the time.

6.4 Operations

6.4.1 General

DPIE Comments:

Operational details

The Department seeks clarification and/or additional information on the following operational aspects of the development:

- *Hours of operation are to be consistent between the EIS and consultants' reports (e.g. EIS page 24 and the air quality impact assessment page 9 currently have inconsistent hours of operation)*
- *Details of management and interim measures for the continued operation of the community recycling facility and active landfill cell during initial and progressive expansion works*
- *Information demonstrating that the existing gas monitoring system is adequate to address the risks associated with LFG emissions as identified in the hazard assessment, and explanation of the 'economic levels' trigger for the implementation of the LFG (flare) management system*
- *Information on the gas flare system (new and existing, if any) in particular, maximum line sizes (piping diameters) and maximum operating pressures, fuel source*
- *Details of how acceptance of flammable wastes (e.g. oils, paints, tyres) would be limited and the proposed maximum volume of stockpiles of flammable waste*
- *Information on any water licensing requirements under the Water Act 1912 or Water Management Act 2000 in Section 4.4.1 of the EIS and indication of whether the project requires water licensing(Section 6.3.4)*
- *Details of operational water supply and usage (in addition to the information provided on water supply for firefighting)*
- *Detailed and consolidated site water balance for the site, which is to take into account the proposed soil and vegetation characteristics of the rehabilitated landfill cells*
- *Funding mechanism for rehabilitation of the landfill*
- *Estimate of jobs to be created during both initial and progressive construction and operational phases*

DPI Ag comments:



Suitable and secure water supply

- *Detail the estimated water demand and water availability and the source of water and any sanitisation methods proposed.*
- *Outline any impacts to water use for agriculture and measures to mitigate against these impacts.*

EPA Comment:

The EPA recommends the following conditions (or conditions with similar wording) are incorporated into any approval of the proposed expansion.

- 1. A maximum of 100,000 tonnes can be received at the premises in any EPL reporting year.*
- 2. New landfill cells must be constructed consistent with best practice detailed in the EPA's 'Environmental Guideline – Solid waste landfills – Second edition, 2016'.*
- 3. The premises must have the same configuration and operate as described in the Environmental Impact Statement titled 'Buronga Landfill Expansion' prepared by Tonkin Consulting Pty Ltd and dated 25 January 2022.*
- 4. Prior to the commencement of any expansion operations, the proponent must update the site's landfill environmental management plan to include the mitigation measures detailed at Table 7.1 of the EIS."*

- *Hours of operation are to be consistent between the EIS and consultants' reports (e.g. EIS page 24 and the air quality impact assessment page 9 currently have inconsistent hours of operation)*

The hours of operation in the EIS were quoted based on the current opening hours for the Buronga landfill as compared with the allowable opening hours as specified in the licence. Given that the operating hours can change over time, EIS Table 3.1 should have quoted the approved opening hours and not the actual hours. This was an unintentional discrepancy in the presentation of the data.

All of the assessments undertaken were based on the approved hours in the EPL and hence potentially represent a worst-case scenario. As a result, the correct hours are as quoted in the EPL, which are:

- 6 am to 7 pm Monday to Friday and
- 7 am to 6 pm Saturdays, Sundays and Public Holidays

- *Details of management and interim measures for the continued operation of the community recycling facility and active landfill cell during initial and progressive expansion works*

It is proposed to continue the operation of the existing facility as is during initial construction activities. Adequate space is available within the footprint of future landfill cells to use for the construction contractor's compound and laydown facility during construction of the first new landfill cell and supporting infrastructure away from existing operations.

Construction of the proposed FERF and RRA facility will require more considered management to allow continued operation of the public waste drop off facilities. It is not expected that this construction will impact access to the landfill cells, noting that it is expected that a new landfill cell in Stage 1A will be operational during this construction.

The new resource recovery shed and residual drop off areas will occupy areas currently used for public waste drop off. Due to this, staged construction of the new waste drop off and storage areas may be required to allow the public drop off areas to be moved to the new hardstand drop off areas temporarily while the residual drop off area and resource recovery shed are constructed within the footprint of the existing public drop off. Alternatively, temporary public drop off outside of the construction footprint may be required.

Construction of the FERF is expected to be able to occur without disrupting access to the site.



Detailed plans to facilitate the continued operation of the CRC and landfill will be developed prior to construction of the FERF and RRA areas once the timing and duration of works has been confirmed. These plans will address public safety and traffic management in these areas.

- *Information demonstrating that the existing gas monitoring system is adequate to address the risks associated with LFG emissions as identified in the hazard assessment, and explanation of the 'economic levels' trigger for the implementation of the LFG (flare) management system*

Landfill gas is generated from the decomposition of the entombed waste. The composition of the gas is controlled by microbial processes and chemical reactions. In anaerobic decomposition, the main gas of concern is methane, whereas in aerobic decomposition, carbon dioxide is the main gas generated. Anaerobic conditions in the waste are caused by compaction during placement, waste depth and moisture content. In small rural landfills in dry climates, the waste decomposition will often be dominated by aerobic decomposition, whereas in larger facilities with specialised machinery the decomposition tends to be more anaerobic.

LFG monitoring is undertaken to ensure that the LFG control system is minimising the greenhouse gas emissions. The proposed monitoring program for Buronga landfill will measure the methane concentrations emitted through the cap and ensure that they meet NSW landfill guideline limits. In addition, methane and carbon dioxide monitoring of structures is undertaken to protect workers and ensure safe conditions in buildings where methane and carbon dioxide can accumulate and potentially cause an asphyxiation or explosion risk. Where concentrations exceed NSW EPA limits, a risk assessment will be undertaken to determine appropriate management and mitigation measures. This assessment will include site-specific measurements to assess the best management system for LFG for the site.

The LFG generated by the waste mass control the type of control system used at a particular facility. The quantity and quality of the gas is important in determining the appropriate system. LFG control systems can be passive and/or active and may also include energy recovery. The systems can be described as follows:

- Passive systems rely on gas pressure, diffusion and convection to vent the LFG to the atmosphere with methane being oxidised by soil micro-organisms to reduce methane emissions. This system is appropriate for waste with low gas generation rates or with predominantly aerobic decomposition. Passive systems can also include "biopiles" or "biowindows" where horizontal pipes are used to collect gas and direct it to areas which are actively maintained to maximise microbial breakdown of methane prior to gas release, i.e. optimum temperature and moisture.
- Active systems remove the LFG from the waste by applying suction to the waste mass. A network of pipes is used to collect the LFG from the waste and then burn the LFG in a flare. A small flare may be used to destroy gas from a low LFG generation landfill whereas higher generation and quality of LFG may allow energy recovery for use on-site or in some cases provide energy into the electricity grid. The minimum methane concentration for flaring is 15-20% by volume with energy recovery typically requiring LFG with > 35% methane by volume.

The quantity of gas which is typically associated with the different management systems has been presented by Vic EPA (2015) in their Landfill BPEM and as shown in Table 6.5. The actual technology for any site is determined from a site-specific assessment as the location of the facility (e.g. close to the power network) as well as the quality of the gas, amongst other things, will affect which technology/ies may be suitable.



Table 6.5 Potential Landfill Gas Treatment Technologies for a Range of Gas Generation Rates (Vic EPA, 2015)

LFG Generation Rate (m ³ /hr)	Potentially Suitable LFG Treatment Technologies
> 1000	Combined heat and power generation Substitute fuel Power generation Intermittent use and off-time flaring High-temperature flaring
250-1000	Power generation Intermittent use and off-time flaring High-temperature flaring Low-calorific flaring
100-250	Power generation Intermittent use and off-time flaring High-temperature flaring Low-calorific flaring Other oxidative technology and discharge e.g. passive flares, biofilters, biocover
<100	Other oxidation technology and discharge, e.g. passive flares, biofilters, biocover

Currently Buronga Landfill does not produce sufficient LFG to warrant active control systems. It is expected that as the quantity of waste increases then active systems will be required to control LFG emissions. It will be necessary to conduct tests to predict the quality and quantity of gas available to determine if and when the Buronga Landfill may require an active system. The high evaporation and low rainfall of Buronga results in placed waste tending to be placed drier than other major facilities and hence site-specific trials will need to be conducted to determine the appropriate control. A crude estimate of LFG generation using a first order decay function estimates that after 5 years of placing 60,000 tpa, the LFG generation may exceed 150 m³/hr, demonstrating that the need for more active LFG management will not be required in the short term. Regardless, monitoring will be undertaken routinely to ensure LFG generation is not proposing an environmental risk and allowance has been made for an active LFG control system to ensure that it is not overlooked.

- *Information on the gas flare system (new and existing, if any) in particular, maximum line sizes (piping diameters) and maximum operating pressures, fuel source*

If and when an active control system is required, an experienced LFG company will be engaged to trial, design, construct and maintain the system. This will ensure the system is appropriately sized and will maximise the collection efficiency and destruction of greenhouse gases.

An active control system is typically comprised of:

- Vertical gas collection wells. Wells are typically < 1 m diameter and placed at a grid spacing of around 50-100 m. The wells are drilled to around 75% the depth of the waste to ensure no damage to the liner;
- Horizontal gas collection wells



- Gas collection header lines
- Blower
- Condensate collection system
- Gas treatment system

Typical information for an active LFG control system is provided in Appendix F.

The fuel source is methane which is extracted under vacuum directly from the landfill cells and is not stored in any vessel prior to flaring.

- *Details of how acceptance of flammable wastes (e.g. oils, paints, tyres) would be limited and the proposed maximum volume of stockpiles of flammable waste*

The volumes of flammable waste are limited in the site's EPL (EIS Appendix B). The LEMP specifies the waste control program to ensure only permitted wastes are accepted for processing or disposal and that the quantities of waste received and recycled are recorded. WSC records the type and quantity of all waste received over the weighbridge. These records must be maintained and can be inspected and audited by the EPA at any time.

The types of waste were summarised in EIS Table 3.4; however WSCS records more specific wastes types. The current waste types recorded are as below but this is subject to change and is based on EPA requirements:

- Comingled recycling: received (in) and recycled (out)
- Cardboard/paper: received (in) and recycled (out)
- Mattresses: single, double
- Tyres: car, truck, tractor
- Other domestic
- Other council
- Kerbside
- Transfer stations
- Deep burial -Commercial and industrial
- General waste -construction and demolition
- Asbestos
- Concrete
- Waste oil: received (in) and recycled (out)
- Scrap metal: received (in) and recycled (out)
- Clean fill
- Garden organics/municipal
- Plastic: received (in) and recycled (out)
- Batteries: received (in) and recycled (out)

- *Information on any water licencing requirements under the Water Act 1912 or Water Management Act 2000 in Section 4.4.1 of the EIS and indication of whether the project requires water licencing(Section 6.3.4)*

The concerns of the Department of Planning and Environment - Water regarding water licencing requirements under the *Water Act 1912* or *Water Management Act 2000* centres on the need to account for any water take that may occur through aquifer interference by holding a Water Access Licence



(WAL) with sufficient entitlement. There are no production bores on the site and therefore no WAL is required. The WM Act identifies that aquifer interference activities require a controlled activity approval; however the approval process has not been enacted yet. Monitoring bores normally require a Water Supply Works Approval UNLESS they are part of approved State Significant Development – see EP7A Act s.4.41(1)(g).

Section 4.41(1)(g) of the EP&A Act states that a water use approval under Section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the Water Management Act 2000 are not required for State significant development that is authorised by a development consent.

Division 6 of the *Water Management Act 2000* (WM Act) relates to controlled activities and aquifer interference activities. Aquifer interference activity is defined in the WM Act as:

Aquifer interference activity means an activity that involves any of the following-

- (a) the penetration of an aquifer,*
- (b) the interference with water in an aquifer,*
- (c) the obstruction of flow in an aquifer,*
- (d) the taking of water from an aquifer in the course of carrying out mining, or any other activity prescribed by the regulations,*
- (e) the disposal of water taken from an aquifer as referred to in paragraph (d).*

Aquifer interference approvals are not enacted by the project and approvals under the WM Act are not required for water supply works that are approved as part of the State significant development assessment – this is based on s.4.41(1) (g) of the EP&A Act 1979. The above exemption does not apply to Water Access Licences which are required if water is to be extracted through aquifer interference activities.

If water supply works approvals are required and have not been assessed as part of the state significant development, then relevant approvals are required under the WM Act 2000. The EIS however provides that groundwater monitoring wells will be installed for monitoring purposes on a six-monthly basis, therefore, no additional approval is required separately under the WM Act.

- *Details of operational water supply and usage (in addition to the information provided on water supply for firefighting)*
- *Detail the estimated water demand and water availability and the source of water and any sanitisation methods proposed.*
- *Detailed and consolidated site water balance for the site, which is to take into account the proposed soil and vegetation characteristics of the rehabilitated landfill cells*
- *Outline any impacts to water use for agriculture and measures to mitigate against these impacts.*

The source of water along with the site water balance is important to ensure that there is sufficient water for the proposed development and that this will not affect other water users or water-dependent ecosystems. The site water balance assists in understanding where and how water is moved around the site.

As discussed in EIS Section 3.7.3, the main source of water for the site is the Mourquong Irrigation Pipeline with drinking water provided by delivered bottled water. Additional sources of water on-site include roof water (collected in small rainwater tanks), stormwater and leachate. The site currently uses 8-10 ML/yr of water for site purposes, mainly dust suppression. This volume will increase with the proposed expansion with additional water required for cleaning resource recovery areas and dust suppression during crushing and grinding and on internal haul roads. Even if it is assumed that water



consumption increases by 100%, in comparison, this would irrigate < 5 ha of horticultural crops (such as citrus) in the area and the filtered water supply for Buronga/Gol Gol in 2016/17 was over 320 ML².

The water balance for many sites is important in ensuring that there is sufficient capacity in the system and to maximise the reuse of water on-site. In the Buronga area the climate is predominantly in a water deficit. The average annual rainfall is 285 mm with a maximum of 657 mm compared with annual evaporation of 2,190 mm, based on Mildura Airport (BoM Station Number 076031). On a monthly basis, the evaporation exceeds the rainfall also. Comparison of decile 9 rainfall with 80% of the evaporation, to reflect the reduction in evaporation from a pond surface compared with pan evaporation shows that evaporation still exceeds rainfall in every month (Figure 8). There is likely to be a water deficit in every month of the year and hence a more detailed water balance has not been undertaken.

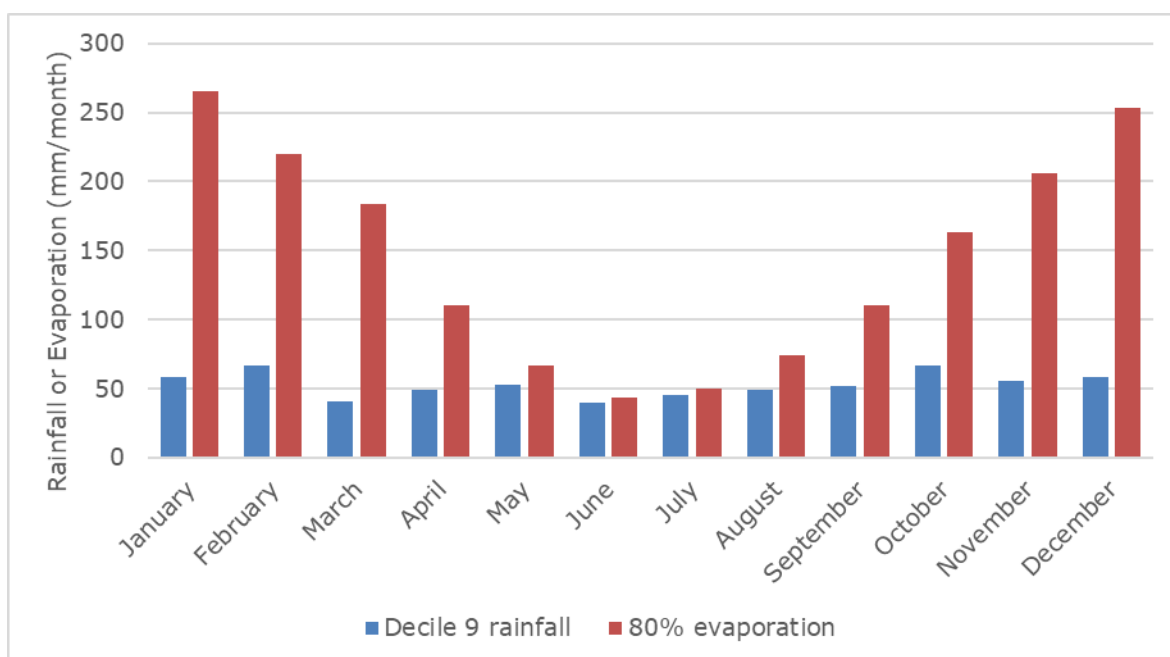


Figure 8 Comparison of Decile 9 Rainfall with 80% Pan Evaporation Recorded at Mildura Airport

Stormwater ponds will be constructed to accommodate the short duration of stormwater from high intensity storms and provide a maximum of 5.5 ML of water; however the ponds will provide only opportunistic use of water for operational or construction purposes.

The existing on-site tank of 50,000 L provide sufficient water for firefighting purposes and daily water needs for approximately 200 days or in future this may reduce to 100 to 150 days based on a 50-100% increase, which is highly conservative. The on-site tank and the new 45,000 L tank will remain the primary source of water for the site. The usage represents a small proportion of the water usage around Buronga.

The proposed development will not impact on agricultural water users or limit further development of irrigated agriculture due to the small volumes of water required.

- *Funding mechanism for rehabilitation of the landfill*

The funding mechanisms are an important consideration to ensure that the rehabilitation of the site has been adequately accounted and a legacy is not left for future generations to remediate. The Buronga

² WSC. 2018. *Development Servicing Plan No 1 – Water Supply and Sewerage Services*. Wentworth Shire Council



facility is not a one-time civil works activity. Design works, general construction and on-going management are all key components requiring consideration when planning for the development of a site and affect the timing of rehabilitation and hence the funding requirements require detailed consideration.

EIS Section 3.9.3 discusses the financial assurance requirements for Buronga Landfill. Further to this, the Australian Accounting Standards require Council to account for any landfill rehabilitation provisions as a liability on its Balance Sheet. Council's current provision as at 30 June 2022 is \$2,713,009. Funding of the actual works will be via a long-term loan which has been factored into Councils 10-year Long Term Financial Plan. This financial planning takes into consideration elements such as future cell construction, closure (rehabilitation) costs and post closure (ongoing monitoring and maintenance requirements) costs. Rehabilitation includes capping and vegetation establishment whilst post-closure includes repairs to the cap and weeding and replacement of vegetation as required.

- *Estimate of jobs to be created during both initial and progressive construction and operational phases*

The estimate of jobs for the project is presented in EIS Section 6.9.2. For the expanded operations it is expected that the operation of the facility could employ an additional 18 people with flow on of an additional 50 full-time equivalents for construction and other support services (e.g. survey, engineers).

The EPA recommends the following conditions (or conditions with similar wording) are incorporated into any approval of the proposed expansion.

- 1. A maximum of 100,000 tonnes can be received at the premises in any EPL reporting year.*
- 2. New landfill cells must be constructed consistent with best practice detailed in the EPA's 'Environmental Guideline – Solid waste landfills – Second edition, 2016'.*
- 3. The premises must have the same configuration and operate as described in the Environmental Impact Statement titled 'Buronga Landfill Expansion' prepared by Tonkin Consulting Pty Ltd and dated 25 January 2022.*
- 4. Prior to the commencement of any expansion operations, the proponent must update the site's landfill environmental management plan to include the mitigation measures detailed at Table 7.1 of the EIS."*

We endorse and agree with these conditions. The tonnages represent the maximum likely tonnages to be received at Buronga Landfill. Buronga Landfill is situated in accordance with EPA recommendations (as detailed in EIS Section 3.3) and operates in accordance with its EPL. The proposed landfill designs (EIS Section 3.6), operations (EIS Section 3.7), monitoring (EIS Section 3.8) and final landform and rehabilitation (EIS Section 3.9) have all been proposed to be conducted in accordance with the site's EPL and the Landfill Guidelines. As the EPL and Landfill Guidelines are amended, site practice will be amended to maintain best practice management on-site.

6.4.2 Fire

FRNSW Comment:

Following a review of the EIS report FRNSW provides the following recommendations for your consideration:

- 1. To ensure that the fire prevention, detection, protection and firefighting measures are appropriate to the specific fire hazards and adequate to meet the extent of potential fires, a comprehensive Fire Safety Study (FSS) is recommended to be undertaken.*



2. *That the FSS is developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper No.2 (HIPAP No.2).*
3. *That the FSS is required to be developed in consultation with FRNSW and to the satisfaction of the operational requirements of FRNSW. FRNSW recommend that the development of a FSS be a condition of consent.*
4. *That the development of the FSS considers the operational capability of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety independence.*
5. *FRNSW preference is to review the Preliminary Hazards Analysis (PHA) report as this will determine the approach and design of the recommended fire safety study.*
6. *That a comprehensive ERP is developed for the site.*
7. *That the ERP specifically addresses foreseeable on-site and off-site fire events and other emergency incidents, (e.g. fires involving solar panel arrays, bushfires in the immediate vicinity or potential hazmat incidents).*
8. *That the ERP detail the appropriate risk control measures that would need to be implemented in order to safely mitigate potential risks to the health and safety of firefighters and other first responders (including electrical hazards). Such measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the photovoltaic system (either in its entirety or partially, as determined by risk assessment).*
9. *Other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site should also be included in the ERP.*
10. *That two copies of the ERP (detailed in recommendation 1 above) are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s.*
11. *An Emergency Services Information Package is to be developed as detailed in FRNSW guideline - Emergency Services Information Package and Tactical Fire Plans for use by responding firefighters. It is to be stored along with the ERP in an 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s.*
12. *All stockpiles of rubber tyres are to be stored in accordance with FRNSW guideline – Guideline for bulk storage of rubber tyres.*
13. *FRNSW note that FRNSW fire safety guideline for Fire Safety in Waste Facilities is acknowledged as a reference. This document includes legislated requirements and development considerations and should continue to be referenced throughout the design process.*

The Bushfire Assessment, presented as Appendix L in the EIS, recommended a Bushfire Emergency Management and Evacuation Plan be prepared and form part of the existing Emergency Response Plan for the site. In developing this plan, it is expected that a Fire Safety Study would form the platform from which the ERP can be updated and this is accepted as one of the mitigation measures to be undertaken as a condition of approval Procedure (ERP) to incorporate any recommendations from the FSS be undertaken as a condition of approval.

As noted by FRNSW, the proposed stockpile area of rubber tyres was developed in consideration of the FRNSW guidelines and the ERP will include the management practices presented in this guideline as relevant to the site.

6.5 Drawings and Layouts

DPIE Comment:

Civil drawings and layouts



The Department requests additional drawings that show the relationship between existing and proposed structures, roads and other site infrastructure, and that illustrate how the progressive expansion of the landfill would work in relation to the continued operation of the community recycling facility and the active landfill cell. The additional drawings should include:

- *Site plan(s) showing existing and proposed structures, site entrance, onsite road network (sealed and unsealed), car park and connections between structures, hardstand areas and roads with relevant dimensions, separations, setbacks and site boundaries shown*
- *Plans showing proposed upgrades to Arumpo Road at the entrance to the site*
- *Plans showing progressive construction / opening of internal roads to the active landfill cell. Access to the tipping face of the landfill over time appears unclear*
- *Location and details of the existing 45,000L static water supply, proposed additional water supply, draw off points and new emergency access road from Arumpo Road to the water supply*
- *Elevations and sections of relocated and proposed new structures*
- *Cross sections showing the historic unlined landfill proposed to be overlaid/'piggybacked' by the proposed lined landfill cells*
- *Concept landscape plan for the rehabilitated landfill cells*
- *Signage strategy including at entry and onsite directional signage*
- *Plans showing sediment and erosion control measures for initial works to relocate or construct buildings, hardstands, basins and internal roadways, and ongoing/progressive extension of roads and landfill cell and basins construction*

DPE Water Comment:

Sediment & Erosion Control:

Recommendation – Post Approval :

The proponent must prepare a Soil and Water Management Plan to address stormwater management and sediment and erosion control. The plan is to address the requirements of the guideline Managing Urban Stormwater: Soils and Construction (Landcom 2004) and the Guidelines for Controlled Activities on Waterfront Land (NRAR 2018)

The drawings have been updated to include additional details on the staging of the proposed development and are provided in Appendix A. The exceptions are as follows:

- Concept landscape plan. There are only two zones, being a zone of undisturbed vegetation which is outside the development footprint and a zone of rehabilitated landfill cells. As further discussed in Section 7.2.2, the latter zone will incorporate a mixture of endemic native vegetation selected from species associated with PCT15 Black Box Open Woodland, PCT58 Black Oak – Western Rosewood and PCT170 Chenopod sandplain mallee.
- Plans showing erosion and sediment controls. These plans will be developed in accordance with the Blue Book by the selected contractor as part of the tender requirements. They are not able to be developed at this stage as the timing, duration, staging and methodology of works is not known. All external haul roads will be constructed with drains which will be directed to the stormwater basins. We endorse the DPE Water recommendation that a Soil and Water Management Plan is prepared as a condition of approval to ensure that the facility appropriately manages all stormwater and provides adequate erosion and sediment controls. This plan can be updated as the facility is developed over the next five years and into the future.

It is also noted that:

- more detailed plans of the Arumpo Road upgrades were provided in the Traffic Impact Assessment presented as Appendix H in the EIS.
- elevations for the proposed structures were provided in the EIS but it was noted that the drawings were missing the height details, so this has now been corrected. The only structure which has not

been detailed is the drum muster storage cage, which is 2.4 m high and would be screened by the FERF. This cage is formed from similar materials to that shown in Figure 9.

- No updated signage is proposed for the entrance at Arumpo Road as the existing signage contains all necessary details of landfill licencing, operations, waste acceptance so it is not included in the Signage Plan shown on Drawing 23.



Figure 9 Current Drum Muster Cage Showing Construction Materials

6.6 Project Costs

DPIE Comment:

Justification for:

- *excluding cell staging (or otherwise confirm the allowances are adequate to account for the cost of works when split into stages)*
- *excluding dust control, water infrastructure and gas management, which are considered to be key establishment costs*
- *excluding escalation costs, even though the project timeline and expected life of each cell for both Stage 1 and Stage 2 are described in Table 3.5 and p.60 of the EIS*
- *limiting rehabilitation plantings to shrubs only, with no allowance for trees*

- *(Justification for) excluding cell staging (or otherwise confirm the allowances are adequate to account for the cost of works when split into stages)*

The costs of construction have not been granularized to the individual cell due to the unknown size and number of the proposed cells and the time duration of the proposed development. A contingency has been provided to account for staging of the construction of the landfill cells.

- *(Justification for) excluding dust control, water infrastructure and gas management, which are considered to be key establishment costs*

The costs were initially excluded as they are partially operational costs and the timing and type of LFG requirements is not currently known. To provide an indicative cost of these items, the cost estimate has been updated to specifically include dust control, water infrastructure and gas management costs, as



provided in Appendix G. The impact on the overall cost of the development is minor, consisting of less than 5% of the overall estimated cost.

- *(Justification for) excluding escalation costs, even though the project timeline and expected life of each cell for both Stage 1 and Stage 2 are described in Table 3.5 and p.60 of the EIS*

Initially the costs were not escalated as the rate of increase of operations, rapidly changing face of the waste management and uncertainty in longer term projects make these numbers unreliable. To provide an indication of the likely impact of cost escalation, an allowance over the next 10 years (until 2032) has been provided in the updated cost estimate as shown in Appendix G. Due to the time over which the construction of this development is proposed, it is impractical to estimate the escalation of construction costs over this much longer time period. This remains though the development application has been reduced to Stages 1A to 1D only. The cost estimate has been provided in terms of current cost to provide an estimate of the capital cost for the project in current terms.

- *(Justification for) limiting rehabilitation plantings to shrubs only, with no allowance for trees*

The cost estimate has been updated to specify an allowance for planting of shrubs and trees during rehabilitation to rectify this oversight as shown in Appendix G. The impact of this on the rehabilitation costs is minor, comprising approximately 6% of rehabilitation costs. Note these costs have reduced due to the reduced extent of this current application.



7 Submission Response – Procedural

7.1 Statutory

DPIE Comment:

Landowner's consent

Landowner's consent is required from Crown Lands.

- *The request for Crown consent would need to address the following:*
 - *Subject Lots 197 and 212 in DP 7569460 which are Crown land (reserved for the purpose of a rubbish depot)*
 - *Arumpo Road and the east-west road on the southern boundary of the site which are identified as Crown land. The proposal requires upgrades to Arumpo Road and part of the front end recycling facility building appears to encroach onto the east-west road.*
- *The request for Crown consent may be lodged through cl.western.region@crowmland.nsw.gov.au*

Crown Lands Comment:

No Crown waterways are contained within the project footprint, however, two Crown road lots adjoin the project footprint, LOT 1 DP 1037845. If the proposal requires the use of these Crown roads in order to implement the Buronga Landfill Expansion proposal, the land will need to be acquired under the Land Acquisition (Just Terms Compensation) Act 1991 (LAJTC Act).

Landowner's consent was not obtained during preparation of the EIS as the majority of works are being conducted on Council-owned land (Lot 1), Council road reserves (Arumpo Road) or land which has approval to be used as a waste facility (i.e. Lots 212 and 197). Following completion of the ecological survey, the design was adjusted to minimise the impact of vegetation clearance by moving the FERF into the entrance road corridor, which it was incorrectly assumed was Council road reserve as no lot boundary was apparent between the entrance road and Arumpo Road. We acknowledge the importance of ensuring that consent is obtained from all parties and have obtained Crown consent to undertake the proposed development as presented in Appendix H. It is noted that the submission responses suggested that Arumpo Road was Crown Land; however, consultation with Crown Lands (email correspondence contained in Appendix H) and WCC has confirmed that Arumpo Road is Council Land so consent is not required. Crown Lands has provided further advice suggesting that WSC should apply to Crown Lands to have the part crown road transferred to WSC (Appendix H).

Appropriate landowner's consent has now been obtained for the proposed development. No conditions were applied that have required a change to the proposed development

7.2 SEARS

7.2.1 Land Use Conflict

DPIE Comment:

Potential land use conflicts

The EIS needs to identify potential conflicts with cultural, agricultural, mining and Crown interests within or in the vicinity of the site and outline how the development addresses these conflicts. The following additional information is required:

- *Address the undetermined Aboriginal Land Claim (ALC 22090) on Lots 197 and 212 DP 7569460 which may limit use of the existing landfill lots*
- *Confirmation that two Crown road lots adjoining the project footprint will not be impacted, or otherwise provide Crown consent or details of any proposed acquisition of Crown land*



- A Land Use Conflict Risk Assessment (LUCRA) to address potential conflicts with surrounding agricultural uses, prepared in consultation with the Department of Primary Industries – Agriculture, including but not limited to consideration of suitable water supply and impacts on agricultural resources and land and any travelling stock routes
- Map and information on existing mining lease titles from the Department of Regional NSW – Mining, Exploration & Geoscience’s MinView website in Figure 21 of the EIS in place of or in addition to Council map
- Details of consultation with current mining lease title holders in the area (i.e. Larmon Pty Ltd, Mallee Quarries Pty Ltd and Morello Earthmoving Pty Ltd) and in particular include consultation by letter with Morello Earthmoving as required by Department of Regional NSW – Mining, Exploration & Geoscience in their advice on SEARs
- Confirmation that no biodiversity offset areas are proposed within the site that would result in a reduction in access to prospective land for mineral exploration or potential sterilisation of mineral or extractive resources

Crown Lands Comment:

It is also noted that Lot 197 DP 756946 and Lot 212 DP 756946 are currently the subject of an undetermined Aboriginal Land Claim (ALC22090), which may limit how the land can be used. However, whilst we acknowledge this claim is undetermined the recommendations provided by Aboriginal Land Claim Assessment Team suggest this claim be refused (LBN21/890).

DPI Agriculture Comment:

Site Suitability:

- *Include a Land Use Conflict Risk Assessment (LUCRA) to identify potential land use conflict with sensitive receptors including surrounding agricultural land uses. The LUCRA is to address separation distances and management practices to minimise odour, dust and noise impacts. A LUCRA is described in the DPI Land Use Conflict Risk Assessment Guide.*
- *Include a map to scale showing the above operational and infrastructure details including separation distances from sensitive receptors including agricultural land uses.*

Consideration of impacts on agricultural resources and land:

- *Describe the soil, slope, land capability, agricultural productivity, land characteristics and the history of agricultural land uses on the proposed development site.*
- *Describe the current and historical agricultural land uses on surrounding land in the locality including the land capability and agricultural productivity of the surrounding land*
- *Detail the potential impacts from the proposed development on agricultural land and agricultural land uses on the site and in the locality.*
- *Detail the location and areas of land to be temporarily removed from agricultural use, and those areas which are to be returned to agricultural use on completion of the development.*
- *Consider possible cumulative impacts on surrounding agricultural enterprises and landholders.*
- *Assess impacts on agricultural support services, processing and value adding industries.*
- *Demonstrate that all significant impacts on current and potential agricultural developments and resources can be reasonably avoided or adequately mitigated.*
- *Detail the expected life span of the proposed development.*

MEG Comment:

MEG requests the following project-specific requirements to be addressed in the EIS:

- *The Environmental Impact Statement (EIS) must include a dated mineral, coal and petroleum titles and applications search through the MEG MinView application, with results shown on a map(s) including the location and extent of the project site. Current mining and exploration titles and applications can be viewed at: <https://minview.geoscience.nsw.gov.au/>*



- *The proponent must consult with Morello Earthmoving Pty Ltd. This should include a letter of notification of the proposal to the title holder including a map indicating the Buronga Landfill Expansion proposal area in relation to the exploration title boundary.*
- *The proponent must consult with all affected title holders. This should include a letter of notification of the proposal to the title holders including a map indicating the Landfill Expansion proposal area in relation to the title boundaries.*
- *MEG specifically requires the proponent to check for new mineral and energy titles that may be granted in the vicinity of the subject site during all decision-making stages of the project to ensure that other stakeholders (such as title holders) with interest in the area are aware of the proposed landfill expansion project.*
- *MEG requests to be consulted in relation to the proposed location of any biodiversity offset areas (both on and off site) or any supplementary biodiversity measures to ensure there is no consequent reduction in access to prospective land for mineral exploration, or potential for sterilisation of mineral or extractive resources*

- *Address the undetermined Aboriginal Land Claim (ALC 22090) on Lots 197 and 212 DP 7569460 which may limit use of the existing landfill lots*
- *It is also noted that Lot 197 DP 756946 and Lot 212 DP 756946 are currently the subject of an undetermined Aboriginal Land Claim (ALC22090), which may limit how the land can be used. However, whilst we acknowledge this claim is undetermined the recommendations provided by Aboriginal Land Claim Assessment Team suggest this claim be refused (LBN21/890).*

The land claim is in respect to Crown land and not freehold land. The main part of the proposed development is freehold land owned by Council and hence is not part of the land claim. The Crown land is only affected with the development of the FERF along the entrance with the larger crown land parcels only minorly affected by a piggyback liner as their use as a landfill is nearing completion. As WSC currently maintain this part crown road reserve, Crown Lands has suggested that Council should request transfer of this land along the entrance from the Crown (Appendix H).

The aboriginal land claim has still not been determined and, as noted by Crown Lands, is still considered likely to be refused. A Request for Search of a Land Claim has been submitted to the Office of the Registrar but no response has been received to date (Appendix P). Previous discussion by Council Officers with staff from the Crown Land Aboriginal Land Claims Unit has indicated that Crown Lands intend to deny the claim as the parcels of land subject to the claims are being used for their gazetted purpose.

With respect to native title over the crown land and Council- owned land it is also noted that Schedule 5 – Description of Extinguished Areas as part of the above claim by the Barkandji Traditional Owners lists Lot 197 and 212 DP 756946 as extinguished. An extract from the National Native Title Tribunal is shown in Figure 10, extracted on 14/10/2022. The extinguishment of native title may reduce the potential for these lots to be subject to any native title claim.

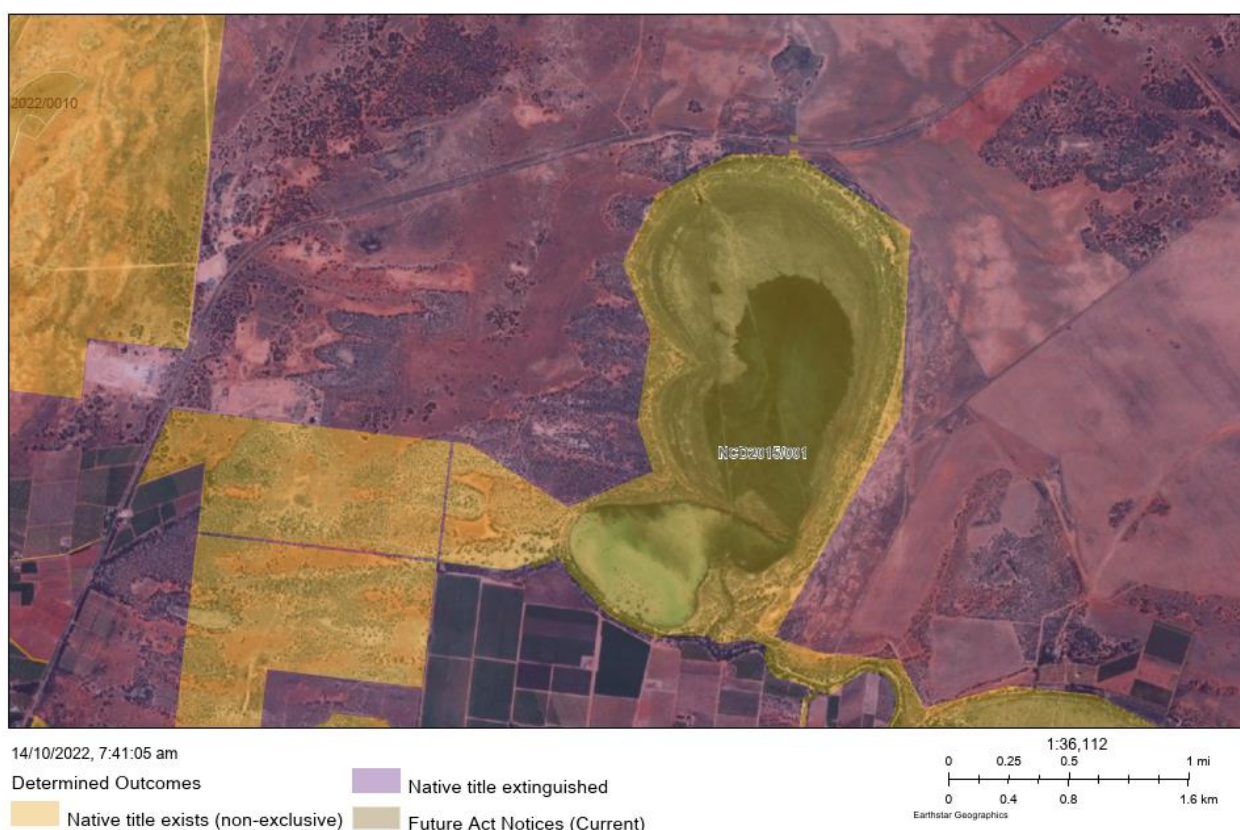


Figure 10 Native Title Applications and Determinations (National Native Title Tribunal)

- Confirmation that two Crown road lots adjoining the project footprint will not be impacted, or otherwise provide Crown consent or details of any proposed acquisition of Crown land

Crown Lands consent has been obtained for the development as presented in Appendix H.

- A Land Use Conflict Risk Assessment (LUCRA) to address potential conflicts with surrounding agricultural uses, prepared in consultation with the Department of Primary Industries – Agriculture, including but not limited to consideration of suitable water supply and impacts on agricultural resources and land and any travelling stock routes
- Include a Land Use Conflict Risk Assessment (LUCRA) to identify potential land use conflict with sensitive receptors including surrounding agricultural land uses. The LUCRA is to address separation distances and management practices to minimise odour, dust and noise impacts. A LUCRA is described in the DPI Land Use Conflict Risk Assessment Guide.
- Describe the soil, slope, land capability, agricultural productivity, land characteristics and the history of agricultural land uses on the proposed development site.
- Describe the current and historical agricultural land uses on surrounding land in the locality including the land capability and agricultural productivity of the surrounding land
- Detail the potential impacts from the proposed development on agricultural land and agricultural land uses on the site and in the locality.
- Detail the location and areas of land to be temporarily removed from agricultural use, and those areas which are to be returned to agricultural use on completion of the development.
- Consider possible cumulative impacts on surrounding agricultural enterprises and landholders.
- Assess impacts on agricultural support services, processing and value adding industries.



- *Demonstrate that all significant impacts on current and potential agricultural developments and resources can be reasonably avoided or adequately mitigated.*

A Land Use Conflict Risk Assessment (LUCRA) has been prepared to identify and resolve any potential conflicts between the proposed development and the surrounding land uses. By undertaking this assessment at the planning stage, it can assist in reducing the potential for conflicts to occur at a later stage.

The LUCRA is presented in Appendix I. It identified several agricultural industries surrounding the site with mining industries located at greater distance. The surrounding activities are predominantly horticultural industry (grapes, orchards) to the south, unimproved grazing to the north and west, mining to the west and Lake Gol Gol to the east. No travelling stock routes are located within 2 km of the proposed development.

The site has been used for unimproved grazing prior to use by WSC for waste management purposes. Initially waste was disposed to Lot 212 before extending west into Lot 197 and into Lot 1. Increased development on site occurred between 1993 and 2017 with a significant change evident in waste management procedures resulting in a defined landfill footprint. The CRC is apparent in 2019. Historical aerial photographs show horticultural development from 1965 which expanded until 1979 and has since remained static in areal extent. The mining industries were developed from around 1990 onwards with composting facilities to the north a more recent development after 2017.

An initial risk assessment evaluated a range of activities including:

- erection of structures,
- transport, loading, storage, processing and placement of waste
- cell and cap construction
- landfill gas and leachate generation
- harvesting
- aerial spraying

The initial evaluation identified all risks as 10 or less suggesting no high land use conflict exists, with the exception of noise associated with crushing and grinding activities which was 12. Within the EIS, additional management strategies had already been proposed to minimise risks as far as practical. With the implementation of the mitigation strategies proposed within the EIS and the additional noise management strategy discussed in Section 8.8, the highest potential conflict was 9 rating due to potential impact from noise during crushing activities.

Overall, the existing use as a landfill combined with large buffer distances of over 300 m from the boundary and over 500 m from the landfill area and with landfilling activities moving northward away from the closest and potentially more sensitive horticultural receptors has provided a low risk of land use conflict for the proposed development. No additional management or mitigation measures are required to manage this risk.

Given the LUCRA has been undertaken following the development of the EIS, some aspects of DPI's comments are addressed within the EIS and not within the LUCRA, as follows:

- Detail the expected life span of the proposed development: this is provided in EIS Section 3.6.3.
- Include a map to scale showing the above operational and infrastructure details including separation distances from sensitive receptors including agricultural land uses: due to the size of the proposed expansion this is provided in the Figures in the EIS and within the Appendices, particularly EIS Appendix G and O.
- Describe the soil, slope, land capability, agricultural productivity, land characteristics and the history of agricultural land uses on the proposed development site: A brief summary is provided within the LUCRA, with the main details provided in EIS Section 6 and associated Appendices



- *Map and information on existing mining lease titles from the Department of Regional NSW – Mining, Exploration & Geoscience’s MinView website in Figure 21 of the EIS in place of or in addition to Council map*
- *Details of consultation with current mining lease title holders in the area (i.e. Larmon Pty Ltd, Mallee Quarries Pty Ltd and Morello Earthmoving Pty Ltd) and in particular include consultation by letter with Morello Earthmoving as required by Department of Regional NSW – Mining, Exploration & Geoscience in their advice on SEARs*
- *The Environmental Impact Statement (EIS) must include a dated mineral, coal and petroleum titles and applications search through the MEG MinView application, with results shown on a map(s) including the location and extent of the project site. Current mining and exploration titles and applications can be viewed at: <https://minview.geoscience.nsw.gov.au/>*
- *The proponent must consult with Morello Earthmoving Pty Ltd. This should include a letter of notification of the proposal to the title holder including a map indicating the Buronga Landfill Expansion proposal area in relation to the exploration title boundary.*
- *The proponent must consult with all affected title holders. This should include a letter of notification of the proposal to the title holders including a map indicating the Landfill Expansion proposal area in relation to the title boundaries.*
- *MEG specifically requires the proponent to check for new mineral and energy titles that may be granted in the vicinity of the subject site during all decision-making stages of the project to ensure that other stakeholders (such as title holders) with interest in the area are aware of the proposed landfill expansion project.*

It was understood that the plan extracted from Council was from MinView; however it appears that this may not have been correct. An updated plan extracted from MinView is presented in Appendix J, which was extracted in July 2022. This plan shows the mining stakeholders within 2 km of the site boundaries as:

- Morello Earthmovers: EL9436 (which includes the Buronga Landfill), MLA615, MLA617, ML1679, ML1804
- Mallee Quarries: ML1644
- Larmon Pty Ltd: EL7175, ML1512
- Iluka Resources: EL9381

Morello Earthmoving was contacted as part of the community engagement undertaken during EIS preparation and, as reported in EIS Appendix E, they did not respond to the letter, email or phone calls. On 7 July 2022 letters were sent to each of the stakeholders requesting contact be made via email or phone call (Appendix J). The only response was received from Iluka Resources who had no objection to the proposed development.

As a result, there is no change to the potential land use conflict from the proposed development and no additional stakeholder requirements received.

- Confirmation that no biodiversity offset areas are proposed within the site that would result in a reduction in access to prospective land for mineral exploration or potential sterilisation of mineral or extractive resources
- MEG requests to be consulted in relation to the proposed location of any biodiversity offset areas (both on and off site) or any supplementary biodiversity measures to ensure there is no consequent reduction in access to prospective land for mineral exploration, or potential for sterilisation of mineral or extractive resources

Biodiversity offsets are required for the project; however the majority of offsets are associated with Stage 2 and the plant community type in this area will not be appropriate for the new landform created by the landfill. As a result, no biodiversity offset areas are proposed within the site that would result in a reduction in access to land.



7.2.2 Landscaping

DPIE Comment:

Landscaping

The Department requests the submission of landscape plans as specified in the SEARs:

• Landscape plans should include:

- trees to be removed / land clearing areas
- location of proposed plantings
- schedules showing the number and species of plantings throughout the site and including rehabilitation plantings that are representative of endemic vegetation sympathetic to the surrounding environment

Vegetation is only proposed to be cleared within the development footprint and is not proposed to be used as part of a biodiversity stewardship agreement to offset the biodiversity impacts discussed in Section 8.6 and Appendix O. Additional plantings are proposed for rehabilitation of the landfill final landform where species will be selected from endemic native species, including trees, shrubs, grasses and herbs. The actual species planted will depend on the availability of local provenance at the time of rehabilitation.

The rehabilitation area will incorporate endemic native vegetation associated with PCT15 Black Box Open Woodland, PCT58 Black Oak – Western Rosewood and PCT170 Chenopod sandplain mallee. A suggested species list is provided in Table 7.1. The species list has excluded species which are spiny as access to the final cap for maintenance purposes is required. A variety of understorey species have been suggested to provide additional groundcover for rehabilitation. The exact species are selected in consultation with Revegetation Consultants and local nurseries during the preparation of the Landfill Closure Plan and detailed designs for capping. All seed supplied should be local provenance, as far as possible and practical.

Table 7.1 Suggested Species List

PCT	Form	Scientific name	Common name
15	Tree	<i>Eucalyptus largiflorens</i>	Black box
15	Shrub	<i>Rhagodia spinescens</i>	Berry saltbush
15	Shrub	<i>Maireana pyramidata</i>	Black bluebush
15	Shrub	<i>Atriplex vesicaria</i>	Bladder saltbush
58	Tree	<i>Casuarina pauper</i>	Belah
58	Tree	<i>Alectryon oleifolius subsp canescens</i>	Western rosewood
170	Shrub	<i>Dissocarpus biflorus</i>	
170	Tree	<i>Eucalyptus dumosa</i>	White mallee
170	Tree	<i>Eucalyptus oleosa</i>	Red mallee
170	Tree	<i>Pittosporum angustifolium</i>	Weeping pittosporum



PCT	Form	Scientific name	Common name
Other	Ground cover	<i>Lomandra effusa</i>	Scented mat-rush
Other	Ground cover	<i>Lomandra leucocephala</i>	Woolly mat-rush
Other	Ground cover	<i>Austrostipa spp</i>	Speargrass
Other	Ground cover	<i>Themeda triandra</i>	Kangaroo Grass
Other	Ground cover	<i>Astrebala spp</i>	Mitchell Grass

Once the bulk earthworks are complete and to ensure the success of plant establishment, it will be necessary to control access into the area. Machine access should be limited inside the landscaping zones other than for landscaping purposes and re-shaping areas of erosion or maintaining a free draining surface. Appropriate sediment control fencing will be installed as specified in the detailed design for capping. Consideration will be given to alternative control structures, particularly those shown in "Best Practice Erosion and Sediment Control" (IECA, 2008). Areas of high erosion potential may require the installation of jute matting or hydromulching. The Hydromulch "mixture" will include jute fibre and a mixture of pre-treated native seed. Experience has shown that using a mixture of native peas and Acacia's in the hydro mulch is an inexpensive way to establish native vegetation at difficult sites.

Being highly modified, the site is unlikely to contain significant weed seed loads at the completion of the bulk earthworks, other than those growing on existing batters. Inspection for and removal of any noxious weeds prior to any landscaping works should be undertaken. All weed control activities are to be completed by a suitably qualified contractor.

Before revegetation activities commence an irrigation system, e.g. drippers or sprinklers, will be installed to assist in establishing vegetation. Once established (3-5 years) the irrigation will be removed and reused, where practical. Installation of an irrigation system helps ensure establishment targets are achieved.

A combination of landscaping techniques should be employed in each of the zones to maximise the potential for good establishment of plants. These techniques may include:

- hydromulching: mulch in the form of plant fibre can be placed onto topsoil using water as a carrier. Pre-treated seed, including native seed can be added to the mulch; native seed must be added with minimal agitation to minimise seed damage. Hydromulch encourages vegetation cover and provides protection against erosion. Initially, it is recommended that blends of the appropriate pre-treated native seed mix be added to the mulch and spread across the area. It is recommended that 2-3 kg/ha of seed be added to the mulch.
- tube stock may also be used by hand planting across smaller areas (up to 10 ha). Machinery is available but is not currently recommended for tube stock. The recommended planting density for trees and shrubs for each zone is 1 per 20 m² with 5 m interrow spacings to achieve a recommended density of 1 per 40 m² once established. It is recommended that ground covers are planted in the interrow at 4 per m². When planted as tubestock each tree/shrub will have a surface mulch ring placed around its base and then protected using a tree guard, stabilised by stakes to prevent herbivory and weed competition and to encourage optimum growing conditions.
- native seed, particularly native grasses, may be mechanically sown on-site. Modified air seeders with trailing harrows have been successfully used across large areas to provide a light cover to native seed. Seeders may be used in the inter-row of tree and shrub tube stock. It is recommended that 3-5 kg/ha of seed be used.

In general, autumn is the best season for planting to reduce stress on young plants from high temperatures or frost. Planting in early spring can be effective provided a suitable watering regime is



implemented; however, has higher risk of lower survival rates. All plants will be 'watered in' on installation, with each plant receiving a minimum five litres. All plantings will receive a further three applications of water during the first 6 weeks to assist establishment, depending on rain fall. Irrigation will be undertaken by drip or sprinkler irrigation or by hand watering, depending on the zone and resources available. Weed spraying will be instigated as required from site inspections with all spraying carried out by suitably trained contractors.

These additional details are typically provided in the Technical Specification as is standard practice for landfill developments. No additional landscaping is proposed around the structures to maintain compliance with bushfire requirements. These details have not changed the proposed development from that presented in the EIS.

7.3 Engagement

DPIE Comment:

Consultation

The following consultation information is required, with reference to the SEARs:

- *Evidence of consultation with:*
 - *Environment Protection Authority*
 - *Environment and Heritage of DPE (formerly Environment, Energy and Science)*
 - *Water Group of DPE*
 - *Fire and Rescue*
 - *NSW Rural Fire Service*
 - *WaterNSW*
- *Consolidation of Applicant's responses to the key issues raised by all agencies and Council in Section 5.2 of the EIS*

DPI Ag Comment:

Community Consultation

- *Consult with the owners / managers of affected and adjoining neighbours and agricultural operations in a timely and appropriate manner about; the proposal, the likely impacts and suitable mitigation measures or compensation.*

- *Evidence of consultation with:*
 - *Environment Protection Authority*
 - *Environment and Heritage of DPE (formerly Environment, Energy and Science)*
 - *Water Group of DPE*
 - *Fire and Rescue NSW*
 - *NSW Rural Fire Service*
 - *WaterNSW*
- *Consolidation of Applicant's responses to the key issues raised by all agencies and Council in Section 5.2 of the EIS*

Additional consultation has been undertaken with the government agencies. All agencies who responded have indicated that they have no further comments and are awaiting this response. Correspondence sent and received is presented in Appendix K.

Agency	Consultation	Response
Environment Protection Authority	Called 26/08 - no answer. Sent email 26/08. Follow up 2/9 and 6/9 by phone and email	No response.



Agency	Consultation	Response
Environment and Heritage of DPE	Called 26/08 - no answer. Sent email 26/08	Received – no further comments beyond that provided to date
Water Group of DPE	Called 26/08 - no answer. Sent email 26/08. Follow up 2/9 by phone and email	Received – no further comments at this time and will respond to the submissions report.
Fire and Rescue NSW	No phone number provided. Sent email 26/08. Follow up 2/9 by phone and email	Received – no further comments at this time beyond that provided to date.
NSW Rural Fire Service	Called 26/08 and contact details provided. Sent email 26/08	Received – no further comments beyond that provided to date
WaterNSW	No phone number provided. Sent email 26/08	Received – will respond to submissions report during formal process

- *Consult with the owners / managers of affected and adjoining neighbours and agricultural operations in a timely and appropriate manner about; the proposal, the likely impacts and suitable mitigation measures or compensation.*

Community consultation formed an important part of the EIS and is summarised in EIS Section 5 and EIS Appendix F. Neighbours surrounding the site were contacted and invited to provide feedback. Of those who responded, a range of comments were received. A consistent area of concern was with respect to the existing state of Arumpo Road. Council has undertaken to consult further with the community about improvements to this road.



8 Submission Responses – Environmental and Social

8.1 Air Quality

DPIE Comment:

Air quality assessment

The Department seeks the following clarifications and additional information in relation to air quality impacts:

- *Assessment to be based on the hours of operation as indicated in the EIS*
- *Additional modelling of PM_{2.5} and PM₁₀ with a view to attaining no incremental increase from the proposal, as required in the EPA's Approved Methods*
- *Clarification if actual data has been used in the modelling, and if not, provide justification*
- *Assessment of the impacts of the LFG flare*

The following is a summary of Vipac's response with the complete report is provided as Appendix L.

- *Assessment to be based on the hours of operation as indicated in the EIS*

The air quality assessment was based on the EPL hours of:

- 6:00am to 7:00pm Monday to Friday; and
- 7:00am to 6.00pm Saturdays, Sundays and Public Holidays.

As discussed in Section 6.1, these are the correct hours.

- *Additional modelling of PM_{2.5} and PM₁₀ with a view to attaining no incremental increase from the proposal, as required in the EPA's Approved Methods*

The measured background concentrations exceed the PM₁₀ and PM_{2.5} criteria on 16 and 2 days, respectively. No additional exceedances of the criteria are predicted by the modelling inclusive of the landfill emissions. Furthermore, the maximum incremental contribution of the landfill emissions to the cumulative PM₁₀ and PM_{2.5} are negligible (0.81 µg/m³ and 0 µg/m³) on those days. As specified in the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales, under these circumstances no additional assessment is therefore required.

- *Clarification if actual data has been used in the modelling, and if not, provide justification*

There is no available measured data for the existing Buronga Landfill and has therefore not been used in the modelling. Furthermore, the majority of the landfill activities will cease at the existing landfill cells with the planned expansion such that measured data at the existing site would no longer be relevant.

It is also noted that where possible, conservative assumptions are adopted (cell locations, maximum activities and in the estimation of emission factors) such that predicted impacts are likely higher than those that would typically occur or as measured.

- *Assessment of the impacts of the LFG flare*

The emissions inventory from the LFG Flare was developed based upon an anticipated maximum rate of 1,000 m³/hr, as shown in Appendix L. The maximum rate was conservatively modelled on a 24 hour 7 days per week for the modelling assessment. Pollutant emission rates were estimated based upon



emission factors for flaring provided in Table 8 of the NPI EET Manual for Oil and Gas Extraction and Production Version 2. A 100% conversion of NO_x to NO₂ is also conservatively assumed.

Modelling carbon monoxide and nitrogen dioxide concentrations at the closest four sensitive receptors showed that predicted concentrations were typically up to an order of magnitude below the criteria. As a result, the operation of the proposed LFG Flare is not expected to generate adverse air quality impacts at any potentially sensitive receptors in the surrounding environment.

Vipac's recommendations provided in EIS Appendix G are therefore unchanged such that air quality should not be considered a constraint to proposed landfill expansion.

8.2 Traffic

DPIE Comment:

Traffic and access

The Department seeks an amended traffic impact assessment that uses appropriate methodology for the full extent of the capacity and timeline of the landfill and that includes an assessment of the proposed internal road network, including the following:

- *Assessment of traffic generation based on a landfill capacity of 100,000 tpa being the proposed maximum capacity of the landfill (rather than 60,000 tpa)*
- *Confirmation that assessment is based on Arumpo Road being a classified regional road*
- *Written confirmation from Transport for NSW (TfNSW) that the methodology used, being an alternative to SIDRA modelling, is satisfactory*
- *Justification for assuming the 'current AADT' (Annual Average Daily Traffic) for each of the affected roadways and whether any adjustments are warranted having regard to the 70-year life of Stage 1 and 50-year life of Stage 2*
- *Separate assessments for the initial construction/establishment phase, and the operational and ongoing progressive construction phases of the development*
- *Assessment of internal road network, including but not limited to the following matters:*
 - *swept paths for heavy vehicles*
 - *potential conflicts between light and heavy vehicles*
 - *progressive extension of road network to the active landfill face*
 - *queuing management for the community facility and landfill active face*
- *Additional information on peak traffic generation, including assessment of operational peaks for light and heavy vehicles relative to AM and PM peaks and how this may affect RMS operating capacity of the road network*

TfNSW Comment:

Pursuant to clause 2.121 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 TfNSW provides the following advice for your consideration:

- *TfNSW supports the assessment for the proposed Rural Basic Right (BAR) turn and a Rural Basic Left (BAL) turn treatments in accordance with Figure 3.25: Warrants for turn treatments on major roads at unsignalised intersections at the site intersection with Arumpo Road as per the TIA.*
- *It is noted that Arumpo Road is a road train approved route and the design of the intersection to the site has stipulated B-double as the design vehicle within the swept path analysis. The intersection treatments need to be designed to allow for the through movements of the AB-triple road train, demonstrated in a swept path analysis.*
- *The intersection treatments of a BAR/BAL proposed at the Arumpo Road/site access are proposed to be delayed until the Buronga Landfill reaches its expanded capacity, which is assumed to be the peak traffic generation of 261 vehicles per day during construction plus operation. Given the deficiency in the existing width of the seal, the current road train access on Arumpo Road and the present turning volumes warranting a BAR/BAL at the intersection, it is recommended that the*



completion of the BAR/BAL intersection treatment occurs prior to the commencement of the construction work associated with the Buronga Landfill Expansion.

- The facility is to be limited to waste volumes of 100,000 tonnes per annum

TfNSW provides the following requirements that will be subject to a future concurrence as a part of a section 138 Roads Act application to the Roads Authority (Wentworth Shire Council):

- The proposed intersection treatments and access to the site are required to comply with the Safe Intersection Sight Distance in accordance with Austroads Guide to Road Design.
- A Rural Basic Left (BAL see figure 8.2 within Attachment 1) and a Rural Basic Right (BAR see figure A6 with Attachment 2) turn treatments are required to be constructed at the intersection of Arumpo Road and the site access prior to the commencement of construction works associated with this project. The intersection treatments are to be designed in accordance with Austroads Guide to Road Design.
- A swept path analysis is to accompany the section 138 Roads Act application to Wentworth Shire Council and demonstrate that the B-double design vehicle can ingress and egress within the correct lane to and from Arumpo Road and include swept path analysis identifying how the AB-triple road trains will be able to simultaneously pass within the passing lane.
- Any ancillary aspects such as road signage, utilities or vegetation are to be identified within the scope of works for the intersection treatments.

DPI Ag Comment:

Traffic Movements

Detail the volume and route of traffic movements for the proposed development and how potential impacts on surrounding agricultural land uses are proposed to be mitigated (eg noise, dust, volume of traffic). This should include consideration of Travelling Stock Reserves (TSR) and the movement of livestock or farm vehicles along / across the affected roads.

The following information has been prepared by Nicholas Firth, Senior Transport Engineer and Senior Road Safety Auditor and author of the Traffic Impact Assessment presented as Appendix H in the EIS.

8.2.1 Landfill Capacity Increase

- Assessment of traffic generation based on a landfill capacity of 100,000 tpa being the proposed maximum capacity of the landfill (rather than 60,000 tpa)

The TIA report assessed the landfill on an average day (60,000 tpa) and a peak year (96,000 tpa) based on the assumption that the peak year is based on 1.6x the average volume. This has been increased to a 1.67x to enable the peak volume to be equal to 100,000 tpa as requested with the amended outputs shown in the tables below. The remaining assumptions from the original report still apply.

Table 8.1 Daily traffic generated by the upgraded landfill

Vehicle Type	Current Operation		Current Operation + Construction		Future Operation		Future Operation + Construction	
	Average (60t)	Peak (100t)	Average (60t)	Peak (100t)	Average (60t)	Peak (100t)	Average (60t)	Peak (100t)
Light Vehicles	30	50	45	75	46	77	61	102
Light Rigid Trucks	4	7	5	8	15	25	16	27
Heavy Rigid Trucks	21	35	22	37	81	135	82	137



Vehicle Type	Current Operation		Current Operation + Construction		Future Operation		Future Operation + Construction	
	Average (60t)	Peak (100t)	Average (60t)	Peak (100t)	Average (60t)	Peak (100t)	Average (60t)	Peak (100t)
Articulated Trucks	1	2	3	5	2	3	4	7
TOTAL	56	94	75	125	144	240	163	272

Table 8.2 Daily Traffic Generation per Area

Vehicle Type	Current Operation + Construction		Future Operation		Future Operation + Construction	
	Average	Peak	Average	Peak	Average	Peak
Mildura	17	29	66	110	83	139
Buronga	1	2	13	22	14	24
Wentworth	1	2	9	15	10	16
TOTAL	19	32	88	147	107	179

Table 8.3 Future daily traffic assessment for average operational traffic

Road Name	Current AADT	Additional Vehicles	Traffic Increase Percentage	New AADT
Silver City Highway (North of Arumpo Road)	2,501	15	0.59%	2,516
Silver City Highway (South of Arumpo Road)	2,999	132	4.41%	3,131
Arumpo Road	478	147	30.74%	625
George Chaffey Bridge	18,000	110	0.61%	18,110

Table 8.4 Future daily traffic assessment for a combination of average construction traffic

Road Name	Current AADT	Additional Vehicles	Traffic Increase Percentage	New AADT
Silver City Highway (North of Arumpo Road)	2,501	2	0.06%	2,503
Silver City Highway (South of Arumpo Road)	2,999	30	1.01%	3,029
Arumpo Road	478	32	6.64%	510
George Chaffey Bridge	18,000	29	0.16%	18,029



Table 8.5 Future daily traffic assessment for a combination of average construction and operational traffic

Road Name	Current AADT	Additional Vehicles	Traffic Increase Percentage	New AADT
Silver City Highway (North of Arumpo Road)	2,501	16	0.65%	2,517
Silver City Highway (South of Arumpo Road)	2,999	162	5.42%	3,161
Arumpo Road	478	179	37.38%	656
George Chaffey Bridge	18,000	139	0.77%	18,139

Table 8.6 Future Intersection peak hour volumes (no change)

	Current Major Road Volume per hour	Current Turn Volume per hour	Peak Additional AADT (daily)	New Major Road Volume per hour	New Turn Volume per hour
Silver City Highway (North of Arumpo Road)	130	24	16	132	26
Silver City Highway (South of Arumpo Road)	252	24	156	268	40
Arumpo Road	47	6	171	64	24

As is evident in the tables above, there is a very slight increase in the peak scenarios for the development, but no change to the resulting peak hour volumes. Despite increasing the peak landfill traffic from 96,000 to 100,000 tpa, there are no changes to any of the outcomes or recommendations of the TIA report, with the increases considered negligible.

8.2.2 Arumpo Road Classification

- Confirmation that assessment is based on Arumpo Road being a classified regional road

We can confirm that Arumpo Road has been assessed based on being a classified regional road, hence the recommendations to upgrade Arumpo Road to meet the minimum seal width requirements of Austroads, as well as the recommendation to upgrade the primary access to the Landfill with a formalised intersection with BAR and BAL Treatments are appropriate.

8.2.3 Use of SIDRA

- Written confirmation from Transport for NSW (TfNSW) that the methodology used, being an alternative to SIDRA modelling, is satisfactory

In consultation with Transport for NSW (TfNSW), it was confirmed that SIDRA modelling would be advantageous and is to be undertaken at the intersection of Silver City Highway and Arumpo Road to confirm the adequacy of the intersection with the incorporation of future traffic volumes. Increased



traffic may occur as a result of the construction and operation of the upgraded Buronga landfill. The details of the modelling are detailed below in the below sections.

8.2.3.1 Assumptions

The following assumptions have been made in the SIDRA modelling process.

- During operating period of the landfill it is expected that:
 - 75% of the vehicles will travel to and from the site from Victoria (Mildura)
 - 15% of the vehicles will travel to and from the site from Buronga/Gol Gol
 - 10% of the vehicles will travel to and from the site from Wentworth
- During construction period of the landfill it is expected that:
 - 90% of construction vehicles will travel to and from the site from Victoria (Mildura)
 - 5% of construction vehicles will travel to and from the site from Buronga/Gol Gol
 - 5% of construction vehicles will travel to and from the site from Wentworth
- Traffic utilising Arumpo Road not related to the landfill is split 44% travelling to and from the north and 56% travelling to and from the south. This was based off current total traffic split (Austraffic counts conducted March 2021).
- Approach distances from the North and East have been assumed to be 500m. These approaches are far greater than this in reality.
- Separated bus counts were not available and as such have been included within the heavy vehicle percentages in the model.
- Cyclists and pedestrians' volumes have been assumed to be negligible and as such have not been assessed within the model.
- Gap acceptance data including critical gap and follow-up headway has been modified as per Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections Table 3.5.
- Vehicle movement data including approach cruise speed and exit cruise speed has been modified as per data obtained from Austraffic counts conducted March 2021.
- Traffic generation volumes for the current, future and construction periods of the landfill have been taken as detailed in Tonkin's Traffic Assessment.
- An alternative approach to the auxiliary right turn (AUR) treatment has been modelled in SIDRA with a short right turn implemented in the model.

8.2.3.2 Outputs

SIDRA modelling was undertaken for the intersection of Silver City Highway and Arumpo Road for current traffic volumes and worst-case future volumes related to the Buronga landfill extension. Worst-case volumes were determined to be future operational volumes in addition to the construction associated volumes while the landfill is under construction.

The following outputs were obtained from the SIDRA model for current and future + construction traffic volumes.



Lane Use and Performance													
	DEMAND FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV] %						[Veh	Dist] m				
South: Silver City Highway (South)													
Lane 1	114	23.0	1621	0.070	100	0.0	LOS A	0.0	0.0	Full	2350	0.0	0.0
Lane 2	16	23.0	816	0.019	100	9.2	LOS A	0.1	0.6	Short	75	0.0	NA
Approach	129	23.0		0.070		1.2	NA	0.1	0.6				
East: Arumpo Road													
Lane 1	29	23.9	803	0.037	100	8.7	LOS A	0.1	0.8	Full	5000	0.0	0.0
Approach	29	23.9		0.037		8.7	LOS A	0.1	0.8				
North: Silver City Highway (North)													
Lane 1	9	19.5	1516	0.006	100	8.6	LOS A	0.0	0.0	Short	100	0.0	NA
Lane 2	145	19.5	1671	0.087	100	1.1	LOS A	0.0	0.0	Full	5000	0.0	0.0
Approach	155	19.5		0.087		1.6	NA	0.0	0.0				
Intersection	314	21.3		0.087		2.1	NA	0.1	0.8				

Figure 11: Current traffic volumes - Lane summary

Lane Use and Performance													
	DEMAND FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV] %						[Veh	Dist] m				
South: Silver City Highway (South)													
Lane 1	114	20.4	1646	0.069	100	0.0	LOS A	0.0	0.0	Full	2350	0.0	0.0
Lane 2	35	24.9	810	0.043	100	9.4	LOS A	0.2	1.4	Short	75	0.0	NA
Approach	148	21.4		0.069		2.2	NA	0.2	1.4				
East: Arumpo Road													
Lane 1	60	24.6	808	0.074	100	8.9	LOS A	0.2	1.6	Full	5000	0.0	0.0
Approach	60	24.6		0.074		8.9	LOS A	0.2	1.6				
North: Silver City Highway (North)													
Lane 1	17	24.3	1470	0.011	100	8.7	LOS A	0.0	0.0	Short	100	0.0	NA
Lane 2	149	20.7	1658	0.090	100	1.1	LOS A	0.0	0.0	Full	5000	0.0	0.0
Approach	166	21.1		0.090		1.9	NA	0.0	0.0				
Intersection	375	21.8		0.090		3.1	NA	0.2	1.6				

Figure 12: Future + Construction volumes - Lane summary



Relevant outputs from the SIDRA model have been summarised below.

	Degree of Saturation (v/c)		Average Delay (sec)		Level of Service		95% Back of Queue (m)	
	Current	Future + Construction	Current	Future + Construction	Current	Future + Construction	Current	Future + Construction
Silver City Highway (South)								
Lane 1 (through)	0.070	0.069	0.0	0.0	LOS A	LOS A	0.0	0.0
Lane 2 (right)	0.019	0.043	9.2	9.4	LOS A	LOS A	0.6	1.4
Approach	0.070	0.069	1.2	2.2	N/A	N/A	0.6	1.4
Arumpo Road								
Approach	0.037	0.074	8.7	8.9	LOS A	LOS A	0.8	1.6
Silver City Highway (North)								
Lane 1 (left)	0.006	0.011	8.6	8.7	LOS A	LOS A	0.0	0.0
Lane 2 (right)	0.087	0.090	1.1	1.1	LOS A	LOS A	0.0	0.0
Approach	0.087	0.090	1.6	1.9	N/A	N/A	0.0	0.0
Intersection	0.087	0.090	2.1	3.1	N/A	N/A	0.8	1.6

Negligible increases are observed from current traffic volumes to future + construction volumes within the SIDRA model. It is evident that the current intersection configuration is adequate for the increased traffic volumes utilising the Silver City Highway / Arumpo Road intersection as a result of the Buronga landfill expansion.

The SIDRA model will also be provided to TfNSW for their review.

8.2.4 Future Traffic Volume Justification

- Justification for assuming the 'current AADT' (Annual Average Daily Traffic) for each of the affected roadways and whether any adjustments are warranted having regard to the 70-year life of Stage 1 and 50-year life of Stage 2



The Traffic Impact Assessment has assessed the impact on future operation plus construction based on the current AADT of the road network. While it could be expected some growth of the AADT of the surrounding road network to occur in this period, it is better to assess against the current AADT as this shows a larger percentage increase now. It is unreasonable to predict what the traffic volumes would be for the surrounding road network in 50 or 70 years' time, as well as what land use change may occur in that time. On the basis that TfNSW has accepted the reporting, we do not believe further adjustments are required.

8.2.5 Construction vs Establishment Phase Assessment

- *Separate assessments for the initial construction/establishment phase, and the operational and ongoing progressive construction phases of the development*

It is considered that the TIA has already considered and assessed separate initial construction/establishment phase, and operational and ongoing progressive construction phases.

8.2.6 Internal Road Network Assessment

- *Assessment of internal road network, including but not limited to the following matters:*
 - *swept paths for heavy vehicles*
 - *potential conflicts between light and heavy vehicles*
 - *progressive extension of road network to the active landfill face*
 - *queuing management for the community facility and landfill active face*

Internal drawings have been updated to include the additional information required by DPE. The drawings are attached to this report in Appendix A.

Swept paths for the front-end facility are shown in drawings 020 to 023. Swept path analysis has been undertaken for light vehicles (passenger car & trailer) and heavy vehicles (12.5m rigid and B-Doubles) and demonstrates that sufficient clearance has been provided for vehicle access to various parts of the front end facility.

Potential conflicts between light and heavy vehicles have been minimised by segregating the public waste drop off areas including the front end recycling facility from the waste storage areas accessed by heavy vehicles. The residual drop off area and resource recovery shed are accessible from both front and rear sides to allow for light vehicle and heavy vehicle access to these areas to be segregated to avoid conflicts. Conflict points where roads merge will have controls including signage to manage light and heavy vehicle interactions at these points. These controls will be determined during detailed design.

Progressive extension of the road network to access the active landfill cells is shown in drawing 019. This drawing shows permanent access roads as well as temporary access roads and turnarounds. The road network will be progressively extended as stages are developed throughout the life of the landfill. Access roads to the active tip face will regularly change during operation due to the dynamic nature of the landfill face during filling activities. These roads will be developed as an operational measure from the stage access roads shown on drawing 019.

Queuing areas for the front end recycling facility are shown on drawing 020. The residual drop off area provides for multiple vehicles to drop off waste at any given time. As identified above, access roads to the active tip face will regularly change and will be determined as an operational measure. Queuing areas for heavy vehicles at the active landfill face will change along with these access roads. Adequate queuing areas will be provided, with traffic management at the tip face to be addressed in operation management plans for the landfill.



8.2.7 Peak Traffic Generation

- *Additional information on peak traffic generation, including assessment of operational peaks for light and heavy vehicles relative to AM and PM peaks and how this may affect RMS operating capacity of the road network*

Peak traffic generation has already been adequately addressed in the report with TfNSW supporting the current assessment. No further amendments to the TIA are proposed.

8.2.8 TfNSW Conditions of Consent – Traffic and Access

- *TfNSW supports the assessment for the proposed Rural Basic Right (BAR) turn and a Rural Basic Left (BAL) turn treatments in accordance with Figure 3.25: Warrants for turn treatments on major roads at unsignalised intersections at the site intersection with Arumpo Road as per the TIA.*

Noted.

- *It is noted that Arumpo Road is a road train approved route and the design of the intersection to the site has stipulated B-double as the design vehicle within the swept path analysis. The intersection treatments need to be designed to allow for the through movements of the AB-triple road train, demonstrated in a swept path analysis.*

Noted. The intersection design has been updated and is attached as Appendix M of this report. The updated design considers the swept path for the through movements of the AB-Triple Road Train. These drawings would be further developed on engineering survey post development consent, with approval obtained from Wentworth Shire Council as the road authority on the design.

- *The intersection treatments of a BAR/BAL proposed at the Arumpo Road/site access are proposed to be delayed until the Buronga Landfill reaches its expanded capacity, which is assumed to be the peak traffic generation of 261 vehicles per day during construction plus operation. Given the deficiency in the existing width of the seal, the current road train access on Arumpo Road and the present turning volumes warranting a BAR/BAL at the intersection, it is recommended that the completion of the BAR/BAL intersection treatment occurs prior to the commencement of the construction work associated with the Buronga Landfill Expansion.*

Noted. This recommendation has been taken on board and it is proposed to construct the BAR/BAL intersection treatment prior to the commencement of the construction work associated with the expansion.

- *The facility is to be limited to waste volumes of 100,000 tonnes per annum.*

Noted. This is the maximum quantity expected to be received at the facility.

- *The proposed intersection treatments and access to the site are required to comply with the Safe Intersection Sight Distance in accordance with Austroads Guide to Road Design.*

Noted. The assessment undertaken during the TIA confirms adequate Safe Intersection Sight Distance is available for the access, in accordance with the Austroads Guide to Road Design Guidelines.

- *A Rural Basic Left (BAL see figure 8.2 within Attachment 1) and a Rural Basic Right (BAR) see figure A6 with Attachment 2) turn treatments are required to be constructed at the intersection of Arumpo Road and the site access prior to the commencement of construction works associated with this project. The intersection treatments are to be designed in accordance with Austroads Guide to Road Design.*

Noted. Addressed in the comments above.



- *A swept path analysis is to accompany the section 138 Roads Act application to Wentworth Shire Council and demonstrate that the B-double design vehicle can ingress and egress within the correct lane to and from Arumpo Road and include swept path analysis identifying how the AB-triple road trains will be able to simultaneously pass within the passing lane.*

Noted. Updated drawings have been prepared as part of this response demonstrating the above and are provided as Appendix M. This will be further detailed onto engineering survey post development consent at detailed design stage.

- *Any ancillary aspects such as road signage, utilities or vegetation are to be identified within the scope of works for the intersection treatments.*

The updated drawings attached to this report (Appendix A) address some of these issues, however these will be assessed in further detail at the detailed design stage once translated to engineering survey post development consent.

- *Detail the volume and route of traffic movements for the proposed development and how potential impacts on surrounding agricultural land uses are proposed to be mitigated (eg noise, dust, volume of traffic). This should include consideration of Travelling Stock Reserves (TSR) and the movement of livestock or farm vehicles along / across the affected roads.*

This aspect has been covered within the EIS and with further detailed provided above. No further details are provided here.

8.3 Soil and Groundwater

DPIE Comment:

Groundwater

The Department seeks clarification of the potential impacts of the proposal on groundwater, including:

- *Details of protection measures for Water NSW's monitoring borehole and how access to the borehole would be maintained*
- *Details of potential groundwater impacts on any licensed water users or other landholder rights*
- *Clarification about the maximum extent of excavation/cut, noting the EIS (p.37) indicates the landfill cells will extend to approximately 5-8m below ground level to achieve a 2m separation from groundwater, however, the Geotechnical Report (p.8) indicates groundwater has been detected at 5.9-9.7m below ground level, which would suggest a maximum excavation of 3.9m (rather than 5m) would be required to achieve the 2m groundwater separation*

WaterNSW Comment:

- *The impact on the existing groundwater monitoring bore (GW087083) located onsite is not considered in the EIS. This includes impact to the monitoring site itself from the landfill expansion and impact to access from changed conditions onsite.*
- *It is unclear from the assessment whether the proposed new stormwater detention pond, north of Area 7 (EIS figure 10) will impact on the GW087083 monitoring bore.*
- *WaterNSW supports the recommendation made in the EIS (section 6.3.4) to install groundwater monitoring wells to monitor groundwater and water quality data prior to construction and during operation. It is noted that the mitigation measures contained in section 6.3.4 are not all included in table 7.1 under groundwater.*

- *Details of protection measures for Water NSW's monitoring borehole and how access to the borehole would be maintained*



- The impact on the existing groundwater monitoring bore (GW087083) located onsite is not considered in the EIS. This includes impact to the monitoring site itself from the landfill expansion and impact to access from changed conditions onsite.
- It is unclear from the assessment whether the proposed new stormwater detention pond, north of Area 7 (EIS figure 10) will impact on the GW087083 monitoring bore.

The network of groundwater bores monitored by Water NSW assist in understanding the longer-term changes to groundwater and groundwater-dependent ecosystems. Continued access to these bores is important for data continuity. The Water NSW monitoring bores are located along the boundary of the site and are not within the proposed development area (Appendix N). Access to the bore will not be altered.

The design of the upgraded facilities, including the landfill is being undertaken in accordance with best management practices to minimise the potential for impacts to groundwater to occur.

- Details of potential groundwater impacts on any licensed water users or other landholder rights
- Clarification about the maximum extent of excavation/cut, noting the EIS (p.37) indicates the landfill cells will extend to approximately 5-8m below ground level to achieve a 2m separation from groundwater, however, the Geotechnical Report (p.8) indicates groundwater has been detected at 5.9-9.7m below ground level, which would suggest a maximum excavation of 3.9m (rather than 5m) would be required to achieve the 2m groundwater separation

Groundwater levels are discussed within the Geotechnical Report (202597R02A) and the Groundwater Impact Assessment (202597R03Rev0). Groundwater was encountered in nine of 11 boreholes during drilling. Two of these boreholes were left open overnight to assess where groundwater levels would stabilise to overnight. Groundwater levels were recorded as varying between 5.9 m below ground level (m bgl) and 9.5 m bgl. Due to the variability of the surface level at each borehole, reducing groundwater standing water level (SWL) to an elevation in m AHD provides a more useful indication of the level of groundwater beneath the site rather than relying on a SWL in m bgl. The SWL in each borehole from the geotechnical investigation has been show in Table 8.7 below, along with the corresponding SWL reduced to m AHD.

Table 8.7 Geotechnical Investigation Standing Water Levels

Borehole	Surface Elevation (m AHD)	SWL at Time of Drilling (m bgl)	SWL at Time of Drilling (m bgl)	SWL Overnight Stabilisation (m bgl)	SWL Overnight stabilisation (m AHD)
H01	47	Groundwater Not Encountered			
H02	40.5	9.5	31		
H03	39.5	8.5	31		
H04	39	8	31		
H05	40	9	31		
H06	42	Groundwater Not Encountered			
H07	37	6.8	30.2	5.9	31.1
H08	38	7.2	30.8		
H09	38	7.8	30.2	6.8	31.2
H10	39	8.1	30.9		



Borehole	Surface Elevation (m AHD)	SWL at Time of Drilling (m bgl)	SWL at Time of Drilling (m bgl)	SWL Overnight Stabilisation (m bgl)	SWL Overnight stabilisation (m AHD)
H11	41	Groundwater Not Encountered			
H12	39	8.1	30.9		

As shown in Table 8.7 standing water levels varied between 31.2 m AHD and 30.2 m AHD. This level is reasonably consistent with the highest observed groundwater levels from the groundwater monitoring well data provided by WSC; 30.2 m AHD in BH02 and 32.7 m AHD in BH04.

The levels of the site in the area proposed for the construction of the Stage 1 and Stage 2 landfill cells vary from 44.5 m AHD at a high point in the central area of the site to low points of 36.0 m AHD in localised depressions in the central area of the site. Much of the area proposed for the landfill cells lies between 43 m AHD and 39 m AHD. This excludes the low point of approx. 32.0 m AHD in the existing borrow pit and the high point of approximately 47.0 m AHD directly adjacent to the existing lined landfill cell.

Based upon the highest observed groundwater level of 31.2 m AHD, 2 metres separation above this level would require a baseliner invert level of 33.2 m AHD. The SWL from BH04 has not been used as these measurements are not quality controlled. When considering the site levels, this would result in an excavation depth varying between 12 m and 3 m to reach a level of 33.2 m AHD. Isolated deeper areas of cut may be required adjacent to the existing lined landfill cell.

The design groundwater level will be reviewed during the detailed design of each landfill cell to allow for future data on groundwater levels to be considered. This may result in baseliner invert levels being adjusted up or down to maintain 2 m separation to the design groundwater level established during detailed design and a corresponding change in maximum excavation depth. Final excavation depths will be established during detailed design to achieve required cell floor grades and separation to groundwater. The groundwater design level and separation provided will be documented in the design report for each landfill cell which shall be submitted to NSW EPA for approval prior to construction.

- *WaterNSW supports the recommendation made in the EIS (section 6.3.4) to install groundwater monitoring wells to monitor groundwater and water quality data prior to construction and during operation. It is noted that the mitigation measures contained in section 6.3.4 are not all included in table 7.1 under groundwater.*

This was an oversight. The updated mitigation measures are presented in Appendix C.

8.4 Hazards

DPIE Comment:

Hazard analysis

The Department is unable to complete its hazards assessment until the following information is provided:

- *A preliminary risk screening in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 and the Department's Applying SEPP 33 as required in the SEARs*
- *Locations and quantities of dangerous or potentially hazardous goods (e.g. tyres, batteries, drums, waste oil, contaminated soil) which may be stored on-site or transported to and from the site*



- *Verification the Preliminary Hazard Analysis (PHA) is appropriate for the development with consideration of the gas flare system and its fuel source*

- *A preliminary risk screening in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 and the Department's Applying SEPP 33 as required in the SEARs*

The preliminary risk screening was presented in EIS Section 6.4.3 where the development was assessed as being a "potentially offensive industry" as it requires a licence under the Protection of the Environment Operations Act 1997 (NSW). The subsequent assessment demonstrated that the offence can be controlled to a level which is not significant. It is acknowledged that no information was presented to support the development not being considered a "potentially hazardous industry" and this is necessary to enable a thorough assessment of the proposal and ensure that a hazardous industry is not permitted to be developed in this area.

The wastes which are stored on site are listed in Table 8.8. Many of the wastes stored at the CRC are not dangerous goods. No items will trigger the transport screening thresholds in Table 2 of the SEPP. No Items appear to trigger the threshold in Table 3/Figure 9 of SEPP. When the classes are combined they still remain below the thresholds, as follows:

- Class 2.1: combined quantity of <0.8 tonnes stored which is below the threshold of 10 tonnes
- Class 2.2: combined quantity of <1 tonne and there is no threshold listed in Table 3 or Table 9 of SEPP 33
- Class 3 PGIII: combined quantity of 2 tonne which is less than the threshold of 5 tonnes
- Class 8 PGII: combined quantity of <1 tonne which is below the threshold of 25 tonnes

All materials assessed to be well below thresholds in the SEPP 33. As a result, the development is not a potentially hazardous industry.

- *Locations and quantities of dangerous or potentially hazardous goods (e.g. tyres, batteries, drums, waste oil, contaminated soil) which may be stored on-site or transported to and from the site*

The locations of dangerous or potentially hazardous goods were shown in EIS Figure 2 for existing locations near the community recycling centre and in EIS Figure 3 for the updated facility, with further detail provided in the drawings in Appendix A. The quantities are limited by the allowable volumes in the licence and the storage capacity at the facility. This is discussed in Section 6.4.1.

- *Verification the Preliminary Hazard Analysis (PHA) is appropriate for the development with consideration of the gas flare system and its fuel source*

The fuel source is landfill gas which is discussed in EIS Section 6.4.2.3 and EIS Appendix K. The LFG is not stored prior to flaring but extracted under vacuum directly from the landfill. The risk assessment considered the risks associated with landfill gas, including the scenario of an active control system. As a result, the PHA is considered appropriate.



Table 8.8 Screening Risk Assessment for Potentially Hazardous Industry

Waste	Capacity	Material	DG Class	Max Quantity	Screening Method	Threshold (individual item)	Notes
COMMUNITY RECYCLING CENTRE							
Paints (oil and water based)	Two x 1 m ³ stillage	Paints (dry)	N/A	<1 tonne	Table 3	None applicable	Paints are dried in the container and no remaining flammable/corrosive material remains.
Motor oils	3 m ³ (3000L)	Motor oil	Not classified as DG Class 3 as not a volatile/flammable product	<3 tonne			
Cooking, hydraulic and transmission oils	1 m ³ stillage	Oil	Not classified as DG Class 3 as not a volatile/flammable product	<1 tonne			
Household single use batteries		Lead acid/other batteries	8 PG II	Not reported	Table 3	Below Threshold 5 tonne	Unlikely to be a large volume, well below trigger threshold.
Car batteries (lead acid/other?)	48 batteries	Lead acid/other batteries	8 PG II	<0.2 tonne acid (up to 800kg)	Table 3	Below Threshold 5 tonne	UN2794 -batteries wet, filled with acid
Fluorescent and compact florescent lighting (mercury containing lamps)	0.5 m ³ stillage	Contains Mercury	8 (no PG)	<0.5 tonne	Table 3	Below Threshold 5 tonne	
Gas cylinders (LPG)	72 -80 9kg gas bottle capacity	LPG	2.1	<0.8 tonne	Table 3	Below Threshold 10 tonne	Bottles are empty or close to empty. Low risk
Fire extinguishers	approx. 100 extinguishers	CO ₂ Dry Chemical Other	2.2 (compressed or liquefied gas)	<1 tonne	Table 3	No threshold listed in Table 3 for non-flammable, non-toxic gases	Non-flammable, non-toxic gas. Assuming propellant has been mostly exhausted and that these are small fire extinguishers. NSW Workcover notification is 10 kL
Aerosols	200 L capacity	Various Aerosol	2/2.1/2.2/2.3/6.1/8/non-toxic?	<200kg	Table 3	Below any of the individual class thresholds starting at 0.5 tonne	UN1950 or UN2037 Risk is lower as are empty/almost empty NSW Workcover notification is 10 kL
Drum muster	50 m ³ cage	N/A			N/A		Drums are empty and have been washed prior to disposal at the transfer station – Low risk
Polystyrene	Five x 0.5-1 m ³ boxes	Polystyrene	Not Dangerous Goods according to ADG Code	Up to 5,000 m3	Not Applicable	Not Applicable	Combustible thermoplastic material and will give off toxic combustion products if ignited. Stored away from oxidising materials and organic solvents. Low risk
MAINTENANCE WORKSHOP							
Diesel	2000 L tank	Diesel Fuel	3 PG III	Up to 2 tonne	Figure 9	Below Threshold 10 tonne	Figure 9 is only applicable if > 5 tonne for 3PGIII WorkCover threshold from 10,000kg or L
AdBlue	500L	Adblue	N/A		N/A		Not a DG
Motor Vehicle Oil	100 L	Motor Oil	N/A		N/A		Not a DG
Grease	100L	Grease	N/A		N/A		Not a DG

8.5 Bushfire

NSW RFS Comment:

- *The NSW RFS has considered the information submitted and raises no objection to the proposed Landfill Extension subject to development consent including a condition to ensure compliance with the bush fire mitigation measures listed in part 6.5.4 of the Environmental Impact Statement prepared by Tonkin dated 25 January 2022*

DPI Ag Comment

Emergency Management

- *The proposal is to detail contingency plans to enable the operation to deal with emergency situations. The proposal is to detail Emergency Management procedures and responsibilities for responding to bushfire threats and possible mass mortality events which might result from extreme climatic conditions, routine or emergency animal disease outbreaks.*

- *The NSW RFS has considered the information submitted and raises no objection to the proposed Landfill Extension subject to development consent including a condition to ensure compliance with the bush fire mitigation measures listed in part 6.5.4 of the Environmental Impact Statement prepared by Tonkin dated 25 January 2022*

Noted. The updated measures are included in Appendix C.

- *The proposal is to detail contingency plans to enable the operation to deal with emergency situations. The proposal is to detail Emergency Management procedures and responsibilities for responding to bushfire threats and possible mass mortality events which might result from extreme climatic conditions, routine or emergency animal disease outbreaks.*

Emergency responses are included in the LEMP with further response requirements, particularly with respect to bushfire which is detailed in EIS Section

8.6 Biodiversity

DPIE Comment:

The Biodiversity Assessment Report (BDAR) has been reviewed by the Department's Biodiversity and Conservation Division (BCD) and found to be inadequate. Please submit:

- *Revised Biodiversity Assessment Report (BDAR) to address SEARs requirements including but not be limited to the identification of regrowth native vegetation in the vegetation zones assessment and details of measures to mitigate, monitor and manage impacts at specific locations – refer to advice of the Biodiversity and Conservation Division in letter dated 17 March 2022 for details which can be found on the portal <https://www.planningportal.nsw.gov.au/major-projects/projects/burongalandfill-expansion>*

DPE BCD Comment:

- 1 *the BDAR requires some rearranging of report sections to adequately address the requirements of the BAM and improve readability.*

Recommended action:

- 1.1 *Update the BDAR to ensure each section addresses the chapters of the BAM including Stage 1 then Stage 2 and ensure the BDAR addresses the minimum requirements in Appendix K (Table 24 and 25) of the BAM (2020).*

2 *the construction and operational footprint of the proposal is unclear, and some ancillary facilities are not identified in the BDAR.*

Recommended action:

2.1 *Update Figure 1 of the BDAR or prepare a new map to outline the construction and operational footprint in stages.*

2.2 *Update the subject land and vegetation zones to ensure all ancillary facilities are included in the BDAR.*

3 *Only one landscape assessment has been prepared for the two related cases in BOAMS. The landscape assessment features require further detail in the assessment and some landscape features are not mapped.*

Recommended action:

3.1 *Update the landscape assessment section of the BDAR to include calculations and maps for each related case in BOAMS.*

3.2 *Update the landscape assessment map to include all landscape features outlined in Table 1.*

4 *definition of Category 1 land and regrowth requires further clarification. PCT selection require further justification. Vegetation zones require clarification. Patch size has not been addressed in the BDAR.*

Recommended action:

4.1 *Allocate a new vegetation zone for 'regrowth' native vegetation and update with VI plot data as required within BOAMS and the BDAR.*

4.2 *Update the landscape assessment non-native vegetation layer to include regrowth vegetation as 'native vegetation' and recalculate the extent of native vegetation in the BDAR and BOAMS.*

4.3 *Additional information should be provided in Tables 2 to 6 of the BDAR to justify the allocation of each PCT.*

4.4 *Update section 3.3.1 and Figure 6 to show the location of zone 2.*

4.5 *Provide patch size area and classes for each vegetation zone in the BDAR and map each relevant patch size.*

5 *Predicted and candidate credit species assessments require clarification. Survey methods applied and locations of survey effort require further detail.*

Recommended action:

5.1 *Provide further detail on the predicted and candidate species for each related case in the BDAR.*

5.2 *Provide further justification for the exclusion of predicted and candidate species in the BDAR.*

5.3 *Update the BDAR to include additional detail regrading survey method, effort and locations in accordance with section 5.3 of the BAM.*

5.4 *Provide further detail on the rationale, methods, results and use of the community survey data.*

6 *Occurrence of Plains Mallee Box Woodland CEEC has not been addressed.*

Recommended action:

6.1 *Update the BDAR to include an equivalency assessment of any additional EPBC TECs. The occurrence of any TECs should be mapped and updated throughout the BDAR.*

6.2 *Provide an assessment of the potential occurrence of the EPBC-Mallee bird community of the Murray Darling Depression bioregion.*

DPI Ag Comment:

Biosecurity

- *Include a biosecurity (pests, weeds and disease) risk assessment outlining the likely plant, animal and community risks. The relevant weed or pest animals for a region are addressed in the regional plans or strategies issued by NSW Local Lands Services.*

- *Include details of how the proposal will deal with identified biosecurity risks as well as contingency plans for any failures. Include monitoring and mitigation measures for weed and pest management.*
- *Detail the design of fencing and its adequacy to keep livestock out*

Pinion has updated the BDAR by undertaking additional survey and assessment as requested above and amended the report to reflect the reduced footprint of the landfill development to Stages 1A to 1D. The complete report is provided in Appendix O with a summary of changes since the EIS provided below.

The existing environment is noted to present five plant community types, with the four presented in the EIS and a new category being:

- PCT 143 – narrow-leaved hopbush – Scrub turpentine – senna shrubland on semi-arid and sand plain dunes in poor condition/regrowth as it lacks the overstorey vegetation across almost all the area, resulting in a VIS of 34.2. This additional PCT is only located within the existing consent area

These five community types were divided into nine vegetation zones, based on overall health, overstorey composition, understorey condition and past management/disturbance. No additional targeted species were identified during the additional surveys.

Threatened ecological communities (TEC) were reassessed due to the addition of:

- Mallee bird community of the Murray Darling Basin Depression, which may be presented in the assessment area. Further assessment has determined that the proposed development will not result in significant impact to this Endangered Ecological Community (EEC) and hence further mitigation measures (above those already proposed) are not required and referral to DCCEEW is not required;
- Plains Mallee-Box Woodland, with some areas broadly similar to this PCT but it did not meet the definition of the TEC.

None of the plant communities identified on-site are threatened ecological communities.

There is 17.53 ha of native vegetation occurring within the development footprint. The majority of this vegetation is PCT58 Black Oak – Western Rosewood open woodland (9.86 ha) followed by PCT170 Chenopod sandplain mallee woodland/shrubland (3.8 ha). An additional 24.16 ha of non-native vegetation has been historically cleared and consists of bare ground, tracks, exotics species and site infrastructure.

A targeted survey undertaken in October 2021 for eight credit species, three flora and 5 avian (bird) species, which may occur within the development area. No sightings of targeted species were observed over the field visits, conducted during daytime and nighttime, and hence they are not considered to occur within the development site.

At the request of DPE, the impacts have been separated into areas within the existing consent for the borrow pits (DA15/154) where consent exists for the removal of vegetation and areas outside the consent area where there is no existing consent to remove vegetation. The impacts within and outside the consent area are the same. The direct impacts on biodiversity are limited to the clearing of native vegetation and habitat. The residual indirect impacts include:

- Introduction of new weeds from landfill site to adjacent vegetation: Moderate
- Impact to adjacent vegetation outside of subject land: Moderate

Prescribed impacts have been assessed as low risk and there are no entities at risk of serious and irreversible impacts at the site. Additional management measures have been recommended to manage the moderate risks and ensure other risks remain low. These measures have been reproduced in Appendix C

The reduction in the landfill area will significantly reduce the clearing required to predominantly within the existing development consent for the borrow pits. Within the existing consent area, 10.35 ha of native vegetation will be impacted by the proposed development. An additional 1.09 ha outside the

existing consent is also proposed to be impacted for the resource recovery areas and associated infrastructure (stormwater pond and haul road). The original proposal required 501 credits with 251 credits required for areas outside the existing consent. For the amended proposal, 185 credits are required, of which 23 credits are outside the existing consent area. Once approved, the proposed development will be discussed with Biodiversity Conservation Council to determine the final offsets required. It is intended to secure and retire credits from a third-party stewardship site, if possible. Biosecurity risks are addressed in the EIS.

8.7 Cultural Heritage

Heritage NSW Comment

In AHIMS, site 46-3-0192 is listed as valid, the report states the object has already been harmed by the previous construction of a borrow pit under AHIP C0002579 / 4081. Recommended actions / options:

- *If site 46-3-0192 was harmed under AHIP C0002579, the AHIP holder Wentworth Shire Council or their consultant Landskape on their behalf will need to complete and submit an Aboriginal Site Impact Recording Form to AHIMS, which will switch the site to destroyed.*
- *If site 46-3-0192 has not been destroyed under AHIP C0002579, it will need to be managed under the current EIS.*
- *We request the applicant respond to this item and any actions taken in the response to submissions"*

Notification of Aboriginal objects Recommended action:

- *Regarding recommendation dot point 2 on page 41 of the ACHAR, in addition to what is specified in this recommendation, if previously unknown Aboriginal objects are identified during works, Heritage NSW must be notified via a record submitted to AHIMS in accordance with s89A of the National Parks and Wildlife Act 1974.*
- *Prepare a Heritage Management Plan to the satisfaction of DPE, prior to construction. Include consultation Heritage NSW and Registered Aboriginal Parties*

- *If site 46-3-0192 was harmed under AHIP C0002579, the AHIP holder Wentworth Shire Council or their consultant Landskape on their behalf will need to complete and submit an Aboriginal Site Impact Recording Form to AHIMS, which will switch the site to destroyed.*
- *If site 46-3-0192 has not been destroyed under AHIP C0002579, it will need to be managed under the current EIS.*
- *We request the applicant respond to this item and any actions taken in the response to submissions"*

A Site Impact Record Form was submitted this on 10 April 2022 and received confirmation from the Aboriginal Heritage Information Management System of Heritage NSW that the submission was approved on 12 April 2022. Proof is presented in Appendix P.

- *Regarding recommendation dot point 2 on page 41 of the ACHAR, in addition to what is specified in this recommendation, if previously unknown Aboriginal objects are identified during works, Heritage NSW must be notified via a record submitted to AHIMS in accordance with s89A of the National Parks and Wildlife Act 1974.*
- *Prepare a Heritage Management Plan to the satisfaction of DPE, prior to construction. Include consultation Heritage NSW and Registered Aboriginal Parties*

These measures are in the Mitigation Table in Appendix C. The Heritage Management Plan and consultation were included in the EIS mitigation measurements.

8.8 Noise

DPIE Comment:

The Department requests clarification and additional information on noise and vibration impacts, including:

- *Assessment to be based on the hours of operation as indicated in the EIS*
- *Clarification as to whether the assessment includes:*
 - *noise generated during the initial construction phase of the new/relocated structures, basins, roadways and other on-site infrastructure*
 - *noise from the general public using the recycling facilities*
 - *noise from monthly shredding of green waste and C&D waste, and the shredding of tyres to maintain a 3m stockpile height*
 - *differentiation of noise from light rigid, heavy rigid and articulated vehicles*
 - *noise associated with final capping and rehabilitation of each cell as it reaches completion*
- *Assessment to include:*
 - *assessment of annoying noise characteristics for the hours of operation up to 1900 Monday to Sunday (in addition to daytime measurements provided)*
 - *LA10 measurements (in addition to the LA90, Leq, and Lmax measurements provided)*
 - *justification for the use of 'default noise-enhancing meteorological conditions' and the exclusion of any noise-enhancing weather or worst-case sound propagation conditions in line with Fact Sheet D of the NPFI*
 - *Noise contours*

Sonus has completed additional works with their complete report provided as Appendix Q. Extracts of their response is provided below.

- *Assessment to be based on the hours of operation as indicated in the EIS*

As with the air quality assessment, the assessment was based on the approved operating hours in the EPL.

- *Clarification as to whether the assessment includes:*

- *noise generated during the initial construction phase of the new/relocated structures, basins, roadways and other on-site infrastructure*

Noise impacts associated with construction of new basins and cells were not specifically considered as these activities predominantly comprise civil earthworks, utilising the same or similar earthmoving equipment to that associated with ongoing waste management within the landfill cells. The EIS assessment considered the 'worst case' scenario for ongoing waste management, comprising placement of waste material at the top of the nearest new cells (Cells 1A and 2E) to noise sensitive locations to the south-west and north-east respectively. As construction of new cells will occur at or below ground level these activities will benefit from shielding by the existing landfill cell and previously completed new cells. As such, noise levels associated with construction of new cells and basins are predicted to be lower than those of the ongoing waste management presented and would therefore comply with the requirements of the ICNG.

An indicative assessment of noise impacts associated with these activities has been conducted based on a conservative construction scenario representative of construction of footings for the Front-End Recycling Facility (FERF) building occurring concurrently with road formation in the vicinity of the FERG.

A noise level of 44 dB(A) is predicted at the nearest noise sensitive receptor, indicating that compliance with the requirements of the ICNG during 'recommended standard hours' will be achieved for construction activities associated with the expansion.

- noise from the general public using the recycling facilities

Noise from the general public using the recycling facilities was not specifically assessed as this component of the operations would generate lower noise levels compared with the more significant noise associated with the commercial receipt and placement of landfill material within the landfill cells. The combined level of all activities conducted on-site (including the FERF and placement of material within the landfill cells) is 40 dB(A) during the day (inclusive of a noise character penalty), which complies with the day-time project noise trigger level.

- noise from monthly shredding of green waste and C&D waste, and the shredding of tyres to maintain a 3m stockpile height

Processing of waste streams (green waste, C&D waste and tyres) will occur periodically to manage stockpile sizes (approximately monthly basis depending on the volume of each type of waste received), and as such forms part of the noise emissions from the site. These noise sources were not included in the noise predictions presented in the EIS.

Based on noise levels of up to 115 dB(A) for shredding or crushing, the operations will need to:

- confine crushing or shredding to the day period (i.e. cease by 6 pm) and
- ensure that only one of these activities (shredding green waste, crushing concrete or shredding tyres) is undertaken at any one time,

to comply with the day predicted noise trigger level under a worst-case scenario and including the operation of the landfill and FERF. WSC currently ceases these operations by 5 pm and only undertakes one operation at a time as the same contractor is used for these tasks.

The proposed additional mitigation measures have been included in Appendix C though they are part of current standard operating procedure.

- differentiation of noise from light rigid, heavy rigid and articulated vehicles

All truck movements were modelled as articulated trucks (which will generate a higher noise level than light rigid and heavy rigid trucks); as such lower noise levels would be predicted by an assessment which differentiated between the different vehicle types. The noise levels associated with these vehicles when moving within the site are significantly lower than those associated with heavy vehicles, and as such will provide a negligible contribution to noise levels in the context of the higher number of heavy vehicle movements within the site. The combined noise contours presented in Appendix Q include the influence of all vehicles accessing the site (both light vehicles and heavy vehicles).

- noise associated with final capping and rehabilitation of each cell as it reaches completion

Final capping and rehabilitation of the landfill cells will comprise the same noise sources and similar activities to ongoing placement of material within the cells and will occur at the top of the cells consistent with the worst-case scenario considered in the EIS.

As such, the noise levels presented in the EIS (and represented by the contours provided in Appendix Q) are representative of this phase of the activities. There is no additional noise which would alter the assessment based on this aspect.

- *Assessment to include:*

- *assessment of annoying noise characteristics for the hours of operation up to 1900 Monday to Sunday (in addition to daytime measurements provided)*

Based on the near field measurement data for the excavator, front end loader and road trucks moving within the site, a 5dB penalty for a low frequency characteristic would apply for the evening period, resulting in an exceedance of the project noise trigger levels at the nearest residence for the “worst case” operational scenarios presented in the EIS between the hours of 6:00pm and 7:00pm.

At the end of every day, the waste must be covered with daily cover and the site left in clean and tidy manner, so waste acceptance ceases earlier than the approved operational hours. Noise levels predicted for the evening period have been based on a scenario comprising dust suppression and waste management occurring at the worst-case locations relative to the nearest noise sensitive receptors to the south-west and north-east (cells 1A and 2E respectively), and as such represent a conservative assessment. The predicted noise levels indicate that compliance with the evening project noise trigger level of 35 dB(A) (including a 5 dB(A) penalty for a low frequency noise character associated with the wheeled loader) is achieved at all nearby noise sensitive receptors.

A 2dB penalty for an annoying noise characteristic during the day period, and a 5dB penalty during the evening period is reflected in the noise contours provided in Appendix Q.

- *LA10 measurements (in addition to the LA90, Leq, and Lmax measurements provided)*

Background noise logging data is provided in Appendix Q on Page 11.

- *justification for the use of 'default noise-enhancing meteorological conditions' and the exclusion of any noise-enhancing weather or worst-case sound propagation conditions in line with Fact Sheet D of the NPfI*

The noise assessment adopted the first option; i.e. noise-enhancing meteorological conditions consistent with Table D1 of Fact Sheet D of the NPfI representing a conservative assessment. Specifically, Stability Category D was used with a wind speed of 2.5 m/s from all sources to each sensitive receiver location.

Noise contours for the day-time and evening periods based on the noise-enhancing meteorological conditions described above (stability category D, 3m/s wind from all sources to each receiver location) are provided in Appendix Q.

- *Noise contours*

Noise contours are provided in Appendix Q.

8.9 Social Impact

DPIE Comment:

Social impact assessment

The EIS appears to focus on positive social impacts of the development, however, does not identify or address any potential adverse social impacts of the development. The Department requests the following:

- *Revised information (EIS Section 6.9) to include an assessment of any negative and cumulative impacts and issues such as way of life, health and wellbeing and aesthetic values*

The potential social impacts of the proposed expansion are generally positive for the local community and regional waste management industry, as discussed in EIS Section 6.9.2, with a neutral impact on demographics and house prices or income. The potential impacts can be summarised as:

Table 8.9 Social and Economic Impacts

Impact	Comment	Timeframe
Employment	A slight increase in employment (< 100 people) is expected but it is not significant in the wider community	Positive impact mainly short term with some positive longer term impact for construction activities
Household income/ property value	Based on the current status of Mourquong/Gol Gol compared with the surrounding towns, there is no indication that proposal will detrimentally impact personal financial or wealth	Neutral impact
Cost effective waste service	The proposed development will improve the resource recovery facilities on-site and extend the extend the life of landfill. By providing a regional facility, cost efficiencies can be realised to provide a more cost-effective waste service to the local and regional community	Positive impact
Environmental	The proposed development will require the removal of over 40 ha of native vegetation. The rehabilitation strategy includes planting native vegetation which may improve the quality of the stands in the longer term	Negative short term impact Positive long term impact
Traffic	Increase vehicle movements can increased the risk of road damage and accidents The greater use of the road will also result in improvements to the road through better intersections and widening	Possible positive and negative impacts. Longer term impact should be positive
Security of planning	By securing a large area for waste management purposes, even if the land area is not used for a landfill in the future but for newer waste processing activities, it has allowed surety in planning for other developments	Indirect positive long term impact
Development and land use	Improving the facilities and road network may attract other commercial users to the area. This could be beneficial, provided the buffers to horticultural industries in the south are maintained and the industries are sympathetic to the existing mining opportunities, e.g. composting facilities, intensive animal husbandry	Indirect long term positive impacts to business growth and development Possible long term negative impacts to agriculture if industries are not compatible
Visual amenity	The landfill is effectively screened from most of the surrounding land uses and hence visual impacts are not likely	No or slight negative impact

Impact	Comment	Timeframe
Way of life	The landfill has been in operation since the 1930s, however increase waste tonnages will mean increased activity which, although does not exceed accepted criteria, can still impact sensitive people. The buffers to sensitive receptors are over 1 km and the landfill is planned to screen subsequently landfill stages	Negative short and long term impact moderated by buffer

8.10 Visual Amenity

DPIE Comment

Visual impact

The Department requests the following information to ascertain how the completed landfill cells would appear in the relatively flat landscape:

- *Visual assessment from key sightlines with diagrammatic representation of views to proposed structures and Stage 1 and Stage 2 rehabilitated dunes*
- *Explanation of the north-south orientation of the Stage 2 cells being at right angles to the east-west orientation of the Stage 1 cells which are said to be sympathetic to other regional landforms (EIS pp. 51 & 68-69)*

- *Visual assessment from key sightlines with diagrammatic representation of views to proposed structures and Stage 1 and Stage 2 rehabilitated dunes*

A visual assessment has been undertaken by developing sight lines from surrounding areas which may be impacted by the proposed development. These renders were not developed for the EIS as the distance from the proposed development and screening which will be afforded by the rehabilitated existing landfill was considered to result in little or no impact to surrounding receptors; however this was not clearly demonstrated within the EIS.

Four sightlines were selected following a site visit to locate potential view points and in discussion with Grieve Gillett Anderson, who completed the renders. The selected locations were:

- 1 To the north of the landfill where the tree screen along the road thins. Road users heading south may be affected by development in this location. A 200 m buffer is in place from the edge of the landfill cell to the boundary fence around the entire site.
- 2 At the entrance to the Buronga facility. Development of the FERF along the entrance may be imposing to road users heading north along Arumpo Road.
- 3 At the closet residences which is over 800 m from the gate and further from the proposed development. This resident is the receptor most likely to be affected by the proposed development in the shorter and longer term
- 4 At an elevated location at the edge of the Buronga residential area. To the north of this location the elevation decreases and the Buronga landfill is screened by native vegetation. A number of locations were investigated in this area but the landfill was only marginally visible from one location.

These locations are shown in Figure 13. An additional two photo locations were discarded as no visual impact was observable due to their elevation. A bright green colour was used to represent the rehabilitated dunes as using a more natural green colour resulted in no observable difference between the renders. Also, the effect of vegetation growing on the rehabilitated face of the existing landfill was

not included, which would have further screened the proposed development stages, particularly Stage 1, to present a worst-case visual impact.

As can be seen in the rendered images, the Buronga Landfill is barely visible in the photos. The largest potential impact is for drivers heading south along Arumpo Road where the final landform may be visible above the tree line (Figure 14). It is noted that only a small section of the landform will be visible and hence the potential impact will be limited to a relatively short timeframe.

The second most obvious impact is at the site entrance (Figure 15). The FERF will be visible from the roadway but the set back distance from the road has limited the impact and passing road user are unlikely to observe the new buildings. No other aspects of the proposed development can be observed from the road.

The closest resident was the receptor most likely to be affected by operations over a longer timeframe; however, the rendered image suggests that the impact is not significant (Figure 16). The Stage 1 development is screened by the existing landfill development and the FERF, RRA and other buildings are not visible from this location. It should also be noted that the photo location was taken on the northern side of the machinery shed which screens the house to the north so the visual impact is further reduced from that shown in Figure 16.

As the Buronga township expands, development to the north is at a lower elevation than the location of Render #4 and during the site visit, the current landfill operations were only visible from this location (Figure 17). The landfill expansion is barely visible in the distance and Stage 1 will be mainly screened by the current landfill stages; Stage 2 is the only section of the proposed development which may be visible as it extends further east than the existing landfill stages. The location of the photo was at ground level so two-storey houses in this location may have a larger view of the landfill but given the distance is over 4 km this change will be negligible.

Overall, the proposed development may have some visual impact on road users along Arumpo Road, though the duration and impact are likely to be small. The visual impact to residents, both as neighbours and within the township, may have a longer duration but the proposed buildings are not visible and the landfill landform is predominantly screened by the existing landfill stages. The visual impact of the development remains as assessed in the EIS.

- *Explanation of the north-south orientation of the Stage 2 cells being at right angles to the east-west orientation of the Stage 1 cells which are said to be sympathetic to other regional landforms (EIS pp. 51 & 68-69)*

The final landform has been developed with east-west ridges to be sympathetic to the regional landscape. The orientation of the landfill cells, which has been designed to be south to north as this operationally efficient, does not dictate the final landform, it only impacts the staging of the landfill cells. Waste filling in each cell will progress until the final surface levels are reached to create the east-west final landform.

Figure 13 Photo Locations for Sight Lines



Figure 14 Render #1 Arumpo Road from North Western Boundary with views as Current (left) and Following Proposed Development (right)



Figure 15 Render #2 Front Entrance of Buronga Facility with views as Current (left) and Following Proposed Development (right)



Figure 16 Render #3 Nearest Resident on Arumpo Road Looking North to Buronga Landfill with views as Current (left) and Following Proposed Development (right)



Figure 17 Render #4 From Elevated Location within Township Looking North to Buronga Landfill with views as Current (left) and Following Proposed Development (right)

9 Updated Project Justification

The Buronga Landfill is appropriately located and designed, meeting the EPA siting and design criteria detailed in the EPA Landfill Guidelines. It has been used as a waste facility for 80 years and is zoned as for use as a waste facility. Its development approval is based upon existing use with its long history associated with appropriate use and few complaints.

The surrounding local government areas do not have facilities that are as large and have as much potential as the Buronga Landfill; many are nearing capacity. There is support for WSC to develop Buronga as a regional waste facility. The Regional Waste Strategy prepared by RAMROC (now RAMJO) identified the need to rationalise the landfills (Action 7.5) and develop subregional facilities. At the time the Strategy was prepared, the Buronga facility was not specifically identified; however given the location of the site on the main arterial roads in Western NSW it provides a relatively central location with good connections to larger recycling operations in Adelaide and Melbourne than other towns in this region. The Mildura Rural City Council Waste Strategy also identifies WSC as key stakeholder in developing expanded resource recovery facilities.

The quantity of waste materials will increase in the future as the population increases. Mildura and Wentworth are the two main LGAs likely to experience population growth in the region and hence it is logical to place a regional waste facility in this locality. For many of the neighbouring Councils, it is prudent to continue to manage their recycling activities as there is potential for the generation of local jobs, savings in transport and generate money from these materials to offset the broader costs of waste management.

The Buronga Landfill currently receives around 33,000 tpa which makes it a medium sized landfill. By increasing the maximum tonnages to 100,000 tpa, the facility will remain a medium sized facility. Over time it is expected that improved site facilities and practices, technology and education will reduce the proportion of waste going to landfill and increase the amount of recycling.

Education is a key to reducing the amount of waste going to landfill and there are ambitious targets to reduce waste to landfill to zero; however these targets will require a paradigm shift for producers and consumers to modify their behaviours. The waste industry does not generate waste, it receives it. By having a waste facility available, this does not encourage producer to make non-recyclable products, nor does it encourage householders to not recycle. The gate fees and charges are levied to discourage waste for disposal compared to recycling. The upgraded resource recovery facilities are part of this development to maximise the potential for waste to be recycled efficiently and economically. The Front End Recycling Facility is a free drop-off for wastes with a value or that can be repurposed. This is encouraging separation and recycling of waste that would otherwise go to landfill. The Resource Recovery Area, including the existing CRC, will further maximise the probability that site users will recycle wastes. Having a price differential for sorted wastes, particularly for C&I and C&D wastes, which are a large proportion of the waste disposed to landfill will assist in increasing recycling rates locally.

It is noteworthy that all submissions were received from government departments and no submission were received from the public, even though WSC emailed the community stakeholders contacted during the EIS preparation and provided them the link to the EIS on the planning portal.

The Buronga Landfill site has the room to accommodate enhanced facilities or new technologies, should these become economical in the future. By gaining approval for a waste management facility with a long future, WSC can guarantee waste management facilities for its ratepayers and its neighbours. By keeping this facility in the NSW Western region it is also keeping jobs in the locality and minimising logistical and transport impacts to a minimum.

The design and operation of the facility is controlled by an Environment Protection Licence (EPL). The EPL specifies the approved operating procedures and monitoring requirements for the landfill. This includes requirements to record and control wastes being accepted at the site and establishes limits on

the quantity of wastes, particularly flammable wastes, which may be stored on-site at any one time. The design requirements not only extend to the landfill but also to the proposed resource recovery facilities as well. During the detailed design of the site infrastructure as well as the cells and capping, the EPA has guidelines which identify best management practices which consider:

- fire protection
- traffic access, conflicts and movements
- protection of the environment from waste, leachate and landfill gas through best practice engineering design
- stormwater management
- buffer distances from sensitive receptors, including groundwater and surface water
- construction practices, including construction environment management plans (CEMPs) which detail erosion and sediment control, noise management and mitigation, traffic, etc.
- appropriate rehabilitation and after care which considers the final use of the landfill in developing the final landform and vegetation selection.

WSC is developing a whole of life financial model to plan the funding required to develop and maintain a best practice facility in the region in the longer term. Part of this includes setting aside provisions within the balance sheet for rehabilitation of the site in the future. For landfills, this is undertaken in a progressive manner as cells are completed. The whole of life model assists in predicting when these funds may be required enabling better planning by WSC.

The outstanding issues related to land owner consent and land use conflict risk assessment has demonstrated that the proposed development is compatible with the current uses in this area. The initial evaluation identified the only risk above ranking 10 as for noise associated with crushing and grinding; however once additional mitigation measures were applied, the risk reduced to acceptable levels. This is further evidenced by the lack of public comments during the exhibition period. There are very few complaints for the existing facility since it has been operated by Council which provides evidence that the landfill can be managed to minimise impacts.

Further assessment undertaken on the economic, environmental and social impacts found the proposed project can comply with acceptable criteria when assessed conservatively using worst case scenarios.

- Air quality assessment still concluded that the proposed development meets the required criteria and air quality should not be considered a constraint to the development. No additional management or mitigation measures were recommended
- Traffic assessment found a negligible increase in traffic. The recommendations to widen Arumpo Road and to improve the intersection at the entrance to the facility and Arumpo Road remain unchanged
- Groundwater will not be impacted for the proposed development with detailed design to ensure a 2 m separation distance is maintained between the cell liner and the groundwater and no WaterNSW groundwater wells will be impacted by the development; the nearest construction is over 100 m from the well
- Potential hazards are not present in the current or proposed development. The additional information supplied, clearly demonstrates that the current and proposed development are not a potentially hazardous industry with the quantities of potentially dangerous or hazardous goods stored on site significantly below thresholds. The current and proposed development is a potentially offensive industry but as demonstrated in the EIS, all potential impacts can be managed to result in no offence
- Biodiversity remains impacted by the project due to the clearing of native vegetation. There were no additional significant impacts identified with the introduction of weeds and impact on adjacent vegetation remaining the moderate risks related to the proposed development. The management and mitigation measures remain the same as presented in the EIS.
- Cultural heritage remains unchanged with the addition of the contingency in the event of finding an artefact. It is noted that a Heritage Management Plan is to be prepared prior to construction and this has been added to the mitigation measures but has not changed any of the risks related to the project.

- Noise assessments found that there is potentially an additional impact which requires additional mitigation. Processing of waste streams, specifically green waste, C&D and tyres) may exceed the noise limit criteria under the worst case scenario if these activities are undertaken concurrently. As Council uses the one contractor to undertake these activities it is unlikely that they would be undertaken at the same time; however, this will be a required management measure to ensure noise levels remain within acceptable limits. No other additional scenarios modelled exceeded the acceptable criteria.
- Social impacts have been expanded to include a broader range of impacts. Buronga Landfills location meets the requirements of EPA Landfill guidelines which include consideration of impact to surrounding receptors and hence it is not unexpected that the proposed development has few disadvantages and those identified are short term or short duration. Overall, the project remains positive on balance.
- Visual amenity sightlines show little or no impact to the nearest neighbour, road users or the Buronga township. By rehabilitating the existing southern batter slope, the proposed development is screen from most neighbours. The impact to road users is likely to be short duration as the landfill development expands and rehabilitates in stages.

Overall, the Buronga Landfill is well-positioned to fill a regional need for a centralised waste management facility that incorporates resource recovery areas to increase recycling rates, in line with State and regional policy. The development is supported by RAMJO and MRCC with no objections from local residents. The EIS has demonstrated that detrimental impacts can be managed by typical operating procedures for landfills which are described in the EPL and LEMP for the site. By clearly establishing a waste management facility in this location for the future, it will allow surety in planning for WSC and its neighbouring LGAs and keep jobs within the local community. It is recommended that the development is approved.

Appendix A – Updated Project Figures

Appendix B – Submission Register

Appendix C - Updated Mitigations Measures

Appendix D – Title Plans and DA15/134 Council Approval and Assessment Forms

Appendix E – Letters of Support

Appendix F – LFG Typical Details

Appendix G – CIV

Appendix H – Crown Consent

Appendix I – LUCRA

Appendix J– MinView Plan and Mining Liaison

Appendix K – Additional Stakeholder Communication

Appendix L – Air Quality

Appendix M – Traffic Plans

Appendix N – Well Locations

Appendix O – Updated BDAR

Appendix P – Heritage Site Record

Appendix Q – Noise