ENVIRONMENTAL IMPACT STATEMENT

Proposed Non-Putrescible Waste Disposal Facility (Landfill)

Tumblong Reserve Road, Tumblong NSW 2729

Lot 7004, DP 1028797 & Lot 7300 DP 1149008 & Part Crown Road

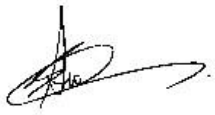
Part A – Report

Prepared for MH Earthmoving

Rev 2.0 – November 2019

DECLARATION

Declaration in accordance with clause 6(f), Schedule 2, Part 3 of the NSW Environmental Planning and Assessment Regulation 2000.

Submission of Environmental Impact Statement (EIS)		
EIS prepared by	Salvestro Planning & Insitu Advisory	
Name	Garry Salvestro	Alan Dyer
Qualifications	Bachelor of Town Planning (UNSW) PIA CPP	B.Sc (Hons), M.Sc. MAusIMM, MIQ, FGS, CEnv, MCIWM
Position	Director Salvestro Planning	Director InSitu Advisory
Address	PO Box 783 (16 Fitzmaurice Street) Wagga Wagga NSW 2650	15/23 Narabang Way Belrose, NSW 2085 PO Box 503 Frenchs Forest
In respect of	Waste Disposal Facility (Landfill) - Tumblong	
SEAR Reference	SEAR 1321	
Applicant name	M H Earthmoving Pty Ltd	
Applicant address	150 Sheridan Street, Gundagai NSW 2722	
Proposal	Use of the site as a waste disposal facility by landfilling of up to 60,000 tonnes per year of non-putrescible waste material and an overall capacity of 485,000m^3.	
Land to be developed	Lot 7004 DP 1028797 & Lot 7300 DP1149008 & Part Crown Road, Tumblong Reserve Road, Tumblong.	
Environmental Impact Statement	An Environmental Impact Statement is contained in following documentation as referred to under clause 78A of the Environmental Planning and Assessment Regulation 2000.	
Certification	*I certify that I have prepared the contents of this Environmental Impact Statement and confirm, to the best of my knowledge, that:* • *It has been prepared in accordance with clauses 6 and 7 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000;* • *The statement contains all available information that is relevant to the environmental assessment of the development to which the statement relates; and* • *To the best of my knowledge it is true in all material particulars and is not, by its presentation or omission of information, materially misleading.*	
Signature		
Date	5 November 2019	5 November 2019

Proposed Non-Putrescible Waste Disposal Facility (Landfill) Tumblong Reserve Road, Tumblong NSW

EXECUTIVE SUMMARY

The Bangus Quarry located at Tumblong Reserve Road, Tumblong was reserved as a quarry in 1975. Since then the quarry has been utilised as a source of gravel to service regional needs. Subsequent to the proposed additional excavation to achieve required formation levels, the quarry will have reached the end of its productive life and requires remediation in accordance with the quarry licence requirements and with the duty of care to the community.

This proposal involves remediation of the quarry by utilising it for general solid waste (non-putrescible) landfill purposes after which the quarry will be capped and returned to a state consistent with the surrounding landscape and local biodiversity considerations.

The landfill will fulfil a local regional need servicing a single manufacturing facility operating in the resource recovery and recycling industry. Visy Pulp and Paper, located at Tumut, NSW is a producer of kraft linerboard utilising plantation grown radiata pine and recycled waste paper. Unfortunately, due to anomalies and imperfections in the recycling industry, the feedstock contains small quantities of unsuitable material such as glass, metal and plastics . These materials cannot be used in the manufacturing process and therefore require disposal to licensed waste processing facilities.

The Environmental Impact Statement has been prepared in accordance with the Environment Protection and Assessment Act 1979, Schedule 2 of the Environment Protection and Assessment Regulations 2000 and the Department of Urban affairs and Planning EIS Landfilling Guidelines 1996. It addressed the Department of Planning and Environment and Environment Secretary's Environmental Assessment Requirements (SEARS No. 1321) as issued on 1 April 2019.

Proposal Location

The site is approximately 4.5 hectares in area and is located approximately 3.5 kilometres from the community of Tumblong and 18.7 kilometres from Gundagai township.

The subject site comprises Lot 7004 of Deposited Plan and Lot 7300 of Deposited Plan 1149008 and part Crown Road, and was designated as a quarry reserve (reserve 89508) in 1975. Access is provided via Tumblong Reserve Road northwards 1.2 kilometres of its intersection with the Old Hume Highway. An adjacent Lot 1 DP702858 owned by the proponent will be used for temporary stockpiling of quarried materials.

Proposal Objectives and Justification

The main objectives of this development proposal are:

- To remediate an existing quarry nearing the end of its economic life in accordance with relevant legislative and community obligations.
- To establish a non-putrescible waste disposal facility in an environmentally sustainable and responsible manner to meet the needs of local and regional waste recycling activities;
- To ensure the proposed development meets or exceeds environmental protection goals through the adoption of best practice environmental management, mitigation and remediation technologies;
- To undertake rehabilitation works that support and regenerate natural ecosystems and habitats.
- Provide local employment through the construction and operation of the proposed facility.

Justification of the project has been assessed in respect of its strategic context, ability to meet key environmental assessment goals, overall benefits, site selection criteria, and consideration of alternatives.

The proposal is consistent with various National, State, Regional and local strategies, and contributes to meeting various community, environmental and economic goals set in the Gundagai Community Strategic Plan 2018-2028 and Riverina-Murray Regional Plan 2036.

The proposal is permissible with consent and satisfies all provisions of the Gundagai Local Environmental Plan 2011. It satisfies the Local Environmental Plan and RU1 zone objectives. The proposal will not have any significant impact on land resources, water resources and biodiversity, as assessed by relevant specialist studies.

The project has the potential to deliver significant community benefits in respect of its contribution to rehabilitating a significantly degraded quarry site, meeting waste recycling strategies, local business growth, environmental management and building on local expertise in sustainable waste disposal management. Alternatives to the proposal were considered in conjunction with applying best practice site selection criteria. It was determined that establishing this facility was the preferred option based on relevant authority guidelines, planning policies and sustainability objectives.

Environmental Impact Assessment

An environmental risk assessment was undertaken based on initial investigations and consultation to identify and prioritise issues for further detailed analysis. The table below lists the key issues and summarises the resultant environmental assessment undertaken.

Key Issue	***Assessment Method***	***Impact Determination***		
		Construction	***Operation***	***Post Remediation***
	Time Frame	0 - 2 Months	2mths – 15 Years	15 Years +
Ground Water	Expert Report	Nil	Negligible	Negligible
Surface Water	Expert Report	Minimal	Negligible	Moderate Positive
Noise and Vibration	Expert Report	Negligible	Negligible	Nil
Air Quality	Expert Report	Moderate	Negligible	Nil
Odour	Expert Report	Negligible	Minimal	Nil
Traffic and Transport	Expert Report	Minimal	Minimal	Nil
Biodiversity	Expert Report	Minimal	Negligible	Minor Positive
Local Character and Amenity	Expert Report	Minimal	Minimal	Negligible
Soil	Expert Report	Minimal	Negligible	Negligible Positive
Greenhouse and Landfill Gas	Expert Report	Negligible	Negligible	Negligible
Hazards and Risk	Expert Report	Nil	Nil	Nil
Socio-Economic	Expert Report	Minor Positive	Moderate Positive	Negligible Positive
Visual Amenity	Expert Report	Minimal	Minimal	Moderate Positive
Cumulative Impact	Expert Report	Minimal	Negligible	Negligible Positive

Note: Impact Determination based on relevant expert responses.

Assessment & Conclusion

The proposal has been assessed against relevant impact criteria including compliance with Ecologically Sustainable Development principles and the public interest.

The proposed development is a sustainable and environmentally responsible development that will meet the objectives of the local, state and national waste management and recycling strategies, as well as the needs of the local pulp and paper production industry, recycling / resource recovery industry and ancillary support services.

Critical analysis of the proposal and potential areas of impact has determined that the site is suitable for the proposed landfilling activity. The proposal is considered to have negligible environmental impact overall, based on the supporting documentation and expert reports.

Proposed Waste Disposal Facility (Landfill) Tumblong Reserve Road, Tumblong NSW

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GLOSSARY OF TERMS AND ABBREVIATIONS

Terms used throughout the EIS		
Term	Definition	Source
Aquatic	of or relating to water.	Macquarie Dictionary
Aquifer	an underground layer of water-bearing permeable rock or unconsolidated materials (gravel, sand, silt, or clay) from which groundwater can be usefully extracted by using a water well.	EPA Solid Waste Landfill Guidelines 2016
Catchment	a drainage area, especially of a reservoir or river.	Macquarie Dictionary
Cumulative Impact	Cumulative impacts are the successive, incremental and combined impacts of one, or more, activities on society, the economy and the environment. Cumulative impacts result from the aggregation and interaction of impacts on a receptor and may be the product of past, present or future activities.	Cumulative Impacts - A Good Practice Guide for the Australian Coal Mining Industry (Franks et al, 2010)
Environmentally Sensitive Land/Area	(a) land identified in an environmental planning instrument as an environment protection zone such as for the protection or preservation of habitat, plant communities, escarpments, wetland or foreshore or land protected or preserved under State Environmental Planning Policy No 14—Coastal Wetlands or State Environmental Planning Policy No 26—Littoral Rainforests, or (b) land reserved as national parks or historic sites or dedicated as nature reserves or declared as wilderness under the National Parks and Wildlife Act 1974, or (c) an area declared to be an aquatic reserve under Division 2 of Part 5 of the Marine Estate Management Act 2014, or (d) land reserved or dedicated within the meaning of the Crown Lands Act 1989 for the preservation of flora, fauna, geological formations or for other environmental protection purposes, or (e) land declared as wilderness under the Wilderness Act 1987.	Environmental Planning and Assessment Regulation 2000
Fauna	The animals of a given region or period, taken collectively, as distinguished from the plants (or flora)	Macquarie Dictionary
Flora	The plants of a particular region or period	Macquarie Dictionary
Fly Ash	unburnt carbon, ash and fine sand, a by-product of the recycling process	A&R EIS
Dregs and Grits	Un-burnt carbon and inorganics, a by-product of the recycling process	A&R EIS
Haulage Route	The specified route that the haulage vehicles utilize to transfer the waste material from the source to the waste disposal facility	Salvestro Planning
Hydrogeology	The branch of geology which deals with the study of underground water and the geological aspects of surface water.	Macquarie Dictionary
Hydrology	The science dealing with water on the land, or under the earth's surface, its properties, laws, geographical distribution	Macquarie Dictionary
Landfill	A landfill is an engineered, in-ground facility for the safe and secure disposal of society's wastes	EPA Solid Waste Landfill Guidelines 2016
Leachate	the liquid that passes through, or is released by, waste. It arises from the inherent moisture content of the waste and from rainwater (and sometimes groundwater) percolating through or contacting the waste mass. Leachate may contain high levels of dissolved solids, ammonia, organic matter, and sometimes metals and other pollutants. These levels are typically well above background levels for undisturbed or slightly disturbed groundwater and surface water systems. The levels are also well above national quality guidelines for drinking water and other beneficial reuses of water.	EPA Solid Waste Landfill Guidelines 2016

Non-Putrescible Waste	a type of waste that is characterised by materials that do not readily decay under standard conditions, emit offensive odours, and attract vermin or other vectors (such as flies, birds and rodents). It does not include household waste containing putrescible organics, and food and animal waste.	Modified from putrescible waste definition
Overtipping	Placing additional waste over an existing approved landfill tipping level in accordance with a subsequent landfill expansion proposal.	SLR Consulting
Particulate	Pollution in the form of fine particles of solids or liquids suspended in a gas	Macquarie Dictionary
pH	a logarithmic scale that is based on the logarithm of the hydrogen ion concentration and is used to measure the acidity, alkalinity or neutrality of water. The range is from 0 to 14: 0 to 7 is acidic, 7 is neutral and 7 to 14 is alkaline.	EPA Solid Waste Landfill Guidelines 2016
Pollutant	includes water, air, noise or land pollution as defined by the POEO Act 1997	Protection of the Environment Operations Act 1997
Pseudogley	Soil types the generally occupy middle and lower slopes where free draining water from higher ground forms seasonal subsurface lateral seepages.	DM McMahon HHLA
Putrescible Waste	a type of waste that is characterised by materials that readily decay under standard conditions, emit offensive odours, and attract vermin or other vectors (such as flies, birds and rodents). It includes household waste containing putrescible organics, and food and animal waste.	EPA Solid Waste Landfill Guidelines 2016
Riparian Corridor	A riparian corridor forms a transition zone between the land, also known as the terrestrial environment, and the river or watercourse or aquatic environment	Office of Water - Guidelines for Riparian Corridors on Waterfront Land
RU1	Primary Production Zone	Gundagai LEP
Sensitive Receptors	Environments that could be affected by pollution from the landfill. Typically, this includes locations close to the landfill where people work or reside, such as dwellings, schools, hospitals, offices or public recreational areas. It can also include water bodies such as groundwater resources, drinking water catchments and sensitive wetlands.	EPA Solid Waste Landfill Guidelines 2016
Sustainable	designed or developed to have the capacity to continue operating perpetually, by avoiding adverse effects on the natural environment and depletion of natural resources	Macquarie Dictionary
Terrestrial	of or relating to the land as distinct from the water.	Macquarie Dictionary
The Proponent	M H Earthmoving Pty Ltd	
The Proposal	Expansion to existing waste disposal facility	
Threatened Species	has the same meaning as defined in the *Threatened Species Conservation Act 1995*	*Threatened Species Conservation Act 1995*
Waste Disposal Facility	A building or place used for the disposal of waste by landfill, incineration or other means, including such works or activities as recycling, resource recovery and other resource management activities, energy generation from gases, leachate management, odour control and the winning of extractive material to generate a void for disposal of waste or to cover waste after its disposal.	Gundagai LEP
Water Front Land	Includes the bed and bank of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary.	Office of Water - Guidelines for Riparian Corridors on Waterfront Land

Acronyms used throughout the EIS	
Acronym	Full Reference
AHD	Australian Height Datum
ADG	Australian Dangerous Goods Code
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AQMP	Air Quality Management Plan
CQA	Construction Quality Assurance
CQC	Construction Quality Control
CSU	Charles Sturt University
DCP	Development Control Plan
DEC	Department of Environment and Conservation
DECC	Department of Environment and Climate Change
DECCW	Department of Environment, Climate Change and Water
DEE	Department of the Environment and Energy
DLWC	Department of Lands and Water Conservation
DPIE	Department of Planning, Industry & Environment
DP&E	Department of Planning & Environment
DPI	Department of Primary Industries
DRS	Double Rough Sheet
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environmental Protection Authority
EPBC Act	Commonwealth Environmental Biodiversity Conservation
EPHC	Environment Protection and Heritage Council
EPL	Environmental Protection Licence
ESCP	Erosion and Sediment Control Plan
FFIA	Flora and Fauna Impact Assessment
FSANZ	Food Standards Australia and New Zealand
GCL	Geosynthetic Clay Liner
GLEP	Gundagai Local Environment Plan 2011
HHLA	Hydrogeological, Hydrological and Land Assessment
HDPE	High Density Polyethylene
LALC	Local Aboriginal Land Council
LCES	Leachate Collection and Extraction System
LCRS	Leachate Collection and Recovery System
LEMP	Landfill Environmental Management Plan
m	Metres
MHE	M H Earthmoving Pty Ltd
MIC	Maximum Instantaneous Charge
NATA	National Association of Testing Authorities
NIA	Noise Impact Assessment
NSW	New South Wales
NWC	NSW Wildlife Council
OEH	Office of Environment and Heritage
PBIA	Potential Blasting Impacts Assessment
PHA	Preliminary Hazard Analysis
PIRMP	Pollution Incident Response Management Plan
PoEO Act	Protection of the Environment Operations Act
REP	Regional Environmental Plan
RFS	Rural Fire Service
RL	Reduced Level
RMS	Roads and Maritime Services
RTA	Roads and Transport Authority
SEARs	Secretary's Environmental Assessment Requirements
SEPPs	State Environmental Planning Policies
SIX Maps	Spatial Information Exchange Maps

SJRPP	Southern Joint Regional Planning Panel
SLR	SLR Consulting
SP	Salvestro Planning
TARP	Trigger Action Response Plan
TIAR	Traffic Impact Assessment Report
TSS	Total Suspended Solids
UNSW	University of New South Wales
VENM	Virgin Excavated Natural Material, as defined in Schedule 1 of the Protection of the Environment Operations Act 1997
WH&S	Work Health & Safety
WMF	Waste Management Facility

Proposed Non-Putrescible Waste Disposal Facility (Landfill) Tumblong Reserve Road, Tumblong NSW

1 INTRODUCTION

The following Environmental Impact Statement has been prepared to assist in assessing and determining a development proposal to establish a General Solid Waste (Non-Putrescible) waste disposal facility at an existing quarry located along Tumblong Reserve Road in the Cootamundra-Gundagai Regional Council area.

The proposal seeks to remediate the existing quarry, which, subject to the final excavation to required levels, is nearing the end of its useful life, by providing a waste disposal facility which will service a large participant in the resource recovery and recycling industry.

Once the landfill reaches its capacity, the site will be fully rehabilitated to standards consistent with the surrounding landscape and biodiversity considerations.

This Environmental Impact Statement has been prepared in accordance with the Environmental Planning and Assessment Act 1979 and Schedule 2 of the Environmental Planning and Assessment Regulations 2000. It addresses the Department of Planning and Environment Secretary's Environmental Assessment Requirements as issued on 2 April 2019 and referenced as EF19/14692 SEAR 1321. A full copy of the Secretary's Environmental Assessment Requirements is included as an Appendix to this Environmental Impact Statement.

EIS Landfill Guidelines 1996 and EPA Environmental Guidelines: Solid Waste Landfills, Second Edition 2016 were key reference documents used in the preparation of this Environmental Impact statement. Other topic specific guidelines, as advised by relevant authorities, were also referenced to ensure best practice design considerations are adopted in the overall project proposal.

The Environmental Impact Statement shall be read in conjunction with accompanying plans and support documentation as listed below in Table 1.

Table 1: Plans and Support Documentation

Appendices		
No.	**Description**	**Prepared By**
1	Secretary's Environmental Assessment Requirements	Department of Planning and Environment
	Design Drawings Figure 0 – Cover Page and Drawing List Figure 1 – Site location plan Figure 2 – Existing Layout & Site Boundaries Figure 3 – Existing Site Survey Figure 4 – Proposed Landfill Subgrade Levels and Layout Plan Figure 5 – Engineered Sub-Base and Bunds Layout Plan Figure 6 – Proposed Engineered Geosynthetics Layout Figure 7 – Typical Sections and Construction Details Figure 8 – Proposed Leachate Drainage Blanket and Pipework Layout Plan Figure 9 – Leachate Drainage Construction Details Figure 10 – Phased Excavation Plan Figure 11 – Proposed Top of Waste Layout Plan Figure 12 – Typical Capping Construction Details Figure 13 – Top of Rehabilitation Soils Layout Plan Figure 14 – 3D Excavation and Proposed Final Waste Profile Plan Figure 15 – Excavation Soils Movement Plan Figure 16 – Rehabilitation Soils Movement Plan Figure 17 – Proposed Filling Plan Figure 18 – Infrastructure Layout Plan Figure 19 – Leachate Dam & Infrastructure Layout Plan Figure 20 – Stormwater Management Plan	InSitu Advisory
	Construction Quality Assurance Plan	InSitu Advisory
	Technical Specification – Cell 1 and 2 and Leachate Dam Construction	InSitu Advisory

	Aboriginal Archaeological Impact Assessment	OzArk Environment and Heritage
	Air Quality Impact Assessment	Northstar Air Quality
	Biodiversity Development Assessment Report	Advitech Environmental
	Leachate Generation Assessment - Memorandum	SLR Consulting
	Surface Water Assessment	SLR Consulting
	Noise and Vibration Impact Assessment	Waves Consulting
	Groundwater Impact Assessment	McMahon Earth Science
	Traffic Assessment	SECAsolution
	Letter of commitment for continuing use of excavated stockpiled gravel by Council	Cootamundra-Gundagai Regional Council

1.1 Background

The Bangus gravel quarry is identified as Lot 7004 of Deposited Plan 1028797 and Lot 7300 of Deposited Plan 1149008 and part Crown Road, and was designated as a quarry (Reserve 89508) in 1975. It is located in the Tumblong region which is included in the Cootamundra-Gundagai Regional Council area and the facility has been utilised on an "as-needed" basis since that time. The quarry has now reached a stage of optimum resource recovery and will soon require remediation.

Figure 1: Bangus Gravel Pit (Source: SP2019)

The Bangus gravel pit is located on the gravel surfaced Tumblong Reserve Road, approximately 1.2 kilometres from its intersection with the Old Hume Highway. The Old Hume Highway is a sealed road and intersects with the Hume Highway 2.3 kilometres to the east of the site.

Lots 236 and 286 in the figure below denote the location of the former Tumblong landfill. This site has been partly remediated.

Figure 2: Location of Bangus Gravel Pit (Source: SIX Maps)

The quarry occupies approximately 4.5 hectares of land and the site is located in close proximity to the former Tumblong landfill. It is adjoined by a travelling stock reserve, large rural holdings and with hobby farms nearby. The nearest residence is approximately 800 metres from the existing operation.

Figure 3: Bangus Gravel Pit (Source: SP 2019)

As is evident in the above, the site is highly archaeologically degraded as a result of previous activity.

Figure 4 & 5: Former Tumblong Landfill (Source: SP 2019)

The proposal is to fully excavate and reshape the existing quarry and to then remediate the site, as near as reasonably possible, to its pre-quarry landform and environmental condition, after which the site will be returned to the Department of Industry (Crown Lands) or their designated beneficiary.

The remediation will be focussed in the form of a general solid waste (non-putrescible) landfill which will serve the dual purpose of remediating the quarry whilst providing a highly strategic and valuable landfill service for a major resource recovery operation that operates in the region.

The landfill will provide services only to the Visy Pulp and Paper mill located between Adelong and Tumut and being approximately 59 km from site via main regional roads being Snowy Mountains Highway, Gocup Road, Hume Highway and Old Hume Highway before entering Tumblong Reserve Road. Access from other sources will not be permitted.

The waste material is primarily an unrecyclable inert product generated from a paper recycling process undertaken by Visy. Over 210,000 tonnes per year of recycled paper and cardboard are processed at the Visy Tumut plant, of which approximately 85% becomes recycled paper product and the remaining 15% requiring disposal to landfill. Other waste included in the subject landfill waste stream are a by-product of the Visy Pulp and Paper mill production process of converting plantation grown radiata pine to "kraft linerboard," which is primarily used in producing cardboard products.

The landfill will be constructed and operated in compliance with all relevant environmental and legislative requirements and with full respect of the local community.

In response to this situation, a site selection and evaluation process was commenced in consultation with Cootamundra-Gundagai Regional Council, Environment Protection Authority, Department of Planning and Environment, Department of Primary Industries, Office of Environment and Heritage, Roads and Maritime Services and other relevant parties. This Environmental Impact Statement is the culmination of that process.

1.2 Proposal and Location

The proposal involves the rehabilitation of a quarry nearing the end of its productive life by utilising it as a general solid waste (non-putrescible) landfill. The quarry is located along the gravel Tumblong Reserve Road and is adjacent to a travelling stock reserve and adjoining rural properties.

The value of capital works associated with the landfill establishment is estimated at $680,000.

The operation of the landfill will employ eight staff and potentially an additional two workers as new sustainable technologies and procedures become available and are introduced to the resource recovery process.

The proposal will involve temporary construction contractors, plant operators and management as well as the employment of support service industries and other businesses during the course of construction, operation and subsequent remediation. Added to this is the potential multiplier effect on the immediate local economy and job creation environment (generally between three to five times).

The site is located approximately 3.5 kilometres from the community of Tumblong which in turn is approximately 15 kilometres from the township of Gundagai.

The subject land is identified as Lot 7004 Deposited Plan 1028797 and Lot 7300 Of Deposited Plan 1149008 and is administered by Department of Industry (Crown Lands). Figure 6 indicates the location of the site in relation to the communities of Tumblong, Gundagai and Tumut and the proposed access route to the site.

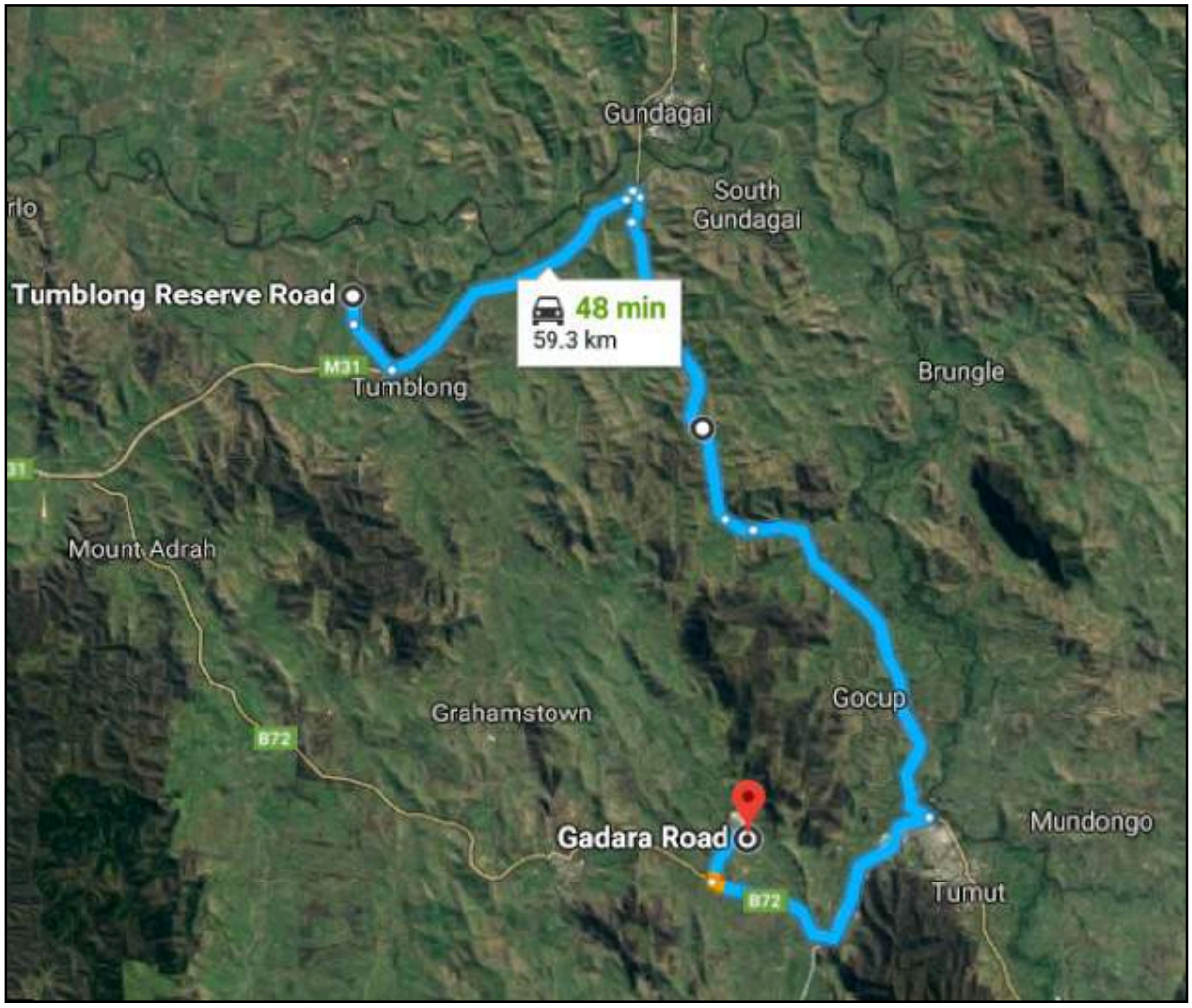

Figure 6: Site Location relative to communities and haulage route (Source: Google Maps)

In 2016–17 the Visy mill generated approximately 75,000 tonnse of residue product, much of which was required to be landfilled at a variety of sites including:

- Burra Road located near Gundagai
- Bald Hill located near Jugiong
- Minda located near Windellama / Bungonia
- Woodlawn located near Tarago

Of these, the Burra Road facility was the principal receptor but is scheduled to close in 2019 due to a recent application for further development expansion not being approved. The closure of this facility will place additional pressure on landfills located closer to the Sydney and Canberra metropolitan areas.

The Visy waste material is classified as General Solid Waste (Non–Putrescible) and consists of Paper Machine Rejects (PMR), dregs and grits, boiler sand / fly ash and recrystallisation plant residue. Of these, the dominant volume (60,000 tonne/annum ~ 78%) is PMR. The PMR are derived as the final step in the paper recycling process and is constituted mainly by plastics, glass and metals that physically cannot be converted into paper and which are unable to be utilised in other resource recovery processes utilising current technologies. The other waste materials are generated in the process of processing radiata pine raw material to create the final product, kraft linerboard, which is subsequently utilised primarily in the production of cardboard boxes.

During the period 2016–17 the Visy mill produced 676,070 tonnes of kraft linerboard from 1,900,000 tonnes of wood fibre and 213,000 tonnes of waste paper. In July 2017 approval was granted for production of 800,000 tonnes per annum of kraft linerboard. It is likely that a major portion of the increased production will be derived from the waste recycling process, in which Visy is a major participant throughout the eastern Australian states.

The recent action of China in introducing the "Green Sword" policy which effectively bans the importation of recycled materials from other countries has created heightened stress on recycling and waste disposal facilities and is likely to result in higher volumes of waste being required to be sent to landfills.

This situation is likely to continue until Australian recycling behaviours are improved and new technologies are developed and implemented

Figure 7, 8, 9 & 10: Recycling Industry Aspects (Source: InSitu 2019)

Additionally, the recent cessation of a NSW Government scheme using treated household waste for soil improvement in NSW farmlands will create further pressure on existing regional landfill capacity.

As a result of these considerations, it is proposed that the Bangus quarry rehabilitation and waste disposal facility will be designed to accept up to 60,000 tonnes per annum from the single source.

In brief summary, the Bangus quarry remediation proposal will benefit the community by rehabilitating an existing quarry, whilst providing a resource to the Visy mill which will allow the mill to increase its participation in the waste recycling industry, be environmentally compliant and responsible, and reduce the pressure on other landfills more closely located to metropolitan areas

1.3 Proponent and Land Ownership

The applicant is M.H. Earthmoving Pty Ltd. The subject land is administered by the NSW Department of Industry (Crown Lands) and has been utilised by the Cootamundra-Gundagai Regional Council as a quarry since being licensed in 1975. The quarry is nearing the end of its useful life and M.H. Earthmoving Pty Ltd is seeking management rights over the site until the quarry is fully rehabilitated, after which the site will be returned to the Department of Industry (Crown Lands).

1.4 Proposal Objectives and Need

The objectives of this development proposal are:

- To rehabilitate an existing quarry that is approaching the end of its lifecycle in accordance with relevant legislation and ethical considerations.
- To rehabilitate an existing quarry to appropriate environmental and community standards.
- To assist in the delivery of relevant local, regional and State waste minimisation and economic development strategies;
- To provide an environmentally responsible and economically viable regional landfill facility to support the continued operation of a large regional business that is a key contributor to waste recycling and waste minimisation in south eastern Australia.
- To minimise the volume and environmental impact of heavy vehicle traffic.
- To ensure the proposal meets or exceeds environmental protection goals through the adoption of best practice environmental management, mitigation and remediation technologies;
- To provide regional employment and economic and community stability to the local area;
- To operate, maintain, monitor and report on the activities of the landfill within statutory approval and licensing arrangements; and
- To undertake rehabilitation works that support and regenerate natural ecosystems and habitats.

1.4.1 Strategic Regional Context

The proposed landfill will be intrinsically linked with the Visy Pulp and Paper mill located at Tumut. Access to a locally based waste disposal facility assists significantly in ensuring the success of the Visy recycling process and achievement of local, regional, State and National waste minimisation and resource recovery strategies and programmes.

The proposal will provide a resource that meets the needs of current recycling technologies and processes, including subsequent strategies which target sustainable waste management. These include the National Waste Policy, the NSW Waste Avoidance and Resource Recovery Strategy 2014–21, and NSW 2021 State Plan.

1.4.2 Local Context

From a local perspective, the proposal will provide employment and skill development of waste management operations, dealing with an inert waste stream that is the end product of current recycling technologies. The proposal will deliver outcomes aligned with local and regional development strategies including the Cootamundra-Gundagai

Regional Council Community Strategic Plan 2018-2028 And Riverina–Murray Regional Plan 2036.
The proposal also forms part of the operator's strategic objective to become a leader in responsible and sustainable waste disposal operations, growing local business and community well-being and thereby assisting in achieving National and State strategies as mentioned above.

1.5 EIS Approach and Structure

As the proposed development is "designated development" under the provisions of the NSW Environmental Planning and Assessment Act 1979 and NSW Environmental Planning and Assessment Regulation 2000, this Environmental Impact Statement has been prepared in accordance with applicable legislative requirements and relevant guidelines. Its content is based on the Secretary's Environment Assessment Requirements and directions given by relevant agencies.

Following the consideration of opportunities, options and need, the Environmental Impact Statement reviews the proposal in relation to strategic relevance, site selection and appropriateness, identification of issues, potential environmental impact analysis, community consultation and overall project justification.

The EIS is presented in two volumes:

Part A, which includes:

1. Introduction and context
2. Project justification in relation to strategic goals and alternatives
3. Site details and history
4. Proposal description including construction and operational details
5. Waste material details including quantities, handling and management
6. Statutory and regulatory framework including permissibility and response to relevant policies
7. Consultation approach and outcomes
8. Identification and prioritisation of issues
9. Environmental impact assessment of key issues
10. Assessment of cumulative impacts;
11. Environmental management proposals including recommended mitigation measures; and
12. Assessment summary and conclusion.

Part B, which combines all relevant appendices, including authority directions, development plans, specialist reports and any other reports or papers that will assist the development application assessment and determination process.

2 PROJECT JUSTIFICATION

This section steps through the preliminary thought and analysis undertaken in considering the preferred option for establishing the landfill activity. The project's justification has been considered in respect of its strategic context, meeting environmental, economic and community goals set in various local and regional plans, overall benefits, best practice site selection criteria, and the analysis of feasible alternatives to the carrying out of the development.

2.1 Strategic Context

Gundagai and Tumblong are located within the Riverina Region and fulfil an important role in servicing the local and wider community. In proposing the quarry rehabilitation and establishment of the landfill, consideration has been given to relevant National, State, Regional and Local strategic directions covering topics including desired landuse patterns and activity areas, economic growth and employment, waste management and resource recovery, transportation networks and sustainable environmental management.

The following relevant strategy plans were considered:

1. National Waste Policy.
2. NSW 2021 State Plan.
3. NSW Waste Avoidance and Resource Recovery Strategy (2014–2021).
4. NSW Forestry Industry Roadmap 2016.
5. Riverina–Murray Regional Plan 2036.
6. Riverina Eastern Regional Organisation of Councils – Regional Waste Management and Resource Recovery Strategy 2014-2021.
7. Riverina Eastern Regional Organisation of Councils - Regional Freight Transport Plan – Oct 2016.
8. Roads and Maritime Services – Tumut to Hume Highway Corridor Strategy 2016.
9. Cootamundra-Gundagai Regional Council - Community Strategic Plan 2018-2028
10. Cootamundra-Gundagai Regional Council - Economic Development Strategy (May 2017)

2.1.1 National Waste Policy

The aims of the National Waste Policy are to:

- avoid the generation of waste, reduce the amount of waste (including hazardous waste) for disposal
- manage waste as a resource
- ensure that waste treatment, disposal, recovery and re-use is undertaken in a safe, scientific and environmentally sound manner, and
- contribute to the reduction in greenhouse gas emissions, energy conservation and production, water efficiency and the productivity of the land.

The policy sets directions in six key areas and identifies sixteen priority strategies. The proposal as outlined in this EIS supports the aims, directions and strategies established by the National Waste Policy by ensuring the expansion will be undertaken in a safe, scientific and environmentally sound manner.

2.1.2 NSW 2021 State Plan

The NSW 2021 State Plan is built around five key strategies and thirty-two goals.

Key aspects of the plan, relevant to this proposal include:

- Drive economic growth in regional NSW.
- Protect the natural environment
- Increase recycling.

The plan is committed to developing long term strategies that encourage resource recovery and prevent unnecessary waste.

This landfill proposal is an essential component of an efficient resource recovery process.

The proposal also supports the NSW 2021 State Plan in key areas of local infrastructure investment, employment opportunities, strengthening the local economy, improving the local skill base, environmental protection and ensuring transport routes are on designated roads that improve road safety.

The proposed operation will play an important role in the region, providing facilities for the disposal of non-recyclable waste generated by the Visy Pulp and Paper mill. This waste product needs to be disposed of in a responsible and environmentally and economically sustainable manner to allow the continuation of recycling and paper production operations at the Tumut facility.

Visy is a major employer in the Tumut region and continues to support the wider region economically. The significance of Visy to the local and regional economy is evident in the support provided by Federal and State Governments by enacting the Visy Mill Facilitation Act 1997. The primary purpose of this NSW Act is to facilitate the establishment and operation of the pulp and paper mill in Tumut NSW. It also extends support, via the State and its agencies, to Visy and any other persons to obtain any approvals that are necessary for, or relevant to, any of the designated activities, as defined in the Act, associated with the mill.

The relative proximity of the proposal makes it a significantly viable option for Visy to utilise it for the disposal of unrecyclable waste. The proposal will secure a sustainable facility for accepting waste from Visy for the next 10-15 years, thereby ensuring Visy's continuing contribution to the local economy of the region and satisfying the NSW 2021 State Plan general goal of driving economic growth in regional NSW by providing jobs in regional / rural NSW. The proposal is also consistent with the objectives of Goal 23 of the NSW 2021 State Plan by assisting Visy to operate a significant recycling facility and increasing recycling in accordance with the NSW Waste Recycling Targets 2014.

2.1.3 NSW Waste Avoidance and Resource Recovery Strategy (2014-2021)

The Visy mill plays an important role in the sustainable and continued operation of the recycling programs for many local, regional and state recycling programs by taking recyclable waste and re-purposing the material into new products. The Visy mill currently accepts over 213,000 tonnes per annum of recyclable material, with a recycling rate of approximately 85%.

The waste sent from the mill to landfill includes material that is unsuitable for recycling and has been rejected by the sorting process currently utilised by the mill. Typically, the material is incapable of being converted into paper due to its physical characteristics i.e plastics, metals and glass. This material cannot be further processed or treated and must be sent to landfill for disposal.

The process prevents approximately 181,000 tonnes per annum of material from going to landfill, improving the ability to provide recycled products to consumers. This is critical to the continued operation of recycling programs throughout local government areas in the region and the state.

The process outlined above support the "key result area" of the NSW EPA Waste Avoidance and Resource Recovery Strategy (2014–2021), reducing the amount of household waste that is landfilled. It is helping to increase recycling rates and providing education on the recycling process and required behaviour changes to increase recycling efficiency and reduce landfilled waste. The proposed landfill supports the Visy mill in achieving these aims by providing an environmentally safe and economical option to dispose of unrecyclable waste and process by-products in an ecologically sustainable manner.

2.1.4 NSW Forestry Industry Roadmap (2016)

This is the NSW Government's plan for building a stronger, more competitive and ecologically sustainable forestry industry. The subject proposal is a related service industry that helps underpin the core strategies of sustainability and growth.

2.1.5 Riverina–Murray Regional Plan 2036

The Riverina–Murray Regional Plan 2036 establishes a framework to grow the region's cities and local centres, supports the production of high–value environmental assets and makes developing a strong, diverse and competitive economy central to building prosperity and resilience in the region.

One of the top two infrastructure investments in this region is the $70 million upgrade of Gocup Road, between Tumut and Gundagai, which is currently underway. This road is part of the haulage route for the proposed landfill.

The regional plan comprises four strategic goals and twenty-nine key strategic directions. The most relevant for the subject proposal include those relating to:

- building resilient prosperous towns;
- protecting and facilitating transport corridors;
- supporting the forestry industry and related industries;
- protecting environmental assets;
- managing landuse activities to minimise impacts on communities and the natural environment.

The proposal has taken into consideration and is consistent with these strategic directions.

2.1.6 Riverina Eastern Regional Organisation of Councils – Regional Waste Management and Resource Recovery Strategy July 2014-2021

The Riverina Eastern Regional Organisation of Councils prepared this strategy in response to the NSW Government's Waste Less Recycle More initiative. Its structure follows focus areas by the Environment Protection Authority in its Reducing Waste: Implementation Strategy 2011–2015. Six themes were adopted for the plan covering areas of waste reduction, sustainability, recycling and investment in waste infrastructure. Snowy Valleys (which includes Tumut) and Cootamundra-Gundagai Regional Councils are members of the Riverina Eastern Regional Organisation of Councils.

The strategy states that:

- The vast distances that the region covers means that transport is a significant consideration in many of the activities that Riverina Eastern Regional Organisation of Councils undertakes.
- Two landfills in the region operate regionally. These landfills are operated by the Wagga Wagga City Council and the Bald Hill facility which is located in the Cootamundra-Gundagai Council area.

Item 4 of the Strategic Themes of the Riverina Eastern Regional Organisation of Councils strategy includes facilitating investment in waste infrastructure which includes:

> *"1.1 Explore the opportunity to establish regional collection and processing facilities including regional landfills.*
> *1.2 Promote investment in regional and rural infrastructure by all tiers of government and private enterprise.*
> *1.3. Work with councils to implement best practice approaches to the operation of waste facilities."*

An item of particular note in the studies carried out by Riverina Eastern Regional Organisation of Councils is:

"Of further concern was the amount of contamination that was found in the recycling in Cootamundra it was 17.45% well above the NSW State average of 5%, in Coolamon it was double the State average at 10.7% and in Wagga Wagga it was 13% again well above the State average".

It is relevant that recycled paper derived from both Wagga Wagga and Cootamundra is sent to the Visy mill at Tumut for further recycling and thereby contributes to the unrecyclable contaminants that are the subject of this proposed development.

The Bangus quarry remediation and landfill facility proposal directly supports the strategies contained in this document, particularly in relation to providing key specialist infrastructure that deals with the unrecyclable end product of regional resource recovery programmes.

2.1.7 Riverina Eastern Regional Organisation of Councils - Regional Freight Transport Plan – October 2016

Riverina Eastern Regional Organisation of Councils initiated this plan to ensure integrated transport solutions are implemented across the region. The Tumut–Gundagai corridor is highlighted as a significant transport route serving the local area, with improvements to Gocup Road ($70 million) currently underway as part of implementing this strategy.

It is noteworthy that this proposal fully utilises these haulage routes and only impacts a relatively short length of the Old Hume Highway and Tumblong Reserve Road.

This proposal ensures that essential haulage routes are utilising this transport route in a safe and sustainable manner.

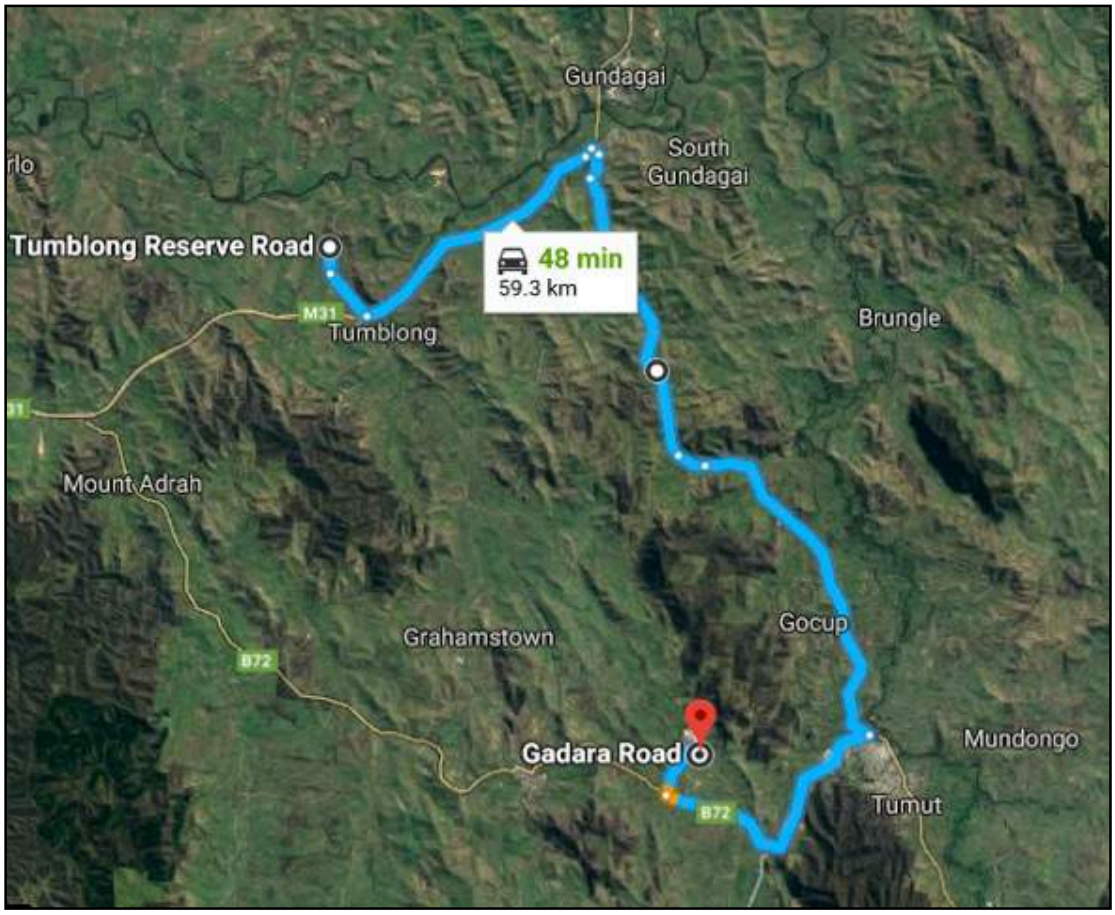

Figure 11: Road Transport Route (Source: Google Maps)

2.1.8 Roads and Maritime Services - Tumut to Hume Highway Corridor Strategy 2016

Roads and Maritime Services has been progressively preparing corridor strategies for every State Road in NSW. This strategy outlines objectives and visions for the Tumut to Hume Highway corridor, prioritising actions to address road infrastructure improvements, and it is in line with other state strategies listed above. Both Gocup Road and Snowy Mountains Highway are State Roads, providing haulage routes in support of local industries. The proposal ensures that essential haulage routes are utilising this transport route in a safe and sustainable manner.

2.1.9 Cootamundra-Gundagai Regional Council - Community Strategic Plan 2018-2028

Cootamundra–Gundagai Regional Council Community Strategic Plan 2018-28 addresses long term strategic planning for the local area concerning matters relating to transport infrastructure, economic development, local employment, key urban design issues including cultural heritage, quality services for the aged and youth, and promoting a family friendly community with strong community spirit. The plan integrates with the broader strategic plans discussed above, promoting partnerships and aligned objectives and goals.

Key areas of focus are encompassed in the strategic themes of:

1. *A vibrant and supportive community: all members of our community are valued.*
   1.1 Our community is inclusive and connected.
   1.2 Public spaces provide for a diversity of activity and strengthen our social cohesions.
   1.3 Our community members are healthy and safe.
2. *A prosperous and resilient economy: we are innovative and 'open for business.'*
   2.1 The local economy is strong and diverse.
   2.2 Strategic land-use planning is co-ordinated and needs-based.
   2.3 Tourism opportunities are actively promoted.
   2.4 Our local workforce is skilled and workplace ready.
3. *Sustainable natural and built environments: we connect with the places and spaces around us.*
   3.1 The natural environment is valued and protected.
   3.2 Our built environments support and enhance liveability.
4. *Good governance: an actively engaged community and strong leadership team.*
   4.1 Decision-making is based on collaborative, transparent and accountable leadership.
   4.2 Active participation and engagement in local decision-making.
   4.3 Cootamundra-Gundagai Regional Council is a premier local government Council.

For the proposed quarry rehabilitation and landfill establishment, relevant outcomes and goals underpinning those themes are respected and achieved by ensuring the development:

- is environmentally sustainable,
- results in the remediation of substantially degraded land,
- provides a facility that supports the waste recycling and recovery process,
- meets the landuse criteria established in the Gundagai Local Environmental Plan 2011,
- provides employment and economic growth for the benefit of the local area,
- accesses and embellishes local and regional infrastructure, and
- contributes to the local community lifestyle and rural setting by remediation of heavily degraded land in an environmentally responsible approach.

2.1.10 Cootamundra-Gundagai Regional Council - Economic Development Strategy (May 2017)

This strategy supports Council by providing a framework for a robust and growing economy through:

- Fostering economic resilience;
- Heightening responsiveness to the needs of the current and future business community;
- Emphasising the region as an accessible, affordable and appealing place to do business, raise a family and enjoy a country lifestyle.

Five strategic initiatives have been developed to help support economic development within the Cootamundra Gundagai region. These are:

- Strategic Initiative One: Grow the economy through existing and new businesses
- Strategic Initiative Two: Marketing and promotion as a great place to live and invest
- Strategic Initiative Three: Product development to become a "destination"
- Strategic Initiative Four: Drive agricultural enterprises
- Strategic Initiative Five: Work with partners to encourage economic infrastructure investment

The proposal is consistent with this strategy by ensuring a local business continues to operate and contribute to the local economy, provides ongoing employment and encourages investment in the local area. In addition, the management and remediation of the site will contribute to improving the local environment and protecting surrounding agricultural enterprises.

2.1.11 Strategic Context Overview

The proposed quarry rehabilitation and landfill has taken into consideration the broad range of strategic plans and policies relevant to its establishment and operation. It is consistent with, and actively supports, the strategic goals and contexts of the region's vision in regards to recycling and the provision of jobs within a rural environment. The provision of additional landfilling resources to accommodate recycling by-products and rejected materials allows for continued sustainable recycling programs throughout the state and regional areas, decreasing the overall amount of waste required to be landfilled.

2.2 Benefits

As noted from the environmental analysis undertaken in this EIS, the proposed proposal will have the potential to deliver significant benefits, including:

- To rehabilitate a significantly degraded landform to an acceptable environmental and community standard.
- To meet the needs of waste recycling strategies for the region and state.
- Creating further opportunities for the wider community and industry (particularly the local timber industry) to meet future targets for resource recovery, recycling and best practice waste management.
- Establishing opportunities for employment growth in relation to the landfill operation and other support industries during both construction and ongoing operational phases.
- Having no significant environmental impacts particularly in relation to groundwater, noise, air quality and local rural amenity.
- Building on local expertise in sustainably managing waste disposal.
- Reinforcing community values and socio-economic well-being of the local area.
- Establishing landfill operations in an appropriately zoned area that consolidates waste management activity in a managed environment with minimal impact on the rural setting during construction and operation, and with overall significant positive impacts when the site is remediated

2.3 Site Selection

Preliminary site assessment has made reference to the site selection process outlined in the Department of Urban Affairs and Planning Environmental Impact Statement Guidelines (1996), as well as criteria listed in the NSW EPA Environmental Guidelines: Solid Waste Landfills (2016), as summarised below.

Table 2: Site Selection Considerations

Site Selection		
Criteria	**Response**	**Site Consideration**
Land zoning and compatibility with surrounding landuses	YES	Compatible
Existing local landuse character and amenity;	YES	Compatible
Potential for environmental and social impacts;	NO	No significant impacts identified.
Proximity to waste source and integration with existing and future waste networks including safe and efficient transportation routes;	YES	Consistent
Natural barriers (e.g. hydrogeological barriers) that protect environmental quality;	YES	Natural barriers exist.
Separation distances to sensitive receptors to ensure no adverse impact on existing and future development;	YES	Adequate separation distances achieved.
At least 250 metres from an area of significant environmental or conservation value (e.g. as legislated including parks, heritage areas / items, critical habitats, scenic areas, etc.);	YES	Requirement achieved
Outside a reserved drinking water catchment	YES	Achieved
At least 40 metres from a permanent or intermittent water body or in an area overlying an aquifer that contains drinking quality ground water that is vulnerable to pollution	YES	Achieved
Not within a karst region or on land with substrata that are prone to land slip or subsidence;	NO	Achieved
Not within a floodway that may be subject to washout during a major flood event (1/100 year event);	NO	Achieved
Avoid land identified in an environmental planning instrument as being of high Aboriginal cultural significance or high biodiversity significance;	TBC	Achieved
Existing and potential future access to operational infrastructure;	NO	Achieved
Proximity to transport resources, employees (existing and future), contractors, community facilities and ancillary services.	YES	Consistent

2.4 Environmental Sensitivity

The terms "environmentally sensitive area", "environmentally sensitive land" and "sensitive land" are often referred to and intermixed in discussion on land use development issues.

"Environmentally sensitive areas" are listed and defined by the Environment Protection Authority in their relevant guidelines for the purpose of considering site selection for landfill sites. These are referred to above and discussed in detail in attached expert reports and relevant section of this Environmental Impact Statement.

An "environmentally sensitive area" is also defined in separate legislation relating to exempt and complying development (State Environmental Planning Policy), however includes land categories that are not applicable to this site.

Sensitive land is referred to in the Gundagai Local Environmental Plan 2011 as being land as identified on the Natural Resources Biodiversity, Land and Water Maps.

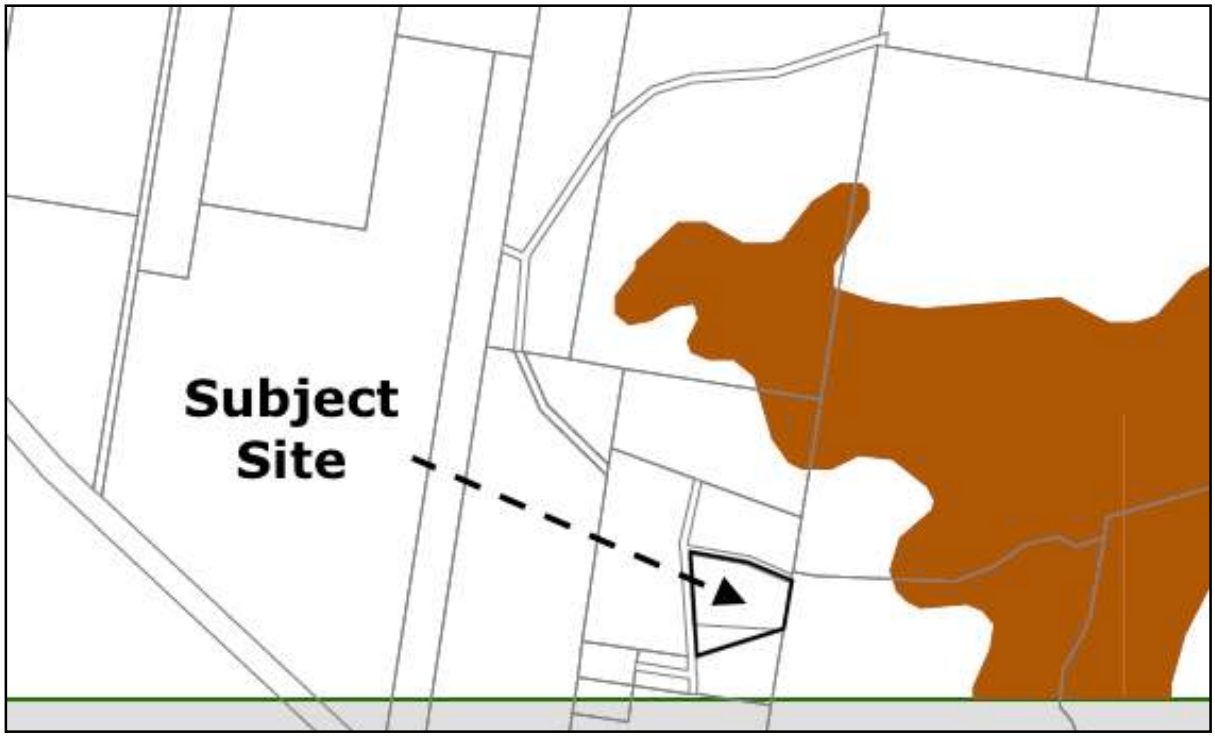

Figure 12: Extract from Natural Resources Sensitivity Land Map (Source: GLEP)

Whilst the site is located in proximity of sensitive areas as defined in the Gundagai Local Environmental Plan 2011 Natural Resource Sensitivity Land Map NRL_005, the site has been identified as not "environmentally sensitive" due to the high degree of landscape disturbance.

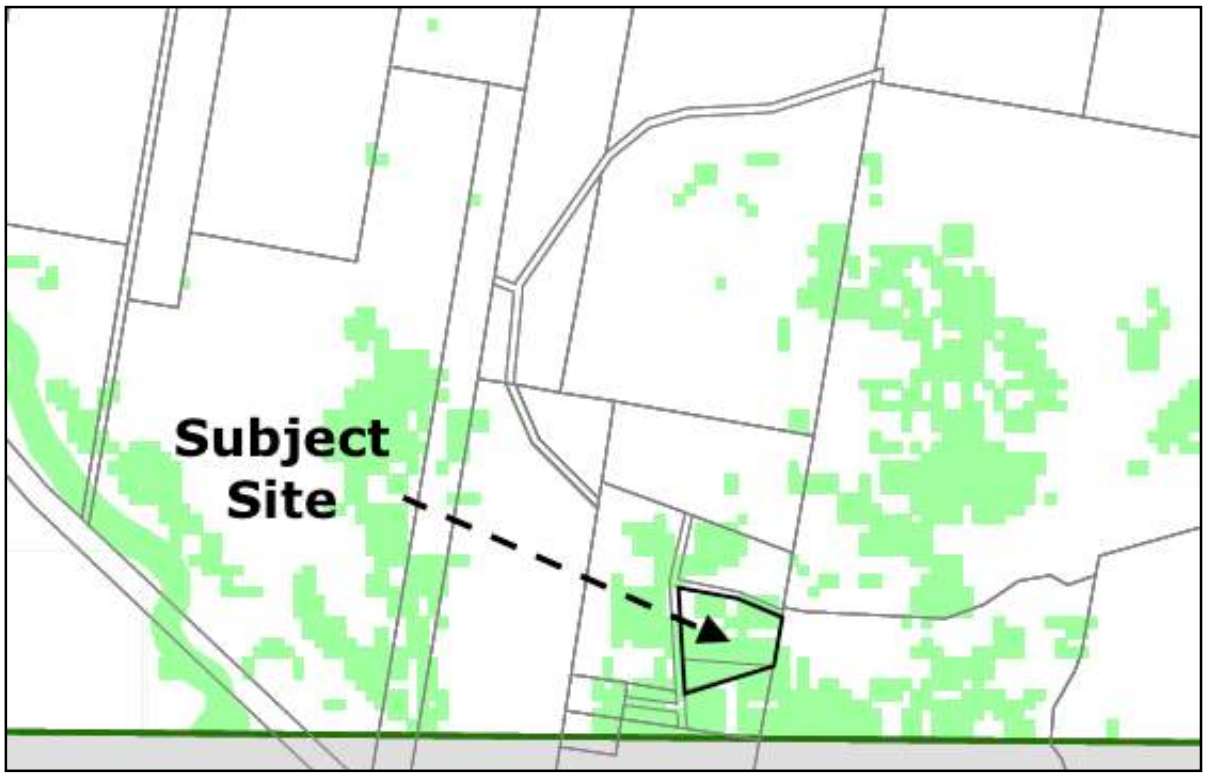

Figure 13: Extract from Natural Resources Sensitivity Biodiversity Map (Source: GLEP)

2.5 Reference Documents

The EPA Environmental Guidelines Solid Waste Landfill 2016 and Department of Urban Affairs and Planning EIS Landfill Guidelines provide criteria for assessing the suitability of the subject site for the proposed landfill. The above site selection criteria include criteria generated from these guidelines.

In respect of the Gundagai Local Environmental Plan 2011, the "Practice Note for using Spatial information in Local Environmental Plans to protect and manage Environmentally Sensitive Lands – Murray–Murrumbidgee Region (2009)", is the source reference for the compilation, management and interpretation of the Local Environmental Plan sensitivity maps. This reference document states that:

> *"it is not the purpose of the Local Environmental Plan maps to prohibit any proposed activity".*

The mapping and subsequent clauses list matters that are required to be considered by the applicant in developing a proposal and then by Council in assessing it. The mapping is a tool to identify circumstances to be taken into consideration and where more comprehensive assessment or further information is required. The practice note also highlights that the scale of mapping when used with cadastral information causes inaccuracies at the cadastre level and should be used as a guide only to the potential issues that may affect a proposed development site.

2.6 Assessment of Environmental Sensitivity

Preliminary site assessment has made reference to the site selection process outlined in the Department of Urban Affairs and Planning EIS Landfill Guidelines (1996), as well as criteria listed in the NSW EPA Environmental Guidelines: Solid Waste Landfills (2016), as summarised below:

2.6.1 Preliminary Site Selection Conclusions

Using the site selection principles recommended in the EIS Landfill Guidelines, and information provided by the expert reports noted above, the following preliminary conclusions were made in respect of the consideration of the proposal…

Table 3: Locational Principles Response

Locational Principles		
Principle	Response	Reason
Is the site inconsistent with any waste management plans or strategy?	No	Relevant strategies and plans, as listed and discussed in the appropriate section, indicate that the site is consistent with their various goals.
Is the proposed land use prohibited on the site?	No	Review of the Gundagai Local Environmental Plan 2011 landuse guide for zone RU1 identifies a "Waste Disposal Facility" as permitted with consent.
Is the site fundamentally inappropriate because of its high environmental sensitivity?	No	Initial site investigations concluded that the proposed location is not sensitive land or located in an environmentally sensitive area.
Is the proposal likely to be incompatible with surrounding zoning / land use considering separation distances?	No	The site is located within an area characterised by the quarry, rural enterprises and prior waste disposal facility. Topographical features physically isolate the site. There is sufficient separation distance from any sensitive land uses.
Do initial site investigations indicate that the site is fundamentally unsuitable?	No	Initial site investigations were conducted by relevant experts. They concluded that the site is suitable for the proposed use.

In addition to the above site selection considerations, further preliminary investigation was undertaken to consider the environmental impacts or consequences of adopting other alternatives prior to moving forward with confirming the preferred option. The discussion on alternatives is provided further in this report.

2.7 Alternatives Considered

Clause 7(1)(c) of Schedule 2 of the Regulations states that an EIS must include:

> *"an analysis of any feasible alternatives to the carrying out of the development, activity or infrastructure, having regard to its objectives, including the consequences of not carrying out the development, activity or infrastructure,"*

The Department of Urban Affairs and Planning EIS Guidelines (1996) list several points to be considered in relation to alternatives. These have been considered in the table below.

Table 4: Consideration of Alternatives

Alternatives	
Suggestion	**Response**
(a) Structural and non-structural options to remove the need for the proposal (e.g. waste minimisation, resource recovery, administrative practices, etc)	The proposed facility will service an existing resource recovery programme that has explored various options for disposal of non–recyclable materials. The proposal assists in avoiding unnecessary waste going to other general landfills at much greater transport distances from the Visy mill. The proposal meets environmental and waste minimisation strategies.
(b) Transferring the waste to another landfill facility instead of the proposed facility.	The proposed facility is relatively conveniently located to efficiently dispose of the waste material in an environmentally sustainable location. The proposed facility will deliver an efficient and specialised non–putrescible waste disposal programme that meets relevant strategies and brings particular socio- economic benefits to the region.
(c) Alternative waste disposal network options (e.g. one large regional facility with transfer stations, resource recovery centres, etc. – or vice versa).	The proposed facility will extend the lives of other facilities, particularly those near metropolitan areas, which are experiencing increased waste volumes through population increase without waste reduction.
(d) Alternative landfill site locations.	Transport distances to this facility, as opposed to others, is significantly reduced.
(e) Alternative transport options, access routes	Other waste disposal network options have been considered, including existing landfill operations in local centres throughout the region and others outside the immediate region. For reasons including limited capacity, distance from source, transport costs / efficiencies and inability to meet environmental impact standards acceptable to authorities and community, the proposed landfill presents the most environmentally and economic option to pursue.
(f) Alternate site configurations	Alternative locations were considered and assessment against the site criteria listed above. Section 2.4.4 discusses the alternative site scenario in greater detail. For similar reasons to the above discussion, establishment of the proposed site would provide the most favourable environmental and economic outcome.
(g) Alternative waste services offered at the site (e.g. reprocessing options, etc)	Road transport is the only viable option at this stage as there are no operational rail infrastructure facilities available in proximity to the Visy mill. The primary access route via Gocup Road is part of a designated road upgrade programme by the State to improve industry accessibility throughout the region.
(h) Alternative landfill management options considering:	The access route from Gundagai to Bangus quarry has been selected to provide minimal community impact and / or impact on other freight corridors.
(i) Alternative site rehabilitation and end use options	The site configurations proposed have been developed in accordance with current standards and best practice, as outlined in sections below.
(j) Do nothing option – consequences of not proceeding	Alternative and additional waste services would potentially be an option on site, particularly as new technologies evolve that enable efficient reprocessing options for the current waste stream. The current waste delivered to Visy is the end product of a highly-sophisticated resource recovery programme that delivers outcomes in line with current strategies. Alternative waste services will continually be researched and introduced as they become viable.

Through the initial consideration of the proposal, a number of scenarios were explored in greater detail to determine the best outcome for the environment and the local, regional and major metropolitan economies.

Due to the Visy Pulp and Paper mill's substantial participation in the recycling process in south eastern Australia, the failure to determine an environmentally and economically sustainable option would have the potential to strongly impact recycling and waste disposal facilities in local and metropolitan communities.

The following options and scenarios were investigated further:

1. *Waste to Energy*
2. *Do Nothing*
3. *Redirect the waste stream to another existing waste disposal facility*
4. *Develop a new waste disposal facility*

2.7.1 Option 1 – Waste to Energy

The option to establish a waste-to-energy facility was investigated to a limited degree. These facilities combust waste materials to produce energy.

Based on Visy's waste generation in 2016-17 approximately 60,000 tonnes of the total waste generation of 75,000 tonnes had the potential to be utilised in a waste-to -energy facility. This volume would be inadequate to individually support a waste-to-energy facility.

Additionally, it was noted that an application to establish a waste-to-energy facility at Eastern Creek in Sydney was rejected by the Independent Planning Commission in July 2018.

Similarly, an application to establish a waste-to-energy facility in the ACT was withdrawn in June 2018 due to environmental concerns.

At this stage, the first full waste-to-energy facility to be established in Australia is to be established at Kwinana in Western Australia. This facility will consume 400,000 tonnes per annum of residual waste derived from eight Local Government Areas post recycling waste. The projected cost of this facility is $450 million.

Based on the above considerations, it was decided to not further consider the waste-to-energy option.

2.7.2 Option 2 – Do Nothing

Should a decision be made to "do nothing" then the existing quarry will be left in a highly-degraded state which will detract from the character and biodiversity of the neighbouring land. Due to the high gradients of parts of the site, there could be potential issues to personal safety should remediation or other safety considerations not be implemented.

The option of "Do Nothing" is exacerbated by the imminent closure of the Burra Road landfill at Gundagai. This facility formerly took 40,000 tonnes per annum of waste derived from the Visy mill, with the other volumes being distributed between the Bald Hill, Minda and Woodlawn facilities.

However, the closure of the primary landfill as a destination, and the volume and licence limitations on other sites, will result in significant impacts on the other facilities in terms of operational lives. This will also result in increased environmental issues and economic viability concerns.

The other key landfills are located significant distances from the Visy mill and are mostly located in closer proximity to the outer western suburbs of Sydney and other regional towns and cities. The need to utilise these facilities, where possible, will result in reduced lifecycles for these facilities and thereby have potential to require the establishment of other facilities servicing metropolitan requirements.

Similarly, the impacts of heavy vehicles travelling significantly longer distances and the resultant effect on the environment and road safety will be exacerbated.

The "Do Nothing" option also has the potential to impact heavily on the economic viability of the Visy recycling processes. When combined with the recent Chinese bans on recycled products, and the increased storage of recyclables in numerous countries, there is intense pressure on the recycling industry in Australia. The impact of longer haulage distances and higher landfill access costs, due to location in relative proximity to metropolitan areas, has the potential to significantly impact economic returns and viability.

2.7.3 Option 3 – Redirect waste to another existing facility

A number of options to redirect waste to another facility were examined. Most of these options reflected processes that are currently in use and which will be exacerbated by closure of the Burra Road facility in 2019.

Bellette's Landfill (Gilmore) EPA Licence No.20596

The Bellette's facility is located at Gilmore which is approximately 10 kilometres one way by road from the Visy Mill. The licensee is Bellette's Landfills Pty Ltd and the licence includes General Solid Waste (Non–Putrescible).

The maximum annual landfill rate is 5,000 tonnes per annum.

It is understood that this facility may be in process of applying to increase the capacity to 30,000 tonnes per annum.

Whilst this facility is in close proximity to the Visy Mill, its primary purpose is to service the needs of the regional Tumut community and it is clearly incapable of meeting Visy's requirements. It is also deemed unsuitable for expansion to the quantities required due to environmental concerns.

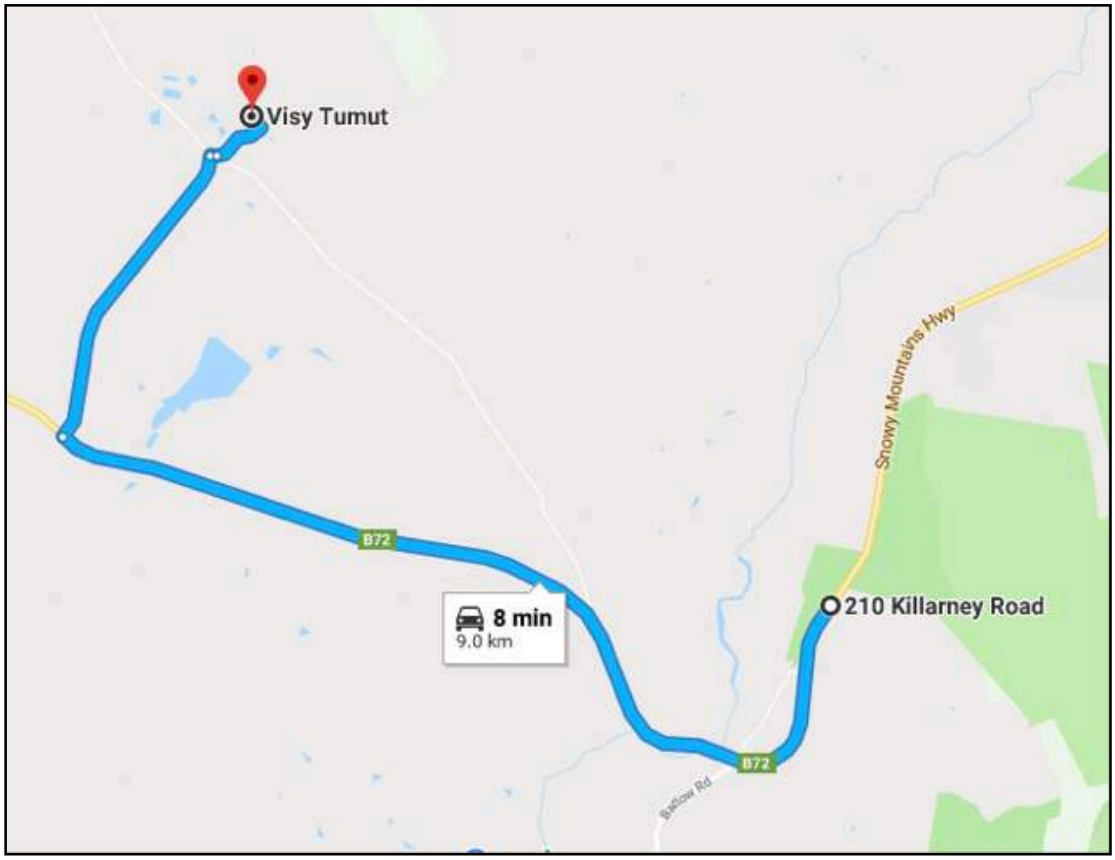

Figure 14: Visy Tumut to Bellette's Landfill (Source: Google Maps)

Burra Road Landfill (Gundagai) EPA Licence No. 20297

The Burra Road facility is located near Gundagai and is approximately 51 km one way by road from the Visy mill. The licensee is MH Earthmoving Pty Ltd and the licence includes General Solid Waste (Non-Putrescible) and excludes biosolids.

The maximum annual landfill rate is 40,000 tonnes per annum. However, the waste may only be derived from the Visy Pulp and Paper mill at Tumut.

A recent application to extend the life of this facility was recently rejected in the Land and Environment Court and this facility is scheduled to cease operations in 2019.

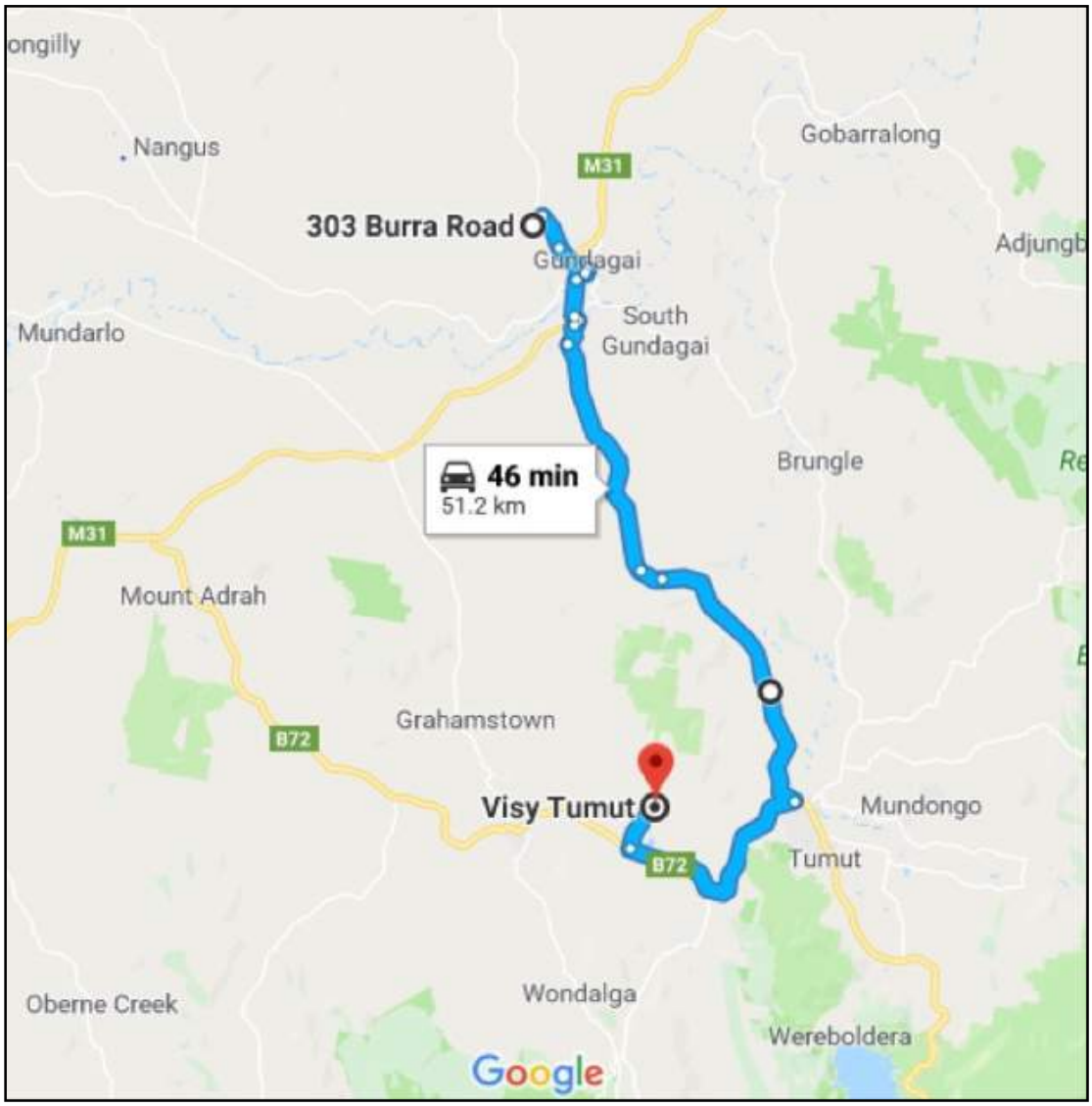

Figure 15: Visy Tumut to Burra Road Landfill (Source: Google Maps)

Bald Hill Landfill (Jugiong) EPA Licence No. 2552

The Bald Hill facility is located near Jugiong which is approximately 95 km one way by road from the Visy Mill. The licensee is Bald Hill Quarry Pty Limited and the licence includes General Solid Waste both Putrescible and Non–Putrescible.

The maximum annual landfill rate is 40,000 tonnes per annum.

It is understood that this facility was originally established in co-operation with a number of regional councils, with an annual limit of 20,000 tonnes per annum, and with the intent that it provides a long-term facility for disposal of waste derived from those council areas. In recent periods the licence was upgraded to 40,000 tonnes per annum

in recognition of additional waste being generated in those council areas and also the increased needs of the Visy mill.

It is understood that there is a reservation of 20,000–25,000 tonnes per annum of the Bald Hill capacity designated for use by the regional councils whilst the balance may be available to Visy.

However, the utilisation by Visy of this facility has the impact of reducing the volume of the facility available to the regional councils and will eventually result in a reduced operational life servicing those councils.

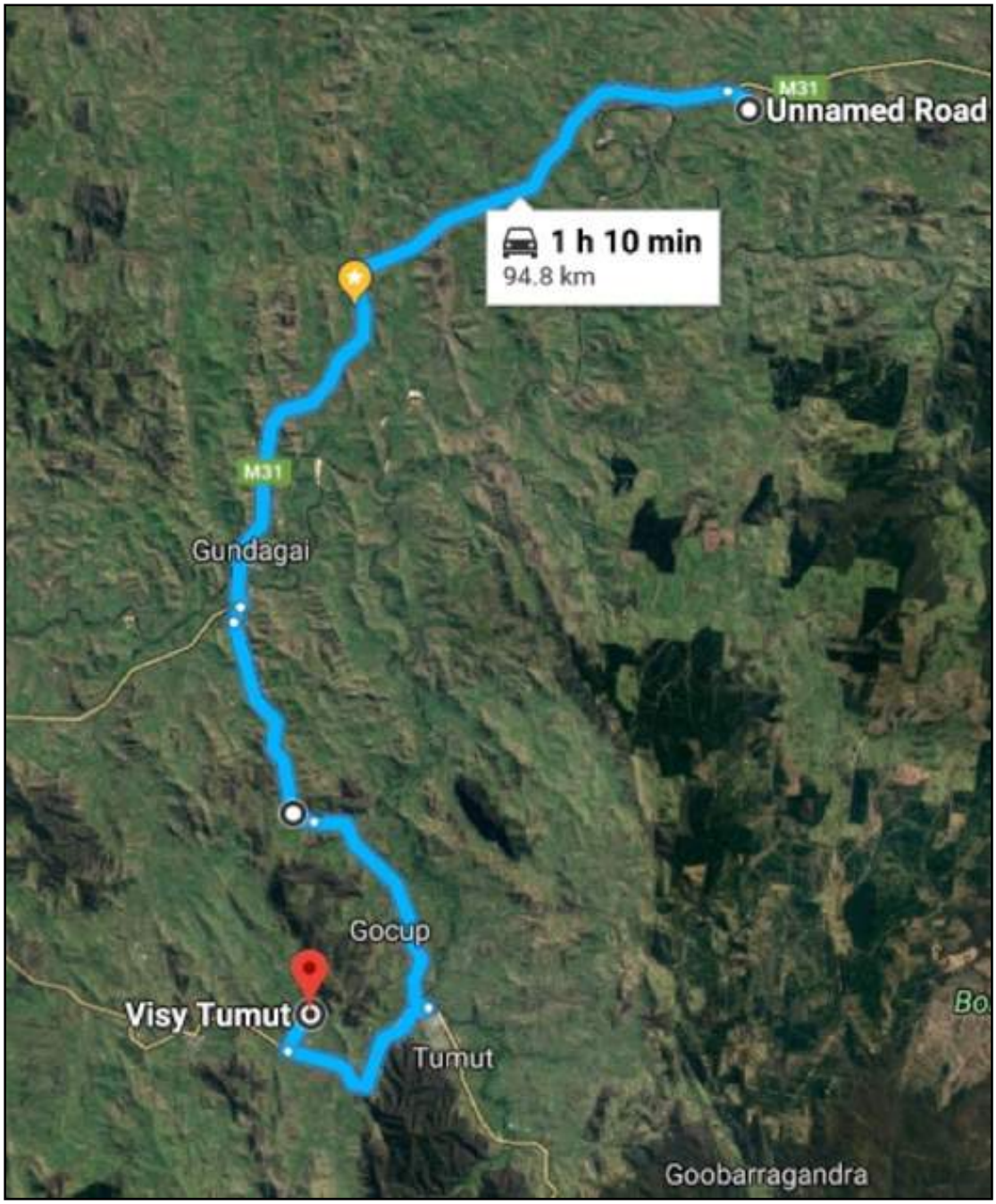

Figure 16: Visy Tumut to Bald Hill Landfill (Source: Google Maps)

Minda Landfill also known as Hi-Quality Landfill (Windellama) EPA Licence No. 10398

The Minda facility is located at Windellama which is relatively close to Canberra, Goulburn, Marulan and Bungonia and is approximately 273 kilometres one-way from the Visy mill. It is also approximately 160 kilometres from outer western Sydney. The licensee is Hi-Quality Waste Management Pty Ltd and the licence includes General Solid Waste (Non-Putrescible).

The maximum annual landfill rate is 120,000 tonnes per annum and there is an additional requirement that the total volume of waste received at the premises over the life of the operation must not exceed 1,947,003 cubic metres.

The relatively close proximity to the outer western metropolitan area of Sydney when combined with the limitation of overall total volume would suggest that strategically this facility should be reserved for use by metropolitan sources and possibly the surrounding regional area.

Figure 17: Visy Tumut to Hi-Quality (Windellama) Landfill (Source: Google Maps)

Woodlawn Landfill (Tarago) EPA Licence No. 11436

The Woodlawn facility is located at Tarago which is approximately 267 km one way by road from the Visy mill. It is also approximately 180 km from outer western Sydney. The licensee is Veolia Environmental Services and the licence includes General Solid Waste both putrescible and non–putrescible.

Maximum annual landfill input rates are:	Tonnes/ Annum
• Putrescible waste received by rail from Sydney	900,000
• Received as residual waste from Woodlawn AWT	100,000
• **Putrescible regional waste received by road**	**50,000**

Based on the specified licensed quantities it is evident that the primary purpose of the Woodlawn facility is to accept putrescible waste from the Sydney metropolitan area and also a relatively small amount of putrescible waste from regional locations. The communities located in closest proximity to Woodlawn are Canberra, Goulburn and Yass.

Whilst Visy has previously had limited access to Woodlawn it would appear to be counter-intuitive to utilise this facility should other options be available.

The rapid growth of the Sydney population and the likely increased volume of waste from that area is likely to reduce the Woodlawn capacity faster than may have previously been planned and it would be appropriate practice to restrict access from distant regional sites when other options might be available.

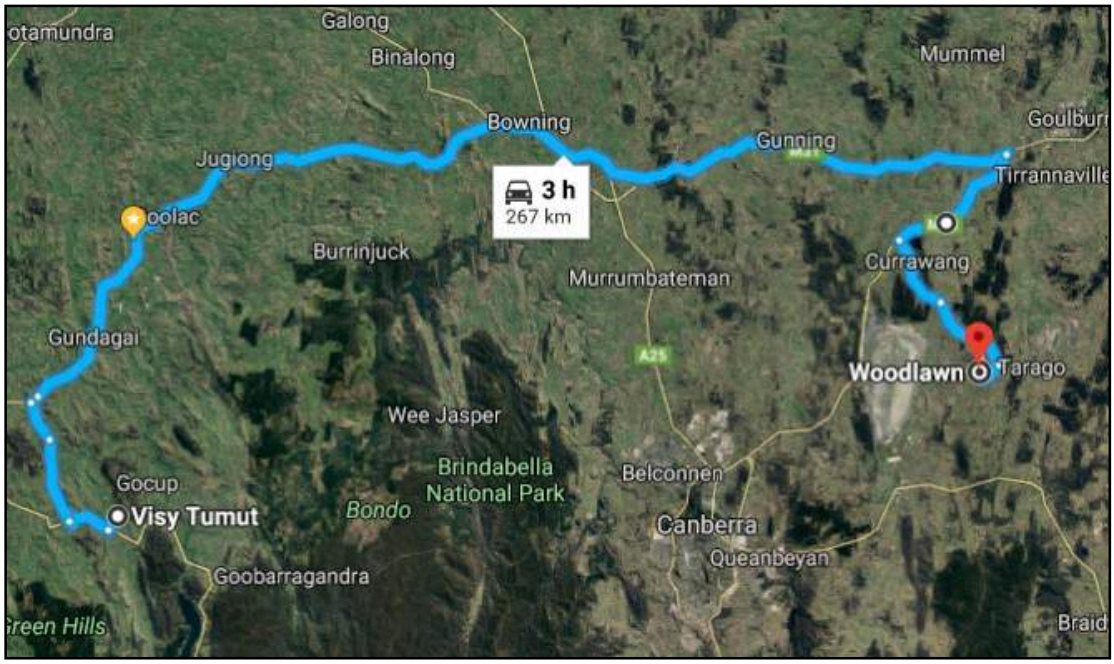

Figure 18: Visy Tumut to Woodlawn (Tarago) Landfill (Source: Google Maps)

Summary

The option to redirect waste to another existing facility has limited possibilities and will result in quickly shortening the operational life of those landfills. It would be necessary to distribute waste, within permissible limits, to each facility with no single facility being able to take all the waste.

This would require long round–trip haulage routes in the vicinity of 540 km and would be mostly directed to landfills primarily servicing metropolitan areas. This would impact metropolitan and regional communities and the availability of landfill facilities in the near future.

The preferred option is to establish an environmentally and economically viable landfill within as close a proximity as viable to the Visy mill. The proposed facility minimises, as far as reasonably possible, the round-trip haulage route to approximately 118 kilometres and meets all relevant environmental requirements.

2.7.4 Option 4 – Develop a New Waste Disposal Facility Offsite

Alternative Sites

The consideration of alternative offsite landfill facilities explored the potential development of a site within the locality that would be suitable to accept the waste currently generated by the Visy mill. Benefits to developing a new waste disposal facility include the potential to rehabilitate a site that may not currently be able to be rehabilitated, with preference given to sites that have been previously excavated or are in a highly-degraded state.

A number of potentially feasible sites were investigated and assessed against a broad range of environmental, social and economic factors. The potentially feasible sites included.

Existing Gravel Pit – Gocup Road

An existing gravel pit along Gocup Road was suggested and subsequently given initial consideration as a potential site. The pit, however, is currently being accessed and operated by Roads and Maritime Services to conduct works to Gocup Road under the Tumut – Hume Highway Corridor Strategy, with no closure date given at this stage. The uncertainty of this time frame, together with other potential location and access issues, does not meet the objectives of the project and is subsequently not an option at this stage.

Figure 19: Gocup Road Gravel Pit (Source: Google Maps)

Somerset Mine, Somerset Road, Coolac EPA Licence No. 2883

An option was explored involving the development of the disused Somerset Mine near Coolac. This site was given closer consideration as it is located within a reasonable distance from the waste source, as well as being currently disused and requiring remediation.

The site is located on land zoned RU1 Primary Production with unsealed public road access to the Hume Highway. The mine was established for serpentine extraction purposes and is now not operational. There are no immediately adjoining sensitive receptors as can be determined with current information sources. The nearest dwelling is approximately 2.4 km from the site.

Land constraints mapping indicates that the site has potentially significant issues with groundwater and possibly potentially other environmental limitations. Extracts from relevant environmental mapping data is provided further below.

Figure 20: Somerset Mine (Source: Google Maps)

The figure above shows a significant amount of water pooled within the excavation, indicative of either groundwater seepage or collected stormwater runoff. A solution could be engineered to locally lower ground water in order to construct an engineered barrier containment system to prevent leachate contaminating ground water. Initial lowering and maintaining a lowered ground water level would involve excessive pumping, storage and discharge of ground water, incurring significant operational costs. Serpentine is known to have traces of blue crysotile asbestos, therefore ongoing operations within the site need to consider all risks of establishing an alternative use of the site. These risks, which may be considerable, have not been fully assessed. Geology below surface level of the site is unknown and presents a major risk to the development of the site. Further geological investigation is severely impeded by the present water in the pit.

Mapping sourced from the Geoscience Australia Online Interactive Australia and Region Surface Geology Mapping indicates that the geology of the site is identified as St – Coolac Serpentine with a description of "Serpentine; partly serpentinised harzburgite and wehrlite; very miinor chromitite and rodingite dykes."

The site is also located within areas identified as being biodiversity and land sensitive areas under the Gundagai Local Environmental Plan 2011.

Major infrastructure works would be required to be undertaken to make the site operational; including establishing suitable access arrangements and connection to essential services. Additional access works required by Roads and Maritime Services may include:

- Right turn lane treatment of the Hume Highway at the intersection;
- Sealing of Somerset Road to prevent dust and debris deposited on the Hume Highway;
- Levelling of the current cutting embankment adjacent to the intersection of Somerset Road and the Hume Highway to improve sight distances.

The Somerset Mine has certain positive attributes including its remoteness, lack of proximity to sensitive receptors and the availability of a previously excavated site. However, based on the above preliminary site analysis, the option of developing the disused mine is considered as severely limited based on identified environmental constraints including groundwater issues and other unknowns in relation to the former mine practices and below surface geological conditions. The costs of modifying the Hume Highway access point to provide a safe and reliable intersection arrangement is considered to be also very limiting to the project's success.

"Eulonga" Quarry, Darbalara Road, Coolac EPA Licence No. 12385

The potential to utilise the "Eulonga" Quarry facility located at Coolac was reviewed but dismissed on an environmental consideration due to its close proximity to the Murrumbidgee River and the associated floodplain.

Figure 21: "Eulonga" Quarry (Source: Google Maps)

Signature Quarry, Old Hume Highway, EPA Licence No. 12787

The potential to utilise the "Signature" Quarry facility located near Mundarlo was reviewed but dismissed on an environmental consideration due to its close proximity to the Murrumbidgee River and the associated floodplain.

Figure 22: "Signature" Quarry (Source: Google Maps)

Millbrae Quarry, EPA Licence No. 12523

The potential to utilise the Millbrae Quarry facility located near Cootamundra was reviewed but dismissed on an environmental consideration due to its inclusion in the Bethungra environmentally sensitive area and the fact that it is still operating as a strong commercially viable facility.

Figure 23: "Millbrae" Quarry (Source: Google Maps)

Bangus Quarry – Tumblong Reserve Road

The Bangus Quarry located on Tumblong Reserve Road was identified as a possible alternate site. Research revealed that the site was reserved as a quarry in 1975 and had been utilised since then on an "as-needed" basis. It was also revealed that the quarry was nearing the end of its productive life and would relatively soon require remediation.

The Bangus quarry was not located as close to the Visy mill as the Bellette's and Burra Road facilities however the limitations on both of these facilities prompted further review. Similarly, the limitations on the Bald Fill facility also prompted further review.

Consideration of a round-trip of 118 kilometres versus approximately 540 kilometres for the Minda and Woodlawn facilities also suggested further review was required.

The fact that the Bangus quarry was not located in close proximity to water resources and was located in a relatively remote rural area, part of which was a former landfill, and that it was abutted by a travelling stock reserve and remote rural neighbours indicated that further review appropriate.

Similarly, the fact that the nearest potential sensitive receptor was approximately 800 metres distant and there was unlikely to be any visual or environmental impact on neighbours encourage further evaluation of the site.

The Bangus quarry option was subsequently determined as the preferred option for further detailed investigation.

Figure 24: Bangus Quarry (Source: Google Maps)

Preferred Option Initial Investigation

To explore the preferred option of Bangus quarry in more detail, preliminary hydrogeological and hydrological investigations (including peer review) were commissioned on behalf of the proponent.

The preliminary assessment concluded that the location is not within any defined "environmentally sensitive area" and that the site satisfies the offset rules for landfills and aquifer interference activities as defined by relevant NSW guidelines and policies.

The site is located in a rural area that has historically included a waste disposal facility in its landuse mix. From a landuse perspective, the existing rural agricultural activities and hobby farms define the local character and amenity. The proposal does not detrimentally impact the landuse mix that is current, or expected, into the foreseeable future. Nor does it pose a threat to the continued enjoyment of the existing local rural character and amenity of the area.

The proposal does offer significant positive character and amenity outlooks as a direct result of future remediation works that will repair scars to the local landscape that were created by the previous use of the site as a quarry. This type of remediation would not be possible without this proposal.

The land zoning and location criteria are satisfied in relation to considering this site as a viable option for a landfill. The additional opportunities and attributes offered by this site, particularly in terms of established infrastructure, business investment, environmental considerations and natural features of the site reinforce the justification for favouring this option in comparison to other alternative sites.

2.7.5 Consideration of Alternative Options

As a result of considering the site selection criteria, together with the assessment of the options available to the proponent, it is suggested that the preferred option is to establish the Bangus Quarry remediation / landfill. This alternative provides the best

opportunity to establish a sustainable landfill operation to meet the projected needs of the wider community, Visy and the proponent.

The options have been considered against the current level of technologies employed across all processes involved in the generation of the waste product. The current defined classification of waste requires the subject waste stream to be directed to landfill. As technologies advance, waste reduction methods may be able to be applied to the waste stream, further reducing the amount of waste to be applied to landfill.

Additional sorting and recycling of the paper machine rejects is a possibility that has been considered during the project investigation phase, but has been deemed to be inefficient with the current technology available. Once technology has increased to enable increases in efficiencies and reduction in waste generation, the waste disposal facility as proposed will seek to apply these technologies as soon as practical. The adoption of new technologies is a key objective of the landfill operation in order for the facility to continue to provide sustainable and environmentally responsible processes to waste management and resource recovery programmes.

2.8 Preferred Option

As determined above, the preferred option is to establish the Bangus quarry remediation / landfill proposal.

The process of determining the preferred option has involved addressing:

- The criteria recommended by guidelines recommended by the Environment Protection Authority, Department of Primary Industries and Council;
- The objectives of various Local, Regional and State policies related to the development site and general locality; and
- The objectives of the proposal, in particular to meet sustainable waste management and resource recycling programmes now and in the future.

The uniqueness of the development proposal is considered worth pursuing for the reasons provided above. The site will deal with the end-product of a sophisticated resource recovery programme that culminates at the Visy Tumut plant. By keeping the waste separate from other general waste disposal areas, it enables the operators to review site and technology initiatives as they become available and apply them accordingly.

3 SITE DETAILS

Details of the proposed site are outlined in this section including land, locality, geological and local climate.

3.1 Subject Land and Locality

The Bangus gravel quarry is identified as Lot 7004 of Deposited Plan 1028797 and Lot 7300 of Deposited Plan 1149008 and part Crown Road, and has been a designated quarry reserve (Reserve 89508) since 1975. It is located in the Tumblong region which is included in the Cootamundra-Gundagai Regional Council area and the facility has been utilised by the Council on an "as-needed" basis since that time. The quarrying works are nearing completion and, as such, the site will soon require remediation.

The Bangus gravel pit is located off the gravel surfaced Tumblong Reserve Road, approximately 1.2 km from its intersection with the Old Hume Highway. In turn, the sealed Old Hume Highway intersection with the current Hume Highway lies a further 2.25 km away.

Figure 25: Location of Bangus Gravel Pit (Source: SIX Maps)

The quarry occupies approximately 4.5 hectares of land and the site is located in close proximity to the former Tumblong landfill and is adjoined by a travelling stock reserve and two large rural holdings. The nearest residence is approximately 800 metres from the existing operation.

The site is located approximately 3.5 kilometres from the Tumblong community and 18 kilometres from the Gundagai township. Access to the site from Gundagai is via the Hume Highway, Old Hume Highway and Tumblong Reserve Road.

Figure 26: Bangus Gravel Pit (Source: SP 2019)

3.2 Surrounding Land Uses

Site and locality plans have been prepared that describe the surrounding land uses.

The surrounding area has a typical rural outlook including primarily open and relatively flat cropping and grazing country, mainly to the south and west with some higher and more heavily vegetated hill country joining the northeast corner of the site. The rural landscape is typical of other rural land in the region that has been subject to historic clearing practices and subject to improved pastures for grazing and cropping purposes. The site adjoins the Tumblong travelling stock reserve within which is located the former Tumblong community landfill.

Larger rural holdings adjoin the area to the north, west and south with a number of hobby farms located west of the site. The hobby farms generally front the Old Hume Highway and are in the vicinity of 9 to 10 hectares in area. The larger rural property residences are widely dispersed.

Figures below demonstrate the diverse nature of the surrounding landscape and highlights the more heavily timbered area to the north east of the site. Other figures provide views of the quarry area from the southern and northern approaches to the quarry

Figure 27: Surrounding Landscape (Source: SIX Maps)

Figure 28: View of the Bangus Quarry from Tumblong Reserve Road southern approach (Source: SP 2019)

Figure 29: View of the Bangus Quarry from Tumblong Reserve Road northern approach (Source: SP 2019)

3.3 Existing Site Environment

3.3.1 General Description

The existing site environment is typical of the surrounding rural landscape, with a historically highly cleared landscape of relatively flat cropping and grazing pastures interspersed with undulating and more heavily timbered grazing areas. Remnant paddock trees are scattered across the flatter grazing and cropping areas as shown in figures below.

Figure 30: More heavily vegetated area to the north east of the site (Source: SP 2019)

Figure 31: Open grazing country to the east of the site (Source: SP 2019)

Figure 32: Open grazing country to the north and west of the site with scattered paddock trees (Source: SP 2019)

3.4 Site Geology

A review of the 1:250,000 regional geological map for Wagga Wagga, Metallogenic Series Sheet SI/55-15, first edition 1977 shows the site within a geological unit labelled B_3L_6 (see figure below with approximate site position indicated by a yellow star). From the geological ,ap, the site geology comprises rocks of the Bowning Tectonic Stage of mid-late Silurian age. The rocks form part of the Cowra Trough which formed by volcanic rift initially which developed into marginal sea with oceanic crust. The B_3L_6 unit is described as '*chloritic phyllite, greywacke, andesite, andesitic tuff, porphyritic dacite, rhyodacitic and rhyolitic lava and tuff, ignimbrite, jasper, cert, minor limestone; includes small serpentinite lenses'*.

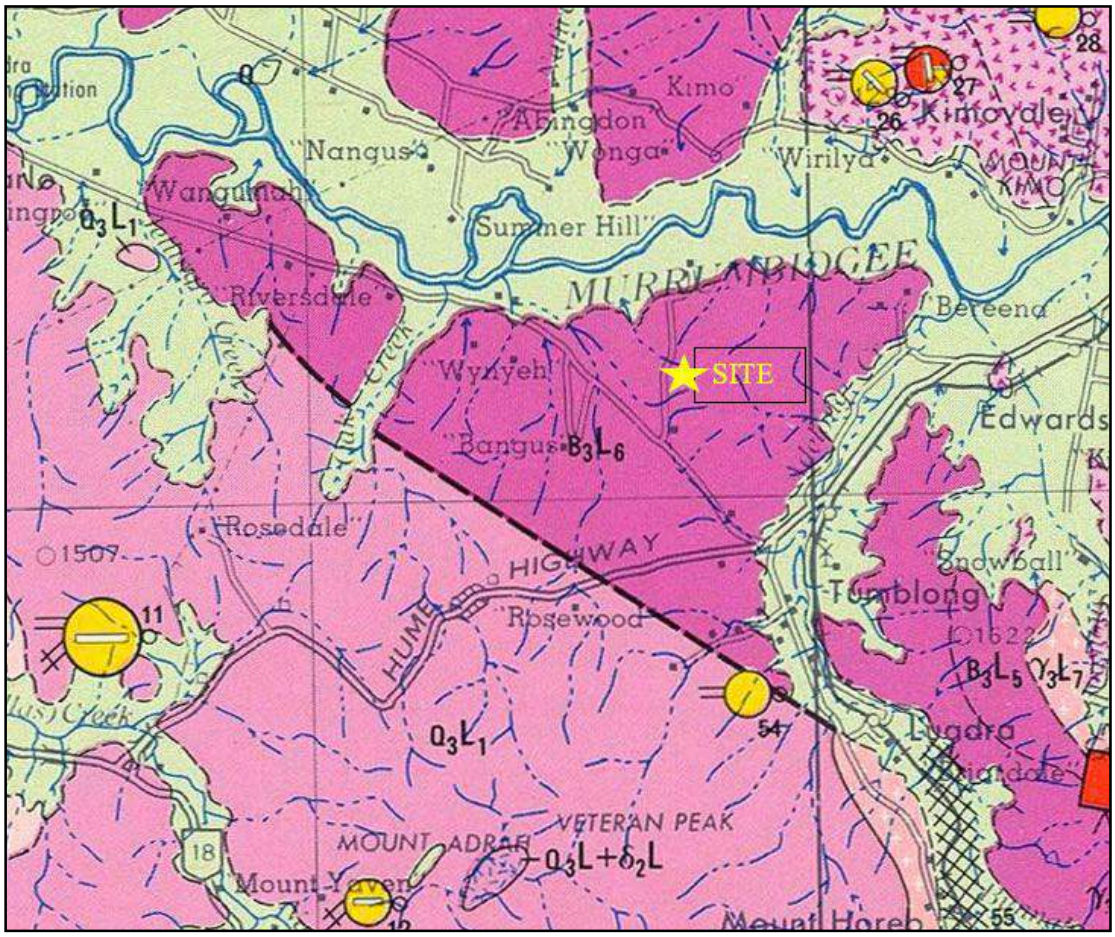

Figure 33: Site Geology Map extract (Source: 1:250 000 Metallogenic Map - Geological Survey, NSW)

A site investigation comprising boreholes drilled within the base of the existing quarry was undertaken by DM McMahon during February 2019. Five separate boreholes were drilled, all to a depth of 21.6m. With a quarry floor level of approximately 269m RL, boreholes extended to 247.4m RL. Borehole logs undertaken by D.M McMahon indicated the presence of siltstone from surface to completion in boreholes 1, 2 and 3, with up to 3.6m of clay encountered within boreholes 4 and 5 from surface.

3.5 Local Climate

The typical climate and rainfall statistics of the area are provided in the table below.

Table 5: Typical climate and rainfall of Gundagai region

Average temperatures and rainfall for Gundagai region	
Climate Element	Annual Average
Mean Maximum Temperature (°C)	22.1 (°C)
Mean Minimum Temperature (°C)	8.6 (°C)
Mean Rainfall (mm)	539.5mm

3.6 Site History

The site was licensed as a gravel quarry in 1975 and has been utilised intermittently, on an as–needed basis, since then. The quarry is now nearing the end of its useful life and requires remediation.

The site is in close proximity to the former Tumblong community landfill and abuts a travelling stock reserve.

The surrounding areas involve agricultural activities focussed on crop production and grazing pastures and some hobby farms of 9 to 10 hectares in area.

3.7 Existing Infrastructure

The site is not located in close proximity to electricity or water infrastructure.

3.8 Groundwater

McMahon Earth Science (McMahon Earth Science 2019) undertook a hydrogeological study of the proposed landfill area with a series of boreholes drilled in the site (see details within the appended report).

The main findings from this study, with respect to groundwater at the site, were:

- The hydrogeology at the site and the surrounding region is a low yielding fractured rock aquifer system within the Silurian quartz rich shale/slate siltstone and fine sandstone of the Bumbolee Creek Formation.
- Based on groundwater depths measured in groundwater bores proximal to the site, the depth of the water bearing zones in the bores in the region of the site is generally greater than 37 metres below ground level, with recorded standing water levels at the time of construction being between 18 and 34 metres below ground level. Yields of 0.46 L/s and 1 L/s at bores GW014960 and GW403222 respectively is the only available information on bore yields.
- The site assessment identified a water bearing zone at the contact between the weathered and unweathered shale at a depth of approximately 60 metres below the ground surface.
- Falling head slug tests found that shallow and deep monitoring bores have hydraulic conductivities between 4.4 x 10-6 m/sec and 8.2 x 10-8 m/sec, which is considered to compare favourably to a minimum hydraulic conductivity of a compacted clay liner of 1 x 10-9 m/sec.
- Concentrations of nickel in samples of groundwater collected from the monitoring bores precludes the aquifer from being used as a source of drinking water.
- Elevated concentrations of manganese in samples of groundwater collected from the monitoring bores suggest the aquifer is anoxic and hydraulically disconnected from the overlying surface water system.

3.9 Surface Water

The surface water regime at the site of the proposed landfill facility was assessed by McMahon Earth Science (McMahon Earth Science 2019) and SLR Consulting Australia (SLR 2019) as desktop exercises. Main findings from these studies concerning existing surface water at the site were:

- There are no natural drainage lines or existing watercourses on the site.
- Surface waters in the surrounding landscape not consumed by evaporation, evapotranspiration or deep drainage, drain to the Murrumbidgee River via surface flow and interflow channels. The channel network in the area surrounding the site is rapidly migrating and tributary to non-tributary in pattern.
- A small catchment, to the north and upslope of the site, produces runoff as sheet flow. The sheet flow drains to the west and does not enter the site due to local topography.

- There is a low point on Tumblong Reserve Road with a stormwater culvert underneath. This low point corresponds to a natural overland flow path, which catches surface runoff from the existing quarry and flows into an existing farm dam west of the site.

Copies of the McMahon Earth Science (2019) and SLR (2019) reports are presented as Appendices to this Environmental Impact Statement.

4 PROPOSAL DESCRIPTION

The following sections will outline the development proposal and works required to facilitate the construction and operation of the proposed general solid waste (non-putrescible) landfill development. Included are details of the project objectives, the design and siting of the waste cell, the staging of the proposal including capping and closure plan, as well as the operational requirements and procedures once the facility has been constructed and commissioned.

4.1 Development Proposal

The development proposal involves the establishment of a General Solid Waste (Non – Putrescible) landfill facility utilising international best practice methods of engineering containment as required by the NSW EPA under the requirements of the Environmental Guidelines: Solid Waste Landfills, Second Edition 2016. The development aims to rehabilitate a degraded quarry facility to meet the obligations of restoration and rehabilitation.

The development will involve the disposal of up to 60,000 tonnes of General Solid Waste (Non-Putrescible) material derived from the Visy Pulp and Paper production facility located at Tumut. The Visy facility is a world leader in recycling of pulp and paper and meets key objectives of the waste hierarchy to reduce-reuse-recycle.

The development and operation of the facility is to be conducted in a sustainable and responsible manner, whilst ensuring that all potential impacts to the surrounding environment are managed appropriately and mitigated or minimised where necessary. The operation is to be maintained, monitored and reported in accordance with the statutory approval and licensing arrangements from the appropriate authorities.

The eventual rehabilitation and closure of the facility will support and regenerate the natural landform, ecosystems and habitats to ensure a net benefit to the environment and local ecosystems, with a responsibility to the continued monitoring of the site once completed and closed.

4.1.1 Project Objectives

The objectives of this development proposal include:

1. To rehabilitate a substantially degraded quarry facility to a high level environmental and community standard.
2. To establish a general solid waste (non-putrescible) waste disposal facility in an environmentally sustainable and responsible manner to meet the needs of local and regional waste recycling activities;
3. To ensure the proposed development meets or exceeds environmental protection goals through the adoption of best practice environmental management, mitigation and remediation technologies;
4. To assist in the delivery of relevant local, regional and State waste minimisation and economic development strategies;
5. To provide employment and economic and community stability to the local area;
6. To operate, maintain, monitor and report on the activities of the development within statutory approval and licensing arrangements;
7. To undertake rehabilitation works that support and regenerate natural ecosystems and habitats;
8. Ensure the safe disposal of waste in a modern engineered facility using best practice techniques in accordance with NSW EPA guidelines, 2016.

4.1.2 Construction Activities

Construction activities for the proposed landfill facility are to be undertaken in a number of discrete operations, these are summarised as follows:

- Excavation and construction of Cell 1 (to include clay sub-base placement, installation of GCL, HDPE and protection geotextile, installation of leachate collection and extraction system), construction of leachate dam and stormwater dam;
- Excavation and construction of Cell 2 (to include clay sub-base placement, installation of GCL, HDPE and protection geotextile, installation of leachate collection and extraction system);
- Partial capping of Cell 1; and
- Final capping of Cell 1 and 2 at completion of landfilling

In accordance with NSW EPA Guidelines, 2016, Section 2 a leachate storage dam has been designed, and will be constructed to:

- have sufficient leachate storage volume, as determined by using a water balance methodology in accordance with HELP modelling.
- have a freeboard that can accept rainfall directly on the dam from a 24-hour rainfall event with a 1-in-25-year average recurrence interval without overflowing. The dam must have a visible marker to indicate the bottom depth of the required freeboard. If the freeboard is exceeded, the occupier must re-establish and maintain the required freeboard. If the dam is in danger of overflowing, an option may be to inject some leachate back into the cells and to stop leachate extraction from the cells.
- be constructed to a standard similar to that of the landfill cell liner.

All aspects of the landfill construction works shall be under the supervision of an independent Construction Quality Assurance (CQA) Engineer. The CQA Engineer shall ensure that all works are undertaken in accordance with a NSW EPA approved Technical Specification and CQA Plan. Appropriate independent testing of all elements of the project shall be undertaken to ensure the required standards are met.

Management of stormwater has been considered for the proposed development, with a report commissioned by SLR Consulting appended to this EIS.

Proposed soils movements within the landfill construction area, and to the adjacent temporary soils stockpile area are presented within design Figure 15. Rehabilitation soils movements back onto the engineered capped landfill are presented within design Figure 16.

It is estimated that the initial first stage of construction works will take approximately four weeks to complete.

Construction work will be conducted between the hours of 7:00 am to 6:00 pm Monday to Friday and 7:00 am to 12:00 pm Saturday.

The construction machinery and plant proposed to be utilised in the construction phases of the proposal are anticipated to include the following:

- Tracked 360° excavator
- Tracked bulldozer CAT D10 or equivalent
- Tracked bulldozer CAT D7 or equivalent
- Articulated dump truck
- Water truck
- Vibrating pad foot roller

The plant and machinery outlined above has been used in the supporting reports to analyse the probability of impacts to potential sensitive receptors during the landfill facility construction works.

A Dial Before You Dig (DBYD) assessment was undertaken to investigate the likelihood of services in or in the vicinity of the proposed development. Referrals were sent to the following through the DBYD process and outcomes are provided as follows:

- Essential Energy – Cable/pipe location, no assets were found in the search area
- Telstra NSW, South – Indicates that no services are present within the search area
- APA Group Networks (APT Management Services P/L) – APA can confirm that the APA Group Network's Division has no underground Gas Assets in the vicinity of the property.

Cable detection scans will be undertaken on the western margin of the project as a secondary check for services prior to excavation.

4.1.3 Temporary Stockpile Area

In order to accommodate storage of capping material and excess soil, a temporary stockpile area will be established over adjoining property Lot 1 DP702858 owned by the proponent. This will be a temporary arrangement to facilitate rehabilitation of the subject land fill site. An existing access way connects the properties. This is illustrated in the figure below.

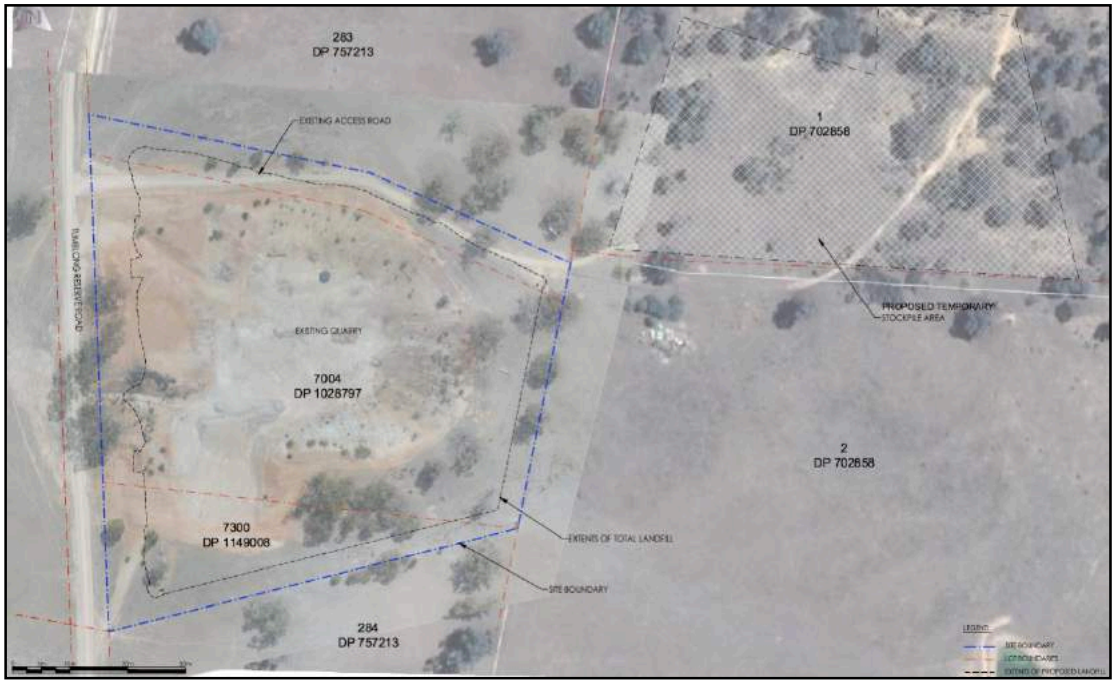

Figure 34: Temporary Stockpile Area (Source: Insitu 2019)

Materials placed in temporary stockpile will be used throughout the duration of the operational and rehabilitation stages of the landfill for engineering purposes, rehabilitation soils and for daily waste cover requirements. From the soils balance calculations undertaken, there is an excess of materials in stockpile compared to the soils requirement for the landfilling and rehabilitation requirement. As the quarried materials in stockpile are a valued resource and historically used for Council construction requirements, Council have committed to the continued use of gravel by removing between 8,000m3 to 10,000m3 of material from stockpile until the stockpiled materials were exhausted. At completion of restoration and rehabilitation, the temporary stockpile in the adjacent Lot will be completely removed and the stockpile footprint completely rehabilitated.

4.1.4 Capping and Rehabilitation

On completion of the landfill it will be capped and revegetated to integrate into, and be compatible with, the surrounding landscape. As part of the Environmental Management Plan to be prepared for the ongoing operation of the facility, a detailed landfill closure and rehabilitation plan will be prepared for the landfill. The closure and rehabilitation plan is described in further detail in Section 11.3 of this Environmental Impact Statement.

In accordance with Section 10.1 of the NSW EPA Environmental Guidelines: Solid Waste Landfills 2016, 'the landfill licence usually requires the licensee to submit a written closure plan to the EPA for approval no later than 12 months before the completion of a landfill's waste receipt operations'. The proponent shall submit a closure plan within this timeframe as required by Section 10.1.

The final landform adopts adheres to the NSW EPA Environmental Guidelines: Solid Waste Landfills 2016, section 9.1 that states 'to facilitate runoff and minimise ponding of water, the cap should have a gradient of greater than 5% to defined drainage points. However, to reduce the risk of erosion, steep caps (greater than 20%) should be avoided'. The proposed final waste profile adopts a 20%, or 1(V):5(H) side slope angle, as presented within design Figure 11. The engineered capping system for the landfill incorporates the following key elements:

- 300mm thick seal bearing layer
- Geosynthetic Clay Liner (GCL)
- 1mm Linear Low Density Polyethylene (LLDPE) geomembrane or High Density Polyethylene (HDPE) geomembrane
- Needle punched protection geotextile
- Min. 800mm thick infiltration soil layer
- 200mm thick topsoil layer

Details of engineering capping design and layout are presented within design Figures 12 & 13.

4.2 Operational Activities

4.2.1 Site Access

Site access will be provided via Tumblong Reserve Road. The road will be sealed to appropriate standards to the intersection with Old Hume Highway together with the site east-west orientated access road, ensuring no vehicle will drag soil or debris onto the public highway. A traffic assessment has been undertaken by SECAsolution to ensure the site access and surrounding road network is suitable and appropriate for the proposed development.

4.2.2 Buildings

The proposed site will require the establishment of a small site office, together with staff amenities and storage area to facilitate operational needs, as shown in the development plans. These facilities will be established in a way that minimises, in particular, visual impacts from off site. It is intended to position the site facilities in the north-eastern corner of the site, at the end of the proposed site entry road (see Infrastructure Layout Plan).

Minimal car parking will be provided close to the office and amenities.

4.2.3 Staffing and Hours of Operation

The landfill is projected to directly employ approximately eight full time staff. However there may be opportunities for further positions to be created as new sustainable technologies and procedures are introduced to the resource recovery process.

Projected employment positions include:

- Three onsite plant and maintenance workers.
- One loader operator at waste source.
- Two truck drivers.
- One administration officer.
- One manager.

The proposal will also involve temporary landfill and infrastructure construction staff, plant operators and management as well as the employment of support service industries and other businesses during the course of construction, operation and remediation. Added to this is the potential multiplier effect on the immediate local economy and job creation environment which is generally in the range of three times the direct employment number.

4.2.4 Plant and Equipment

The operational activities on the site will include the use of the following plant and machinery:

- Haulage Heavy Vehicles (truck and Trailer).
- Water Cart.
- Excavator.

This machinery will be utilised for waste haulage, dust suppression and waste emplacement respectively.

4.2.5 Waste Disposal

During the operational phase of the landfill, the facility is proposed to receive waste at a maximum rate of 60,000 tonnes per annum, at a rate of approximately 300 tonnes per day.

The waste disposal process to be followed during the normal daily operation of the facility is outlined below:

- Waste is loaded onto vehicles at the Visy source.
- The load is covered so as to prevent any escape of waste while in transit.
- The vehicle weight is recorded upon entering and leaving the Visy site and the net vehicle weight leaving the site is recorded.
- Waste is transported via the designated haulage route to the landfill.
- The vehicle arrives at site and establishes contact with site management and staff via UHF radio and proceeds along the site access road to the waste receival area.
- The vehicle is guided to the waste unloading hopper.
- Waste is unloaded into the waste cell.
- The haulage vehicle is inspected and any remaining waste on the interior or exterior of the vehicle is removed and placed in the cell.
- The waste is spread and compacted by the front-end loader / excavator located within the waste cell.
- The haulage vehicle leaves the site to pick up another load of waste.
- The process is repeated.

4.2.6 Security Fencing

The site will have security fencing installed to prevent unauthorised access and also for stock management and litter prevention. Additional fencing shall be installed around the proposed leachate dam and clean stormwater pond.

4.2.7 Litter Management

The site is not anticipated to generate any onsite operational waste or litter. However, onsite staff will conduct regular litter patrols to ensure that no litter or waste leaves the site.

4.2.8 Onsite Essential Services

The site is not proposed to be connected to essential services, such as power or water. The site will rely on a small portable generator to provide any electrical services as required. Potable water shall be brought into the site from outside.

No connections are proposed to gas services or to Council's sewer or stormwater infrastructure.

A portable toilet will be set up on site for staff and visitors use, the proposed toilet will be pumped out when required by an external contractor.

4.2.9 Approvals and Licences

Below is a list of approvals and licences required under various legislation in order for the proposed development to commence construction and operation.

Table 6: List of Approvals and Licences required for the proposed development

List of Approvals and Licences	
Approval/Licence	**Description**
Development Consent	Under Gundagai Local Environmental Plan 2011, development consent is required in accordance with the procedures and processes included in the Environmental Planning and Assessment Act 1979 and supporting Regulations. The Environmental Planning and Assessment Act Regulations 2000 classify the proposed landfill (waste management facility) as designated development. The consent authority, by legislation is the Southern Regional Planning Panel.
EPA Licence	An Environmental Protection Licence is required for the proposed waste disposal facility.
Groundwater Licence for Monitoring Bores	A licence may be required for groundwater monitoring bores/sampling needs.

5 WASTE MATERIAL DETAILS

The proposed landfill facility will receive waste derived exclusively from paper recycling and kraft linerboard production operations at the Visy Pulp and Paper Mill at 436 Gadara Road, Tumut, in southern NSW.

5.1 Paper Recycling Waste

Waste from paper recycling derives primarily from residual impurities in the waste paper feedstock received by the paper mill and which have not been removed during preceding sorting and separation processes. The main components of residual impurities in the waste paper feedstock are plastics (typically comprising approximately 70% rigid plastics and 30% soft/flexible plastics), metals (e.g. aluminium foil and staples), cloth and fibres. Waste from the feedstock also includes paper that is too degraded for reprocessing. The feedstock waste contains negligible, if any, organic and earth-based materials.

Examples of activities in the waste paper recycling process are provided below.

Figure 35: Loose, sorted waste paper being prepared for baling (Source: InSitu)

Figure 36: Baled waste paper ready for distribution to recycled paper manufacturing facilities (Source: InSitu)

Figure 37: Higher quality cardboard waste paper being input to the paper production process (Source: InSitu)

5.2 Dregs and Grits

Dregs and grits is a mixture of sodium and calcium carbonates, lime mud and a small fraction of unburnt organics resulting from the process of removing lignin from virgin fibre raw material in the kraft pulping process. The Visy mill is projected to produce approximately 12,000 tonnes per annum of dregs, grits and lime mud.

5.3 Fly Ash (Power Boiler Ash)

The power boiler generates energy from raw materials that are not directly consumed in the production of kraft linerboard. Fuel for the power boiler comprises bark removed from incoming pulp logs, and wood chips (e.g. pin chips) and fines (e.g. sawdust) unsuitable for pulping.

Clean sand is used to transport the fuel in the fluidised bed of the power boiler. Over time, the sand in the fluidised bed becomes contaminated with bottom ash and is replaced with clean sand.

The Visy mill is projected to produce approximately 4,000 tonnes per annum of fly ash, bottom ash and sand waste.

5.4 Recrystallisation Plant Residue

The Visy mill has recently installed a recrystallisation plant to reduce the build-up of chloride in the recovery boiler. The recrystallisation plant generates approximately 2,000 tonnes per annum of non–usable material.

5.5 Quantities

In the Visy Pulp and Paper annual return for year ended 30th June 2017 the site produced 676,070 tonnes of Kraft linerboard paper and generated the following quantities of waste:

Waste Material	Tonnes
Dregs and Grits	10,827
Fly Ash	3,146
Boiler Sand	1,149
Recrystallisation	987
Paper Machine Rejects	58,927
Total	75,036

Subject to approval, the proposed landfill facility will be licensed to accept up to 60,000 tonnes per annum. Based on the proposed total airspace capacity of 485,000m^3 and the landfilled waste compacted to an average density of 1 tonne per cubic metre, the duration of landfilling operations is anticipated to be approximately 8 to 10 years, depending on actual annual inputs, followed by landfill closure, rehabilitation and post-closure.

5.6 Classification

The proposed landfill facility will accept only waste that has been generated from the paper recycling and kraft linerboard production works at the Visy mill at Tumut. All waste generated at the Visy mill will be pre-processed and sorted at the mill so the waste is within the physical and chemical requirements for - and formally classified as - General Solid Waste (Non-Putrescible) as per NSW EPA Waste Classification Guidelines: Part 1 Classifying Waste (2014).

Copies of waste classification assessments of waste from the Visy mill are presented in Appendix 8 or 9. These assessments demonstrate the waste meets the requirements for General Solid Waste (Non-Putrescible), the waste is not hazardous waste and does not pose a bio-security or disease risk. It is expected that waste to be received at the proposed landfill facility will continue to be consistent with the waste material generated in previous years by the Visy mill.

5.7 Waste Handling

Waste generated at the Tumut Visy mill and received by the proposed landfill facility will be handled as follows:

- Waste will be tested and classified in accordance with the NSW EPA (2014) Waste Classification Guidelines.
- Waste classified as General Solid Waste (Non-Putrescible) will be loaded onto trucks and weighed.
- Receiving and unloading waste at the Waste Disposal Facility.
- Landfilling of waste within the approved landfilling cell, and covering of landfilled waste.
- Quantities, types and classification of wastes transferred from the Visy mill and landfilled at the proposed landfill facility will be documented for audit and reporting purposes.

This waste handling procedure is described in more detail below.

5.7.1 Testing and Analysis

Waste materials at the Visy mill will be screened and sorted into discrete batches for waste classification assessment in accordance with the NSW EPA (2014) Waste Classification Guidelines. Only batches of waste that have been classified as General Solid Waste (Non-Putrescible) and meeting the licensing criteria for the proposed landfill facility will be eligible for transport to the proposed landfill facility for disposal. Copies of all waste classification assessments are to be retained for reporting and audit purposes.

5.7.2 Loading and Weighing of Waste at the Waste Source

Batches of classified waste eligible for disposal to the proposed landfill facility will be loaded onto trucks and weighed. All trucks used to transport waste will be fitted with a cover system so that loads of waste are fully and adequately covered during transport from the Visy mill to the proposed landfill facility. The weight and corresponding waste classification assessment for each load will be retained for reporting and audit purposes.

5.7.3 Transport of Waste

Waste leaving the Visy mill will be transported to the proposed landfill facility via a designated haulage route which will include the Snowy Mountain Highway, Gocup Road, Hume Highway, and Old Hume Highway before entering Tumblong Reserve Road; Tumblong Reserve Road will be sealed to Roads and Maritime Services standards appropriate for use by the transport vehicles (likely "truck and dog" vehicles). The transport vehicles will be regularly maintained and replaced. Loads are enclosed to prevent any spillage or odour impacts during transport.

5.7.4 Receiving of Waste at the Waste Disposal Facility

The waste receival process at the proposed landfill facility will be:

- The transport vehicles will enter the landfill facility from Tumblong Reserve Road.
- On entering the site, transport vehicles will reverse to the waste cell hopper.
- The waste will then be tipped into the waste cell hopper from the tipping trailer.
- The truck will then move forward, disengage the trailer, reverse back to the waste cell and the waste will then be tipped from the truck tipper into the waste cell hopper.
- The vehicles will then be cleaned and recoupled before leaving the waste cell.

5.7.5 Spreading and Covering of Waste

Waste material deposited into the waste cell will be spread evenly and compacted by a front–end loader to form the appropriate shape of the waste cell. Daily cover material will then be applied to the waste as per licensing criteria. A stockpile of daily cover material will be retained on site, with adequate material to provide a 150mm thick cover over all waste at the end of every working day. Staff will routinely conduct litter patrols to ensure that waste material does not leave the operational waste cell.

It is anticipated the dregs and grits waste shall be used as partial daily cover material if suitable, otherwise the fill material from the adjacent temporary stockpile will be used.

5.7.6 Documentation and Reporting

Descriptions of waste, waste classification assessments and corresponding times, dates and weights of loads - including copies of weighbridge data - of waste transported from the Visy mill will be recorded and submitted to NSW EPA in accordance with the Environmental Protection Licence for Visy mill and for the proposed landfill facility. It is expected the recorded information on waste quantities leaving Visy mill will be correlated with topographical surveys undertaken at the proposed landfill facility and indicating the consumption of landfilling capacity.

5.8 Leachate Management

Leachate control and management is an important consideration in ensuring that the proposed facility will have no adverse impact on groundwater and surface water systems. This section provides further detail on the Leachate Management System that will serve the landfill.

Leachate can be defined as a liquid that passes through a landfill waste mass and has extracted dissolved and suspended matter from the waste. The primary sources of leachate generation are:

- Surface water infiltration into the waste surface and surface runoff into the waste mass during periods of prolonged rainfall;
- Surface water shed from the landform; and
- Leachate generated by the moisture content, and degradation of the received emplaced waste.

5.8.1 Proposed Leachate Management System

The proposed leachate management system comprises:

- An impermeable leachate barrier liner, installed across the floor and over the side-walls of Cells 1 and 2 to prevent uncontrolled migration of leachate out of the landfill cells.
- An independent leachate collection and removal system in each of Cells 1 and 2, comprising a granular leachate drainage blanket (positioned over the leachate barrier liner and beneath the landfilled waste) and an integrated network of leachate collection pipes to extract the leachate from the drainage blanket via dedicated sumps designed into the base of both Cell 1 and Cell 2.
- A leachate storage and evaporation dam, to temporarily store the leachate extracted from Cells 1 and 2.

Drawings showing the conceptual arrangement of the leachate barrier, leachate collection and removal system and the leachate storage dam are presented within design Figures 8 & 9.

The capacity of the leachate storage and evaporation dam was calculated by SLR Consulting Australia Pty Ltd (SLR) using a water balance model. The water balance model was prepared in accordance with The Environmental Guidelines: Solid Waste Landfills Second Edition (NSW EPA 2016) using the HELP model, and Environmental Guidelines: Use of Effluent by Irrigation (NSW DEC 2004). The study considered climatic data (including local rainfall data and evapotranspiration rates), anticipated depth and type of landfilled waste, materials used in the final capping of the landfill and methods for disposing of the collected leachate (e.g. irrigation, evaporation etc).

The water balance modelling was conducted for two 'worst-case' scenarios with respect to generation of leachate:

- Scenario 1: Cell 1 completed to final height (daily cover installed), and
- Scenario 2: Cell 1 completed to final height (final capping installed), Cell 2 two-thirds filled (combination of interim and daily cover installed) and assuming the entire Cell 2 area will contribute to leachate generation.

The water balance modelling indicated the minimum volume (including freeboard allowance) of the leachate storage pond for Scenario 1 should be 3.06 ML with a surface area of 1,250m^2, and 6.86 ML with a surface area of 2,436m^2 for Scenario 2.

A copy of SLR's report is included as an Appendix.

5.9 Biosecurity

Biosecurity matters to be considered in relation to the proposed landfill expansion include the prevention and eradication of declared noxious weeds, feral animals, vermin and pests. The Operational Management Plan will include protocols and procedures to manage any potential impact on the biosecurity of the local area.

5.9.1 Noxious Weeds

The spreading or tracking of declared noxious weeds throughout the local area and along the haulage route requires appropriate management protocols in relation to this landuse activity.

Any noxious weeds identified on the site require appropriate control in order to comply with the Noxious Weeds Act 1993, as well as any weed action plan developed by Council. Weeds are to be managed along access roads and storage areas to minimise contact and spreading by vehicles accessing the site. A weed management protocol is to be developed in the operational plan for the site, as well as education of staff to be able to identify weeds that have the potential to occur on the site.

All machinery involved in the construction and operation of the waste disposal facility is to be inspected for noxious weed material and cleaned if necessary prior to leaving the site.

5.9.2 Feral Animals, Pests and Vermin

As outlined above, the waste material is non–putrescible and contains negligible levels of organic material. As such, the potential of the waste facility to attract feral animals, pests and vermin, including birds, is minimal.

No goods or services that might have the potential to attract pests or vermin will be stored on site.

In the event that feral animals, pests or vermin were to become a problem on the site, appropriate action will be taken to implement controls to eradicate any identified issue.

5.9.3 Pathogens

Due to the non–putrescible nature of the waste and the site operational procedures, it is considered that the chance of spreading of pathogens is negligible.

6 STATUTORY-REGULATORY FRAMEWORK

The following section of the Environmental Impact Statement lists and assesses the proposal against relevant Acts, Regulations, Environmental Planning Instruments (State, Regional and Local), Development Control Plans and any other identified local or agency guidelines.

6.1 Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) and Environmental Planning and Assessment Regulation 2000 (EP&A Regulations) provide the principle legislative planning framework for the consideration of development activity in NSW. The proposed development has been considered against the relevant provisions of this Act and Regulation.

6.1.1 Environmental Planning and Assessment Act 1979

The EP&A Act (the Act) is the principle planning legislation from which development activity is considered. The objectives of the Act are:

(a) to encourage:
- *(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
- *(ii) the promotion and co-ordination of the orderly and economic use and development of land,*
- *(iii) the protection, provision and co-ordination of communication and utility services,*
- *(iv) the provision of land for public purposes,*
- *(v) the provision and co-ordination of community services and facilities, and*
- *(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
- *(vii) ecologically sustainable development, and*
- *(viii) the provision and maintenance of affordable housing, and*

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

Environmental Planning Instruments (State Environmental Planning Policies, Regional Environmental Plans, and Local Environmental Plans) are generated and implemented under this Act, together with other legislative planning procedures and documents including strategic planning, development assessment, certification of development, enforcement and other administrative planning functions.

Section 4.15 of Division 4.3 of Part 4 of the Act sets out the criteria for development assessment. Matters that must be taken into consideration when determining the development application for this proposal include:

(a) the provisions of:
- *(i) any environmental planning instrument, and*
- *(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and*
- *(iii) any development control plan, and*
- *(iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4*
- *(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),*
- *(v) (Repealed)*

that apply to the land to which the development application relates,

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,

(c) the suitability of the site for the development,

(d) any submissions made in accordance with this Act or the regulations,

(e) the public interest.

Discussion in relation to the above 4.15 matters is provided in sections below.

6.1.2 Environmental Planning and Assessment Regulation 2000

Schedule 2 of the Regulations sets out the criteria for the content and procedures in relation to Environmental Impact Statements to be prepared for this type of development proposal. The relevant Secretary's Environmental Assessment Requirements from NSW Department of Planning & Environment have been acquired and form the basis of the structure of the Environmental Impact Statement. A summary detailing the reporting responses to the Secretary's Environmental Assessment Requirements is included within the Environmental Impact Statement.

Schedule 3 of the Regulations provides details in relation to designated development.

The proposed development falls within the definition of a "Waste Management Facility", as defined in Environmental Protection and Assessment Regulation 2000 Schedule 3 which defines "Waste Management Facilities or Works" as:

"(1). Waste management facilities or works that store, treat, purify or dispose of waste or sort, process, recycle, recover, use or reuse material from waste and:

(a). that dispose (by landfilling, incinerating, storing, placing or other means) of solid or liquid waste:

(iv). That comprises more than 200 tonnes per year of other waste material."

As the proposal is to dispose of up to 60,000 tonnes per annum of non–putrescible waste it is correctly defined as a "waste management facility"

6.2 Waste Avoidance and Resource Recovery Act 2001

The overall objectives of this Act are to encourage the most efficient use of resources, avoid unnecessary resource consumption, encourage resource recovery, minimise final disposal of waste, and achieve integrated solutions to waste and resource management. A product of the Act is the NSW Waste Strategy prepared by the Environmental Protection Authority titled the NSW Waste Avoidance and Resource Recovery Strategy (2014 – 2021). The subject proposal is an integral part of a regionally driven resource recovery programme that addresses and meets the objectives of the Strategy and Act.

6.3 Protection of the Environment Operations Act 1997

The Protection of the Environment Operations Act requires licensing of scheduled activities such as the subject proposal. An Environment Protection Licence will need to be issued for the proposal to proceed.

6.4 Water Management Act 2000

The purpose of this Act is to ensure the sustainable and integrated management of the state's water for the benefit of both present and future generations.

A controlled activity approval will not be required as the proposal is not in the vicinity of waterfront land.

6.5 Biodiversity Conservation Act 2016

The purpose of this Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. A comprehensive analysis of biodiversity issues in relation to this site is outlined in sections below and accompanying reports.

6.6 National Parks and Wildlife Act 1974

This Act aims to conserve nature, objects, places or features of cultural value within the landscape. The Office of Environment and Heritage administer the provisions of this Act. The preparation of the Environmental Impact Statement has included responses to considering cultural archaeological heritage matters in accordance with guidelines issued by the Office of Environment and Heritage.

6.7 Roads Act 1993

Roads and Maritime Services, Council and Crown Lands administer provisions of this Act, where applicable. The objects of the Act cover all matters relating to the creation, access to, and classification of public roads. The proposal will involve both light and heavy traffic that will access public roads, a crown road and classified roads. Roads and Maritime Services have provided comment in relation to this proposal, as well as Council and Crown Lands.

6.8 Visy Mill Facilitation Act

The principle purpose of this Act is to facilitate the establishment and operation of a kraft pulp and paper mill in southern NSW by Visy. The Mill has been established in Tumut NSW. The Act also indicates that it is the intention of NSW Parliament and its agencies to promote the principle purpose of the Act and in particular to use their best endeavours to assist Visy and any other persons to obtain any approvals that are necessary for or relevant to any of the designated activities of the Mill.

Designated activities are defined as any activities or proposed activities to which a timber supply agreement relates or any other activity declared by an order made under this Act. Visy undertake the resource recovery / recycling programme that generates the waste stream that will be deposited at the proposed landfill, including other waste generated from the pulp and paper mill process.

6.9 State and Regional Planning Policies

6.9.1 State Environmental Planning Policies

The proposed development is subject to the provisions of relevant State Environmental Planning Policies as listed below.

Table 7: Designated Development Provisions

Designated Development Provisions applicable to this development	
State Environmental Planning Policies	Comment
State Environmental Planning Policy No. 33 – Hazardous and Offensive Development	Applicable & relevant. This Policy is relevant to this proposal as there are potential impacts to the surrounding environment and nearby residents. State Environmental Planning Policy No.33 guidelines list Waste Management Facilities as potentially offensive development. A preliminary hazard analysis has been conducted to determine that the facility does not meet the definition of a potentially hazardous or hazardous industry. In assessing the potential for this proposal to be offensive, relevant steps from the State Environmental Planning Policy No. 33 application guide indicate that the proposal will not fall within the category of being "offensive".
State Environmental Planning Policy No 55—Remediation of Land	Applicable, not relevant. The proposed development will address site remediation as a requirement of consent.
State Environmental Planning Policy (Infrastructure) 2007	Applicable & relevant. Under this SEPP, the proposed facility is permissable with consent as it is located within a prescribed zone, being RU1. All other provisions of this State Environmental Planning Policy are satisfied by this proposal, as discussed below. In determining this proposal, the consent authority will take into account the following points:

Designated Development Provisions applicable to this development	
State Environmental Planning Policies	Comment
	• The proposal adopts best practice to ensure that the waste amount is minimised before being placed in landfill, the design and operation meets industry standards and addresses any long–term impacts of the waste disposal including odour control and groundwater contamination; • The proposal is establishment of a landfill operation that will utilise previously degraded land and will be located and operated in a manner to minimise land use conflict; • The proposal is consistent with regional planning strategies, local principles and guidelines. The proposal makes best use and optimises transport linkages to reduce environmental and social impact when considering all associated opportunities and constraints.
State Environmental Planning Policy (State and Regional Development) 2011	Applicable & relevant. As the development falls within the definition of regional development as per Schedule 4A of the Environmental Planning and Assessment Act, the Southern Regional Planning Panel is the determining authority for this proposal. The State Environmental Planning Policy outlines the functions of joint regional planning panels to determine development applications.
State Environmental Planning Policy (Primary Production and Rural Development) 2019	Applicable & relevant. A purpose of this SEPP is to reduce land use conflict and sterilisation of rural land by balancing primary production, residential development and the protection of native vegetation, biodiversity and water resources. The proposal achieves this objective through sustainable design and management of the facility, as outlined in other sections of this EIS.

Under the Environmental Planning and Assessment Act 1979, the proposal is not eligible for biodiversity offsets as per NSW Biodiversity Offsets Policy for Major Projects, as the project is not classified as State Significant Development or State Significant Infrastructure. It is considered that biodiversity impacts from the development will be minimal, with a net benefit to biodiversity values in the area once the facility has been rehabilitated.

6.9.2 State Environmental Planning Policy (Infrastructure) 2007

The State Environmental Planning Policy (Infrastructure) overall aim is to facilitate the effective delivery of infrastructure across the State. Waste or resource management facilities, including a waste disposal facility, are considered infrastructure and subject to the provisions of this State Environmental Planning Policy.

The State Environmental Planning Policy indicates that a waste disposal facility may be carried out with consent on land in a "prescribed zone". The zoning of the subject land is RU1 Primary Production, which is defined as a prescribed zone. The proposed development may be carried out under the provisions of this State Environmental Planning Policy.

Where there is an inconsistency between the State Environmental Planning Policy and any other Environmental Planning Instrument (e.g. Gundagai Local Environmental Plan 2011), State Environmental Planning Policy (Infrastructure) prevails to the extent of the inconsistency.

The following matters must be taken into consideration when determining a development application for the subject proposal:

> *(a) whether there is a suitable level of recovery of waste, such as by using alternative waste treatment or the composting of food and garden waste, so that the amount of waste is minimised before it is placed in the landfill;*
>
> *COMMENT*: The proposal is handling non-recyclable materials from an established resource recovery process. The current process results in a significant amount of recyclable material being recovered and reused. Future refinements to the process may result in a further minimisation of waste and,

together with the potential introduction of new resource recovery initiatives at the subject landfill site, achievement of additional sustainable outcomes.

(b) whether the development:
(i) adopts best practice landfill design and operation, and
(ii) reduces the long-term impacts of the disposal of waste, such as greenhouse gas emissions or the offsite impact of odours, by maximising landfill gas capture and energy recovery, and

COMMENT: The proposed landfill design employs best practice principles, as presented in the expert reports attached to the Environmental Impact Statement.

(c) if the development relates to a new or expanded landfill:
(i) whether the land on which the development is located is degraded land such as a disused mine site, and
(ii) whether the development is located so as to avoid land use conflicts, including whether it is consistent with any regional planning strategies or locational principles included in the publication EIS Guideline: Landfilling (Department of Planning, 1996), as in force from time to time, and

COMMENT: The proposed site is located on land that is significantly degraded as a result of its use as an aggregate quarry. The location enables sufficient separation from sensitive receptors and is consistent with relevant strategies. The site has been determined as degraded and suitable for this activity, in accordance with applicable guidelines including the EIS Landfill Guidelines.

(d) whether transport links to the landfill are optimised to reduce the environmental and social impacts associated with transporting waste to the landfill.

COMMENT: The proposal is sited on land with established road transport linkages that ensure efficient and sustainable transport from source to landfill. The transport links include state funded arterial roads that have been designed to optimise connectivity throughout the local area. Environmental and social impacts associated with transporting waste to the landfill are minimised through the utilisation of this site, compared with other existing and proposed alternatives. Transport considerations are explored and analysed in separate sections of this EIS that support this position.

6.9.3 Regional Planning Policies

The site is located within the defined area of the Riverina–Murray Regional Plan 2036. The draft strategies, aims and objectives outlined in this plan have been considered during the concept development of the proposal. The proposal is consistent with the overall aims of the draft plan, helping to increase the economic growth of the region, as well as supporting a major manufacturing and resource recovery industry in the area. This support is delivered by providing a waste solution for by-products of the manufacturing, recycling and value adding process of the industry.

Additional discussion regarding this regional planning policy is contained within section 2.1 of the Environmental Impact Statement.

6.10 Local Planning Policies

6.10.1 Gundagai Local Environmental Plan 2011

The subject land falls within the boundaries of Gundagai Local Environmental Plan 2011. The proposed landfill development will be assessed primarily against the provisions of this Local Environmental Plan.

Under the definitions of the Gundagai Local Environmental Plan 2011, the proposed land use of the site is defined as a "waste disposal facility". The definition of this land use is as follows:

> *"A building or place used for the disposal of waste by landfill, incineration or other means, including such works or activities as recycling, resource recovery and other resource management activities, energy generation from gases, leachate management, odour control and the winning of extractive material to generate a void for disposal of waste or to cover waste after its disposal"*

The consent authority for the purpose of administering the Local Environmental Plan is Cootamundra-Gundagai Regional Council. However, as determined under the provisions of the Environment Protection and Assessment Act and Regulations for this proposal, The Southern Regional Planning Panel will consider and determine the application on behalf of council.

The particular aims of the Local Environmental Plan are listed in the table below together with comments on the proposal's consistency with each:

Table 8: Gundagai Local Environmental Plan 2011: Aims

Gundagai Local Environmental Plan 2011 - Aims	
Aim	Comment
(a) to retain the distinctive character of Gundagai town in its riparian setting.	The proposed landfill supports this aim. The subject land is located in an area that does not impact upon the local riparian setting. The development is compatible with the existing rural setting and will not have any detrimental impact on the character of the local area, as demonstrated by the environmental analysis contained in the Environmental Impact Statement.
(b) to protect Gundagai's crop and pasture lands and vineyards from adverse environmental impacts	The proposed landfill supports this aim. The development will remediate an environmentally degraded site whilst not negatively impacting other crop and pasture lands. Whilst there are vineyards located approximately 2.6 km and 7.0 km from the site both vineyards are positioned on gradients that mean they are not exposed to any impact from the proposed landfill site.
(c) to protect environmentally sensitive land and important fauna and flora	The subject land is located on land that has been assessed as not environmentally sensitive in accordance with applicable guidelines and the results of specialist reports that accompany the Environmental Impact Statement. Fauna and flora assessment has determined that the proposed project is unlikely to have a significant impact on any threatened species or endangered ecological communities, as defined. Based on the environmental assessment contained in his Environmental Impact Statement, the proposed landfill supports this aim.
(d) to protect, conserve and enhance Gundagai's rich indigenous and non–indigenous cultural heritage	The proposed landfill supports this aim. Cultural heritage assessment undertaken in respect of the nature and site of the proposed landfill has determined that there will be no negative impact on indigenous or non–indigenous rural heritage. Due diligence matters have been undertaken in reaching this conclusion including the adoption of best practice procedures in the event of a significant item being encountered during the course of construction and operation of the proposed facility. Whilst there are a number of modified (i.e. scar) trees identified in the adjacent travelling stock reserve the quarry site is highly disturbed and does not contain similar items. However the site is subject to an aboriginal land claim and it is anticipated that once the quarry has been rehabilitated further development of this claim might proceed.
(e) to encourage, employment creation and business opportunities in the rural, village and urban area of Gundagai	The proposed landfill supports this aim. The proposal will sustain employment and business within the local area. The proposal is consistent with state and regional strategies including major infrastructure investments to secure long term economic growth locally and regionally.
(f) to maintain Sheridan Street as Gundagai town's primary area for business, civic and cultural uses visitor services	The proposed landfill supports this aim. M.H. Earthmoving is a local business and has their main administrative office in Sheridan Street. The proposal will generate further business activity that will utilise the Sheridan Street area for business, civic and cultural activity.

Gundagai Local Environmental Plan 2011 - Aims	
Aim	Comment
(g) to encourage the renewal and consolidation of older residential areas close to the Gundagai town centre to provide appropriate housing that meets the needs of the community	The proposed landfill supports this aim. The retention of business and employment in the local area will have the potential to indirectly encourage residential investment and growth in the local area to meet the needs of a growing and prosperous community.
(h) to ensure that all development in Gundagai is required to comply with the principles of Environmentally Sustainadle Development.	The proposed landfill supports this aim. The proposal complies with Ecologically Sustainable Development principles as demonstrated in the thorough environmental assessment of this project. Further discussion on this matter is provided below.

6.10.2 Land Zoning

The subject site is zoned RU1 – Primary Production in the Land Zoning Map and is designated as "AB2" in the Lot Size Map. "AB2" is stated to include a minimum lot size of 40 Hectares.

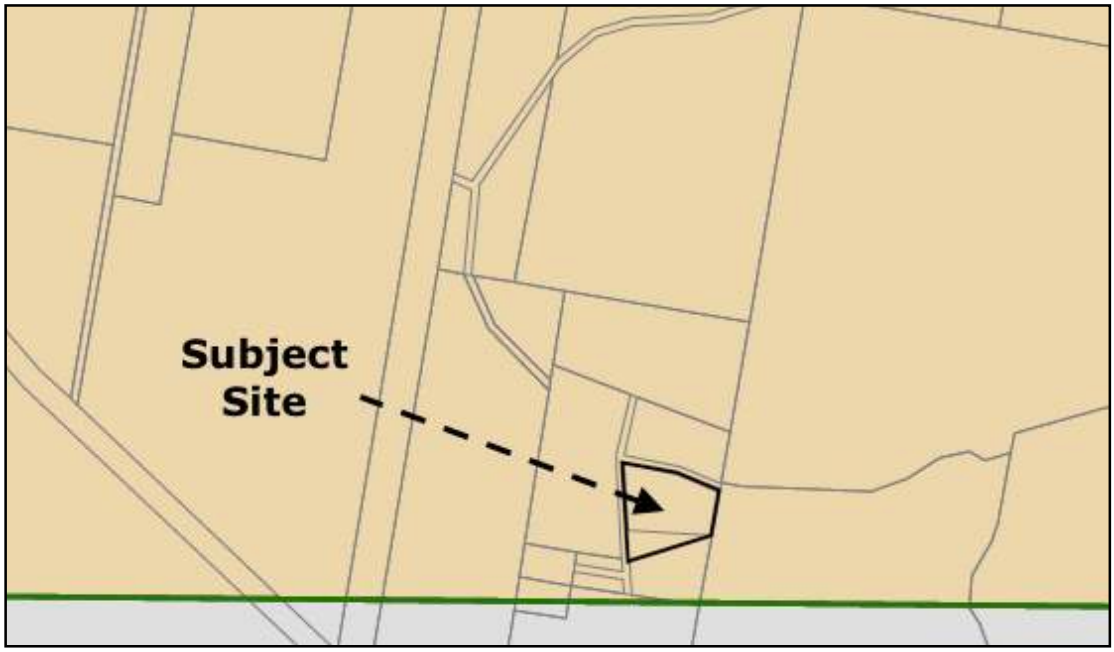

Figure 38: Extract from Land Zoning Map LZN_004 (Source: GLEP)

Figure 39: Extract from Lot Size Map LSZ_004 (Source: GLEP)

The RU1 Land Use Table reads as follows:

Zone RU1 Primary Production
1 Objectives of zone
• To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
• To encourage diversity in primary industry enterprises and systems appropriate for the area.
• To minimize the fragmentation and alienation of resource lands.
• To minimize conflict between land uses within this zone and land uses within adjoining zones.
• To encourage the efficient use and conservation of water resources.
• To protect significant scenic landscapes.
• To encourage development that does not adversely impact nearby agricultural activities.
• To protect, enhance and conserve the natural environment, including native vegetation, wetlands and wildlife habitat.
• To ensure development prevents or mitigates land degradation.
2 Permitted without consent
Extensive agriculture; Environmental protection works; Home occupations; Intensive plant agriculture.
3 Permitted with consent
Dwelling houses; Extractive industries; Farm buildings; Function centres; Intensive livestock agriculture; Open cut mining; Roads; Roadside stalls; Any other development not specified in Item 2 or 4.
4 Prohibited
Amusement centres; Attached dwellings; Bulky goods premises; Business premises; Cemeteries; Child care centres; Community facilities; Dual occupancies; Eco-tourist facilities; Entertainment facilities; Extension homes; Exhibition villages; Hardware and building supplies; Health services facilities; Home occupation (sex services); Industrial retail outlets; Industrial training facilities; Marinas; Mooring pens; Mortuaries; Multi dwelling houses; Office premises; Public administration buildings; Registered clubs; Residential flat buildings; Respite day care centres; Restricted premises; Semi-detached dwellings; Seniors housing; Service stations; Sex services premises; Shop top housing; Storage premises; Timber yards; Vehicle body repair workshops; Vehicle sales or hire premises; Wharf or boating facilities: Wholesale supplies.

The table below lists and addresses the objectives of the RU1 Primary Production zone:

Table 9: Zone Objectives

Gundagai Local Environmental Plan 2011: RU1 Primary Production Zone Objectives	
Zone Objective	Comment
To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.	The proposal will not negatively impact on the natural resource base of the area, and is located on a site of minimal, realistically zero, primary industry value. The land has minimal value for agricultural production and has been severely degraded from quarrying activities. The objective is supported by not utilizing prime agricultural land and remediating highly degraded land.
To encourage diversity in primary industry enterprises and systems appropriate for the area.	The landuse is permissible in the RU1 zone and under State Environmental Planning Policy (Infrastructure) 2007. Diversity in primary production is not compromised by this proposal. The objective is supported by encouraging landuse activity in an appropriate area that can be successfully managed whilst co-existing with other rural enterprises.
To minimize the fragmentation and alienation of resource lands.	The proposal will not fragment resource lands. The objective is supported as the land and surrounding land are already fragmented and this proposal consolidates a permissible activity within a small footprint to minimize any further impact that could lead to fragmentation. The subject land is located within a rural setting that includes a disused waste management facility. Remediation of the quarry will serve to rehabilitate already fragmented resource lands.
To minimize conflict between land uses within this zone and land uses within adjoining zones.	The subject land and surrounding land are all zoned RUI Primary Production. The site is located a sufficient distance from nearest sensitive receptors to enable natural mitigation of any potential impacts as a result of this development activity. The natural topography provides additional natural attenuation of any potential impact to minimize conflict with other adjoining land uses. The objective is supported by ensuring that mitigation measures including adequate separation is employed by the activity to minimize potential conflict. Future monitoring activities will ensure this position is maintained.
To encourage the efficient use and conservation of water resources.	The proposal does not utilize water resources except for water captured in the leachate disposal system. There are no plans to access groundwater or existing stream water supplies. The objective is supported by ensuring that current water resources are protected and enhanced by continually improving management practices.

Gundagai Local Environmental Plan 2011: RU1 Primary Production Zone Objectives	
Zone Objective	Comment
To protect significant scenic landscapes.	The proposal is located in an isolated valley with supporting and ultimately rehabilitated walls and surrounds to ensure the scenic landscape is protected in relation to the public domain. The objective is supported as the site and future works have little impact on the public domain and are screened by the natural topography. The proposal will be remediated to a natural state once the life of the site activity is completed.
To encourage development that does not adversely impact nearby agricultural activities.	The proposal will not negatively impact nearby agricultural activities by providing measures to reduce, or negate, any potential impacts throughout the construction and operational life of the landfill. The objective is supported by the responsible application of best practice management principles that are actively monitored and licensed by the Environment Protection Authority and Council, to avoid any adverse impact on nearby agricultural activities.
To protect, enhance and conserve the natural environment, including native vegetation, wetlands and wildlife habitat.	The site does not contain any significant natural environments, being historically heavily disturbed and disrupted. The objective is supported as the project will result in a rehabilitated environment that will ultimately encourage the re-establishment of natural flora, fauna and ecosystems and result in a net benefit to the environment.
To ensure development prevents or mitigates land degradation.	The proposal will provide measures to reduce or negate any potential impacts to the land and the surrounding environment. The objective is supported in that the land will be rehabilitated from its current degraded state.

6.10.3 Permissibility

The land use table indicates that a "Waste Disposal Facility," as defined, is permissible with consent in a RU1 zone. A "Waste Disposal Facility" falls within the category of an "innominate" use under Item 3. "Permitted with consent..... Any other development not specified in item 2 or 4." A "Waste Disposal Facility" is not specified in item 2 or 4 of the land use guide, therefore it is permissible with consent.

There are no Gundagai Local Environmental Plan 2011 Part 4 Principal development standards or Part 5 Miscellaneous provisions applicable to the proposed land use and environmental status of the land.

6.10.4 Natural Resources Sensitivity - Biodiversity

Clause 6.1 of the Gundagai Local Environmental Plan 2011 refers to maintaining terrestrial and aquatic biodiversity. The objective of this clause is to maintain terrestrial and aquatic biodiversity, including protecting native fauna and flora, protecting the ecological processes necessary for their continued existence and encouraging the recovery of native fauna and flora and their habitats.

Figure 43 shows that the site is located in close proximity to the areas indicated in the Natural Resources Sensitivity Biodiversity Map.

Figure 40: Extract from Natural Resources Sensitivity Biodiversity Map NRB_004 (Source: GLEP)

Specialist studies that accompany the Environmental Impact Statement conclude the proposal will avoid any adverse impact in relation to biodiversity matters. As a result, the development satisfies the objectives of this clause. In addition, the rehabilitated quarry / landfill site will provide a net benefit to the local area biodiversity values, with rehabilitation measures to increase the amount of natural vegetation on the site.

Before determining development application for development on land to which this clause applies, the consent authority must consider any adverse impact of the proposed development on native ecological communities, regionally significant species of fauna and flora or habitat and habitat elements providing connectivity.

The assessment conducted by Advitech in the accompanying Biodiversity Development Assessment Report confirms that the proposal will have no adverse impact on any environmental factors as outlined above. No threatened species or significant species, populations or ecological communities will be detrimentally impacted by the proposal.

It is considered that the proposal is consistent with the aims and objectives of Clause 6.1 of the Gundagai Local Environmental Plan 2011 with relation to sensitive land. It is also considered that the proposal is sited, designed and will be managed appropriately to minimise any impact

6.10.5 Natural Resources Sensitivity - Land

Clause 6.2 of the Gundagai Local Environmental Plan 2011 refers to maintaining soil resources and the diversity and stability of landscapes.

The site is located in close proximity, but not within, land mapped as "sensitive land" under this clause, as shown in the map extract below. The objective of this clause is to maintain soil resources and the diversity and stability of landscapes, including protecting land with steep slopes and shallow soils, land subject to soil salinity, land with high erosion potential soils, land susceptible to other forms of land degradation and other landforms.

As outlined in the accompanying reports, the land has been analysed and the following conclusions have been made regarding the suitability of the site in relation to land sensitivity:

- The land is not steeply sloped, it is moderately inclined with levels varying from approximately 285m RL in the east to 271m RL on the western boundary.
- The soil is not saline and the proposal will have negligible impact on soil salinity.
- The site has some pseudogley soils but these will be treated with an engineered liner which will stabilise them. Erosion and Sediment Control Plans will be prepared and implemented.
- The site is highly modified, degraded and generally not fit for agricultural production.
- The scale of the project is unlikely to affect land degradation with the proposed rehabilitation works enhancing geomorphic function of the local environment.
- Landforms of the surrounding locale will be maintained. The site will have minimal visual impact from adjoining viewpoints. No vista will be significantly impacted by the proposal. The final capping layer will be formed to be consistent with the surrounding landform.

It is considered the proposed works will not have a significant impact on the land resources and land that is considered to be "sensitive" under the Gundagai Local Environmental Plan 2011. It is also considered that the proposal is sited, designed and will be managed appropriately to minimise any impact.

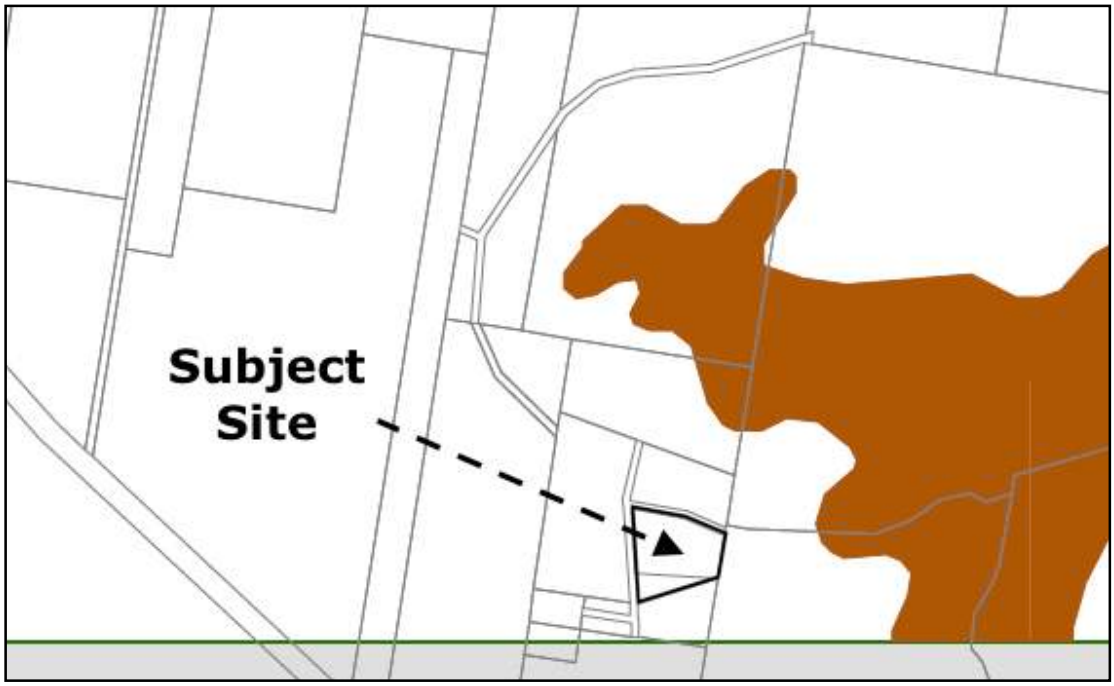

Figure 41: Extract from Natural Resources Sensitivity Land Map Sheet NRL_004 (Source: GLEP)

6.10.6 Natural Resources Sensitivity - Water

Clause 6.3 of the Gundagai Local Environmental Plan 2011 refers to maintaining the hydrological functions of riparian land, waterways and aquifers. The objective of this clause is to maintain the hydrological functions of riparian land, waterways and aquifers, including protecting water quality, natural water flows, the stability of the bed and banks of waterways and groundwater systems.

The site is mapped as being sensitive to water resources, as shown in the Gundagai Local Environmental Plan 2011 Natural Resources Sensitivity Water Map – Sheet NRW_005 shown below.

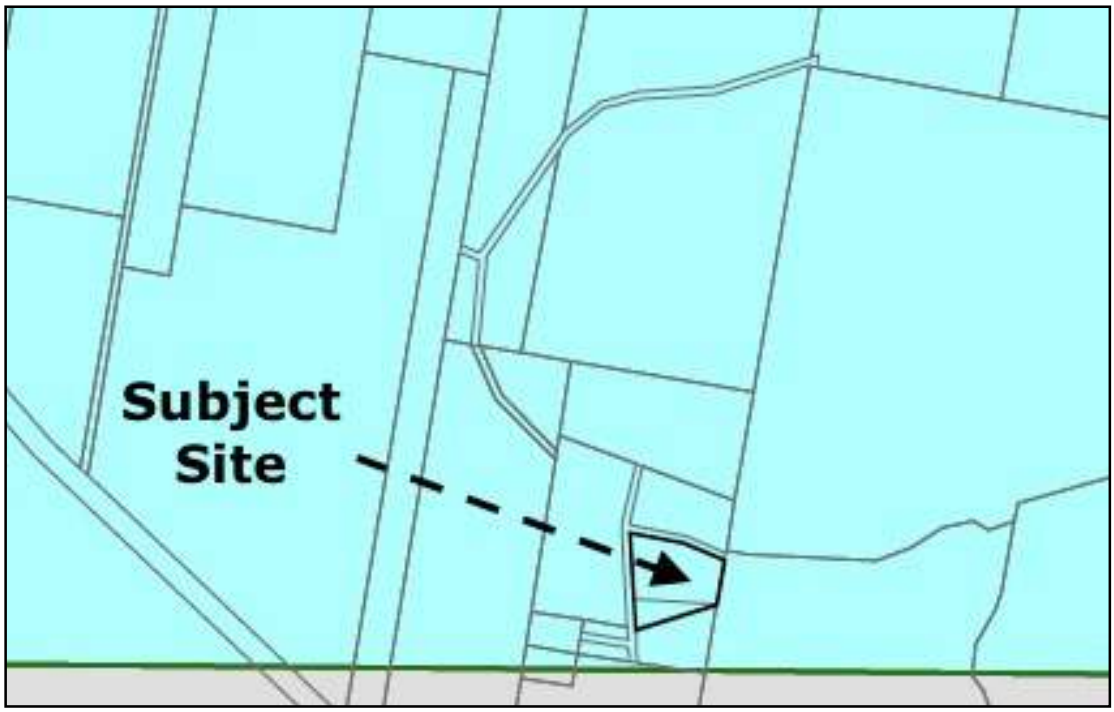

Figure 42: Extract of Natural Resources Sensitivity Water Map Sheet NRW_004 (Source: GLEP)

The impacts of the proposal on these systems have been assessed in the attached DM McMahon report.

It is considered that the proposal is sited, designed and will be managed appropriately to minimise any impact.

6.10.7 Additional Local Provisions

Clauses 6.4 Flood planning, 6.5 Earthworks and 6.6 Essential Services are not considered applicable to the proposed development.

6.10.8 ESD Principles

A particular aim of the Gundagai Local Environmental Plan 2011 (Clause 1.2(2)(h)) requires all development in Gundagai to comply with the principles of ecologically sustainable development.

A number of principles underpin ecologically sustainable development including:

a. The precautionary principle.

b. Intergenerational equity.

c. Biodiversity and ecological diversity.

d. Improved economic valuation including environmental factors.

The quarry remediation / landfill has been considered in respect of these principles.

The precautionary principle.

Namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

It is the opinion of environmental experts engaged in this assessment that there are no imminent threats of serious or irreversible environmental damage that would eventuate as a result of the approval, establishment and operation of the proposal. Further detailed discussion in this regard has been documented in the body of, and Appendices to, this Environmental Impact Statement.

Intergenerational equity

Namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

The proposal has considered intergenerational equity issues and concludes that the remediation of the quarry, provision of a facility that supports the waste recycling industry, protecting the integrity and productivity of the local environment, and ensuring that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

Conservation of biological diversity and ecological integrity.

The content of the Environmental Impact Statement and the supporting technical reports provide confidence that this proposal will, where practically and physically possible, conserve biological diversity and ecological integrity of the natural environment.

Improved valuation and pricing of environmental resources.

The proposal has considered and will implement the principles of ensuring that environmental factors are included in the valuation of assets and services in relation to the landfill. The principles of "polluter pays", full life-cycle costs and pursuing sustainable environmental goals are an integral part of the proposed landfill activities for this site. The development and approval / licensing systems that oversee the subject

landuse activity ensure continuing respect and achievement of the Ecologically Sustainable Development principle

6.11 Other Relevant S4.15 Matters

The table below lists other relevant s4.15 Evaluation matters for consideration:

Table 10: Matters for consideration under section 4.15

Matters for Consideration under Section 4.15	
Zone Objective	Comment
Any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority	There are no known proposed instruments applicable to the development proposal.
Any planning agreement	There are no known planning agreements applicable to the development proposal.
The suitability of the site for the development	The site is considered suitable for the development based on the environmental assessment in this Environmental Impact Statement.
Any submissions	Council will undertake appropriate public consultation and consider any submissions accordingly.
The public interest	The public interest is supported with this application as the proposal is in accordance with the publicly endorsed strategies, legislation, planning policies and guidelines to ensure compatible and sustainable development on the site and within the facility. The public interest is also supported by application of Environment Protection Authority standards, guidelines and licensing to ensure compliance with best practice landfill performance criteria. Contributions to the local economy, employment and community as a result of this development are also in the public interest.

6.12 Local Development Guidelines

Council does not currently have any Development Control Plans that are applicable to the site or the proposed development. Consideration was given to Council's relevant Section 7.12 plan, which is discussed in the section below.

6.12.1 Section 7.12 Plan

Council's Section 94 Plan – Developments generating Heavy Vehicle Movements on Local Roads has been considered in the preparation of the subject Development Application and Environmental Impact Statement. Under the local developer contribution policy, the subject proposal will be assessed for Section 7.12 contributions in relation to the maintenance of local roads as utilised by the heavy vehicles that facilitate the landfill site's operations. Council will apply Section 7.12 charges as required during the assessment of the subject Development Application.

Section 7.12 charges are calculated based on the basis of the load imposed on roads from heavy vehicles and the resulting increased cost of repair. The formula for deriving a contribution from development that will result in an impact on local roads is as follows:

Contribution per vehicle trip ($) = ESA x Marginal Cost x distance (km)

For Council to derive a total contribution amount for all heavy vehicle movements, the following information needs to be provided by the applicant:

- The type of heavy vehicles to be used.
- The mass limits for axle configuration of vehicles to be used.
- The frequency of vehicle movements by type of vehicle.
- The anticipated loads for each vehicle type.

Council will nominate:

- The ESA (based on the chart at Figure 3).
- The Marginal Cost (based on the chart at Figure 4).
- The type of road(s) to which the contribution applies.
- The distance of road(s) to which the contribution applies.

The relevant information will be provided to Council with regards to heavy vehicle movements prior to drafting of the relevant Section 7.12 conditioning.

During discussions with Council officers, it was determined that works in kind may be an acceptable way to contribute to the community in lieu of payment of the Section 7.12 fees for developments generating heavy vehicle movements on local roads, as outlined above. Further discussions are required with Council to determine the nature of any works in kind that may be accepted.

6.13 Other Relevant NSW Legislation and Guidelines

The following additional relevant guidelines, as advised by relevant agencies, were referenced in respect of the proposed landfill siting, construction and operation:

- Environmental Guidelines: Solid Waste Landfills (EPA 2016)
- Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid wastes (EPA 1999)
- EIS Guideline: Landfilling (DP&E, 1996)
- NSW State Rivers and Estuaries Policy (1993)
- Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development (Austroads 2016)
- Guide to Traffic Generating Developments (RTA 2002)
- Managing Urban Stormwater, Soils and Construction – Volume 1 (Landcom 2004) and Volumes 2A to 2E (DECC 2008) – 2B Waste Landfills
- Local Planning for Healthy Waterways – Using NSW Water Quality Objectives (DEC 2006)
- Guidelines for Fresh and Marine Water Quality (ANZECC 2000)
- ANZECC Guidelines and Water Quality Objective in NSW (DEC 2006)
- The NSW State Groundwater Policy Framework Document (DLWC 1997)
- NSW Groundwater Protection Policy (DLCW 1998)
- Assessment and Management of Groundwater Contamination 9DEC 2007)
- National Environment Protection Measure Guideline on the Investigation Levels for Soil and Groundwater (EPHC 1999)
- Australian Groundwater Modelling Guidelines (NWC 2012)
- NSW Aquifer Interference Policy (DPI Water 2012)
- Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (EPA 2004)
- Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA 2005)
- Assessment and Management of Odour from Stationery Sources in NSW (DEC 2006)
- NSW Road Noise Policy (DECW 2011)
- Interim Construction Noise Guideline (DECC 2009)
- Industrial Noise Policy (EPA 2000)
- Assessing Vibration: A Technical Guideline (DEC 2006)
- Technical Basis for Guidelines to Minimise Avoidance Due to Blasting Overpressure and Ground Vibration (ANZEC 1990)
- Waste Classification Guidelines Part 1 Classifying Waste (EPA 2014)
- Hazardous Industry Planning Advisory Paper No.6 – Hazard Analysis (DP&E 2011)
- Soil and Landscape Issues in Environmental Impact Assessment (DLWC 2000)
- Threatened Species Assessment Guidelines (DECC 2007)
- Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH 2011)
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECC 2010)
- Agricultural issues for landfill developments (DPI 2011)

The above guidelines' relevance and application to the preparation of this Environmental Impact Statement and supporting appendices, are outlined below.

Environmental Guidelines: Solid Waste Landfills (EPA 2016)

This is the key guidance document for the assessment, establishment and operation of a landfill in NSW. These guidelines specify minimum standards in relation to design and construction techniques, effective site operations, monitoring and reporting protocols, and post-closure management requirements.

The minimum standards reflect the following broad goals for landfilling in NSW:

- Landfills should be sited, designed, constructed and operated to cause minimum impacts to the environment, human health and amenity.
- The waste mass should be stabilised, the site progressively rehabilitated, and the land returned to productive use as soon as practicable.
- Wherever feasible, resources should be extracted from the waste and beneficially reused.
- Adequate data and other information should be available about any impacts from the site, and remedial strategies should be put in place when necessary.
- All stakeholders should have confidence that appropriately qualified and experienced personnel are involved in the planning, design and construction of landfills to high standards.
- The guidelines provide a number of key factors to take into consideration when preparing a landfill proposal, including:
- Identify and rank those sites that require the fewest engineering and management controls to meet the objects of all State environmental protection policies.
- Planning and impact assessments are a critical step in establishing a landfill with a minimal environmental impact.
- The landfill must have a leachate barrier system to contain leachate and prevent the contamination of surface and ground water over the life of the landfill. The leachate barrier system ensures that pollutants are not permitted to migrate beyond the boundaries of the premises.
- Sufficient leachate storage and disposal must be performed in order to not cause harm to the environment.
- Controls should be implemented to reduce erosion and minimise sediment load in surface water that is discharged from site.
- A landfill gas management program must be established to ensure that the appropriate engineering controls are in place to ensure that methane and other gases produced by the landfill are properly managed.
- A completed landfill cell must be capped and revegetated to ensure that waste is properly covered and remediated.

The points above have been addressed throughout this report and in greater detail in the supporting reports and documentation. It is considered the design of the proposal meets the requirements of the EPA Environmental Guidelines: Solid Waste Landfills (2016)

Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes (EPA 1999)

The Environmental Guidelines regarding the assessment, classification and management of waste has been considered in this respect of the classification of the waste material proposed to be disposed at the waste disposal facility. These guidelines contain the criteria for trace elements of certain types of waste, the subsequent classification of waste and the acceptable methods of disposal of waste types.

These guidelines have been addressed throughout the Environmental Impact Statement document, including analysis of the Waste Material Details.

EIS Guideline: Landfilling (DP&E, 1996)

The EIS Guideline provides a defined set of criteria for taking into consideration when preparing an Environmental Impact Statement for a landfill proposal. This Environmental Impact Statement has been prepared with reference to those guidelines; taking into account the following key points and issues:

- Relevant environmental factors in the site selection.
- Alternatives.

- Suitability of the location.
- Waste management principles and best practice.
- Surface and groundwater quality.
- Air Quality.
- Visual impact.
- Other key relevant environmental factors.

These factors have also been addressed throughout the report and the supporting documentation, including various sections within Environmental Impact Statement. The discussion in those sections demonstrate that the proposal has been designed and is sited to minimise impacts to adjoining sensitive receptors and to the local and regional environments, in accordance with the recommendations of the EIS Guidelines.

NSW State Rivers and Estuaries Policy

The NSW State Rivers and Estuaries Policy was also consulted during the preparation of the Environmental Impact Statement document in relation to works to be conducted in proximity to existing waterways. This policy encourages projects and activities which will restore the quality of the river and estuarine systems, such as:

- rehabilitating remnant habitats.
- re-establishing vegetation buffer zones adjacent to streams and wetlands.
- restoring wetland areas.
- rehabilitating of estuary foreshores.
- ensuring adequate streamflow to maintain aquatic and wetland habitats.

The policy aim to achieve these objectives through the application of a number of management principles including the rehabilitation of environmentally degraded areas and restoration of the biophysical functions of the waterway.

Whilst the site is not located in proximity to waterways, the rehabilitation of the significantly degraded quarry will have a net environmental benefit.

Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development (Austroads 2016)

These guidelines are concerned with identifying and managing the impacts on the road system arising from land use developments. It provides guidance for the design, development and management of a variety of land use developments, aiming to ensure consistency in the assessment and treatment of traffic impacts, including addressing the needs of all road users and the effect upon the broader community. This document presents the land use and transport planning context for traffic impact assessment, including travel demand, safety, parking and access management issues. It provides guidance on the need and criteria for impact assessments, and a detailed procedure for identifying and assessing the traffic impacts, and mitigating their effects. Assessment of safety, infrastructure and environmental effects is also covered.

Guide to Traffic Generating Developments (RTA 2002)

This Guide outlines all aspects of traffic generation considerations relating to developments. It also provides information regarding traffic issues for those submitting Development Applications, and for those involved in the assessment of these applications. The overall objective is that both parties have access to common information relevant to the development approval process.

Managing Urban Stormwater, Soils and Construction – Volume 1 (Landcom 2004) and Volumes 2A to 2E 9DEC 2008) – 2B Waste Landfills

These guidelines outline the general principles of reducing the effect of stormwater on erosion and sedimentation, controlling the undesired effects through engineered solutions and natural measures, advocating regeneration of native vegetation to control erosion and sedimentation where possible.

The Landcom guidelines to managing urban stormwater, soils and construction were utilised in the preparation of the design of the proposal, utilising the principles outlined in this publication to guide erosion and sediment control measures appropriate for a landfill.

Local Planning for Healthy Waterways – Using NSW Water Quality Objectives (DEC 2006)

This booklet complements the Guidelines for Fresh and Marine Water Quality (ANZECC 2000), with an emphasis on providing guidance for Council's to incorporate water quality objectives into strategic planning documents, with an overall aim of improving water quality and the general health of waterways. This handbook advocates a six-step approach to achieving these goals.

Guidelines for Fresh and Marine Water Quality (ANZECC 2000)

This publication is the key guide to providing a standard in setting quality objectives to sustain current or likely future environmental values for natural and semi natural water resources, setting the thresholds for water quality throughout the region.

Using the ANZECC Guidelines and Water Quality Objective in NSW (DECC 2006)

Supporting the guidelines discussed above, this booklet is used to guide practitioners in the application and the use of the ANZECC publication in NSW. This booklet was used in conjunction with the ANZECC Guidelines to assess the current state of the subject site and the potential impacts from the proposal.

The NSW State Groundwater Policy Framework Document (DLWC 1997)

The content of this policy contains the aims and objectives to sustainably manage the states groundwater resources, whilst retaining the ability to use the resource to maintain the full range of benefits afforded by groundwater. The framework aims to reduce the impact on groundwater through the management of uses and practices that may negatively impact on groundwater resources.

NSW Groundwater Protection Policy (DLWC 1998)

This Groundwater Quality Protection Policy is specifically designed to protect valuable groundwater resources against pollution. The sustainability of groundwater resources and their ecosystem support functions are given explicit consideration in resource management decision making throughout this document.

Assessment and Management of Groundwater Contamination (DEC 2007)

The guidelines focus on groundwater pollution arising from point source contamination rather than on broad-scale groundwater issues arising from diffuse sources. The publication discusses the assessment and management of groundwater contamination and outlines a best-practice framework for assessing and managing contaminated groundwater in NSW. They are intended to aid in devising groundwater assessment and management strategies that are consistent with DEC's expectations.

National Environment Protection Measure Guideline on the Investigation Levels for Soil and Groundwater (EPHC 1999)

This publication provides general guidance in relation to investigation levels for soil, soil gas and groundwater in the assessment of site contamination.

Australian Groundwater Modelling Guidelines (NWC 2012)

The guidelines outline the methods that are acceptable in modelling groundwater, noting that there are a number of acceptable methods to model groundwater, depending on the situation and information available.

NSW Aquifer Interference Policy (DPI Water 2012)

The policy outlined in this document provides guidance on the correct classification and approvals required to impact on any aquifer or groundwater.

Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA 2004)

This document lists the sampling and analysis methods to be used when complying with a requirement by, or under, the environment protection legislation, or a licence or notice under that legislation, to test for the presence or concentration of matter in water and the volume, depth and flow of water or wastewater.

Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA 2005)

This document lists the statutory methods for modelling and assessing emissions of air pollutants from stationary sources in the state.

Assessment and Management of Odour from Stationary Sources in NSW (DECC 2006)

This document lists the statutory methods for modelling and assessing odour emissions from stationary sources in the state.

NSW Road Noise Policy (DECCW 2011)

The Road Noise Policy aims to identify the strategies that address the issue of road traffic noise from existing roads, new road projects, road development projects and new traffic-generating developments. The Road Noise Policy also defines criteria to be used in assessing the impact of such noise.

Interim Construction Noise Guideline (DECC 2009)

The guideline is specifically aimed at managing noise from construction works regulated by the Environment Protection Authority and will be used to assist the Environment Protection Authority in setting statutory conditions in licenses or other regulatory instruments.

Industrial Noise Policy (EPA 2000)

This policy is specifically aimed at assessing noise from industrial noise sources scheduled under the Protection of the Environment Operations Act 1997. It will be used as a guide by Environment Protection Authority officers for setting statutory limits in licenses for these sources. The policy is designed for large and complex industrial sources and specifies substantial monitoring and assessment procedures that may not always be applicable.

Assessing Vibration: A Technical Guideline (DEC 2006)

This guideline presents preferred and maximum vibration values for use in assessing human responses to vibration and provides recommendations for measurement and evaluation techniques. It does not address motion sickness, occupational vibration, blasting vibration effects or vibration-induced damage to buildings or structures.

Technical Basis for Guidelines to Minimise Avoidance Due to Blasting Overpressure and Ground Vibration (ANZEC 1990)

The guidelines intend to provide a recommended comfort criteria for all blasting activity at nearby sensitive receptors. This document does not provide any recommendations in regards to damage from blasting to nearby structures.

As no blasting is intended for the site this document was not considered further.

Waste Classification Guidelines Part 1 Classifying Waste (EPA 2014)

This part of the Waste Classification Guidelines covers the classification of wastes into groups that pose similar risks to the environment and human health. The guidelines contain a six-step process for the classification of any waste material to be disposed of.

Hazardous Industry Planning Advisory Paper No. 6 – Hazard Analysis (DP&E 2011)

This publication provides a guide to the integrated assessment process for safety assurance of development proposals, which are potentially hazardous or offensive.

Soil and Landscape Issues in Environmental Impact assessment (DLWC 2000)

The purpose of this document is to provide a guide to requirements and methodology relating to the assessment of soil and landscape issues during the Environmental Impact Assessment process for a wide range of development projects.

Threatened Species Assessment Guidelines (DECC 2077)

The aim of these guidelines is to help ensure that a consistent and systematic approach is taken when determining whether an action, development or activity is likely to significantly affect threatened species, populations or ecological communities, or their habitats either directly or indirectly. These guidelines clarify the specific terminology of the relevant legislation and provide clear interpretations of the factors of assessment.

Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH 2011)

The purpose of this document is to provide guidance on the process for investigating and assessing Aboriginal cultural heritage in NSW and the Office of Environment and Heritage's requirements for an Aboriginal cultural heritage assessment report.

Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DEC 2010)

This code of practice is to assist individuals and organizations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit.

Agricultural issues for landfill developments (DPI 2011)

The purpose of this guideline is to help consent authorities plan for and assess landfill facilities in rural areas. This guide is aimed at setting out the key agricultural issues, impacts and recommendations for consent authorities to consider in relation to landfill activities on, or near, rural land. The content of these guidelines is addressed throughout the Environmental Impact Statement and the associated relevant Appendices.

6.14 Commonwealth Legislation

6.14.1 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Act 1999 provides a mechanism for assessing the environmental impact of activities and developments, where "matters of national environmental significance" may be affected by the proposed activities. Matters of national environmental significance include:

World heritage properties;

- "RAMSAR" wetlands of international importance;
- Listed threatened species and communities;
- Migratory species protected under international agreements;
- Nuclear actions; and
- The Commonwealth marine environment.

Consideration has been given to the proposed development with regard to potential impacts on National Environmental Significance and matters protected by the Commonwealth Environmental Biodiversity Conservation Act 1999.

A preliminary search of the databases administered by the NSW Office of Environment and Heritage and the Department of Sustainability, Environment, Water, Population indicated there was potential for endangered and vulnerable species, and / or species habitat, protected under the Environment Protection and Biodiversity Act, to occur in the general area.

The figure below presents an extract of the search conducted using the Department of the Environment and Energy Protected Matters Search Tool, indicating that the site is not subject to any "matters of national environmental significance". The report generated from this tool and attached also confirms that within 1 kilometre of the site that there are no "matters of national environmental significance".

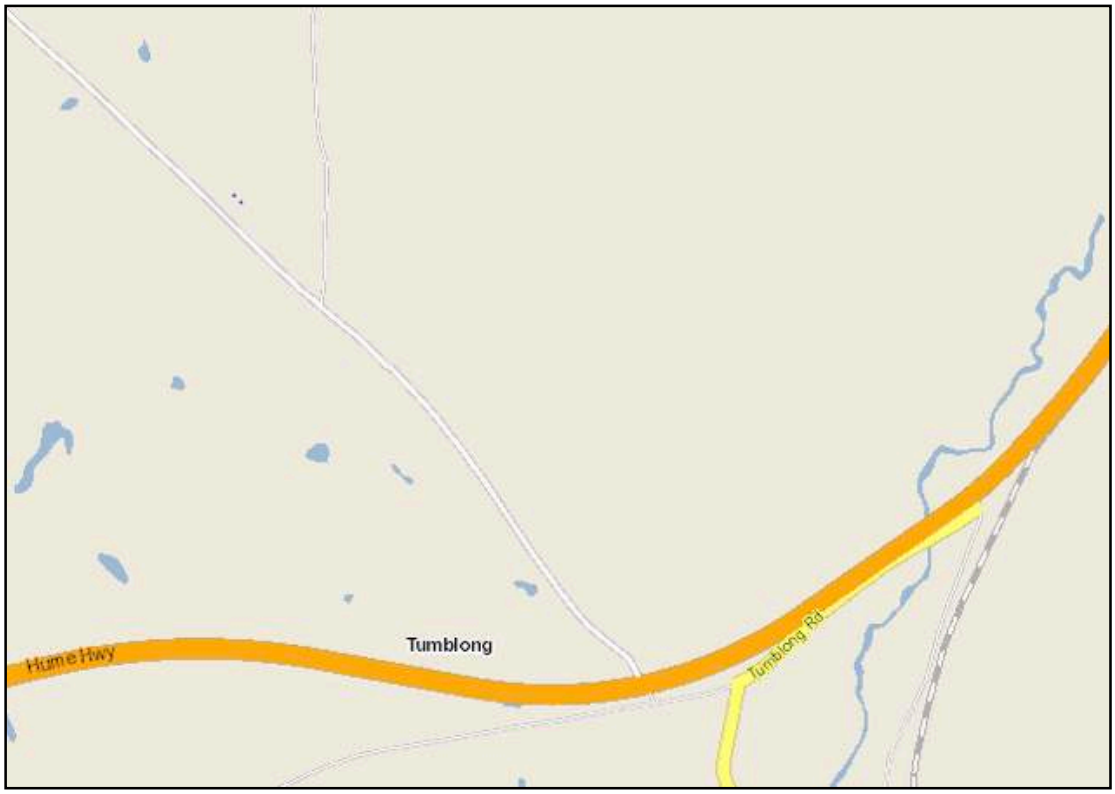

Figure 43: Department of the Environment and Energy Protected Matters Search Tool (Source: DEE 2019)

From the conclusions of the attached reports, the subject land has been extensively modified through historical land clearing associated with agricultural activities, waste management and quarrying in the area.

6.15 Statutory-Regulatory Framework Summary

The proposal is subject to an extensive range of statutory legislation and agency guidelines to ensure that any assessment and determination will result in sustainable environmental, economic and social outcomes for the benefit of the local and regional community. The assessment undertaken in this Environmental Impact Statement indicates that the proposal satisfies the provisions, aims and objectives of all relevant State, regional and Local Planning Policies and Guidelines, as relevant and applicable.

7 CONSULTATION

The proponent is committed to providing transparent and effective consultation in respect of the proposed landfill facility. To this effect, the consultation process during the preparation of this Environmental Impact Statement aimed to ensure that all stakeholders were informed of the project details, including design and data sources, and be provided the opportunity for effective participation so that all relevant issues were identified and addressed. Consultation was undertaken with government agencies, local Council and the local community concerning the proposed landfill facility.

7.1 State Government Authorities

This section provides details of authority consultation undertaken during the preparation of the Environmental Impact Statement and is to be read in conjunction with Section 7.3.

7.1.1 Secretary's Environmental Assessment Requirements

As the proposal is considered to be designated development, application was made to the State Planning Department for their recommendations and the Secretary's Environmental Assessment Requirements (SEARs), which were subsequently issued on 2 April 2019 (SEAR Number 1321). The SEARs is a list of key issues from relevant referral authorities that require consideration in the Environmental Impact Statement.

The following NSW authorities provided relevant comment and advice:

- Department of Primary Industries (Agriculture; Crown Lands);
- Environment Protection Authority;
- Office of Environment and Heritage;
- Roads and Maritime Services;
- Roads and Maritime Services, and
- Rural Fire Service.

The table below presents a summary of the key issues from the SEAR Number 1321 and where in this Environmental Impact Statement the key issues have been addressed.

Table 11: Sections addressing SEARs requirements

SEARs requirements and corresponding sections where addressed		
No.	Secretary's Environmental Assessment Requirements Item	Environmental Impact Statement Location
1	Strategic Context	Section 2.1
2	Waste Management	Sections 4.2.5, 5.1 and 5.2.
3	Hazards and Risks	Sections 9.10, 9.11.2 and 9.11.3
4	Air Quality & Odour	Sections 9.2 and 10.3.1
5	Noise & Vibration	Section 9.4
6	Water Resources .	Sections 5.3, 9.8, 10.2 and 11.1
7	Soil & Water	Sections 3.4, 3.8, 3.9, 9.7, 9.8 and 10.2
8	Traffic & Transport	Sections 9.5 and 10.3.2.
9	Biodiversity	Section 9.6
10	Visual	Section 9.14
11	Heritage	Section 9.12
12	Bushfire & Incident Management	Section 9.10

SEARs requirements and corresponding sections where addressed		
No.	Secretary's Environmental Assessment Requirements Item	Environmental Impact Statement Location
13	Relevant Environmental Planning Instruments	Section 6
14	Relevant guides from Local, State and Commonwealth government agencies.	Section 6.13
15	Consultation	Section 7

7.2 Local Council

The local council authority Cootamundra–Gundagai Regional Council was consulted during the pre-lodgement Preliminary Hazard Analysis of the application and during the preparation of the Environmental Impact Statement document. Council is aware of the history of the site and community attitude and potential reaction to the proposal. The Environmental Impact Statement process has provided clarity to Council over the proposed development, the primary areas of concern and the proposed mitigation measures to be instigated by the development.

Council reviewed SEAR Number 1321 and were also invited to inspect the site of the proposed landfill; no further issues other than those already presented in SEAR Number 1321 were raised by Council.

7.3 Community Consultation

Adjoining landholders were contacted in relation to the proposal and provided with preliminary background information on the proposal scope and nature, and also the process to be followed for formal DA lodgement, notification and assessment.

Adjoining landholders included those to the immediate east, west and north of the site. Other adjoining land includes Crown land and land owned by the proponent.

Initial discussion concluded that, whilst the landholders were appreciative of the contact made, further details of the proposal would be reviewed during the formal notification process and any appropriate submissions may be made prior to closure of the DA assessment period.

8 IDENTIFICATION AND PRIORITISATION OF ISSUES

This section provides a risk management view of the issues identified in the preliminary investigation into the proposal and also comments received during consultation sessions with the community, local authority and relevant agencies. From this exercise, relevant issues are prioritised to inform the environment impact assessment process, particularly in relation to the level of detail required to address key issues.

8.1 Risk Management Principles

The proposal is likely to result in some impacts, both positive and negative to the surrounding environment. An impact can be considered as any change to the environment either wholly or partially resulting from activities associated with the Project. Impacts may either be beneficial to the environment and community, or may give rise to changes that are considered less desirable.

The events or activities that are likely to lead to impacts that do not provide a benefit will require some level of monitoring, mitigation and / or management. The extent of management or monitoring required will depend on the level of risk that may be associated with the impact

Risk is generally measured as the result of a combined consideration of:

- *How likely is it that an impact would occur, or likelihood; and*
- *What would be the outcomes if it did occur, consequence*

The Environmental Risk Assessment was undertaken with consideration of *'AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines'*. This involves the following steps:

- *Evaluating likelihood of occurrence*
- *Evaluating consequence*
- *Assigning a risk rating.*

The likelihood of an impact occurring can be described in terms of probability. Overlaying this is the need to recognise the uncertainty that may be associated with the potential impacts, particularly during the initial risk assessment process. Where there is a scientific uncertainty a cautious approach would identify a higher level of risk.

Each identifiable impact can be assigned a likelihood between remote and almost certain. In simplifying the possible impacts for the purpose of a risk assessment, an element of subjectivity is introduced. The purpose of the risk assessment is not necessarily to agree on the probability of any particular impact, but to facilitate an understanding of the relative probability of different impacts.

8.2 Risk Management Assessment

To undertake the risk analysis for the quarry rehabilitation / waste disposal facility, potential risks were given a ranking between one and three with regard to the likelihood of it occurring (assuming that the Project is designed and implemented with standard environmental controls), in accordance with the following definitions.

Likelihood of occurrence:

- 1 Lower: unlikely to occur
- 2 Medium: potential to occur
- 3 Higher: likely to occur.

Assessing the consequences of a potential risk requires a degree of subjective assessment, as the likely consequences of an impact may consist of several elements. To undertake the risk analysis for the project, potential risks were given a number between one and three with regard to the perceived consequence if left unmanaged, in accordance with the following definitions.

Consequence of unmanaged impacts:

- 1 Low: potential for insignificant to minor environmental change; localised implications; imperceptible or short term cumulative impacts; offsets readily available
- 2 Medium: potential for moderate adverse environmental change; regional implications; modest or medium term cumulative impacts; offsets available.
- 3 High: potential for adverse environmental change; inter-regional implications; serious or long term cumulative impacts; offsets not readily available.

Based on the assessment of likelihood and consequence, a foreseeable impact / risk can be assigned a risk rating. This enables higher rating risks to be identified early in the process for the purpose of focusing the environmental assessment process. The matrix shown in in the table below was used to prioritise potential Project environmental risks as either category A, B or C.

Table 12: Environmental Risk Classification

Matrix for classifying potential environmental risks				
		Consequence		
		3 – High	2 - Medium	1 – Low
Likelihood	3 – High	Category A	Category A	Category B
	2 - Medium	Category A	Category B	Category C
	1 – Low	Category B	Category C	Category C

Category A issues were considered the highest priority and were the main focus of the environmental impact assessment. In general, the following was applied when scoping requirements for the environmental impact assessment:

- *Category A issues – require detailed specialist investigations and field work, and were the highest priority to enable identification of appropriate management and mitigation options.*
- *Category B issues – desirable to undertake further investigations as part of the environmental assessment to address some uncertainties.*
- *Category C issues – may not require detailed specialist investigations, particularly where identifiable management/mitigation guidelines exist, only broad or desktop investigations were undertaken.*

The preliminary risk assessment for the Project involved the following procedure:

- *Identification of potential environmental issues, as listed below.*
- *Identification of potential key risks or impacts associated with each of these potential issues*
- *Evaluation of the likelihood of occurrence and consequence in accordance with the definitions provided above.*
- *Assign a risk ranking/priority using the impacts priority matrix.*
- *Decide on a response – it was decided that a specialist study will be undertaken for any overall issues which included a risk ranking of category A or B.*

The potential environmental issues associated with the proposal were considered to include:

- Air quality
- Noise and vibration
- Soil
- Water
- Traffic and Transport
- Biodiversity
- Visual amenity
- Socio – economic
- Hazards and risk
- Heritage
- Bushfire

8.3 Assessment Results

The table below provides the results of the preliminary environmental risk assessment for the proposed expansion.

Table 13: Preliminary Environmental Risk Assessment Results

Preliminary Environmental Risk Assessment Results					
Issue	Potential key risks	Likelihood	Consequence	Priority category	Comment
Air Quality	Particulate emissions from construction activities	Low	Low	C	Dust emissions are likely to be generated during the construction Preliminary Hazard Analysis, with less anticipated to be generated by operational activities Odour emissions are anticipated to be low, given the non–putrescible nature of the waste. Greenhouse and landfill gas generation is also expected to be low, given the nature and scale of the proposed expansion. The Secretary's Environmental Assessment Requirements identified air quality as a key issue to address in the Environmental Impact Statement.
	Emissions from operational Preliminary Hazard Analysis	Low	Low	C	
	Odour emissions from waste material	Low	Low	C	
	Greenhouse and Landfill Gas generation	Low	Low	C	
Noise and Vibration	Noise emissions and vibration from site during construction Preliminary Hazard Analysis that affect nearby sensitive receptors.	Low	Low	C	Noise emissions and vibration impacts are likely to be more significant and have greater impact during construction, when more plant is operational. Blasting is not required.
	Noise emissions and vibration from site during operational Preliminary Hazard Analysis that affect nearby sensitive receptors.	Low	Low	C	Noise emissions and vibration impacts during the operational Preliminary Hazard Analysis are anticipated to be considerably lower than during the construction Preliminary Hazard Analysis.
Traffic and Transport	Increase in traffic during construction and operation.	Low	Low	C	
Biodiversity	Effects on threatened or vulnerable species through the removal of vegetation or habitat.	Low	Low	C	The development will result in the clearing of no trees, however it is not anticipated that threatened species will be significantly impacted.

Preliminary Environmental Risk Assessment Results					
Issue	Potential key risks	Likelihood	Consequence	Priority category	Comment
Soil	Erosion and sediment generation, including stability and suitability of soils for proposed works.	Low	Low	C	The soil on the site is anticipated to be stable and suitable for the proposed works.
Water	Impacts from sedimentation and erosion to existing surface water during construction and operation. Impacts to groundwater from leachate generation of waste cell.	Low Low	Low Low	C C	Appropriate sediment and erosion control measures have been designed to reduce impacts. A leachate barrier has been designed to prevent leachate from entering the area outside the proposed waste cell.
Bushfire	Ignition of fire or bushfire threatening the facility and staff.	Low	Low	C	Bushfire is not considered to be a significant threat to this proposal, but all appropriate management plans will be implemented to further reduce risk.
Hazards Risk	Storage of hazardous materials on site.	Low	Low	C	The risk of hazardous materials to the environment is not significant, given the small amount of hazardous materials to be stored on site. These materials are limited to small amounts of hydrocarbons.
Heritage	Discovery of Aboriginal Cultural Heritage or human remains during excavation.	Low	Low	C	Initial investigations conclude that the chance of impact to Aboriginal Cultural Heritage during the construction Preliminary Hazard Analysis is low. No known Aboriginal Cultural Heritage items or places have been identified on the site.
Socio - Economic	Amenity impacts during construction and operation.	Low	Low	C	The overall socio – economic impact will be positive due to the provision of jobs and economic benefit to the community.
Visual Amenity	Visibility of the proposed facility, local land use character impacts.	Low	Low	C	The visual impact of the proposal is considered to be minimal to insignificant depending on vantage point, given the proposed location of the facility.

Based on the results above, priority in the environmental assessment of this proposal has focused on issues relating to:

- Hydrogeological (waterways, groundwater, geology, soils, etc.
- Traffic.
- Air Quality.
- Noise / Vibration.
- Biodiversity.
- Cultural Heritage.
- Local character and Visual Amenity issues.

9 ENVIRONMENTAL IMPACT ASSESSMENT

The outcome of the identification and prioritisation process above has highlighted key issues that require detailed analysis, including comprehensive assessment by relevant experts. This section discusses each key issue together with a summary of process undertaken and outcomes provided by the expert reports that accompany the Environmental Impact Statement.

9.1 Site & Local Area Analysis

9.1.1 Subject Site Analysis

The site is located 1.2 km along Tumblong Reserve Road on highly modified rural land that is typified by undulating, varied terrain that has historically been cleared to accommodate grazing and other rural activities.

The site is reserved by the Department of Industry (Crown Lands) for the purpose of a quarry (Reserve 89508) and is currently operated as a gravel quarry. It was first reserved in 1975 and has been utilised since then. The quarry has largely reached the end of its useful life and is now in need of final excavation and remediation in accordance with the quarry licence requirements and with Council's duty of care.

The proposal is to fully excavate the quarry and to form a landfill site using part of the excavated material and with excess material to be used as "day cover" during the operational period.

The site area is slightly less than 4.5 hectares and is virtually 100% utilised by the existing quarry operation.

The land has limited vegetation, with a number of remnant paddock trees and shrubs being located across the site, as shown in the photos below.

Figure 44: Photo of site (Source: SP 2019)

Figure 45: Photo of site (Source: SP 2019)

Figure 46: Photo of site (Source: SP 2019)

Figure 47: Photo of site (Source: SP 2019)

The site is adjoined by a travelling stock reserve, large rural grazing / pasture properties and hobby farms and is in close proximity to the former Tumblong landfill. There are significant separation distances between the proposed operation and any nearby potential sensitive receptors. The topography of the proposed landfill also provides additional natural buffering, with the majority of nearby sensitive receptors having very limited "line-of-sight" to the site. The proposed site is generally located at elevations above that of nearby receptors, and operation is not readily visible from those receptors.

9.1.2 Local Area Analysis

The general character of the local area can be described as predominantly rural (agricultural production, grazing, cropping, pastures, rolling hills, trees, etc), with built elements interspersed throughout the countryside. The land has been cleared since European settlement in the area, with other non–agricultural uses introduced over the past 50–60 years including a Council waste management facility. Rural land subdivision policies also created opportunities for the creation of small rural holdings that are generally used for hobby farming and rural lifestyle purposes.

Land uses within the general local area, as defined above, comprise predominantly rural land activities together with an older disused and mostly covered landfill and hobby farms.

The disused and substantially remediated former Tumblong landfill facility is located approximately 300 metres southwest of the subject site. It is designated as Lot 236 and 286 of Deposited Plan 727816.

Figure 48: Proximate property titles indicating hobby farms to the southeast (Source: SIX Maps)

Figure 49: Former Tumblong community landfill locations (Source: SIX Maps)

9.1.3 Impact Assessment

The site's, and adjacent area's, history, terrain setting and other environmental elements indicate that the proposed landfill would not be out of character or impact the amenity of the immediate local area, as discussed above.

Waste management, as a land use activity, is not foreign to this catchment. The local area will continue to have a mix of rural residential, rural and quarry remediation / waste management activities into the foreseeable future.

The proposal will not have any significant negative impact on the future character or amenity of the area, particularly given that the land use mix will not fundamentally change. The site and landform will undergo some temporary changes during construction and landfill operation, however these overall impacts are likely to be minimal in the interim and negligible in the long term once the site has been capped and rehabilitated.

The rehabilitated site will ultimately improve the character and amenity of the area through revegetation and other environmentally positive works.

9.2 Air Quality and Landfill Gas

The site has been the subject of an air quality study conducted by Northstar Air Quality Pty Ltd (Northstar) to determine the impacts to air quality in the area as a result of the proposed establishment of the waste disposal facility and present recommendations for mitigation and monitoring of any air quality impacts. The air quality study was conducted in accordance with the relevant guidelines, NSW Office of Environment and Heritage publications including:

- Protection of the Environment Operations (Clean Air) Regulation 2002;
- Approved Methods for the Modelling and Assessment of Air Quality in NSW (NSW EPA, 2017);
- Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC, 2006);
- Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW (NSW DEC, 2006);
- Technical Notes: Assessment and Management of Odour from Stationary Sources in NSW (NSW DEC, 2006);
- Environmental Guidelines - Solid Waste Landfills (second edition) (NSW EPA, 2016).

The following sections present a summary of the key information and conclusions from the air quality study. The complete report by Northstar is presented as an Appendix.

9.2.1 Potential for Emissions to Air

Potential emissions were identified during construction phase activities and operational phase activities, specifically:

- Construction Phase
  - Short-term emissions of particulates (construction dust);
  - Localised engine exhaust emissions from construction machinery and vehicles.
- Operational Phase
  - Particulate matter, from:
    - Movement of vehicles around the landfill site on paved and unpaved surfaces;
    - Placement of waste;
    - Placement of cover material.
  - Odour, from:
    - Active waste face;
    - Intermediate waste cover;
    - Leachate.

9.2.2 *Sensitive Receptors*

Five sensitive receptors were identified within an approximately 2 km radius from the proposed landfill facility.

Table 14: Potential Sensitive / Sensitive Receptor Locations

Sensitive Receptors		
Receptor ID	Address	Land Use
R1	68 Tumblong Reserve Road, Tumblong	Residential
R2	108 Old Hume Highway, Tumblong	Residential
R3	419 Old Hume Highway, Tumblong	Residential
R4	346 Old Hume Highway, Tumblong	Residential
R5	335 Tumblong Reserve Road, Tumblong	Residential

9.2.3 *Modelling Scenarios*

The air quality study modelled two scenarios in which air emissions may be generated and affect the nearby receptors, namely where:

- Emissions arise from construction and operational phase activities ("Particulate Matter Scenario"), and
- Emissions arise from operational phase activities only ("Odour Scenario").

These scenarios modelled the following impacts on sensitive receptors (refer to Table 9 in Air Quality report):

Table 15: Modelled Impacts on Sensitive Receptors

Modelled Impacts	
Pollutant	Average Period
Particles (as TSP)	Annual ug.m-3
Particles (as PM10)	24 hour ug.m-3 and Annual ug.m-3
Particles (as PM25)	24 hour ug.m-3 and Annual ug.m-3
Dust deposition	Annual g.m-2.month-1
Odour	Nose response time (1 sec)

9.2.4 *Particulate Matter Impacts*

The air quality study concluded that, for the Particulate Matter and Odour Scenarios, the construction and/or operational activities at the proposed landfill facility:

- Does not result in any exceedances of the annual average particular matter impact assessment criteria at the identified sensitive receptors.
- Does not result in any exceedances of the annual average dust deposition impact assessment criteria at the identified sensitive receptors.
- Does not result in any exceedances, additional to predicted exceedances driven by existing background concentrations, of the maximum 24-hour average PM10 impact assessment criteria at the identified sensitive receptors.
- Does not result in any exceedances, additional to predicted exceedances driven by existing background concentrations, of the maximum 24-hour average PM25 impact assessment criteria at the identified sensitive receptors.

9.2.5 *Odour Impacts*

The air quality study concluded that, for the Particulate Matter and Odour Scenarios, the construction and/or operational activities at the proposed landfill facility would not cause unacceptable odour impacts at the identified sensitive receptors.

9.2.6 Impact Mitigation and Monitoring

Particulate matter and odour impact mitigation measures to be implemented at the proposed landfill facility are:

During construction phases:

- Minimise drop heights when loading haul trucks with excavated material.
- Use of a water cart on unsealed site roads.
- Limit vehicle speeds across unpaved areas of the site.

During operational phases:

- Pave Tumblong Reserve Road.
- Minimise drop heights when placing waste and daily cover.
- Limit vehicle speeds across the site, and along Tumblong Reserve Road.
- Restrict the size of the active tipping face to 600m^2.
- Placement of 150 mm thick daily cover on the active tip face at the close of each business day.
- Placement of 300 mm thick intermediate cover on areas awaiting final capping.

Based on the results of the air quality impact modelling, the air quality study concludes that no dedicated monitoring is proposed to be performed during the construction or operation of the proposed landfill facility.

It is, however, anticipated that visual and olfactory monitoring will be regularly undertaken by staff at the landfill and appropriate control measures taken to minimise local dust or odour emissions.

An Air Quality Management Plan (AQMP) will be prepared for the proposed landfill facility, detailing the management procedures to be employed at the facility and how these management measures will be reviewed and audited. A complaints register will be maintained by the facility operator to record any complaints relating to air quality and/or odour. Records of complaints will be made available to NSW EPA and DP&E upon request.

9.2.7 General Conclusion

Northstar's air quality study concluded:

> *"The results of the air quality impact assessment indicate that the granting of Development Consent for the [proposed landfill facility] should not be rejected on the grounds of air quality."*

9.2.8 Landfill Gas

The proposed waste is considered to be a general solid non–putrescible waste and, as such, is not anticipated to produce significant amounts of landfill gas. Therefore, a formal gas collection and treatment system is not currently proposed. However, should future environmental monitoring at the site suggest that landfill gas emissions are near permissible levels, a number of engineering controls, such as the inclusion of a landfill gas collection and treatment system, will be assessed and implemented as necessary and in consultation with NSW EPA.

9.3 Noise and Vibration

To investigate the potential impacts of noise on the locality, Waves Consulting Pty Ltd (Waves Consulting) completed a Noise and Vibration Impact Assessment (NVIA). The main findings of the NVIA are summarised in the following subsections. A copy of the NVIA is presented as an Appendix.

9.3.1 Sensitive Receptors

The site is located in an area surrounded by rural residential dwellings, which are the only noise-sensitive receptors in the area. Five noise-sensitive receptors were identified as shown in the table below.

Table 16: Nearest noise-sensitive receptors

Sensitive Receptors		
Residential Receiver	Distance from site (km)	Direction from site
R1	580	South East
R2	840	South South East
R3	1,900	South West
R4	1,100	North West
R5	1,750	North North East

Adjacent to the proposed landfill site is Tumblong Reserve Road, which provides the main access for road traffic to the site. The next nearest road (local road) is the Old Hume Highway, which is located approximately 1 km directly south of the site.

9.3.2 Sources of Noise and Vibration Impacts

The main sources of noise associated with the operation of the landfill facility will be the outdoor movement of vehicles to deliver, handle and manoeuvre waste material. As the site develops over time, the mobile noise sources will progress from operating below the surrounding ground level (i.e. the quarry void), to level with the surrounding ground, to finally above the surrounding ground level (i.e. landfill mound).

The NVIA was conducted with the following sources and conditions:

- Volvo L120 front end loader (sound power of 107 dB re 1pW).
- Volvo 360 excavator (sound power of 107 dB re 1pW).
- Hino watercart (10,000 L capacity) (sound power of 106 dB re 1pW).
- Truck and dog (sound power of 106 dB re 1pW).
- Construction hours: 0700 to 1800 hrs Mondays to Fridays; 0800 to 1200 hrs on Saturdays.
- Operational hours: 0700 to 1700 hrs Mondays to Fridays; 0700 to 1300 hrs on Saturdays.

9.3.3 Potential Noise and Vibration Impacts

Potential noise impacts from construction activities include:

- Noise emission from vehicle movements on the site to any nearby sensitive receptors. Typical vehicle movements include delivery trucks, bulldozers, loaders and excavators. These vehicles will also haul excess spoil to an adjacent lot during construction.
- Additional noise emission from construction vehicle movements on the surrounding roads to any nearby sensitive receptors.

Potential noise impacts from operation of the landfill facility include:

- Noise emission from vehicle and plant movements on site to any nearby sensitive receptors (i.e. delivery truck, excavator and loader movements).
- Additional noise emission from vehicle movements on the adjacent roads to any nearby sensitive receptors.

The potential for vibration impacts on sensitive receptors from construction or operational activities at the landfill are effectively nil, due to the offset distances (>500m) between vibrationally intensive equipment and sensitive receptors.

9.3.4 Predicted Noise and Vibration Impacts

It is predicted that vibration impacts on sensitive receptors will be nil during construction and/or operational works at the proposed landfill facility.

For noise impacts, Waves Consulting (2019) predicted:

- During standard construction hours, exceedances of the noise assessment limit by 3 dB are predicted at the closest residential receptor to the site, R1. There are no exceedances of assessment limits at any of the remaining four receptors.
- Construction noise levels are not predicted to exceed 75 dB $_{LAeq,15m}$ at any receptor. Therefore, no receptors were found to be 'highly noise affected'.
- Operational noise emissions from the site to the surrounding environment are low and there are no exceedances of noise assessment limits at any of the sensitive receptors.

9.3.5 Noise Mitigation Measures

Standard noise mitigation measures should be implemented, including:

- Avoiding the coincidence of noisy plant working simultaneously close together;
- Equipment used intermittently be shut down when not in use;
- Equipment with directional noise emissions be oriented away from sensitive receptors where possible;
- Implement regular compliance checks on noise emissions from all plant and machinery;
- Use non-tonal reversing alarms.

Since no sensitive receptors are considered to be 'highly noise affected', no additional noise mitigation measures (i.e. non-standard measures) are considered necessary.

9.3.6 Overall Conclusions

The NVIA concluded that:

- Predicted noise emissions from the site to the surrounding environment are low.
- The proposed development satisfies relevant noise trigger levels during all time periods.
- The proposed development generates negligible construction and operational traffic noise.
- No noise-sensitive receptors are identified to be 'highly noise affected'.
- The proposed development is a complying development with respect to noise and vibration impacts and is therefore suitable for construction and operation.

9.4 Traffic and Transport

9.4.1 Traffic Generation

The proposed development will generate traffic movement and impacts on the local and regional transport network as a result of:

- Construction plant activity;
- The transportation of non-putrescible waste material from the Visy plant at Tumut to the subject site.
- Employee vehicular movements;
- Visitor vehicular movements.

The proposed quarry remediation / landfill proposes to source all clay liner material from resources within the boundaries of the subject land. Therefore, there will be no additional traffic movements to the above list as a result of this intention.

The main impact of traffic movement is the change in final destination that results from this proposal. Heavy haulage vehicles will follow the existing route from the Visy plant until the intersection of the Snowy Mountains Highway and the Hume Highway. From this point vehicles will travel south west on the Hume Highway rather than travelling north east. This traffic will initially occur on the Hume Highway before entering the Old Hume Highway at Tumblong and eventually accessing Tumblong Reserve Road to the proposed site. The haulage route is diagrammatically presented below.

A Traffic Impact Assessment Report has been prepared by SECA Solution, which accompanies this EIS, and is to be referred to for further details and analysis.

9.4.2 Access and Parking

Access to the site after leaving the Hume Highway will be via the Old Hume Highway and Tumblong Reserve Road, which will be sealed as part of this project. Tumblong Reserve Road provides access to two rural residences, one of which is located between the Old Hume Highway and the proposed facility.

The Tumblong travelling stock reserve is also accessed immediately upon entering Tumblong Reserve Road.

There will be adequate space on site adjacent to the site office for staff and visitor parking, as shown on the plans accompanying the EIS.

The access and parking arrangements proposed for the facility are considered adequate for operation of the facility.

9.4.3 Haulage Route

The haulage route, involving State and Local roads between the source (Visy) and site, is outlined as follows**:**

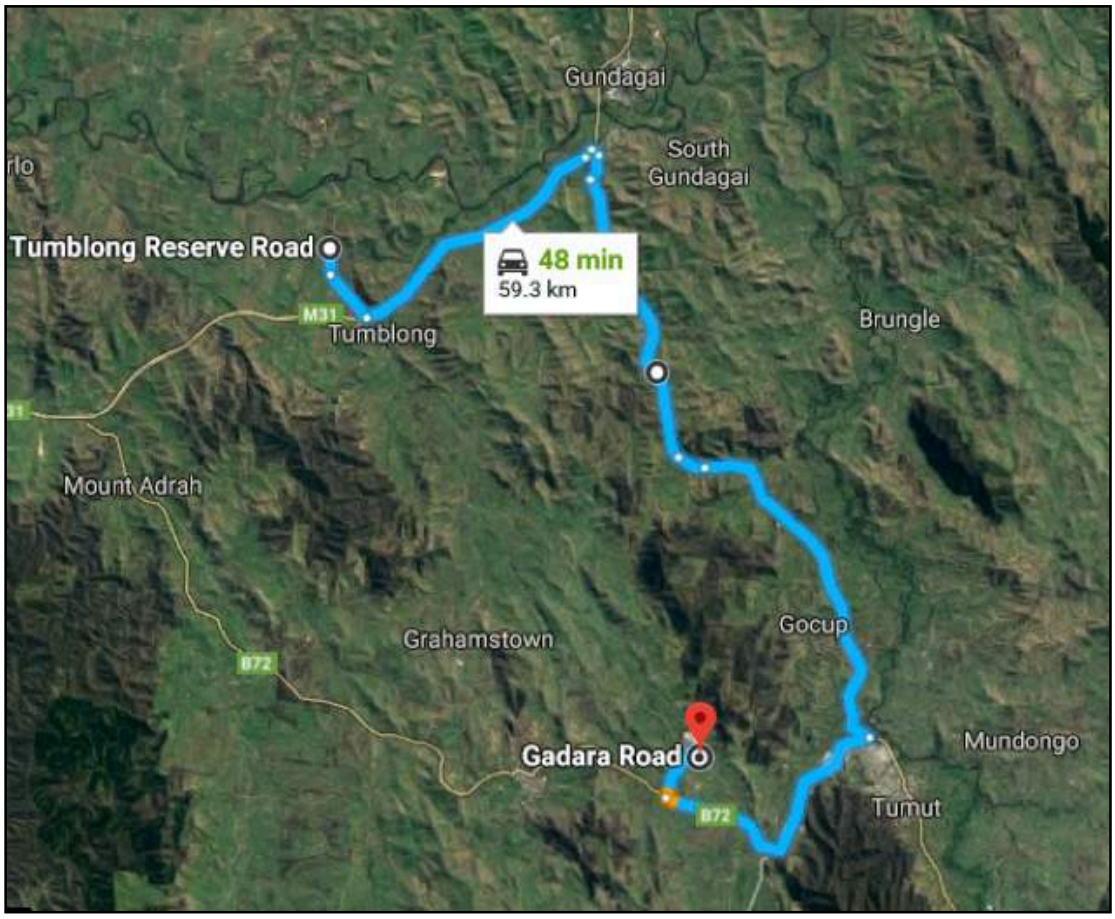

Figure 50: Haulage Route (Source: Google Maps)

The proposed vehicle route, with approximate distances, is as follows:

Table 17: Proposed Haulage Route to Bangus Quarry

Detailed sections of proposed vehicle haulage route	
Description	Distance (km)
436 Gadara Road (Visy) to Tumut via Snowy Mountains Highway	14.3
Tumut to Gundagai via Gocup Road	29.8
Gundagai to Tumblong / Old Hume Highway Intersection	11.7
Old Hume Highway to Tumblong Reserve Road Intersection	2.3
Tumblong Reserve Road to Bangus Quarry	1.2
Total Travel Distance (One Way)	**59.3**

The haulage route had been designed to ensure minimum disruption to communities whilst also complying with all relevant legislation. Key points of note, based on travelling from Visy to Bangus, include:

1. Once vehicles leave Visy they will travel along Bachelor's Valley Way and the Snowy Mountain Highway until they reach the intersection with Gocup Road (14.3km).
2. The vehicles will leave the Snowy Mountains Highway and enter Gocup Road and proceed to South Gundagai (29.8 km).
3. Upon entering South Gundagai, the vehicles will turn left along Mount Street and enter the Hume Highway.
4. After entering the Hume Highway the vehicles will travel south until they reach the intersection of the Old Hume Highway, in proximity of Tumblong (11.7 km).
5. Once having accessed the Old Hume Highway, the vehicles will travel west until the intersection with Tumblong Reserve Road (2.3 Km).
6. Vehicles will then turn onto Tumblong Reserve Road and travel to the quarry entrance (1.2 km).

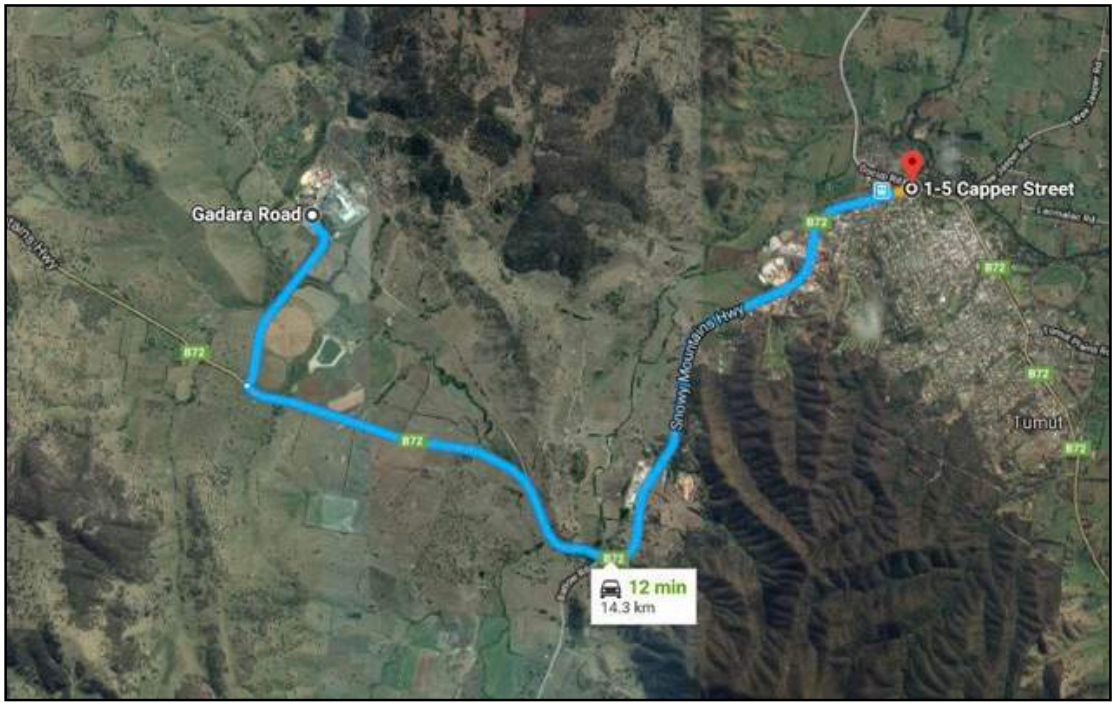

Figure 51: Visy To Tumut (Snowy Mountains Highway / Gocup Road Intersection) (Source: Google Maps)

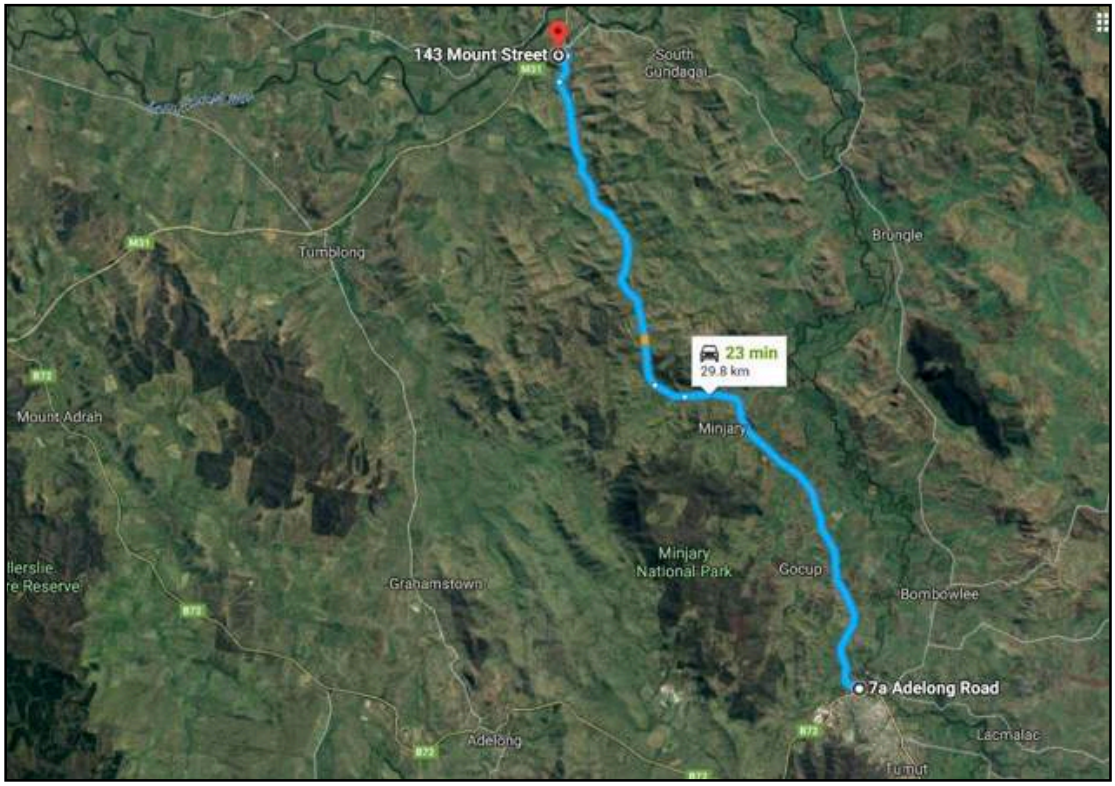

Figure 52: Gocup Road to Mount Street Intersection at South Gundagai (Source: Google Maps)

Figure 53: Mount Street to Hume Highway / Old Hume Highway Intersection (Source: Google Maps)

Figure 54: Hume Highway Intersection to Tumblong Reserve Road Intersection (Source: Google Maps)

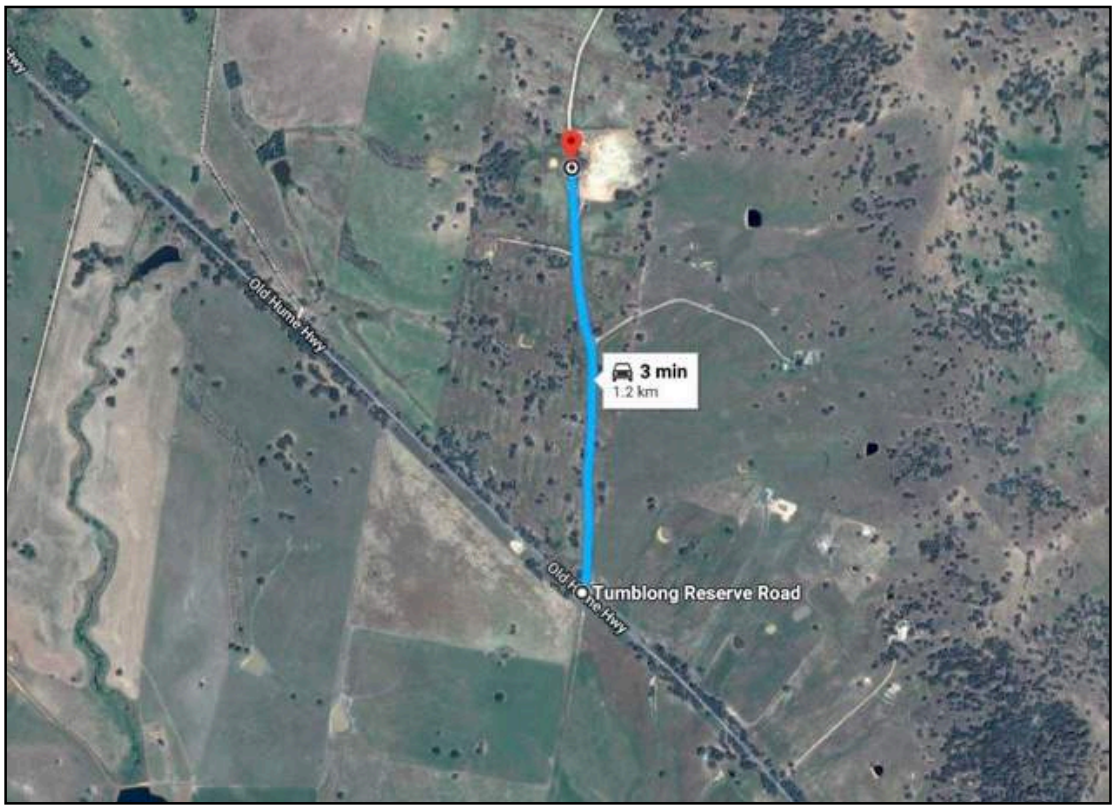

Figure 55: Tumblong Reserve Road to site entrance (Source: Google Maps)

The haulage route, with exception of Tumblong Reserve Road, is part of the State Roads Network and has been designed to cater for vehicles up to and including Austroads Class 11 Long Vehicles (PBS Class 2B, e.g. A-Double, 30m). The fleet proposed for the landfill operation will comprise Class 9 (7 axle) heavy vehicles. The road network is more than adequate to accommodate these vehicles.

The route is also an integral part of the Tumut to Hume Highway (Snowy Mountains Highway and Gocup Road) Corridor Strategy (July 2016). The landfill operation fits within the Corridor Strategy 20 year vision, which aims to deliver safe and secure transport planning processes that respond to current and future transport needs.

Gocup Road is subject to upgrade works as a result of a $70 million commitment by the NSW Government and the adoption of the Corridor Strategy. The road was originally a Regional Road managed by Gundagai and Tumut Councils. In 2010, it was reclassified as a State Road due to significant changes in economic activities and traffic flows in the area, particularly as a result of the expansion of the local timber industry.

9.4.4 Intersection Analysis

The key intersections in the haulage route are:

- Bachelors Valley Way (Visy access road) – Snowy Mountains Highway
- Snowy Mountains Highway – Gocup Road
- Gocup Road – Hume Highway
- Hume Highway – Old Hume Highway
- Old Hume Highway – Tumblong Reserve Road

Intersections encountered throughout the haulage route and local road network are more than adequate to continue accommodating traffic movements generated by the proposed landfill operation. See attached TIA for further discussion and assessment details.

9.4.5 Road Safety

The Traffic Impact Assessment Report concludes that the landfill haulage trucks will not have a significant impact on the local traffic environment.

The current corridor strategy for State Roads in the region confirms that the haulage route is located within appropriately designed and constructed road infrastructure that facilitate safe and efficient movement of heavy vehicles to and from the subject site.

9.4.6 Mitigation Measures

The traffic impact analysis has identified the following measures to mitigate any potential impact from the proposal:

- Drivers Code of Conduct shall be prepared that shall detail these controls to ensure that road safety is maintained for the project, especially at the intersection of the Hume Highway and Old Hume Highway.
- All vehicles to enter and exit the site in a forward direction.
- Internal operations will be controlled with a specific on-site management plan.

9.4.7 Conclusion

Analysis of potential traffic and transport network impacts by SECA Solution concludes that *"the proposed development can operate in a safe and satisfactory manner. Discussion with the RMS has highlighted the safety concerns at the key intersection of the Hume Highway and Old Hume Highway and the project will allow for suitable vehicle use and the control of vehicles at this location to maintain road safety. Overall it is considered that the proposed development should be approved with respect to traffic and road safety."*

9.5 Biodiversity

The site has been heavily disturbed through quarrying, with the site being utilised primarily for extractive industrial uses by the local Council. Whilst being located close to a former local landfill site it is also located in a dispersed rural landscape with an adjacent travelling stock reserve. The heavy disturbance of the site lessens the chance that any significant flora or fauna communities have been retained.

In support of the project, a detailed Biodiversity Development Assessment Report (BDAR) has been conducted by Advitech Environmental, of Mayfield West, NSW, with their report dated November 2019 and included in full as an appendix to this EIS. It is considered that the detailed BDAR and Appendices adequately addresses the potential impact in relation to the proposal and meets the requirements set out in the SEARs.

Figure 56: Aerial image of site showing site specific sparse flora (Source: SIX Maps)

Figure 57: General Landscape Surrounding Site (Source: Advitech 2019)

Figure 58: General Landscape to the west of site (Source: SP 2019)

Figure 59: General landscape to the north and west of site. (Source: SP 2019)

9.5.1 Flora

The vegetation across the entire site is highly disturbed primarily due to historical clearing and quarrying activities. Native vegetation assemblages on site are consequently in a degraded, highly modified condition restricted to remnant trees and a small number of native shrubs and groundcovers.

The remnant vegetation on site has been assessed as to whether it is consistent with remnant White Box – Yellow Box – Blakely's Red Gum woodland and derived native grasslands. This community is listed as an Endangered Ecological Community under the Threatened Species Conservation Act and Critically Endangered under the Environment Protection and Biodiversity Conservation Act and is known to occur in the local area. The vegetation on site is not considered to form part of this Endangered Ecological Community as any patches of vegetation were not of a sufficient size, lacked a predominantly native ground layer and had a low proportion of native understory species. No Endangered Ecological Communities were identified within the subject site.

Advitech state 'the temporary stockpile site is 35.90 ha, and up to 2.18 ha of vegetation may be impacted, described as PCT 343 (Mugga Ironbark – Red Box – Red Stringybark – Western Grey Box grass/shrub woodland on metamorphic substrates). This PCT is also significantly disturbed, and characterised by a weedy ground layer, but includes vegetation zones in greater condition. This PCT was not found to meet the description of any Threatened Ecological Communities (TECs)'.

Six plots were used to assess the composition, structure and function components of vegetation integrity. The Advitech BDAR report shows that two PCTs were identified on site. Around a central 50 m transect, a 20 x 20 metre quadrat was established to record floristic diversity and combined with a 20 x 50 metre quadrat for recording fauna habitat and forest regeneration. Within the 20 x 50 m plot area, five 1 m2 plots were also established to assess groundcover composition. Vegetation plots were undertaken for the following:

- 268: White box – Blakely's Red Gum – Long-leaved box – Nortons Box – Red Stringybark grass-shrub woodland on shallow soils on hill in the NSW South Western Slopes Bioregion
- 343: Mugga Ironbark – Red Box – Red Stringybark – Western Grey Box grass/shrub woodland on metamorphic substrates in the Tarcutta – Gundagai region, NSW South Western Slopes Bioregion

No threatened/candidate flora species were recorded at the proposal site during a survey undertaken in September-October 2019. All candidate flora species could be assessed during the timing of the assessment. Despite dry conditions in the region, the site did not appear to be drought affected at the time of survey with a range of small forbs in flower and farms dams relatively full.

The proposed project is unlikely to have a significant impact on any threatened species or Endangered Ecological Community.

9.5.2 Fauna

The fauna capacity of the site was assessed in the BDAR with the existing habitat examined with the findings presented.

Tree cover in the proposal areas is fragmented. However, scattered clumps of trees, including paddock trees provide connectivity for highly mobile species such as birds.

No candidate species were recorded in the proposal areas during surveys undertaken in September-October 2019. Two species of nomadic pollinators, Anthochaera phrygia (Regent Honeyeater) and Lathamus discolor (Swift Parrot) were assumed present. These species were assumed present in vegetation zones (listed in Table 5.5) that included Eucalypt trees. This follows the best guidance and the precautionary principle, considering the proposal area contains known important feed trees for this species (E. albens and E. sideroxylon) that provide nectar and pollen and potential breeding habitat

(hollows 5-10 cm in diameter). In addition, L. discolour is known to inhabit the local area, and has been recorded 167 times within 20 km of the proposal lots.

9.5.3 Conclusion

The BDAR states that the project has avoided impacts to biodiversity values at the project site by locating the proposal areas in vegetation that is degraded/ significantly disturbed with low native species cover. The project has also been designed to minimise impacts to large trees growing along the fence lines on the southern, western and eastern boundaries on the infill proposal lots. The proposal also seeks to retain 4/7 hollow bearing trees identified across the proposal areas. Furthermore, the proposal area does not form a part of any habitat linkages that would support the dispersal of wildlife in the local landscape.

The BAM calculator identified a total of 22 candidate species (species credit species) and 26 predicted species (ecosystem credit species) required consideration for assessment. One threatened species, Miniopterus orianae oceanensis (Large Bent-winged Bat) was identified adjacent the stockpile site, over a farm dam using a song meter. This species is unlikely to be impacted by the proposal given no breeding habitat (caves, tunnels, mines) is located within or nearly (within 500 m) of the proposal site.

No candidate species were identified in the proposal areas; however, two species Anthochaera phrygia (Regent Honeyeater) and Lathamus discolor (Swift Parrot) were assumed present. This follows the best guidance and the precautionary principle, considering the proposal area contains known important feed trees for this species (E. albens and E. sideroxylon) that provide nectar and pollen and potential breeding habitat (hollows 5-10 cm in diameter). In addition, L. discolour is known to inhabit the local area, and has been recorded 167 times within 20 km of the proposal lots. The remaining candidate species were surveyed and assessed as absent from the proposal sites, or habitat was assessed as degraded (that is, no breeding habitat is available for entities that require large tree hollows) or there were geographic limitations.

Key safeguard and management measures identified to minimise and avoid biodiversity impacts include, but are not limited to, detail delineation of vegetation clearing limits, including marking trees that are to be retained, development of protocols/management plans to control invasion and spread of pathogens and weeds and completion of a site rehabilitation plan.

The assessments identified that the proposed development is unlikely to significantly impact on any Matters of National Environment Significance.

9.6 Soil

9.6.1 Existing Environment

A geotechnical investigation at the site was undertaken by McMahon Earth Science (2019) (Appendix X) and provided the following information about the geology and soils at the site:

- Bedrock at the site is predominantly weathered and fractured, Silurian siltstone and quartzose sandstone.
- Soils from 0.0 to 21.6m below ground level comprise discrete units of red clays and low plasticity silty sandy clay. These units are underlain by weathered clay and weathered shale.
- There is no known occurrence of acid sulfate soil risks in proximity to the site.

9.6.2 Contamination

Anecdotal evidence from nearby property owners and a search of the NSW Environment Protection Authority's Protection of the Environment Operations Act Public Register produced no indications concerning issues with land contamination at the site of the proposed landfill facility. The site is used for quarry purposes only and is not used for

storage of fuels, chemicals or other hazardous materials. As such, the site is not considered to be currently contaminated and contamination remediation is currently not required.

Asbestos is not generally found in Silurian geological formations, in which this site is located. Excavation activities at the site are therefore not expected to present environmental or human health risks associated with asbestos.

There is no known occurrence of acid sulfate soils at the site, and the site is not within an area mapped as being at risk of acid sulfate soils according to Office of Environment and Heritage's Acid Sulfate Soil Risk Maps.

A preliminary site investigation conducted by McMahon Earth Science (2019) (included as an Appendix) found the following:

- There were no discoloured or stained soils observed.
- There were no unusual or deleterious odours.
- There were no sheens on surface waters.
- No bonded asbestos containing materials (ACM) or hazardous building materials were observed on site.
- Stockpiles of soil or bitumen were observed on the quarry floor. These stockpiles contained isolated occurrences of foreign material (e.g. plastic, metal, rubber, wire, glass and bitumen), although no hazardous building material was observed in any stockpile during the site inspection.
- Additional stockpiles of recently quarried material, assessed to be site-won excavated natural material, were present on site. No foreign material and no hazardous material were observed in stockpiles of excavated natural material.
- One offsite source of contamination was identified in the form of a decommissioned Council landfill located down-gradient of the site. The decommissioned landfill is approximately 150 m south west of the site and is currently capped with soil. A small collection of metal, wire, timber and plastic was observed in one area on the landfill and appears to be rubbish dumped since the decommissioning of the landfill.
- There is no evidence of surface waters being a potential contamination source or pathway from onsite contamination sources.
- There is no evidence of groundwater being a potential contamination source or pathway from onsite contamination sources.
- The subject site is suitable for the proposed use as a landfill with low risk of contamination from the identified on and offsite potential contamination sources.
- The potential contamination sources, pathways and receptors have been investigated and assessed, and further investigation is not considered warranted.

9.6.3 Impact Assessment

The predicted impacts to the soil on the site as a result of the proposed land use are considered to be negligible given the provision of an appropriate, engineered leachate barrier in the proposed landfill, and the suitability of the soils to support the proposed landfill.

9.6.4 Mitigation Measures

Mitigation measures will constitute constructing the landfill facility in accordance with the appropriate design documentation and operating the landfill facility in accordance with the environmental management plan and associated sub-plans and procedures.

9.7 Surface Water and Groundwater

9.7.1 Existing Environment

The existing surface water and groundwater aspects relating to the site are presented in Sections 3.8, 3.9 and in the associated specialist reports referred to in those sections.

9.7.2 Contamination

Aside from elevated concentrations of nickel and manganese in samples of groundwater collected from bores installed at the site, no existing contamination issues have been identified in existing surface water or groundwater at the site.

9.7.3 Ground Water

Potential environmental risks to water associated with construction of the landfill cells include:

- Runoff water quality;
- Storage and use of hydrocarbon fuels and other chemicals on site; and
- Potential for flood events to inundate the construction site.

Additional risk and potential impacts during the operational phase include:

- Water quality impacts from sediment loads in stormwater system;
- Water quality impacts from potential migration or overflow of leachate;
- Change in catchment yield and environmental flows, and change in creek flows during major rainfall events;
- Potential for flood events to come into contact with waste; and
- Changes to catchment yield, environmental flows, hydrology, and flooding behaviour.

These risks and potential impacts are discussed in more detail in SLR's (2019) report, which is included as an Appendix.

9.7.4 Mitigation Measures

Risks and potential impacts to surface water and groundwater during construction and operation of the proposed landfill facility will be mitigated and managed as clean water runoff, stormwater runoff and leachate:

- Clean water runoff will be managed by diverting the water around the perimeter of the site via clean water drains, and kept separate from stormwater and leachate. Clean water will be discharged to the receiving environment via the culvert under Tumblong Reserve Road.
- Stormwater runoff will be managed via a contour drain, toe drain and a sediment basin. The contour drain will be constructed over completed sections of the landfill mound and direct stormwater away from active tipping areas and into the toe drain around the base of the landfill mound. The toe drain will discharge into the sediment basin, located in the north-western corner of the landfill facility.
- Leachate will be prevented from migration into the ground and groundwater by a leachate barrier lining the floor and sidewalls of the landfill cells. The leachate will be extracted from the cells and held in the leachate pond.

Mitigation measures are discussed in more detail in SLR's (2019) report.

The proposed landfill facility will include a fully sealed roadway to the landfill cell unloading area, thereby avoiding the need for waste transport vehicles to traverse any unsealed portions of the site. As such, no fixed wheel washes are proposed for the site. The facility operator will, however, utilise a road sweeping vehicle to maintain cleanliness and tidiness of Tumblong Reserve Road.

A Pollution Incident Response Management Plan and Trigger Action Response Plan will be kept on site at the landfill facility. These plans will detail actions to be taken if a pollution incident occurs on site, including an uncontrolled release of leachate into groundwater or surrounding surface waters, and the statutory authorities who will be contacted in the event of incidents.

9.7.5 Water Quality Monitoring

Surface water should be monitored in the sediment dam and culvert/spillway, and groundwater monitored in appropriate groundwater monitoring wells, in accordance with requirements stipulated in the Environment Protection Licence and procedures outlined in the LEMP. While details of surface water and groundwater monitoring are to be developed at a later stage, it is anticipated that monitoring would include:

- Quarterly routine monitoring of surface water quality and groundwater quality (i.e. quarterly sampling and assessment from the sediment dam, culvert/spillway and groundwater monitoring wells);
- Monitoring of surface water quality after rainfall and prior to any 'planned discharge' to verify compliance with the requirements of the EPL. If the water quality is unlikely to comply with water quality requirements, then the dam should be flocculated to improve water quality prior to discharge; and
- Monitoring of surface water quality during heavy rainfall resulting in 'unplanned discharges' via the culvert/spillway, to the extent that is practical and safe to do so.

It is considered that the impact to surface water and groundwater from the proposed landfill will be minimal, provided that the recommended mitigation measures of an adequate leachate barrier system, the proposed erosion and sediment control measures, a regular monitoring regime and the relevant appropriate management plans are implemented.

9.8 Blasting

There will be no blasting activities either during construction or operation.

9.9 Bushfire

The proposed landfill facility is generally considered to represent a low bushfire risk on account of the inert nature of the proposed paper mill waste to be received, that no hazardous waste is to be received at the facility and that the site is not considered as a bushfire risk in the Gundagai Local Environmental Plan 2011 nor in the Riverina Highlands Bush Fire Risk Management Plan.

A bushfire management plan for the landfill facility will, however, be prepared in consultation with the NSW Rural Fire Service to mitigate residual risks of fire within the landfill facility and fires impacting upon the facility. The bushfire management plan is anticipated to include information on and procedures for:

- Vegetation management;
- Removal of natural fire hazards, including storm debris and fallen tree limbs from the site;
- Appropriate storage of flammable materials;
- On-site firefighting resources such as fire extinguishers, fire blankets, hydrants and/or boosters, static water sources, portable pumps, hoses and nozzles;
- Providing adequate access for firefighting appliances (e.g. RFS Category 1 Tanker) to and within the facility, including the boundary of the facility for property protection;
- Staff training in extinguishing small fires, where safe to do so;
- Staff training in emergency procedures and appropriate emergency meeting point(s);

- Notification to the Rural Fire Service of any activities that include the lighting of fires;
- Notification of any incidents involving fire to the Rural Fire Service as well as the Environment Protection Authority, in accordance with the facility's Environment Protection Authority licensing.

9.10 Hazards Risk

A hazards risk analysis, comprising Preliminary Hazard Screening and a Preliminary Hazard Analysis (included as an Appendix), was undertaken as part of this Environmental Impact Statement to:

- Identify hazards and situations that could potentially cause hazards;
- Identify the range of safeguards;
- Assess the risks by determining the probability (likelihood) and consequence (effects) of hazardous events for people, the surrounding land uses and environment;
- Identify approaches to reduce the risks by elimination, minimisation and / or incorporation of additional protective measures.

9.10.1 Preliminary Hazard Screening

Preliminary screening to determine the requirement for a Preliminary Hazard Analysis was undertaken for the proposal, taking into account broad estimates of the possible off–site effects or consequences from hazardous materials present on–site and their locations. Potentially hazardous industry is defined as Multi–Level Risk Assessment, (DP&I, 2011) as having "potential for significant injury, fatality, property damage or harm to the environment in the absence of controls."

In accordance with Multi–Level Risk Assessment (DP&I, 2011), it was determined that the proposed development is potentially hazardous, as the possibility of harm to the off–site environment in the absence of controls could not be discounted.

According to Multi–Level Risk Assessment, (DP&I, 2011), a Level 1 assessment (qualitative analysis) can be justified if the analysis of the facility demonstrates that there are no major off–site risks, if the technical and management controls are well understood and where there are no sensitive surrounding land uses.

The preliminary hazard screening identified there to be limited potential for scenarios with significant off–site consequences, that technical and management controls are well understood, and that there are no sensitive surrounding land uses as defined within the NSW EPA Solid Waste Landfill Guidelines (2016). Accordingly, a Level 1 assessment (qualitative analysis) was implemented for this Preliminary Hazard Analysis.

9.10.2 Preliminary Hazard Analysis

The Preliminary Hazard Analysis was completed in accordance with the provisions of State Environmental Planning Policy No. 33 (hazardous & Offensive Development) and with the guidance of the Hazardous Industry Planning Advisory Paper No. 6 – Hazard Analysis and the Assessment Guideline – Multilevel Risk assessment as prepared by the then Department of Planning and Infrastructure, 2011. In accordance with Multi-Level Risk Assessment (DP&I, 2011), the analysis specifically covered risk from fixed installations and regular site activities, considers off–site risks to people, property and the environment (in the presence of controls) arising from atypical and abnormal hazardous events and conditions (i.e. equipment failure, operator error and external events) and did not encompass transportation of material to or from the site by road or any other means of transportation.

Potentially hazardous materials identified as being stored on the site includes the presence and storage of hydrocarbons (fuels and oils) and leachate. Waste material proposed to be deposited at the facility is not classified as a hazardous material under the provisions of the Australian Dangerous Goods Code and only constitutes a hazard if the material is improperly managed (e.g. deposited outside of the prepared waste

cell and allowed to impacts on the environment as litter). The proposed storage of hydrocarbons on the site is not of a quantity that would require the material to be classified as a hazardous material.

The analysis indicates potential hazardous incidents on the site can be classified into spills, leaks and thefts/vandalism. These incidents were then rated according to the table below, based on the significance of the impact and the likelihood of the incident occurring.

Table 18: Hazardous Incidents - Risk Ranking Table

Hazardous Incidents - Risk Ranking Table						
		Probability				
		A	B	C	D	E
Consequence	1	1(H)	2(H)	4(H)	7(M)	11(M)
	2	3(H)	5(H)	8(M)	12(M)	16(L)
	3	6(H)	9(M)	13(M)	17(L)	20(L)
	4	10(M)	14(M)	18(L)	21(L)	23(L)
	5	15(M)	19(L)	22(L)	24(L)	25(L)

Notes: L - Low, M – Moderate, H – High
Rank Numbering: 1 – Highest Risk; 25 – Lowest Risk

The proposed landfilling facility is not considered to pose a significant risk in generating offsite impacts.

9.10.3 Mitigation Measures and Recommendations

The facility is not identified as a hazardous, or potentially hazardous, facility as defined in the provisions of State Environmental Planning Policy No. 33. No hazardous materials as defined under the Australian Dangerous Goods Code will be stored in any significant amounts or generated on the site.

The site is more appropriately identified as being a "potentially offensive industry" under the provisions of State Environmental Planning Policy No.33. As outlined in Section 5 of Applying State Environmental Planning Policy No.33 (Department of Planning 2011), provided that any emissions from the facility are controlled and maintained within acceptable levels so as not to present a significant risk of harm to the environment or to human health.

Based on the proposed design, layout, operation and site setting of the proposed landfill facility, management and mitigation of residual risks will align with the following key areas:

- Maintenance – ongoing and timely maintenance of all mobile and fixed plant and equipment in accordance with manufacturer's recommendations and maintenance schemes required by legislation.
- Staff Training – Operators and drivers would be trained and licensed (where appropriate) for their positions. Potentially hazardous work is to be carried out only by appropriately trained and experienced personnel.
- Civil Engineered Excavation – civil engineering would be constructed in accordance with applicable codes, guidelines, Australian Standards and all provided civil engineering plan sets.
- Contractor Management – All contractors employed by the site operator would be required to operate in accordance with the relevant Australian Standards and NSW legislation.
- Storage Facilities – Storage and usage procedures for potentially hazardous materials (i.e. fuels) would be developed in accordance with Australian Standards and relevant legislation.
- Emergency Response – procedures manuals and systems would continue to be implemented.
- Permit to Work Policy – for hot working such as metal welding, welding of High Density Poly Ethylene geomembranes or operating petrol generators in the presence of possible, localised occurrences of landfill gas.

Measures for managing and mitigating residual risks at the proposed landfill facility will be described and implemented in accordance with the following management plans to be developed for the site:

- Bushfire Management Plan
- Waste Management Plan
- Pollution Incident Response Management Plan
- Trigger Action Response Plan
- Site Operational Plan

9.11 Heritage

Both Aboriginal and non-aboriginal heritage significance has been considered in the preparation of this proposal and EIS.

9.11.1 Aboriginal Cultural Heritage

An Aboriginal Archaeological Impact Assessment has been prepared in respect of the proposal. The report accompanies this EIS and is to be referenced for further details and understanding of the analysis undertaken.

The report concluded that "*No Aboriginal sites were recorded as a result of the field survey. In addition, due to the extent of past landform modification in some portions of the study area and the sloping nature of the unmodified landforms, it was assessed that there was a low possibility for subsurface archaeological deposits in the study area.*

Recommendations concerning Aboriginal cultural values within the study area are as follows:

1. *No Aboriginal objects will be harmed by the proposal. As such, an Aboriginal Heritage Impact Permit is not required, and the works can proceed without further archaeological investigation.*

2. *As no Aboriginal cultural heritage values will be impacted by the proposal, undertaking the Aboriginal cultural heritage consultation requirements for proponents or the development of an Aboriginal Cultural Heritage Assessment Report are not required.*

3. *This assessment is confined to within the assessed study area. Should the parameters of the proposed work extend beyond these assessed locations, the further archaeological assessment may be required.*

4. *All staff involved with the landfill activities should be aware of the legislative protection of Aboriginal objects under the NPW Act and the contents of the Unanticipated Finds Protocol.*

5. *In the event of skeletal remains being identified during the works, the Unanticipated Skeletal Remains Protocol should be followed.*

6. *All staff involved with the landfill activities should undergo cultural heritage induction to ensure they recognize Aboriginal artefacts.*

9.11.2 Non-Aboriginal Heritage

There are no known items of heritage significance on the site. This site is not located within a heritage conservation area.

The site has been highly disturbed by agricultural and quarry activities that began in the 1970's.

9.12 Socio-Economic

The subject site is located within the Cootamundra–Gundagai Regional Council Local Government area that is part of the greater Riverina Murray Regional area. A suite of strategic documents, reports and plans cover the subject site and the local area, including the Riverina Eastern Regional Organisation of Councils Regional State of the Environment report, the Cootamundra- Gundagai Regional Council Community Strategic Plan 2018-28 and the Riverina-Murray Regional Plan 2036. A review of these documents combined with key statistical data sourced from the Australian Bureau of Statistics and .id Population Forecasts has provided a snapshot of local demographic indicators and key socio–economic elements. From this snapshot, an assessment has been made of the impact of the proposal on the socio-economic fabric of the area.

9.12.1 Key Socio-Economic Characteristics

The Cootamundra- Gundagai Regional Council Community Strategic Plan 2018-28 provides long term vision and desired outcomes for the local area. The relevant outcomes in relation to environment and employment are:

- Ensuring sustainable environmental performance and protection of biodiversity and natural heritage.
- Provide infrastructure and services that build capacity in the community to be resource efficient and encourage waste minimisation.
- Encourage development of sustainable employment generating industry and the expansion of local businesses.
- Facilitate programs that support and enhance local business by increasing capacity and competence.

Current relevant demographic statistics for the Gundagai area are provided below:

Table 19: Key Demographic Statistics

Key Demographic Statistics for Gundagai	
Indicator	Statistic
Population (2016)	3,597
Unemployment Rate (2016)	4.4%
Labour Force Participants (2016)	1,660
Median Weekly Personal Income – People Aged 15 Years and Over	$570 / Week
Key Industry Sources (2016)	Meat Processing (7.1%) Beef Cattle Farming (5.6%) Take Away Food Services (5.0%) Sheep Farming (Specialised) (4.2%) Sheep-Beef Cattle Farming (3.6%)
Machinery operators and drivers	7.6% of Total Employed
Median Age (2016)	44
Working Age Population (2015)	46.1%

(Source: Australian Bureau of Statistics, 2019)

The Riverina-Murray Regional Plan 2036 also identifies a number of priorities for the Cootamundra–Gundagai Local Government area, which include:

- Supporting agriculture and rural industries, as well as the development of key freight transport services.
- Develop niche value-added agricultural produce and related tourism opportunities.
- Capitalise on the existing access to rail and road infrastructure.
- Enhance access to health services and facilities to support a healthy rural community

9.12.2 Impact Assessment

The proposed waste disposal facility will ensure the continuing employment of eight direct personnel who will otherwise be unemployed as a result of the impending closure of the Burra Road facility. The impact of the loss of these direct jobs, and the multiplier effect, will heavily impact the Gundagai community. The proposal will allow these jobs

to be sustained and help to achieve the key outcomes and priorities identified in the various community plans summarised above. It also allows the continued participation of local industry in resource recovery initiatives undertaken by Visy that have regional and state significance.

The proposal will provide up to 15 employment opportunities during construction and up to 10 employment opportunities during operation. The potential multiplier effect as a result of salaries and turnover generated by the proposal will provide flow-on benefits to the immediate local economy and employment environment. The flow-on benefits from job creation or continuation are generally expected to be in the order of 3 to 5 additional jobs that support the employment generating development and similar injection to the value of the local economy.

The employment opportunities afforded by the proposal contribute to the growth and stability of the employment market, upskilling and retaining a local workforce. The local economy is also supported by the proposal, increasing the amount of investment in local business through the proposal and its supporting industries. Increased investment allows businesses to improve operations and expand the range of services offered, supporting the priorities and outcomes identified by community strategic documents, and improving the services available to the wider community.

The proposal also supports the amenity and community values identified by those relevant strategic plans. The proponent of the project supports a number of community services and programs. Community facilities are also supported by the proponent, providing community benefits and funding for key tourism generating facilities through sponsorship.

The amenity of the area will also be improved through the remediation of a quarry site at the end of the project.

It is accepted that there may be some loss of amenity during the construction and operation of the facility in the short term, however this impact is considered to be minimal given the nature, location and topography of the proposed site.

The strong community network within the Gundagai and Tumblong communities and rural area will ensure that the operations of the facility are well communicated and responded to in an open and appropriately responsible manner. The proposal also encourages further research into end use products of the waste material to encourage sustainability and resource recovery.

9.12.3 Conclusion

Social and economic analysis indicates that the proposal will have an overall positive impact on the socio-economic characteristics of the local and regional area. This is demonstrated by the subject proposal's support of key strategies for the local area and the economic growth, community engagement and amenity values identified and encouraged by these documents. The proposal will sustain and create employment opportunities, provide direct and indirect support for the community infrastructure and will ultimately contribute to amenity improvement of the local area.

9.13 Visual Amenity

The proposal is located within a distinctly rural setting and existing quarry facility. A visual impact assessment of the local area has been undertaken with images provided below for reference. The analysis focussed on the immediate landscape features, terrain, location of existing dwellings, impact on users of public roads and any other significant visual / vista features.

9.13.1 Existing Environment

The local area has a distinct rural character with surrounding hills and improved farming properties and lifestyle / hobby farms.

The site is located in close proximity to a travelling stock reserve and the remediated Tumblong community landfill.

The existing quarry facility has been designed to minimise visual impact to neighbours and passing traffic and the proposed facility will enhance upon this approach.

Rural dwelling sites are associated with the existing rural properties and lifestyle / hobby farms, including various outbuildings, sheds and storage areas. The Old Hume Highway corridor is characterised by the rural properties and landscape enclosing it, with views across the landscape to hills and rolling pastures and cropping areas.

Public visual amenity impacts of the subject site are isolated to limited viewing angles from the Tumblong Reserve Road and one nearby property access road which does not have a rural residence. There are no rural residences overlooking the facility and the majority of residences along the Old Hume Highway are to the south east of the facility with views to the further south of the proposed site.

Figure 60: View of site from Old Hume Hwy intersection (Source: SP 2019)

Figure 61: View of site from Tumblong Reserve Road – Looking S (Source: SP 2019)

Figure 62: View of site & existing quarry stock piles (Source: SP 2019)

9.13.2 Impact Assessment

The subject site is well set back from the Old Hume Highway public road corridor and the local Tumblong Reserve Road which services only two existing relatively remote rural residences. The site is nestled in a highly developed quarry site which now provides little visual aspect to passing traffic. Together with the planned further excavation of the site, the operation will be effectively screened from passing traffic and other observers to a significant extent.

On site works will not have a significant impact on the local visual amenity as they will incur largely within the existing footprint and works will be designed to further restrict the visual impact of the site.

The Tumblong Reserve Road has limited local traffic relating to the public and / or landfill operations and the proposal will have minimal impact on visual amenity relative to potential viewers and activity along the road.

Based on this visual assessment, the proposal will have a minimal to insignificant impact on the local rural character when viewed from accessible public areas and existing rural dwelling locations. Continued embellishment and maintenance of site plantings / screenings will ensure that any visual intrusion of site operations will be minimised.

At the closure stage of the project, remediation measures will transform the subject site to a typical rural landscape. Images below provide views of the remediated Tumblong community landfill.

10 CUMULATIVE IMPACTS

Cumulative impacts have been assessed in the various environmental assessment section above including the attached specialist reports. Generally, in relation to landfill operations, cumulative impacts are considered in relation to:

- Interaction of other existing or planned landfills in the area;
- Any other nearby development activities that may have similar impacts;
- The receiving environments ability to achieve and maintain identified water quality objectives; and
- Any long-term or short-term cumulative impacts relating to surface and groundwater quality, noise, air quality, traffic, public health, visual amenity and character, biodiversity, cultural heritage and other factors

10.1 Landuse Activity and Local Amenity

The proposal is to fully excavate an existing quarry and to rehabilitate the existing and resultant quarry pit. The local area and catchment has included waste management as part of the local character, amenity, land use mix and activity.

It can be expected that the local area amenity and character will remain significantly the same for the foreseeable future. Cumulative impacts from land use activity and amenity intrusion are considered insignificant during operation of the landfill and ultimately revert to a positive contribution to the local area once the landfill site has been remediated. The net environmental benefit will be a positive as a result of an improved environment established with the landfill construction, operation and closure works.

10.2 Catchment Water Quality

There are no defined water quality objectives for the immediate catchment and the site is not located within a drinking water catchment (McMahon Earth Sciences 2019).

The detailed environmental assessment of the hydrogeological setting of the proposal indicates geological and soil characteristics that will adequately sustain catchment quality water during and following closure of the landfill.

Groundwater systems are protected as they are hydraulically disconnected from the surface water systems and cell liner layer technology will ensure that there is no threat of migration of leachate to these systems. The reports indicate no evidence of potential negative cumulative impacts on catchment water quality.

10.3 Other Environment Impacts

10.3.1 Air quality

Air quality impact assessment modelling suggested that cumulative odour ground level concentrations above the standard set for rural environments will not be encountered at any identified sensitive receptors.

Modelling of dust impact at worst case scenarios suggested no exceedances above NSW Office of Environment and Heritage standards at sensitive receptors.

10.3.2 Traffic

The traffic impact assessment indicated some minor increase in traffic volumes, However, overall this was considered negligible and well within the design capabilities of the local and regional road network. There were no indications of significant cumulative impacts in relation to traffic volumes and the nature of traffic in the locality.

10.3.3 Other Environmental Indicators

In relation to noise, public health, biodiversity and cultural heritage, none of the specialist reports indicated any potential issues in relation to cumulative impacts. This can be attributed to the relatively isolated location of the site and its already highly disturbed condition.

10.4 Cumulative Impact Conclusion

The detailed environmental assessment of the proposed landfill, including all specialist reports discussed above, has determined that there will be an insignificant to no cumulative impact on key environmental indicators for the catchment and local area as a consequence of the proposed landfill.

11 ENVIRONMENTAL MANAGEMENT AND IMPACT MITIGATION - SUMMARY

11.1 Environmental Management Plan

An Environmental Management Plan (EMP) will be prepared following development approval to ensure construction, operation, rehabilitation and post-closure use of the site are consistent with:

- Commitments made in the Environmental Impact Statement;
- Conditions of consent;
- Environmental protection licence conditions; and
- Performance standards as set out in Part B of the NSW EPA Environmental Guidelines: Solid Waste Landfills, Second edition 2016.

11.2 Mitigation Measures Summary

Table 20: Summary of Mitigation Measures

Summary of Mitigation Measures	
Impact Criteria	Mitigation Measures
Character and Land Use Impacts	• Operation within designated working hours • Site maintenance and litter procedures • Closure plan, remediation and revegetation measures and final landform design.
Odour and Particulate	• No unacceptable impacts anticipated regarding odour or dust and no non-standard mitigation measures required during construction and operation of the proposed landfill facility and associated infrastructure. • Watering of exposed surfaces during periods of high winds, particularly during periods where winds are blowing towards nearby sensitive sensors. • Limiting dust generation activities during adverse wind conditions. • Preparation and implementation of an Air Quality Management Plan.
Landfill Gas	• The proposed waste is considered to be a general solid non–putrescible waste and, as such, is not anticipated to produce significant amounts of landfill gas. Therefore, a formal gas collection and treatment system is not currently proposed.
Noise and Vibration	• No unacceptable impacts to noise-sensitive receptors identified. • No impacts from vibration on sensitive receptors. • Education of staff and contractors in regards to noise mitigation measures. • Good machinery operation techniques and regular maintenance. • Maximise shielding in plant locations where possible. • Acoustic treatment to highly noise affected receivers if necessary.
Traffic and Transport	• Implementation of operational hours that restricts vehicle movements in accordance with approved operating times. • Maintenance and replacement of haulage fleet to ensure safe and reliable transportation within the public road environment.
Biodiversity – Fauna	• Development of Flora and Fauna Management Plan. • Compensatory nest hollows, if required.
Biodiversity - Flora	• Development of Flora and Fauna Management Plan. • Vegetation protection zones. • Vegetation pre-clearing survey requirements.
Soil	• All construction and stockpiling conducted in accordance with the design documentation and drawings.
Surface Water	• Sediment erosion control measures to minimise exposed soils and erosive effects. • Surface diversion bunds and drainage ditches around open excavations and active landfill cell. • Stormwater control ponds. • Monitoring of surface water as per the facility's Environmental Protection Licence and EMP. • After closure, contour banks, sediment fences and diversion bunds.
Ground Water	• No groundwater impacts anticipated. • No groundwater within 50m of proposed base of landfill. • Monitoring of groundwater as per the facility's Environment Protection Licence and EMP. • Development of a Pollution Incident Management Response Plan and a Trigger Action Response Plan, which details the response to be taken if impacts occur to groundwater.
Bushfire	• Preparation and implementation of a Bushfire Management Plan. • Vegetation management and provision of firefighting equipment including access. • Removal of natural fire hazards on the site.

	• Storage of flammable materials in appropriate containers. • Staff training. • Rural Fire Service notification of any fire activities or incidents.
Hazards and Risk	• Relevant management plans available onsite. • Ongoing maintenance of plant. • Appropriate staff training on OH&S ISSD. • Excavation to civil engineering guidelines. • Contractor management and site induction. • Appropriate storage facilities for hazardous materials. • Effective emergency response measures.
Heritage	• No heritage issues identified. • No non-standard heritage management measures required. • The due diligence process in the preparation of the Environmental Impact Statement. • Consultation with Local Aboriginal Land Council as part of this EIS. • Searched Aboriginal Heritage Information Management System as part of this EIS. • Operational procedures to minimise impact to heritage items or human remains if discovered during excavation.
Socio-Economic	• Ongoing communication by the site operator to the community. • Operation of the proposed facility in accordance with the proposed management plans and mitigation measures. • Employment of local workforce, trades and service personnel. • Support of other local businesses.
Visual Amenity	• Revegetation works and the design of the final landform and rehabilitation complements local landscape. • Design of the landfill.

11.3 Closure and Rehabilitation Plan

A landfill closure and rehabilitation plan (LCRP), including the detailed design, technical specification and construction quality assurance plan for the final cap, will be prepared for approval by NSW EPA no later than 12 months before cessation of waste receipt operations at the landfill in accordance with Section 10.1 of the NSW EPA Environmental Guidelines: Solid Waste Landfills 2016.

The LCRP will present information on:

- Aims and objectives of the rehabilitation plan including goals, landmarks and monitoring parameters;
- Timeframes for rehabilitation program components;
- Procedures for detailed contaminated site assessment in accordance with State Environmental Planning Policy No 55 – Remediation of Land;
- Details of final landform contour, capping and monitoring infrastructure;
- Species list for the rehabilitated area;
- Procedures for planting, including seed application fertilisation and watering;
- Fire control plan;
- Feral animal control plan;
- Weed control plan;
- Ongoing maintenance and monitoring details;
- Costs breakdown for rehabilitation works;
- Details of funding arrangements (e.g. royalties or similar).

In lieu of the detailed design and technical specification and based on current industry standards, the final capping will likely comprise the following key components (from bottom to top):

- Engineered fill – 300mm thick;
- Low permeability sealing layer as recommended by the relevant guidelines;
- Revegetation layer – 100mm thick, with top 200mm being topsoil / compost mix to support vegetation growth.

Drawings of a conceptual final capping arrangement and final landform for the site are included in the accompanying plan set.

Rehabilitation of the site, which will be presented in detail in the LCRP, is anticipated to involve:

- Removal of all structures with exception of perimeter fence and gate;
- Inspection and quality check of drainage and erosion control measures;
- Construction of capping and revegetation layer;
- Appropriate fertiliser application;
- Revegetation with selected species to replicate local landscape;
- Water in as necessary depending on climatic conditions;
- Apply mulch and reapply fertiliser as necessary;
- Carry out weed control measures.

Following completion of rehabilitation works, the landfill will be monitored and maintained over a two-year period to ensure rehabilitated features as satisfactorily established. Monitoring and maintenance will then be continued until the landfill is deemed by NSW EPA to be stable and non-polluting.

In accordance with Section 10.1 of the NSW EPA Environmental Guidelines: Solid Waste Landfills 2016, the proponent shall submit such a closure plan within this timeframe as required.

12 ASSESSMENT AND CONCLUSION

In accordance with Clause 6(e) of Schedule 2 of the Environmental Planning and Assessment Regulations 2000 an environmental assessment has been undertaken in respect of the proposed development, as presented in the Environmental Impact Statement sections above. This section summarises the environmental assessment by confirming that matters referred to in Schedule 2 of the Regulations have been addressed and by providing a conclusion based on information gathered and results of reports and investigations made in relation to the proposal.

12.1 Assessment of Environmental Impact

The proposal, as outlined and investigated in this Environmental Impact Statement, has been assessed in relation to:

- Project objectives, need and benefits;
- An analysis of feasible alternatives including the consequences of not carrying out the development;
- Local environmental assessment, addressing potential impact and achieving environmental performance requirements;
- Consistency with the Environmental Planning and Assessment Act, Regulations, State and Local planning policies;
- Supporting and achieving National, State, Regional and Local waste minimisation and management strategies, as well as meeting the need for alternative waste technologies;
- Meeting sustainability objectives in relation to site suitability, operational efficiencies and safeguarding public health;
- Compliance with ecologically sustainable development principles; and
- The public and community's interest

12.1.1 Project Objectives, Need and Benefit

Assessment within the Environmental Impact Statement indicates that the proposal will provide a landfill resource that meets the needs of current recycling technologies and processes, in particular the resultant unrecyclable waste from the Visy (Tumut) resource recovery operation. The proposal would ensure the continuing employment and skill development of sustainable waste management operations in the region, in line with the proponent's objective of becoming a leader in responsible and sustainable waste disposal operations. The proposal would also provide net environmental benefits to the local area as a result of operational efficiencies and site remediation.

12.1.2 Alternatives

The Environmental Impact Statement has considered alternatives to undertaking the project as described and at the location proposed, as well as considering the "do nothing" option. This included utilising criteria recommended by various authorities, referring to the objectives of various relevant Local, Regional and State strategies and policies, and the key objectives of the proposal, in particular its need to meet sustainable waste management and resource recycling programmes now and in the future. The analysis earlier within the Environmental Impact Statement suggested that the preferred option is to establish the proposed facility based on its potential to provide the best opportunities to establish a sustainable waste disposal facility to meet the projected needs of the wider community, the local resource recovery industry and the proponent. The uniqueness of the development proposal was considered worth pursuing for the reasons outlined previously.

12.1.3 Potential Impact and Environmental Performance

The Environmental Impact Statement has provided evidence that the potential impact of the proposal construction and operational activities will be minimal. Scientific reports and data analysis have been included that substantiate the conclusions made in relation to key environmental performance criteria. Consultation with the community and various agencies raised various matters and best practice principles that have been addressed in the various sections of the Environmental Impact Statement to ensure any potential impact has been identified, analysed and addressed.

12.1.4 Consistency with Legislation and Policy

Assessment within the Environmental Impact Statement provides details that address relevant provisions of the Environmental Planning and Assessment Act, Regulations, State and Local planning policies. Documented analysis indicates that the proposed landfill activity to be undertaken on the subject site is consistent with the aims, objectives and specific permissibility criteria of these provisions.

12.1.5 Meeting Waste Minimisation and Management Strategies

Various current National, State, Regional and Local waste minimisation and management strategies have been referenced in the Environmental Impact Statement, including the National Waste Policy, State Plan, NSW Waste Avoidance and Resource Recovery Strategy, Riverina – Murray Regional Plan and Gundagai Community Strategic Plan. The proposal demonstrates consistency and support of the strategic goals and context of the various strategies in regard to recycling, environmental sustainability and the provision of jobs within a rural environment.

12.1.6 Sustainability of Site and Operation

The Environmental Impact Statement includes a high level of consideration and analysis in relation to the site selection, site impact assessment, construction and operational details, as provided in various other sections throughout this report. In particular, detailed expert reports in the area of hydrogeological and hydrology matters, cell design. groundwater vulnerability, biodiversity, air quality, noise impact and traffic assessment conclude that the proposal is environmentally sustainable with no significant impacts on the local area.

12.1.7 Compliance with ESD Principles

Environmentally Sustainable development principles have been considered, based on the provisions of the local planning instrument and Environmental Planning and Assessment Act. The proposal demonstrates compliance with these principles as outlined earlier in the Environmental Impact Statement.

12.1.8 Public Interest

The Environmental Impact Statement has ensured that the public interest has been acknowledged, supported and upheld in proposing the subject development. The public interest will be further acknowledged in the subsequent assessment and determination of the development application.

In defining the public interest reference is made to the Planning Principle (Land and Environment Court) that suggests breaking down the consideration of public interest into three steps.

1. Defining the public whose interest is being invoked.

The proposal involves the establishment of a waste disposal facility that involves construction and operational activity that may impact on natural resources, local infrastructure and the local economy. The public involves the wider local community.

2. Defining the benefit towards which a proposal claims to make a contribution (or from which it is claimed to detract).

The development of the land for a waste disposal facility is a private interest. However, the disposal of non–recyclable materials from a resource recovery process that has been put in place to deal with regional recyclable waste is in the public interest, in particular to achieve national, state and regional waste management strategies.

The potential environmental impact from the development and the mitigation measures to be introduced to manage impact is in the public interest. In addition, the potential contribution to the local economy and employment opportunities is in the public interest.

It is in the public's interest and benefit that the subject proposal is considered, established and operated within the intent and guidelines set by public endorsed strategies, policies and guidelines.

The Environmental Impact Statement has demonstrated that the proposal will achieve the objectives and standards set by the public to ensure compatible and sustainable development of the site and in the locality. In particular, the proposal has demonstrated it will:

- Contribute to achieving the strategic intent of National, State, Regional and Local landuse and waste management / resource recovery policies;
- Meet the aims and objectives of the Local Environmental Plan and the Rural Zone; and
- Comply with the principles of ecologically sustainable development.

3. Making explicit the weight given to the public interest relative to other considerations.

The Environmental Impact Statement includes reference and assessment of all publicly endorsed landuse, environmental, economic development and waste management strategies relevant to the proposal, as well as ensuring that consultation with public authorities, adjoining landholders and the general community has been undertaken and feedback considered. The Environmental Impact Statement also refers to, and measures the proposal against, all relevant guidelines to ensure that the potential impact on the environment has been adequately addressed. The public interest has been given considerable weight.

12.2 Assessment Summary

The table below lists the key issues raised and analysed by the Environmental Impact Statement and summarises the resultant environmental impact assessment undertaken and conclusion reached in relation to determining environmental impact.

Key Issue	***Assessment Method***	***Impact Determination***		
		Construction	***Operation***	***Post Remediation***
	Time Frame	0 - 4 Months	4mths – 15 Years	15 Years +
Ground Water	Expert Report	Nil	Negligible	Negligible
Surface Water	Expert Report	Minimal	Negligible	Moderate Positive
Noise and Vibration	Expert Report	Negligible	Negligible	Nil
Air Quality	Expert Report	Moderate	Negligible	Nil
Odour	Expert Report	Negligible	Minimal	Nil
Traffic and Transport	Expert Report	Minimal	Minimal	Nil
Biodiversity	Expert Report	Minimal	Negligible	Minor Positive
Local Character and Amenity	Land use survey, planning principles	Minimal	Minimal	Minor Positive
Soil	Expert Report	Minimal	Negligible	Negligible Positive
Greenhouse and Landfill Gas	Expert Report	Negligible	Negligible	Negligible
Hazards and Risks	Hazards Analysis Guidelines	Nil	Nil	Nil
Socio - Economic	Social and economic indicators	Minor Positive	Moderate Positive	Negligible Positive
Visual Amenity	Visual analysis, onsite and catchment inspections, photographic records	Minimal	Minimal	Moderate Positive
Cumulative Impact	Combined analysis of above assessments and considerations	Minimal	Negligible	Negligible Positive

Note: Impact Determination based on relevant expert responses.

12.3 Conclusions

The Environmental Impact Statement has been prepared in accordance with the Environmental Planning and Assessment Act and Regulations and has addressed all investigation and reporting requirements listed in the Secretary's Environmental Assessment Requirements issued by Department of Planning and Environment.

Potential environmental impacts, both positive and negative, have been investigated in relation to construction and operational Preliminary Hazard Analysis of the proposal. This includes specialist reports on hydrogeological, and hydrological water quality (surface and groundwater), air quality, noise, biodiversity, traffic, cultural heritage, waste facility design and operation.

The proposed establishment of a waste disposal facility has been presented as a sustainable and environmentally responsible development that will meet the objectives of local, state and national waste management and recycling strategies, as well as the needs of the local pulp and paper production industry, recycling / resource recovery industry and ancillary support services that are essential elements to achieving these objectives.

The proposed expansion ensures employment opportunities in the local area are maintained and potentially expanded including the retention of waste management skills unique to this type of landfill operation.

Equally important, the proposal incorporates design and monitoring solutions to ensure the health of the natural environment and well–being of the local community are protected and ultimately enhanced.

Critical analysis of the proposal and potential areas of impact by the Environmental Impact Statement has determined that the site is suitable for the activity and will, overall, have a negligible impact on the local environment. Expert reports have been prepared and presented to address the main areas of concern as well as addressing the Secretary's Environmental Assessment Requirements.

Further consultation will occur throughout the process to address any other concerns raised by the public and to minimise any other potential impacts. This process will also aid in the continuing effective management and operation of the site and minimise any potential social and environmental impacts arising from the undertaking of the proposed waste disposal facility.

The Environmental Impact Statement demonstrates that the project has been developed with transparent consultation to all parties that may have a vested interest in the development, including surrounding residents and relevant authorities. The concerns of all stakeholders have been noted for consideration in the final outcomes presented in the Environmental Impact Statement document.

The Environmental Impact Statement will assist the responsible authority in assessing the merits of the development proposal and making a determination accordingly.

13 CLOSURE AND STATEMENT OF COMPLIANCE

This report has been prepared by InSitu Advisory and Salvestro Planning with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

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18076: Document History

Revision No.	Date	Authorised By Name/Position	Signature	Notes
Rev 1.0 – Preliminary Draft	10/10/19	Alan Dyer	AD	Initial draft prepared by InSitu Advisory
Rev 1.1 – Revised Draft	05/11/19	Garry Salvestro	GS	Revised draft with additional detail
Rev 1.2 – Final Draft	05/11/19	Garry Salvestro	GS	Final Draft
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