

Environmental Impact Statement

Bobs Farm Sand Quarry

3631 Nelson Bay Road, Bobs Farm

Prepared on behalf of Newcastle Sand Pty Ltd

May, 2026

Document Control Sheet					
Issue ID.	Amendment	Date of Issue	Prepared By	Reviewed By	Project Ref
A	Draft	25.05.2026	RD	RD	240856
B	REAP Review	28.05.2026	RD	SBL	240856
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Reference: 240856

Limitations Statement

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Unless otherwise specified in this report, information and advice received from external parties during the course of this project was not independently verified. However, any such information was, in our opinion, deemed to be current and relevant prior to its use. Whilst all reasonable skill, diligence and care have been taken to provide accurate information and appropriate recommendations, it is not warranted or guaranteed and no responsibility or liability for any information, opinion or commentary contained herein or for any consequences of its use will be accepted by ADW Johnson or by any person involved in the preparation of this assessment and report.

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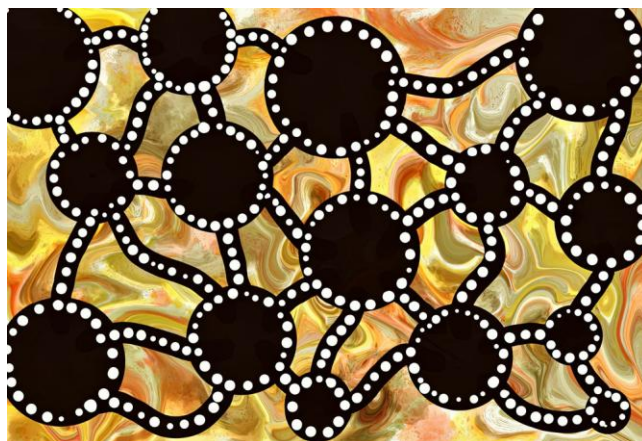
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Acknowledgement of Country

We, ADW Johnson, acknowledge the Traditional Custodians of the land where we live and work, the country of Awabakal, Darkinjung and the Eora Nation.

We recognise their continuous connection to the land and waters of our beautiful regions. We pay our respects to Aboriginal and Torres Strait Islanders Elders past, present and emerging.

Artwork created by Joe Griffin, a proud Aboriginal man, descendant of the Awabakal people.



EIS Declaration

Project Details

Project Name	Bobs Farm Sand Quarry
Application Number	SSD-99860959
Address	3631 Nelson Bay Road, Bobs Farm NSW 2316

Applicant Details

Applicant Name	Newcastle Sand Pty Limited
Applicant Postal Address	398 Cabbage Tree Road Williamstown NSW 2318

Details of person who prepared this EIS

Name	Rob Drew
Address	5 Pioneer Avenue, Tuggerah NSW 2259
Professional Qualifications	Master of Urban and Regional Planning (University of New England)

Signature:



Date: 29.05.2026

Declaration by Registered Environmental Assessment Practitioner

Name	Susan Blake
Registration Number	6600
Organisation Registered with	Planning Institute Australia

Declaration: The undersigned declares that this EIS:

- Has been prepared in accordance with the Environmental Planning and Assessment Regulation 2021;
- Contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates;
- Does not contain information that is false or misleading;
- Addresses the Planning Secretary's Environmental Assessment Requirements (SEARs) for the project;
- Identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments;
- Has been prepared having regard to the Departments State Significant Development Guidelines – Preparing an Environmental Impact Statement;
- Contains a simple and easy to understand summary of the project as a whole, having regard to the significant likely economic, environmental and social impacts of the project and the principles of ecologically sustainable development;
- Contains a consolidated description of the project in a single chapter of the EIS;
- Contains an accurate summary of the findings of any community engagement; and
- Contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole.

Signature:



Date: 27.05.2026

Summary

This Environmental Impact Statement (EIS) has been prepared by ADW Johnson on behalf of Newcastle Sand Pty Limited (the Proponent) in support of a State Significant Development (SSD) application for an extractive industry (sand quarry) at 3631 Nelson Bay Road Bobs Farm (the site). The EIS is submitted to the Department of Planning, Housing and Infrastructure (DPHI) pursuant to Section 4 of the *Environmental Planning and Assessment Act 1979* (EPA Act).

The proposal is SSD pursuant to Section 2.6(1)(b) of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) which identifies at Schedule 1 Clause 7 that development for the purpose of 'extractive industries' that extracts more than 500,000 tonnes of materials per year is SSD. The Secretary's Environmental Assessment Requirements (SEARs) for the project (SSD-99860959) were issued on 18 December 2025 (**Appendix 1**). The proposal was also referred to the Commonwealth Government for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) with the proposal determined to be a controlled action under section 75 of the EPBC Act and Supplementary SEARs (EPBC2026/10456) issued on 10 April 2026 (**Appendix 2**).

A previous application for a sand quarry as State Significant Development (SSD) (SSD-6395) had been lodged by another developer for the site with that application receiving the Director General's requirements in March 2014. Although that application was ultimately withdrawn, community and agency feedback to this previous application was considered and assisted with informing the proposed quarry design and operations for this application. Notably, the current proposal does not propose extraction below the groundwater table or the use of Marsh Road for access, which resolves these two (2) key concerns associated with the previous application.

The findings of this EIS demonstrate that the proposed sand quarry – its design, operations and rehabilitation – provides an essential sand resource, and the site is suitable subject to appropriate mitigation measures being implemented as outlined in accompanying technical reports.

Strategic Context

The site is located in Bobs Farm within the Port Stephens local government area (LGA) on the northern side of Nelson Bay Road. Nelson Bay Road is a State road and the key transport route between the eastern extent of the Tomaree / Tilligerry Peninsula and Greater Newcastle region to the southwest. Part of the site is currently used for the purpose of agriculture being for olive and fig orchards with the remainder of the site being vegetated. The site is surrounded by the Worimi National Park to the south and predominantly by rural residential developments to the west, north and east. The site is within the Newcastle Bight coastal sand dune system which was created within the last 10,000 years. The sand resource at the site is suitable for a variety of purposes from construction, industrial manufacturing, glass production, horticulture as well as landscaping and recreational uses.

Endorsed strategic plans which apply to the area include priorities to grow the local economy by supporting business and jobs in the region. The proposal wholly aligns with these objectives.

Project Description

The proposal seeks consent to use most of the site for the purpose of a sand quarry. Areas proposed to be excluded from sand extraction include those identified as having high ecological value, easements / right-of-carriageways, as well as a minimum 15m setback from all site boundaries to provide a buffer between adjacent sites and contribute to maintaining flora and fauna connections.

Development of the site would comprise first establishing of the processing and sales area where sand processing and stockpiling will take place over the life of the quarry. This stage (Stage 1) includes construction of a new left-in left out intersection onto Nelson Bay Road, extraction down to 0.7m above the predicted groundwater table and subsequent levelling of the processing and sales area with 0.3m of gravel prior to installing infrastructure and ancillary structures needed for quarry operations.

After the processing and sales area is established, extraction would take place in accordance with the approved staging plan which involves staged clearing and stockpiling of topsoil, ongoing sand extraction from the final quarry pit level being 0.7m above the predicted groundwater table across the site (approximately 3m AHD final extraction level) to the point where natural 3H:1V batters are achieved to stage boundaries. Ongoing rehabilitation of the site would take place in accordance with the approved rehabilitation plan to return the site to its current ratio of vegetated and non-vegetated areas. The existing dwelling and ancillary structures are proposed to be retained and used as a manager's residence and for use with the proposal. Based on demand and by arrangement, up to 6,000tpa of certified Virgin Extracted Natural Material (VENM) / Excavated Natural Material (ENM) is proposed to be brought from offsite for processing.

A summary of the project is outlined at **Table 1** and the site plan for the proposal shown at **Figure 1**.

Table 1: Project Summary

Project Element	Summary of Project	
Proposed Development	Sand quarry	
Extraction Method	Dry (surface) extraction only	
Resource	Sand	
Site area	40.9ha	
Total extraction area	31.4ha	
Onsite Annual Production	Up to 530,000tpa	
Offsite resource	Up to 6,000tpa of VENM / ENM brought from offsite for processing	
Anticipated total resource	4.4 million tonnes	
Quarry Life	10 years	
Infrastructure	• New left-in left-out intersection onto Nelson Bay Road • Weighbridge • Processing plant infrastructure • Refuelling bay including up to 35,000L aboveground diesel tank with bunding • Manager's residence and ancillary sheds (existing)	
Product Transport	Transport by truck with maximum of 120 laden trucks per day to cater for peak capacity but with an average of 46 laden trucks per day	
Water Management	Bunded infrastructure to drain to water recycling detention area	
Construction Workforce	70 to 100 workers	
Operational Workforce	15 full time ongoing employees	
Hours of Operation	Sand extraction, processing, washing and production	• 7:00 am to 5:00 pm, Monday to Friday • 7:00 am to 4:00 pm, Saturdays • Closed Sundays and Public Holidays
	Sales	• 6:00 am to 6:00 pm, Monday to Friday • 7:00 am to 4:00 pm, Saturdays • Closed Sundays and Public Holidays
	Maintenance activities	• 24 hours 7 days a week, so long as maintenance activities are not audible for nearby sensitive receivers
Site Rehabilitation and final land use	Progressive rehabilitation and revegetation as each stage of sand resource is exhausted in accordance with Rehabilitation Plan. Post-quarry the land will be used for agricultural purposes consistent with the current use of the site. Vegetation on site will continue to be restored and managed.	
Capital Investment Value	\$25,875,365.64 (excl. GST)	

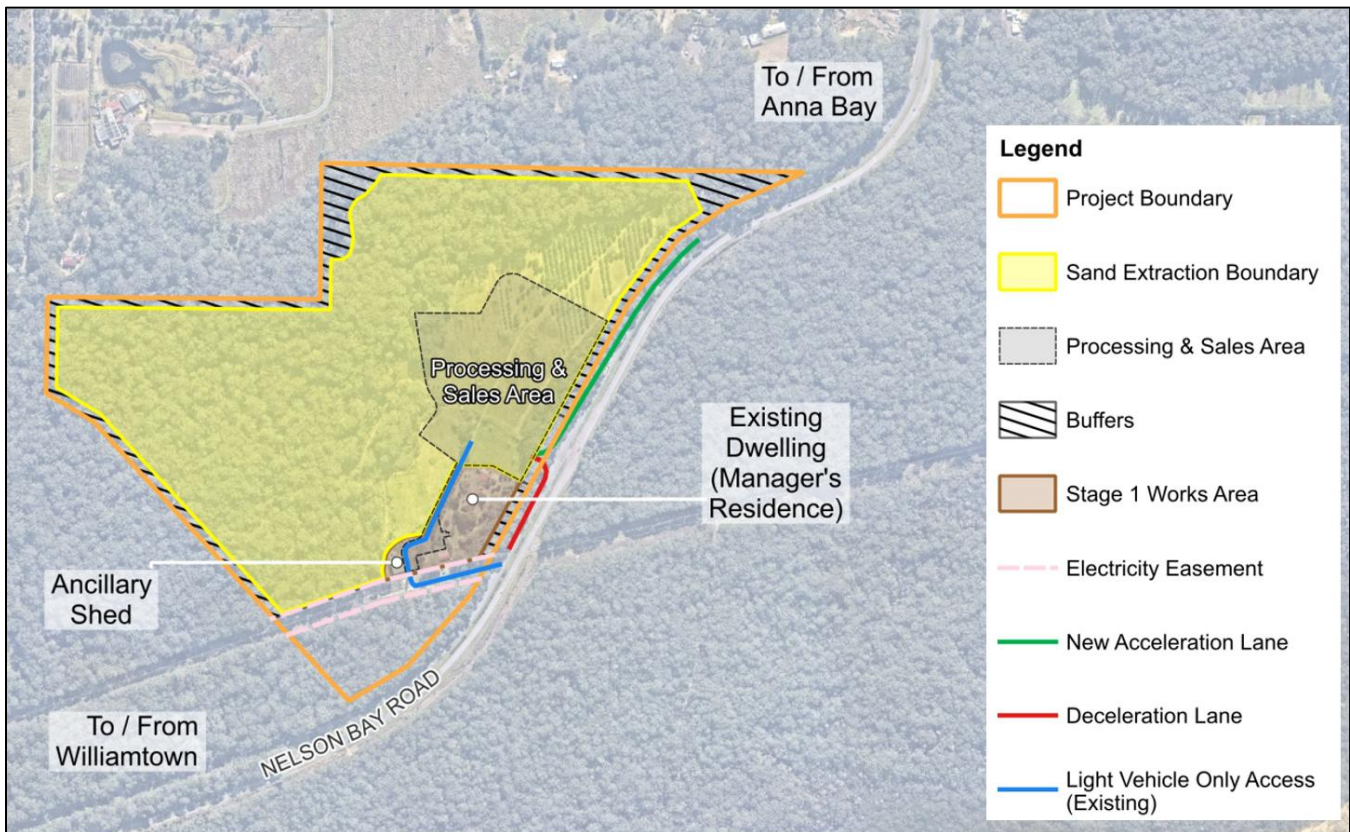


Figure 1: Site Plan

Engagement

Engagement with the community and key stakeholders for the proposal has taken place since the end of 2025 to receive and consider feedback to inform the proposed design, operations and EIS. Consideration of feedback has informed the development of the proposed quarry design and operations. Stakeholder consultation has included adjacent landowners, the broader Bobs Farm and Salt Ash community, local interest groups, Port Stephens Council, Government agencies, and local traditional owners.

Engagement has been undertaken in accordance with the Engagement Plan for the project and has comprised direct engagement with stakeholders including adjacent landowners and groups who raised concern as part of the previous SSD application for the site, the preparation of information fact sheets, webpage information, online survey, notice in the newspaper, and drop-in session with the community.

Stakeholder feedback has informed various amendments to the proposed quarry design and operations as outlined in this EIS.

Assessment of Impacts

An assessment of impacts associated with the proposal has been undertaken in accordance with the SEARs (SSD-99860959) and relevant legislative requirements and policies. Findings have been informed by technical reports which found that the proposal complies or can comply with relevant controls and guidelines and with appropriate measures potential adverse impacts can be eliminated or appropriately mitigated.

Based on technical studies procured to assess the proposal's likely impacts, the following key conclusions are made –

Biodiversity

The site comprises two (2) Plant Community Types (PCTs) being PCT 3544: Coastal Sands Apple-Blackbutt Forest and PCT 4066: Northern Paperbark-Swamp Mahogany Saw-sedge Forest. PCT 4066 is a Threatened Ecological Community Type (TEC) and does not form part of the proposed extraction area and so will not be directly impacted.

The proposal would result in impacts to 23.99ha of native vegetation and required further assessment for impacts for twenty (20) candidate flora species and thirty-one (31) predicted fauna species. Fifteen (15) threatened species were identified through targeted surveys and of these four (4) required offsetting and further assessment. These species were Masked Owl (*Tyto novaehollandiae*), Powerful Owl (*Ninox strenua*), Squirrel Glider (*Petaurus norfolcensis*), and Koala (*Phascolarctos cinereus*). Prescribed impacts requiring consideration were identified as non-native vegetation (fruit trees used by Grey-headed Flying-Fox); habitat connectivity; and, waterbodies, water quality and hydrological processes.

The proposal incorporates appropriate avoid and minimise measures including minimising impacts to higher condition vegetation and areas of TEC, retention of 27% of identified hollow-bearing trees, retaining vegetation buffers around the entire site between site boundaries and areas of excavation, and ongoing rehabilitation. Residual direct impacts to biodiversity values after avoid and minimise measures are included were assessed as not causing an increase in the protection status of threatened species such as causing impacts to be considered Serious and Irreversible Impacts.

Indirect impacts likely to occur on native vegetation were assessed as being the potential for transfer of weeds and pathogens to and from the site; and, noise, vibration, lighting, waste and air pollution impacts to adjacent sensitive habitat areas. These impacts are assessed as having a low likelihood of occurrence and consequence under management.

Prescribed impacts were assessed as relating to habitat connectivity, waterbodies, water quality and hydrological processes, and vehicle strikes. Habitat connectivity will be maintained by way of retained vegetation corridors to the north and south of the site (minimum 40m wide). Impacts to Groundwater Dependent Ecosystem (GDE) will be avoided by proposing extraction not within the north of the site where the GDE is mapped.

One (1) Serious and Irreversible Impact (SAIL) species was previously recorded on the site being *Diurus arenaria* (Sand Doubletail) in the electricity easement but not within the impact area. As such it was determined the proposal is unlikely to result in significant impact to this SAIL species.

The project was determined to be a “controlled action” under Section 75 of the EPBC Act and further assessment was undertaken in accordance with Supplementary SEARs under the bilateral agreement. Further assessment was required for Koala, Grey-headed Flying-fox, Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland, Swift Parrot, Regent Honeyeater, Spotted-tailed Quoll, South-eastern Glossy Black Cockatoo, Yellow-bellied Glider, and New Holland Mouse. The further assessment found based on the features of the site and if recommended management and mitigation measures are implemented there would not be any significant impact on critically endangered, endangered species and ecological communities, or vulnerable species.

The proposal generates 553 ecosystem credits and 2,948 species credits.

Noise

A noise impact assessment was undertaken to determine the potential noise impact of the proposal on noise sensitive receivers for four (4) construction stages and three (3) operational stages in the day and night period (including sleep disturbance) during both neutral and adverse weather conditions.

Noise levels are predicted to comply with the day and night criteria except for a small number of the closest sensitive receivers. In conjunction with the recommendation for a Construction and Operational Noise and Vibration Management Plan, the assessment recommends a hold in operations after the completion of Stage 2 to verify onsite noise sources to determine what acoustic mitigations are required, if any, prior to commencing to future extraction stages.

Air Quality

Key contributors to air quality impacts were identified as being caused by wind-borne dust, vehicle usage, materials handling and transfers. The air quality impact assessment utilised emissions inventory and dispersion modelling to estimate emissions resulting from the proposal.

The assessment found that Total Suspended Particles (TSP), Respirable Crystalline Silica (RCS), dust deposition and annual average PM₁₀ and PM_{2.5} were less than criteria for the project including background at all sensitive receptors modelled. While 24-hour average PM₁₀ and PM_{2.5} predictions were above the criteria, these exceedances were driven by the elevated background adopted for the assessment which were already above their respective criteria and no additional exceedances predicted to occur as a result of the proposed quarry operations.

A range of mitigation and management measures are provided and recommended to be implemented to minimise emissions as far as is practical, including ongoing air quality monitoring. Implementation of recommended mitigation measures conclude that air quality should not be a constraint for the proposal.

Annual greenhouse gas emissions are estimated at 2,169.8 tonnes CO₂e which, when compared to Australia's reported greenhouse gas emissions for 2024 (446.4 million tonnes), constitute approximately 0.00049% of total emissions.

Water Resources

The proposal would extract sand down to 0.7m above the predicted groundwater table and after sand has been extracted a layer of 0.3m of topsoil (retained onsite) would be spread to result in a final landform of one (1) metre above the groundwater table. This approach was adopted based on previous agency advice. There are no dams or water courses on the site. The site benefits from a Water Access Licence (WAL) for 40ML per annum which is proposed to be used for sand washing purposes. Sand washing operations are anticipated to require approximately 32ML of water per annum and operational water requirements can be met within the current WAL. Water tanks would be installed at the site to cater for potable water demands, onsite facilities, as well as water for dust suppression. Effluent disposal for new WCs will be achieved by way of pump out system serviced by regular contractor.

A Detailed Site Inspection was undertaken which included groundwater sampling. Groundwater level monitoring has re-commenced for the current application since the beginning of 2026, noting that approximately a decade's worth of groundwater level monitoring is available associated with the previous application. An assessment of potential water quality hazards was undertaken including acidity, metals, salinity and contaminants including poly-fluoroalkyl substances (PFAS). Water sampling did not result in findings which would be prohibitive of the proposal.

The potential for offsite impacts were assessed including potential impacts to Groundwater Dependent Ecosystems (GDEs). The assessment found that under three (3) scenarios tested there would not be any adverse impacts to GDEs. Due to sandy soils at the site and the final landform comprising a depression surrounded by higher elevated land, the proposal will also not result in offsite impacts, increases to flood affected land, or drawdown on aquifers.

Heritage

Aboriginal Heritage

Five (5) registered sites were identified through investigations associated with the previous application for a sand quarry at the site. Heritage NSW's requirements at that time required extending the previous test excavation programme to a minimum of one (1) metre below the surface for all previously identified sites but which had not been completed for the previous SSD application. As such, the current proposal prepared an excavation methodology with input from Registered Aboriginal Parties which involved mechanical excavation in 10-centimetre spits down to one (1) metre below the surface across the registered AHIMS sites with all material sieved through appropriate mesh sizes. All five (5) registered AHIMS sites were assessed as having low scientific significance being well represented locally and regionally, in poor conditions, and retaining negligible research potential.

The proposed quarry operations will result in direct, total impacts to all five (5) sites; however, given all sites comprise disturbed, low-density surface shell material with no substantial subsurface component, the cumulative impact to Aboriginal cultural heritage is limited subject to the adoption of recommendations outlined in the Aboriginal Cultural Heritage Assessment Report (ACHAR).

Historic Heritage

A Statement of Heritage Impact was prepared for the proposal which found there are no statutory historic items, historic archaeological relics, or areas of confirmed archaeological sensitivity occurring within the project area. The nearest statutory item is the Stockton Beach Dune System located nearby the site to the south of Nelson Bay Road. The project area intersects the boundary of the archival Register of the National Estate (RDE 19510) listing for the Newcastle Bight Coastal Area which carries no statutory weight.

A residual, low-likelihood possibility exists for disturbed archaeological material associated with the short-lived Bobs Farm evacuation camp (1943-1944) but any such material is unlikely to meet the statutory definition of a relic. The proposal has been assessed as resulting in little to no heritage impacts with any heritage risk being able to be appropriately managed through an Unexpected Finds Procedure implemented during construction and operations.

Traffic and Transport

The application proposes a new intersection directly onto Nelson Bay Road for all heavy vehicle access, as well as the initial haulage route where all trucks would travel east along Nelson Bay Road to make a U-turn at the Port Stephens Drive roundabout prior to dispersing through the classified road network. The site could experience up to a maximum of 120 laden trucks per day to cater for peak periods with the site on average experiencing approximately 46 laden trucks per day.

The Traffic Impact Assessment (TIA) prepared in support of the proposal found the site and wider road network can accommodate the proposal and that traffic and access arrangements for the proposal are satisfactory. No traffic or access impediments were identified for the proposal. Cumulative impacts were identified as being negligible as the Proponent's existing quarry operations at Cabbage Tree Road will completely wind down prior to operations at that subject site commencing meaning there will be no net increase in truck movements in the area as a result of the proposal.

Land Resources

Impacts on soils and land capability were assessed to understand the potential impacts on soils including contamination, final landform at the site, and the potential for land use conflicts with surrounding development as a result of the proposal.

A geotechnical hazard risk assessment for the proposal found that hazards such as subsidence, landslips, toppling, settlement, dewatering / heave, slumping, and fracturing are of minimal consequence when mitigation measures are put in place. Preliminary soil samples taken found elevated levels of copper and zinc in the area of the site used for agricultural / horticultural purposes. In response to this, a Detailed Site Inspection (DSI) was undertaken which confirmed this finding within surficial areas associated with horticultural works. One (1) fragment of asbestos containing material was located during the DSI. A Remediation Action Plan was not found to be required to respond to these findings, with a Soil Management Plan being prepared for the application which recommends delineation and stockpiling of soil types with mixing and testing of soils prior to resspreading for rehabilitation works. The Soil Management Plan also includes implementation of 'unexpected finds and asbestos controls' during stripping and excavation.

A Land Use Compatibility Risk Assessment (LUCRA) was undertaken to consider impacts on surrounding developments associated with land clearing, extraction of material, haulage, rehabilitation, and proposed final landform. The LUCRA found that where there is a potential for conflict, impacts can be significantly reduced through the implementation of mitigation measures. The exception to this is the risk of bushfire which will remain a risk in a bushland setting.

Waste Management

Waste generation associated with the project would primarily comprise of minor construction waste during site establishment, general operational waste from staff amenities, maintenance related wastes from plant servicing, and sediment and fines generated during sand washing processes.

Overall, waste quantities are expected to be low and typical of extractive industry operations. Waste materials generated onsite would be stored within designated waste storage areas located within the operational compound and minimised where possible through reuse of materials onsite including rehabilitation works and recycling where practical. Waste required to be collected and taken offsite will be removed by licensed waste contractors.

Hazards

Bushfire

The site is mapped as bushfire prone land (Category 1 and Category 3). Bushfire has been assessed as the proposal nominates use of the existing onsite dwelling as a manager's residence as well as the installation of an Atco structure for a new onsite office. Notwithstanding the National Construction Code does not provide for any bush fire specific performance requirements for Class 5 to 8 structures, a bushfire assessment was undertaken to understand the appropriateness of the site for the proposed use.

The assessment found that with bushfire related upgrades to the proposed manager's residence and construction of the Atco structure to Bushfire Attack Level 12.5 (BAL-12.5), the proposal satisfies all relevant specifications and requirements of Planning for Bushfire Protection and will provide a satisfactory level of bushfire protection. Installation of a 20,000L Static Water Supply for fire-fighting purposes will also be provided.

Hazardous Goods

The proposal seeks consent for an up to 35,000L bunded diesel storage tank and onsite storage of a nominal amount of oils, flocculant and coagulant required for excavators, truck maintenance and quarry operations. Screening against hazardous industry planning thresholds confirms that the proposal does not constitute a Potentially Hazardous Industry or Potentially Offensive Industry under SEPP (Resilience and Hazards) 2021.

The qualitative risk assessment demonstrates that potential hazards associated with fuel storage, mobile plant operation and dangerous goods transport are low risk and would be effectively managed through standard industry controls.

Visual

The visibility analysis considered two types of potential visual impact as a result of the proposal, being how visible the site is from nearby sensitive receivers such as rural residential housing; and, how visible the site is from traffic on Nelson Bay Road.

The Visual Impact Assessment determined that with the retention of a minimum 15m vegetated buffer between the site boundary and any areas of disturbance as well as the installation of a solid rolling sensor gate or equivalent at the site entrance, there would be no adverse impacts on nearby residential development or passers-by driving along Nelson Bay Road.

Social

A Social Impact Assessment was undertaken to assess the potential social impacts as a result of the proposal based on quantitative and qualitative research on the community of Bobs Farm in the context of the proposal. The significant and positive improvements of the quarry design and operations compared to the previous application at the site are noted, namely the removal of below groundwater dredging from the proposal; removal of access to the site via Marsh Road; and, reduced footprint, annual extraction and life-of-quarry.

Community engagement and consultation was undertaken in accordance with the Social Impact Assessment Scoping Report and various online and in person updates and opportunities for engagement were arranged to receive ongoing community feedback. Through analysis of feedback, near neighbours to the site raised the highest level of concern particularly regarding amenity, noise, dust, traffic, biodiversity loss and changes to the rural character of Bobs Farm. As outlined in the EIS, impacts associated with these can be readily managed or mitigated through recommended management and mitigation measures.

Overall, the social impact assessment found the project presents manageable social risks provided the identified management and mitigation measures in supporting technical assessments are implemented, a Social Impact Monitoring Plan is prepared and implemented, and the community continues to be given opportunities to receive updates on the project, review monitoring outcomes, and contact quarry personnel regarding any concerns.

Economic

An Economic Impact Assessment was undertaken to assess the likely economic impacts of the development including the significance of the resource, a Cost and Benefit Analysis (CBA), and assessment on the demand for the provision of local infrastructure and services.

The CBA found the project would have net production benefits to NSW of \$20 million (\$15 million in quarrying benefits and \$5 million in quarry transport benefits) which includes capital and operating costs associated with biodiversity offsets and the proposed new intersection off Nelson Bay Road, costs associated with recommended mitigation measures, monitoring and management of other potential impacts.

As well as providing net economic and social benefits to NSW, the project will provide direct economic activity including jobs to the local area economy and indirect economic activity to the local area via both wage and non-wage expenditure. Fifty-five (55) jobs will be provided as a result of the proposal, 15 of which being quarry jobs currently associated with the Proponent's existing quarry at Cabbage Tree Road Williamstown, and 40 ex-quarry transport jobs.

The project is estimated to provide the following annual direct and indirect annual effects to the local economy –

- \$39m in output
- \$22m in value-added
- \$7m in gross wages
- 78 jobs total

Cumulative Impacts

A Cumulative Impact Assessment was undertaken to assess likely impacts of the proposed quarry in combination with other developments in the locality. In the immediate surrounding vicinity of the site is the Worimi National Park to the south and otherwise is principally comprised of rural residential development. Non-residential developments surrounding the site include lower scale developments including The Shark, Ray & All Creatures Rescue, cellar door wine tasting, outdoor recreation development (Go Karts Go), and the Bobs Farm Primary School.

Environmental impacts associated with the proposal are largely contained within the site and where there would be the potential for offsite impacts, these are eliminated or mitigated through recommended management and mitigation measures. As such it is not considered the proposal would result in adverse impacts cumulative impacts with regard to water resources, land capability or shared infrastructure.

With regard to road safety and traffic, there are three (3) existing sand quarries as SSD in the broader area including the Proponent's current sand quarry at 398 Cabbage Tree Road, Williamtown. Operations at Cabbage Tree Road would cease prior to any processing and sales at the subject site and so cumulative impacts on road safety as a result of haulage trucks were considered based on available information on existing quarries in the area including the subject site. As part of the TIA, it was found there would be no adverse impacts on road safety or traffic because the site relies on Nelson Bay Road which is a State road and approved B-Double route with sufficient capacity to accommodate the proposal including at the Port Stephens Drive roundabout. In addition, road safety is likely to increase after the upgrade to the M1 extension to Raymond Terrace because haulage truck will be unlikely to need to use local roads (noting use of Marsh Road will be prohibited) except where the destination for sand resource requires use of a local road.

Rehabilitation

A Rehabilitation Strategy has been prepared to address ongoing rehabilitation of the site once sand resource has been exhausted from relevant stages, as well as post-quarry final landform design, final land use, completion criteria and monitoring and maintenance requirements.

Progressive rehabilitation will take place in a staged manner to limit the total area of exposed sand at any one time, reduce the risks associated with wind erosion, dust generation and sediment transport, as well as allow for the progressive establishment of vegetation across the site. Once the quarry has reached its end of life, the site will be decommissioned in accordance with the Rehabilitation Plan. Progressive landform shaping will take place prior to the replacement of topsoil and seeding which will ultimately return the site broadly to its current ratio of vegetated areas to grassland areas and horticultural areas. Post-quarry uses would be consistent with uses currently permissible in the RU2 Rural Landscape zone.

EIS Summary

The proposal is for an extractive industry as a sand quarry which will be a continuation of the Proponent's current sand quarry at 398 Cabbage Tree Road Williamtown after operations at that site ultimately cease. The proposal seeks consent for extraction of up to 530,000tpa over 10 years equating to approximately 4.4 million tonnes of sand over the life of the project. Consent is also sought to receive up to 6,000tpa of VENM / ENM certified sand from offsite for onsite processing.

The project will require construction of a new left-in left-out intersection onto Nelson Bay Road and staged clearing and extraction of sand in accordance with the proposed staging plan, which requires some flexibility in terms of the location of extraction across the site to respond to market demands. The site benefits from a current Water Access Licence for 40ML per annum which is proposed to be used for sand washing purposes. Ongoing rehabilitation of the site will be undertaken to return the site largely to its current ratio of cleared / managed land for agricultural purposes and vegetated land.

Long-term supply certainty for key resources including sand is essential to ensure the materials needed to build NSW, including housing, are not constrained. This is recognised by Cement Concrete & Aggregates Australia. In this regard the proposal has significant economic benefits through the continued supply of sand to local and regional markets for construction, recreation, landscaping and other retail purposes as well as employment for 70 to 100 jobs during construction and ongoing employment of 15 full-time staff. Potential social impacts can be readily managed through management and mitigation measures.

The EIS is supported by technical assessments which find that impacts as a result of the proposal are acceptable, subject to the adoption of recommended mitigation measures. Taking into account the findings of the EIS, the Delegate for the Minister is requested to grant development consent to the application.

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Glossary

Term	Meaning
1% Annual Exceedance Probability (AEP) Flood Level	The height of water reached during a flood event that has a 1% chance (1 in 100 chance) of occurring or being exceeded in any single year
3H:1V	3 metres horizontal to 1m vertical, referring to slope batters
Aboriginal Cultural Heritage Assessment Report (ACHAR)	A documented study that evaluates how a proposed land development or activity might impact areas, objects, or places of significance to Aboriginal peoples
Aquifer Interference Policy (AIP)	The regulatory framework designed to manage and protect groundwater resources
Australian Geomechanics Society (AGS)	The society representing practitioners in civil, mining, offshore, and environmental engineering
Australian Height Datum (AHD)	The official national reference system used to measure elevations and depths across Australia
Area of Archaeological Potential (AOP)	A designated zone identified by planners and heritage experts where undiscovered, buried artifacts or historical remains are highly likely to exist
Acid Sulfate Soils (ASS)	Natural, waterlogged sediments containing iron sulfide minerals (primarily pyrite). Harmless and benign when undisturbed, however if drained, excavated, or exposed to oxygen then sulfuric acid is produced
Bushfire Attack Level (BAL)	The measure of a building's potential exposure to ember attack, radiant heat, and direct flame contact during a bushfire
Biodiversity Assessment Method (BAM)	Framework used to measure the condition of native ecosystems, evaluate how a proposed development will impact local wildlife and habitats, and calculate the environmental offsets required to ensure "no net loss" of biodiversity
Biodiversity Development Assessment Report (BDAR)	A report which assesses how a proposed development or construction project will impact local native vegetation, threatened species, and their habitats, and outlines strategies to avoid, minimise, or offset those impacts
Biodiversity Offsets Scheme (BOS)	Framework designed to offset the environmental impacts of development and land clearing by requiring developers to purchase "biodiversity credits" to compensate for unavoidable habitat loss
Construction and Operational Noise and Vibration Management Plan (CONVMP)	A detailed environmental document that outlines how a project will monitor, control, and mitigate noise and vibration impacts
Department of Planning, Housing and Infrastructure (DPHI)	NSW State government agency responsible for sustainable land-use planning, housing supply, and infrastructure development across NSW
Environmental Impact Statement (EIS)	A formal document that details the potential environmental, social, and economic effects of a proposed major development project
Excavated Natural Material (ENM)	Naturally occurring rock and soil (such as clay, shale, and sandstone) excavated from the ground, contains at least 98% natural material by weight, and is safe for beneficial reuse
Environmental Protection Authority (EPA)	The primary environmental regulator for NSW
Environmental Planning & Assessment Act 1979 (EPA Act)	The primary legislation regulating land use planning and development assessment in NSW.
Environmental Planning and Assessment Regulation 2021 (EPA Regulation)	The primary legislation that outlines the day-to-day administrative procedures for the NSW planning system
Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	Australia's primary national environmental law providing a legal framework to protect and manage unique plants, animals, habitats, and places of national and international significance, and promotes ecologically sustainable development
Environment Protection Licence (EPL)	A legally enforceable document issued by environmental regulators such as the EPA
Ecologically Sustainable Development (ESD)	The framework for balancing economic and social progress with environmental protection
Groundwater Dependent Ecosystem (GDE)	Any natural environment that relies on groundwater to maintain its ecological health
Heritage NSW (HNSW)	A division of the NSW Government tasked with protecting, preserving, and managing the state's cultural, natural, and historical heritage
Housing Productivity Contribution (HPC)	A broad-based development charge on new residential, commercial, and industrial developments in high-growth regions of NSW
Hunter Regional Plan (HRP)	NSW Government's 20-year strategic blueprint for land use, housing, infrastructure, and economic growth in the Hunter region

Local Government Area (LGA)	A local administrative subdivision of NSW managed by a council
Local Strategic Planning Statement (LSPS)	A land use planning document outlining a Council's 20-year vision for land use
Land Use Compatibility Risk Assessment (LUCRA)	An assessment identify, evaluate, and manage potential disputes and amenity issues between neighbouring land uses
Matter of National Environmental Significance (MNES)	Specific heritage and environmental places (wetlands, reefs etc), or flora and fauna species which are nationally threatened species and ecological communities
Monitoring Well (MW)	A purpose-built borehole installed into the ground to measure groundwater levels and extract water samples
pH_{FOX}	A rapid, preliminary screening test used in environmental and agricultural science to detect the presence of Potential Acid Sulfate Soils (PASS)
PM₁₀	Inhalable airborne pollutants with a diameter of 10 micrometres or less
PM_{2.5}	Inhalable airborne pollutants with a diameter of 2.5 micrometres or less
Probable Maximum Flood (PMF)	The theoretical, absolute worst-case flood that could conceivably occur in a specific location
Protection of the Environment Operations Act 1997 (POEO Act)	The primary environmental pollution law in NSW establishing standards for businesses and individuals to minimise waste, noise, air, and water pollution, while granting regulatory bodies the power to issue licenses
Peak Particle Velocity (PPV)	A standard metric used to measure ground or structural vibration
Plant Community Type	The most specific level of classification in the NSW vegetation classification system
Port Stephens Local Environmental Plan 2013 (PSLEP)	The primary legal planning document to guide land use, zoning, and development in Port Stephens
Registered Aboriginal Party (RAP)	An officially recognised Traditional Owner corporation that manages and protects Aboriginal cultural heritage
Respirable Crystalline Silica (RCS)	Fine, airborne dust particles generated when materials containing silica (such as concrete, sandstone, brick, and engineered stone) are cut, sanded, or crushed
Relative Level (RL)	The vertical height or elevation of a specific point compared to a fixed, known reference point
Secretary's Environmental Impact Assessment Requirements (SEARs)	Project-specific guidelines that dictate what information must be included in an Environmental Impact Statement
Serious and Irreversible Impacts (SAII)	Severe, permanent consequences on threatened species or ecological communities that significantly push them toward extinction
State Environmental Planning Policy (SEPP)	A State-wide legal instrument dictating land use and development rules across NSW
State Significant Development (SSD)	Major projects that are crucial to the state for economic, environmental, or social reasons
Threatened Ecological Communities (TEC)	A group of native plants, animals, and other organisms interacting in a specific area that is at risk of extinction
Traffic Impact Assessment (TIA)	A report that predicts how a proposed development will affect the local road and transport network
Transport for NSW (TfNSW)	The lead Government agency in NSW responsible for planning, funding, and managing the transport network
Total Suspended Particles (TSP)	The total mass of all solid and liquid particles suspended in the air
Virgin Extracted Natural Material (VENM)	Completely natural soil, clay, gravel, sand or rock that has been excavated and is entirely free of manufactured chemicals, process residues, industrial waste, and naturally occurring asbestos or sulfidic ores
Water Access Licence (WAL)	A legal, tradeable title that grants the holder the right to a specific share of water from a designated river, lake, or aquifer
Water Closet (WC)	Refers to both a flush toilet and the small, enclosed room or compartment that contains it

Section 1

Introduction



1 Introduction

1.1 Overview

This EIS has been prepared by ADW Johnson on behalf of Newcastle Sand Pty Limited (the Proponent) in support of an SSD application submitted to DPHI under Part 4 of the EPA Act for an extractive industry as a sand quarry at 3631 Nelson Bay Road, Bobs Farm (the site). The site is 40.9ha and located approximately 23km east of Raymond Terrace and approximately 27km north-east of Newcastle within the Port Stephens Local Government Area (LGA) (**Figure 2**).

The project is SSD pursuant to Schedule 1 Clause 7 of the Planning Systems SEPP and requires approval under Part 4 Division 4.7 of the EPA Act. The Secretary's Environmental Assessment Requirements (SEARs) for the project were received on 18 December 2025. The proposal was referred to the Australian Government for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and was determined to be a controlled action with Supplementary SEARs received on 17 April 2026 to include assessment requirements for the project as a controlled action.

The Proponent has operated in the Hunter region since 2020 supplying sand for various industrial and retail purposes to local and regional markets. The Proponent's current quarry operations are located at 398 Cabbage Tree Road Williamtown NSW which were approved by the Independent Planning Commission under SSD-6125 in 2018. Sand resource at this site will be exhausted in the near future and so this SSD application has been prepared to ensure continued supply of sand to the region as well as ongoing employment of staff associated with the Cabbage Tree Road quarry.

It is proposed to broadly replicate current sand quarry operations at the Cabbage Tree Road site in terms of annual throughput, operational details and equipment used. Details of the Proponent's current operations at Williamtown including a comparison with the current application at the site are detailed at **Section 1.4.1**.

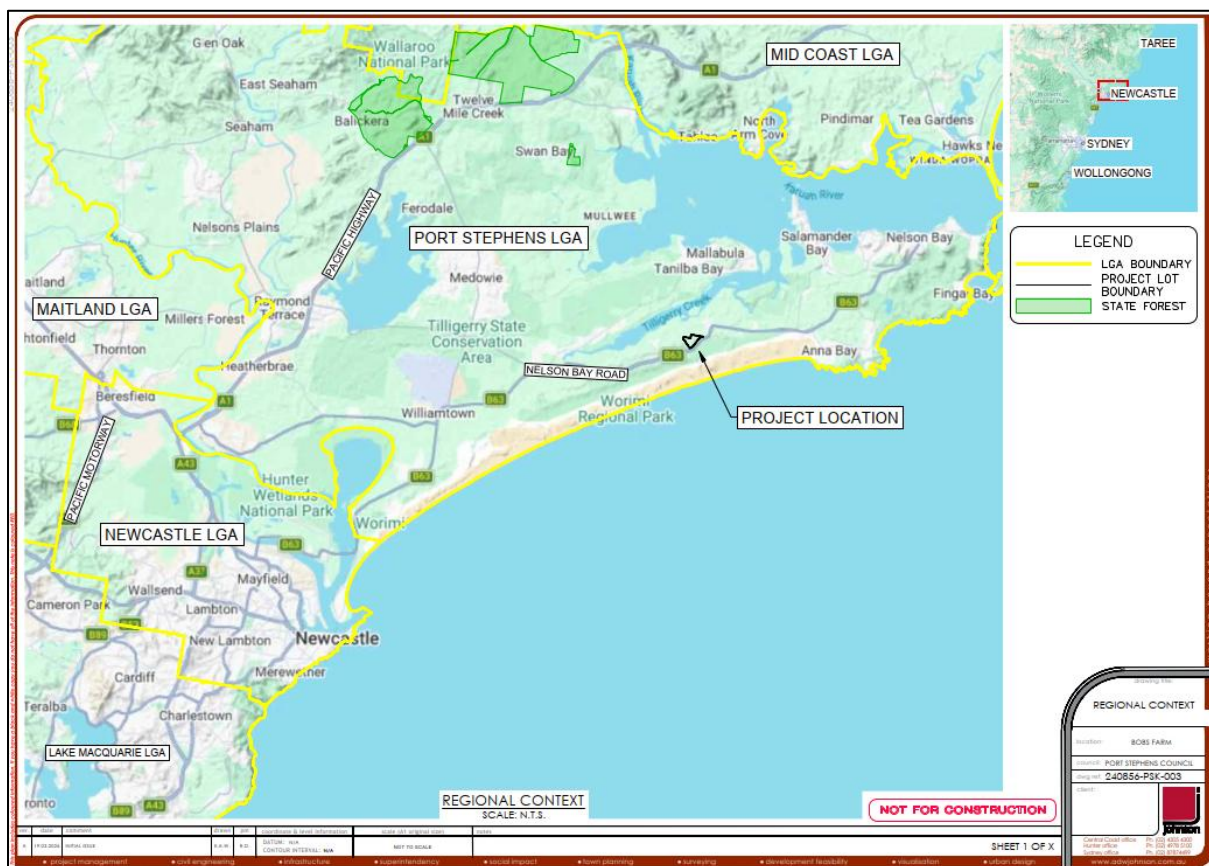


Figure 2: Regional Context

The site was subject to a previous application for a sand quarry as SSD (SSD-6395) which was ultimately withdrawn. The previous application was for a much larger proposal in terms of site area, design and proposed annual extraction. Two (2) key elements of this previous application were for proposed dredging below the water table and use of Marsh Road (a local road) for access. These two elements do not form part of the current proposal and as such, environmental and amenity issues associated with these previous key concerns are resolved as part of the current application.

The proposed buffer of 0.7m between the predicted groundwater table and lowest point of extraction has been adopted based on agency feedback from the (then) Department of Planning, Industry and Environment - Water for the previous sand quarry application at the site. Advice at that time recommended that extraction be limited to a height that maintains at least a 0.7m buffer above the groundwater table with the final landform being a minimum of one (1) metre above the groundwater table consistent with other approved projects of the area. The proposal adopts this recommendation.

Further details of the previous SSD application for the site are described at **Section 1.4.2**. Where data and information associated with this previous SSD application have been used or relied on for the current application, such as groundwater monitoring data and resource analysis, this is duly noted and referenced.

The current application developed through an iterative design which has been informed by responding to key issues raised as part of the previous application as well as recent investigations and community consultation to arrive at a quarry design and proposed operations that seek to –

- Use the site for the purpose of a sand quarry with an annual extraction of up to 530,000tpa over a 10-year period, and receiving of up to 6,000tpa of VENM / ENM sand received from offsite for onsite processing.
- Minimise and / or eliminate significant environmental impacts by avoiding impacts on areas of the site with the highest ecological value as well as proposing dry extraction methods only which will not intersect the groundwater table.
- Implement ongoing rehabilitation of disturbed areas.
- Eliminate traffic, safety and amenity issues on nearby Marsh Road by prohibiting trucks from using this road for haulage.
- Implement appropriate measures to mitigate or eliminate environmental impacts on surrounding development.

The SSD application duly seeks consent for:

- Construction of a new left-in left-out intersection onto Nelson Bay Road.
- Site preparations for the Processing and Sales Area (Stage 1) comprising extraction down to 0.7m above the groundwater table and subsequent laying of 0.3m of gravel to create the base for the processing and sales area.
- Installation / construction of equipment, handstand areas, site office (Atco structure) and associated ancillary structures required for the proposed quarry operations.
- Staged clearing and stripping of topsoil within approved extraction areas using dry method extraction only down to 0.7m above the predicted groundwater table across the site.
- Annual extraction of up to 530,000tpa for a period of 10 years equating to a total extraction of approximately 4.4 million tonnes and maximum average sales of 10,000 to 12,000 tonnes per week.
- Receiving of up to 6,000tpa of VENM / ENM sand received from offsite for processing.
- Up to 120 laden trucks per day to cater for peak periods, noting the site will typically only generate an average of 46 laden trucks per day.

- Operating hours of:

Quarry operations (sand processing, washing and production)	7am to 5pm Monday to Friday and 7am to 4pm Saturdays
Sales	6am to 6pm Monday to Friday and 7am to 4pm Saturdays
Maintenance	At any time provided that these activities are not audible at any privately-owned residence

- Use of the existing dwelling as a manager's residence and retention of the existing access at the electricity easement for light vehicle access.
- Ongoing rehabilitation to reinstate the site post-quarry broadly to its current ratio of vegetated and cleared areas.
- Post-quarry use of the site for forest and agricultural uses consistent with permissible land uses in the RU2 Rural Landscape zone.

1.1.1 Estimated Development Cost

The Estimated Development Cost (EDC) of the proposal, as determined in accordance with the definition for EDC per the *Environmental Planning and Assessment Regulation 2021* is estimated to be \$25,875,365.64 (excl. GST).

The EDC report prepared by Vasey Consulting is included at **Appendix 3**.

1.1.2 Employment Numbers

Construction Jobs

It is anticipated that 70 - 100 full time equivalent construction jobs will be created as a result of the project as outlined in the EDC Report (**Appendix 3**).

Operational Jobs

Once the site is operational, all 15 staff at the Proponent's current quarry operations at Cabbage Tree Road will transfer to the subject site. As such, the site will maintain 15 full time roles.

1.2 Proponent Details

Proponent details are presented at **Table 2**.

Table 2: Application Details

Details	Particulars
Project name	Bobs Farm Sand Quarry
Applicant	Newcastle Sand
ABN	40 957 455 785
Applicant address	398 Cabbage Tree Road Williamtown
Postal address	PO Box 1011, Newcastle NSW 2300
Contact	c/o Rob Drew (ADW Johnson)
Contact details	robd@adwjohnson.com.au

1.3 Structure of the Report

The structure of the EIS has been drafted in accordance with DPHI's State Significant Development Guidelines – Preparing an Environmental Impact Statement as follows:

Part 1 – Introduction

Part 2 – Strategic Context

Part 3 – Project Description

Part 4 – Statutory Context

Part 5 – Engagement

Part 6 – Assessment of Impacts

Part 7 – Justification of the Project

A SEARS table including references within the EIS is provided at **Appendix 4**.

A Statutory Compliance Table is provided at **Appendix 5**.

A Community Engagement Table is provided at **Appendix 6**.

A compilation of Proposed Mitigations is provided at **Appendix 7**.

1.3.1 Supporting Documentation

Documents included in support of the proposal are outlined at **Table 3**.

Table 3: Document Schedule

Appendix Reference	Title	Consultant / Agency
Appendix 1	Secretary's Environmental Assessment Requirements	DPHI
Appendix 2	Supplementary Secretary's Environmental Assessment Requirements	DPHI
Appendix 3	Estimated Development Cost	Vasey Consulting
Appendix 4	SEARs Compliance Table	ADW Johnson
Appendix 5	Statutory Compliance Table	ADW Johnson
Appendix 6	Community Engagement Table	ADW Johnson
Appendix 7	Mitigation Measures Table	ADW Johnson
Appendix 8	Geological and Resource Assessment	VGT
Appendix 9	Plans Set	VGT
Appendix 10	Intersection Strategic Design Plans Set	ADW Johnson
Appendix 11	Soil Management Plan	Martens Associates
Appendix 12	Rehabilitation Plan	IEMA
Appendix 13	Detailed Site Inspection	Martens Associates
Appendix 14	Biodiversity Development Assessment Report	Wedgetail Project Consulting
Appendix 15	Aboriginal Cultural Heritage Assessment Report	McCardle Heritage Consulting
Appendix 16	Statement of Heritage Impact	EMM
Appendix 17	Bushfire Assessment Report	Bushfire Hazard Solutions
Appendix 18	Hydrogeological Impact Assessment	Martens Associates
Appendix 19	Greenhouse Gas Assessment	Vipac
Appendix 20	Traffic Impact Assessment	SECA Solutions
Appendix 21	Additional Geotechnical and Acid Sulfate Soil Assessment	Martens Associates
Appendix 22	Surface Water Assessment	VGT
Appendix 23	Social Impact Assessment	Key Insights
Appendix 24	EPBC Assessment	Wedgetail Project Consulting
Appendix 25	Noise and Vibrations Assessment	Vipac
Appendix 26	Air Quality Impact Assessment	Vipac
Appendix 27	Land Resource Impact Assessment	VGT
Appendix 28	Visual Impact Assessment	IEMA
Appendix 29	Economic Assessment	Gillespie Economics

1.4 Site Background and Application History

1.4.1 Proponent's Current Sand Quarry Operations at Cabbage Tree Road Williamtown NSW

The Proponent currently operates an existing sand quarry at 398 Cabbage Tree Road, Williamtown which received consent as part of State Significant Development SSD-6125 from the Independent Planning Commission in May 2018. The Proponent can demonstrate a proven track record of successfully operating this sand quarry which has consent to operate for up to 15 years and will lapse in 2033.

It is anticipated that the available resource able to be extracted at the 398 Cabbage Tree Road sand quarry will be exhausted prior to the lapse date of 2033 a new sand quarry is needed to ensure continued operations. To allow for associated assessment, approvals and any site establishment and construction works needed, an application for a sand quarry at the subject site is being prepared now. This will ensure a smooth transition between operations at 398 Cabbage Tree Road Williamtown to the subject site at 3631 Nelson Bay Road Bobs Farm and allow for the ongoing provision of sand to local and regional markets as well as ongoing employment of staff. For clarity, it is not proposed that both sites will operate concurrently. That is, operations at the subject site would only commence after operations at 398 Cabbage Tree Road have ceased.

A summary comparison of the Proponent's approved current operations at Williamtown and proposed operations at Bobs Farm are outlined at **Table 4**. The location of the subject site in relation to 398 Cabbage Tree Road Williamtown is shown at **Figure 3**.

Table 4: Comparison between Current and Proposed Operations

Consideration	Williamtown, Existing (SSD-6125)	Bobs Farm, Proposed (SSD-99860959)
Resource	Sand	Sand
Annual Extraction Amount	530,000tpa	530,000tpa
Extraction Methods	Surface (dry) extraction only	Surface (dry) extraction only
Maximum Extraction Depth	Within 0.7m of the predicted maximum groundwater level	Within 0.7m of the predicted maximum groundwater level
Site Buffers	20m, unless a written agreement exists with a neighbouring landowner to reduce the buffer adjacent to his / her property and a copy of this agreement is provided to the Department	15m, unless a written agreement exists with a neighbouring landowner to reduce the buffer adjacent to his / her property and a copy of this agreement is provided to the Department
Total Extraction Amount	3.35 million tonnes	4.4 million tonnes
Quarry Life	15 years	10 years
Employees	15 full time ongoing employees	15 full time ongoing employees
Hours of Operation	<u>Quarry Operations</u> 7am to 5pm Monday to Friday 7am to 4pm Saturdays - At no time on Sundays or public holidays <u>Sales</u> 6am to 6pm Monday to Friday 7am to 4pm Saturdays - At no time on Sundays or public holidays <u>Maintenance</u> May be conducted at any time, provided that these activities are not audible at any privately-owned residence.	<u>Quarry Operations</u> 7am to 5pm Monday to Friday 7am to 4pm Saturdays - At no time on Sundays or public holidays <u>Sales</u> 6am to 6pm Monday to Friday 7am to 4pm Saturdays - At no time on Sundays or public holidays <u>Maintenance</u> May be conducted at any time, provided that these activities are not audible at any privately-owned residence.
Access	New left-in left out intersection onto Cabbage Tree Road (State road)	New left-in left out intersection onto Nelson Bay Road (State road)



Figure 3: Location of Subject Site to Existing Quarry at 398 Cabbage Tree Road

1.4.2 Previous SSD Application for a Sand Quarry at the Subject Site

The site was subject to a previous proposal for a sand quarry as State Significant Development in 2018 which was ultimately withdrawn in 2024. The Director-General's Requirements for that application were issued in March 2014 as part of State Significant Development Application SSD-6395.

That application sought consent for a much larger proposal both in terms of size and throughput and was subject of several unresolved issues particularly related to impacts on groundwater quality from proposed dredging, and use of Marsh Road (a local road) for access. These two (2) elements of the previous proposal do not form part of the current application and as such are resolved. A summary of the previous application against the current proposal is set out at **Table 5**.

A significant amount of technical reporting and consultation was completed as part of the now withdrawn application and so the site is well understood in terms of the amount and quality of resource at the site, environmental characteristics of the site and previous community views. The current application has been informed by data associated with previous site investigation monitoring, testing and surveys, as well as community feedback at that time.

This current application incorporates substantial improvements on the previous application in terms of proposed design and extraction operations. These improvements include environmental through the reduced disturbance footprint, reduced annual throughput, reduced quarry life, removal of dredging from the proposal, improved water saving measures, and significant amenity and safety improvements.

Table 5: Comparison of Previous Application and Current Application for 3631 Nelson Bay Road

Consideration	Previous Application (SSD-6395)	Current Application (SSD-99860959)
Disturbance Area for Quarry	39.07ha	31.4ha
Extraction Methods	Dry and wet extraction methods	Dry only
Extraction Depth	-15m AHD	Approximately 3m AHD, being 0.7m above the predicted groundwater table
Resource	Sand	Sand
Annual Extraction Amount	750,000tpa	530,000tpa
Total Extraction Amount	10 million tonnes	4.4 million tonnes
Quarry Life	15 years	10 years
Employees	7-10 fulltime onsite workers	15 fulltime onsite workers
Hours of Operation	<u>Quarry Operations</u> 6am to 6pm Monday to Saturday <u>Sales</u> 6am to 6pm Monday to Saturday	<u>Quarry Operations</u> 7am to 5pm Monday to Friday 7am to 4pm Saturdays At no time on Sundays or public holidays <u>Sales</u> 6am to 6pm Monday to Friday 7am to 4pm Saturdays At no time on Sundays or public holidays <u>Maintenance</u> At any time, provided that these activities are not audible at any privately-owned residence.
Access	Initially proposed main access onto Marsh Road (local road) with trucks turning right at Marsh Road onto Nelson Bay Road. This was amended during the assessment to be a new left-in left-out intersection onto Nelson Bay Road.	A new left-in left-out intersection onto Nelson Bay Road which is consistent with access arrangements previously supported by TfNSW.
Transport Route	Initially proposed the use of Marsh Road to access Nelson Bay Road.	All haulage trucks will access Nelson Bay Road (a State road) via new left-in left-out intersection into the site and travel east along Nelson Bay Road to make a U-turn at the Port Stephens Drive roundabout. All haulage trucks will be prohibited from using Marsh Road for transport.
Truck movements	Up to 20 laden truck movements per hour and up to 100 laden truck movements per day	Up to 10 laden truck movements per hour equating to up to 120 laden truck movements per day to cater for peak periods, noting the proposal will typically generate 48 laden truck movements per day.
Post Quarry Use	Water based tourist activities or solar farm.	Return to current equivalent of vegetated land and land for agricultural purposes.

Section 2

Strategic Context



2 Strategic Context

2.1 Sand Resource

Sand is an essential resource for industrial manufacturing including cement, concrete and aggregates. The sustainable supply of these is essential to support the circular economy and underpins the sustainable development of NSW including housing construction. The importance of this is recognised by Cement Concrete & Aggregates Australia.

NSW's demand for construction materials is strongly driven by its substantial infrastructure pipeline and housing construction. The National Housing Accord aims for the construction of 1.2 million new and well-located homes by 2029 – of which 377,000 are required in NSW – as well as the NSW Government's \$2.2 billion Housing Infrastructure Plan (2023) which funds enabling infrastructure to support new housing development and continues to drive demand for cement, concrete and aggregates. As of 2026, at least 500 million tonnes of finished quarry products are required to supply the Greater Sydney Region's requirements alone. Outside the Greater Sydney area, regional NSW faces its own housing and infrastructure demands, from new social housing initiatives to upgrades of key corridors.

Meeting these needs poses challenges for material supply, particularly as quarries near urban centres face depletion with sand supply risk emerging as a specific constraint in NSW. Existing reserves of sand are projected to run out around 2030 if new supply is not enabled. Ensuring secure access to cement, concrete, and aggregates – for which sand is a crucial ingredient – will be essential for NSW to deliver on infrastructure and facilitate housing commitments. Without quarries in well located areas close to urban centres, materials need to be transported from more distant locations which adds significant cost, time and logistic complexity to project delivery.

Geological investigations into the available sand resource at the site (**Appendix 8**) confirm the site contains high quality and highly suitable sand for a variety of purposes which will assist in addressing NSW's growing needs including for construction, industrial manufacturing, and retail uses. The site is well located having direct access to Nelson Bay Road (a B-double approved State road) with easy access to the M1 Pacific Motorway extension at Raymond Terrace which is scheduled to be open to traffic in late 2026 and will facilitate faster and easier access to local and regional markets.

The future winding up of sand quarry operations at the Proponent's current operations at 398 Cabbage Tree Road Williamtown mean the proposal will also have significant social and economic benefits being the continued supply of sand to the area as well as ongoing local employment.

2.2 Site Location and Characteristics

The site is in the suburb of Bobs Farm within the Port Stephens LGA, approximately 27km east of the township of Raymond Terrace. Approximately 40% of the site area used for agricultural purposes (olive and fig orchard) with the remainder of the site being vegetated. A small portion of the agricultural use area is occupied by farm sheds with a farm hand residence and a master residence located at the southern end of the existing cleared area within the site to the north of the electricity easement.

There is an existing easement which runs through the north-east of the site to provide access to 3679 Nelson Bay Road and 724 Marsh Road and an electricity easement which runs east-west at the south of the site. These key site characteristics are shown at **Figure 4** and **Photo 1**.

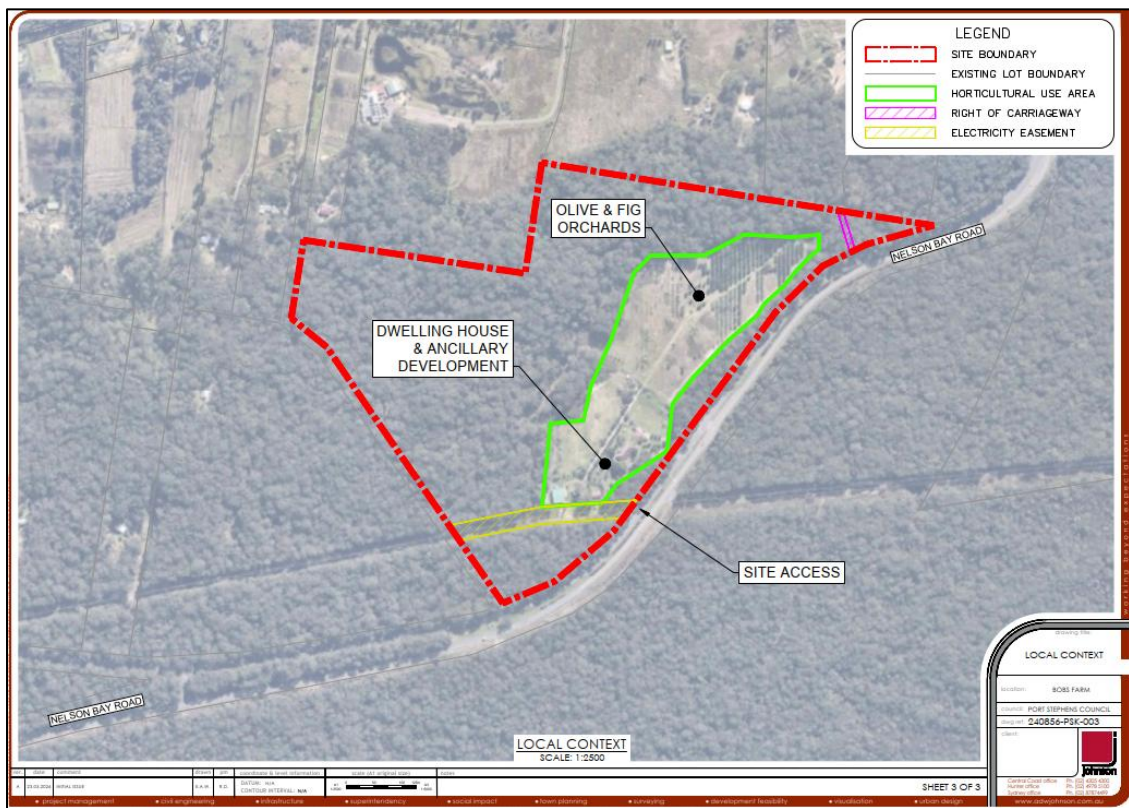


Figure 4: Local Context



Photo 1: Existing horticulture at the Site

The site is largely surrounded by rural residential developments with the most notable non-residential development near the site being the Shark, Ray and All Creatures Rescue immediately north of the site. The Worimi National Park is located to the south of the site. Further east along Nelson Bay Road is the Sunrise Lifestyle Community, an over-55s resort-style development. The location the site and key surrounding development is shown at **Figure 5**.



Figure 5: Local Context

Within a regional geological context, the site is located within the Newcastle Bight coastal sand dune system and consists of Holocene sand dunes deposited within the last 10,000 years (**Figure 6**). A Geological and Resource Assessment for the site is included at **Appendix 8**.

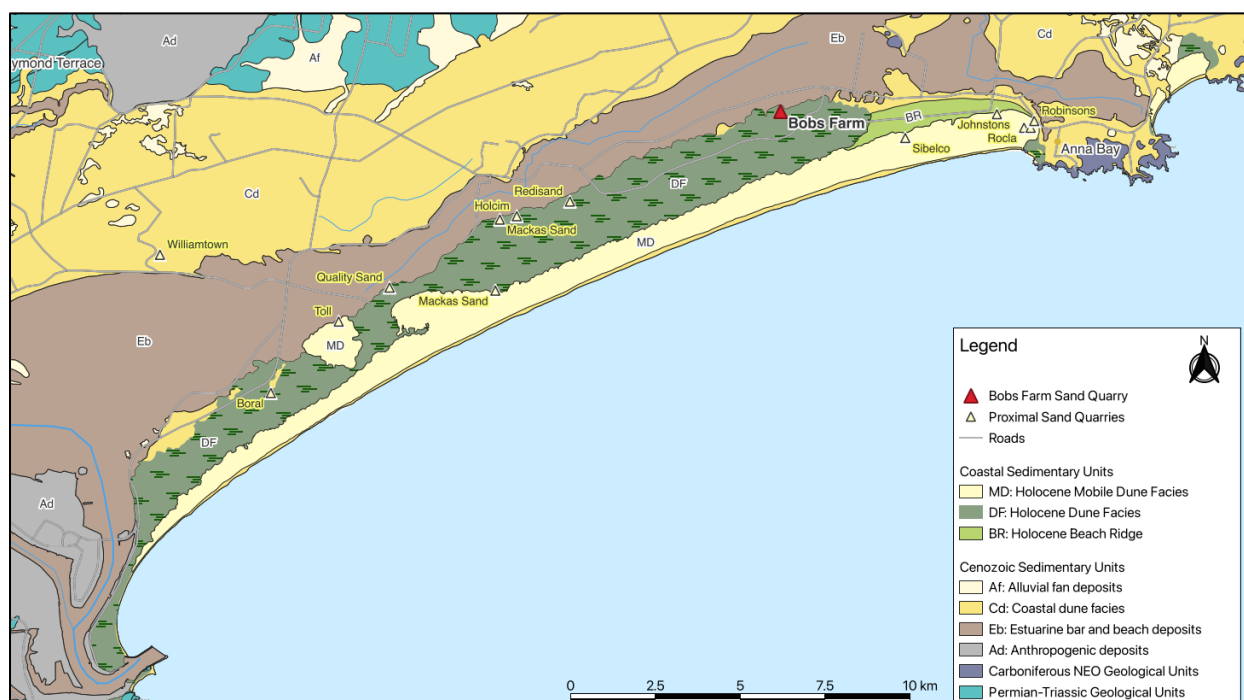


Figure 6: Sedimentary Units

Key features of the site and its surrounds are summarised at **Table 6**.

Table 6: Site Features and Details

Feature	Detail
Legal Description	Lot 254 DP753204
Zoning	RU2 – Rural Landscape
Services	Electricity is available at the site. The site is not connected to reticulated water and sewer; however, Hunter Water Corporation's water main runs adjacent the site along Nelson Bay Road.
Easements	Existing electricity easement running east-west at the southern end of the site.
Access	Existing right-of-carriageway broadly running north-south servicing 3679 Nelson Bay Road and 724 Marsh Road.
Topography	The site is relatively flat with two dune knolls located at the west of the site and one dune knoll at the north. The lowest point of the site is at the north of the site adjacent the swamp associated Plant Community Type. Slopes are mild (typically 0-5%) in the eastern portion of the site and higher (typically 10-50%) over the remainder of the site.
Previous Uses	The site has been used for the purpose of agriculture and associated rural residential development since at least the early 2000s.
Surrounding Development	Worimi National Park is located to the south and east of the site. Immediately adjacent the site to the west, north and north-east largely comprises rural residential development with some commercial development, including the Shark, Ray & All Creatures Rescue. North of the site is the Bobs Farm Public School and further afield is Go Karts Go and the Sunrise Over 55s Lifestyle Community.

Nearby Sensitive Receivers	There are 29 noise sensitive receptors identified in the vicinity of the site. The closest noise sensitive receptor is approximately 55m from the proposed extraction area.
Key Surrounding Infrastructure	Nelson Bay Road (a classified State road) is located south of the site. The M1 Pacific Motorway extension to Raymond Terrace is due to be completed in 2026 is approximately 30km west of the site.
Ecology	Vegetated areas of the site comprise two (2) Plant Community Types being PCT 3544: Coastal Sands Apple-Blackbutt Forest across the majority of the site and PCT 4006: Northern Paperbark-Swamp Mahogany Saw-sedge Forest located in an isolated pocket at the north of the site. The remainder of the site is cleared for horticulture and exotic grassland.
Flooding	There is a small area of land at the north of the site mapped as subject to the 1% AEP flood level
Geotechnical / Acid Sulphate Soils	Underlain by four (4) Unit types, being – Unit 1: very loose grey organic sand; Unit 2a: Very loose aeolian sand; Unit 2b: Loose and medium density orange / yellow aeolian sand; Unit 3: Medium dense marina sand and clayey sand with organic content; and, Unit 4: Dense light brown / grey marine sand. Isolated Potential Acid Sulphate Soils may be present in parts of the soil profile.
Aboriginal Heritage	Five (5) registered AHIMS sites are located at the site.
Historic Heritage	There are no mapped heritage items at the site. The nearest mapped heritage item is the Worimi State Forest to the south of the site.
Bushfire Prone Land	The entire site is mapped as bushfire prone land (Category 1 and Category 3).

2.3 Agreements with Other Parties

The applicant has not entered into any Voluntary Planning Agreements to facilitate the approval of the proposed development.

As outlined at **Section 5**, the Proponent met with landowners associated with the existing right-of-carriageway located at the north-east of the site subsequent to in-person consultation on the project. As part of discussions, the Proponent has agreed to various upgrades and mitigations including to bitumen seal the right-of-carriageway including the access point at Nelson Bay Road, and to install a vegetated bund within the subject site to mitigate visual impacts. These upgrades would take place post-determination of the application.

2.4 Key Strategies and Plans

The proposal aligns with State, District and Local planning objectives as outlined in this section.

2.4.1 Hunter Regional Plan 2041

The *Hunter Regional Plan 2041* (HRP) sets out the NSW Government's strategic vision for the Hunter region. The plan aims to strengthen the region's economic resilience, maintain its well-established economic and employment bases, and build on its existing strengths to foster greater market and industry diversity. The plan also aims to protect its diverse terrestrial and aquatic ecological systems, conserve its heritage values and create thriving communities that enrich the quality of life and wellbeing of the residents.

The following objectives of the HRP specifically relate to the proposal:

- ***Objective 1, to diversify the Hunter's mining, energy and industrial capacity and ensuring the Hunter will be a leader in a 21st century industrial economy.***

The proposal will contribute to the Hunter's industrial capacity by directly retaining and promoting jobs in the area as well as ensuring projects and sub-industries which rely on sand can be provided with a stable and readily available resource. The proposal responds well to the characteristics of the site and is appropriately located.

The quarry will contribute to the regional economy of Port Stephens, the Hunter and broader markets into the future.

- *Objective 9, to sustain and balance productive rural landscapes and acknowledging NSW needs a reliable supply of construction materials to support continued growth including sand.*

The proposal will actively contribute to and assist with the supply of sand to various industrial, manufacturing and retail industries locally and across NSW. The resource will support the continued growth of the Hunter region and the future demand across NSW.

2.4.2 Port Stephens Local Strategic Planning Statement

The Port Stephens Local Strategic Planning Statement (LSPS) sets out the goals and objectives for land use planning across the LGA. The following planning priorities of the LSPS specifically relate to the proposal:

Planning Priority 2: Make business growth easier

This planning priority states that by creating an environment where business can thrive, Council can facilitate the growth of innovative and successful enterprise and ensure existing industries can continue to provide jobs and opportunities in our LGA.

The proposal will directly contribute to achieving this planning priority.

2.4.3 Port Stephens Community Strategic Plan 2022-2032

The Port Stephens Community Strategic Plan (CSP) captures priorities of the community and guides decision-making. These are directed into selective key values and strategic outcomes that shape the communities' interests and desired outcomes.

The following community outcomes and values of the CSP specifically relate to the proposal:

P1 Strong economy, vibrant local businesses, active investment

Our community has an adaptable, sustainable and diverse economy

The proposal will directly contribute to achieving this planning priority.

2.4.4 Port Stephens Regional Economic Development Strategy 2021-2025

The Port Stephens Economic Development Strategy (EDS) 2021 – 2025 sets out the long-term economic vision for the Port Stephens LGA. The vision of the EDS is to build a vibrant and liveable place that supports local economic growth. The four strategic priorities that support and enable business growth across Port Stephens relate to:

- *Investment Attractions: Support opportunities for innovation and entrepreneurship to attract new business and investment.*
- *Sustainability & Resilience: Support businesses to be agile resilient and innovative.*
- *Future Workforce: Building skills and capabilities to ensure skilled future workforce*
- *Support Local: Support the development and promote the benefits of local supply chains*

The proposal is consistent with the EDS through the continuation of economic growth within the extractive resource industry, ongoing supply of resources for use in manufacturing and retail purposes, and ongoing employment in the area.

2.5 Design Drivers

Several key design drivers informed the proposed layout and operations which were informed by community and agency feedback to the previous and current application as well as technical investigations at the site.

These key design drivers are detailed below –

Groundwater Table Buffer

Avoiding impacts to the groundwater table was one of the principal design drivers to avoid adverse environmental impacts during and post quarry activities.

The proposed buffer of 0.7m between the predicted groundwater table and final extraction was adopted based on agency feedback from the (then) Department of Planning, Industry and Environment: Water for the previous application for the site. It was recommended that extraction be limited to a height that maintains at least a 0.7m buffer above the groundwater table with the final landform being a minimum of one (1) metre above the groundwater table consistent with other approved projects of the area. The current proposal adopted these recommendations. The Proponent operates under the same parameters at its Cabbage Tree Road sand quarry.

Avoiding Endangered Ecological Communities

A small area at the north of the site contains Northern Paperbark-Swamp Mahogany Saw-sedge Forest which is listed as an Endangered Ecological Community (EEC) and is associated with a Groundwater Dependent Ecosystems.

Due to the higher conservation value of this area of the site, it was excluded from the proposed extraction area. An additional buffer between the final location of extraction and this area has also been provided for by way of ceasing extraction within Stage 4 at the 8.5m AHD contour. The result of this is the existing natural topography and vegetation adjacent the EEC and sand extraction will be retained.

Mitigate conflicts with existing accesses

There is an existing right-of-carriageway which runs through the north-east portion of the site which gives access to 3691 Nelson Bay Road and 724 Marsh Road. To avoid conflicts with the proposed acceleration lane and the right-of-carriageway, the location of the proposed new left-in left-out access to the site was sited to be as far south as was possible of the processing and sales area (Stage 1) so that the required length of the acceleration lane did not interfere with the right-of-carriageway.

Haulage Truck Access

The previous SSD application for a sand quarry initially proposed a larger site with all vehicle access running adjacent the Bobs Farm Public School on Marsh Road (a local road). These proposed access arrangements raised significant concern around safety and amenity impacts on existing rural-residential properties and the primary school. As a result, the proposed access was ultimately amended to be via Nelson Bay Road.

This feedback was incorporated into the current proposal and the current proposal also seeks to facilitate access by way of a new intersection onto Nelson Bay Road.

Light Vehicle Only Access

Retention of the existing accessway at the electricity easement was a key design driver to avoid potential conflicts with light vehicles and heavy vehicles entering the site and to keep a dedicated light vehicle access to the site. Retention of the existing light vehicle access at the electricity easement is also sought to maintain the current status of access for the existing dwelling which will also be used after the quarry ceases operations.

Site Boundary Buffers

Maintaining appropriate buffers between areas of proposed extraction and surrounding development as well as to the public domain was a key design driver in determining the proposed layout. Larger buffers of 15m to lot boundaries will contribute toward maintaining fauna access around the site and will also contribute to visual screening to and from the site.

Section 3

Project

Description

3 Project Description

3.1 Objectives of the Project

The Bobs Farm Sand Quarry is for the extraction of sand at 3631 Nelson Bay Road Bobs Farm with the key objectives of the project being –

- Establish a sand quarry in close proximity to Newcastle Sand's existing operations at 398 Cabbage Tree Road, Williamtown to continue to contribute to the supply of sand to the region after the closure of the Cabbage Tree Road quarry including ongoing employment of staff.
- Support NSW's construction and manufacturing sectors to reduce reliance on interstate imports and deliver other local and regional economic benefits.
- Minimise, mitigate and manage potential environmental and amenity impacts resulting from the proposed development.

3.2 Project Overview

The Proponent seeks to develop the site for an extractive industry as a sand quarry. Consent is sought for annual extraction of 530,000tpa for 10 years, equating to a total life-of-quarry of approximately 4.4 million tonnes. Anticipated sales will average 10,000 to 12,000 tonnes per week.

The site has an area of approximately 40.9ha with the proposal seeking to use most of the subject site for extractive industry purposes with the exception of:

- A minimum 15m buffer between the site boundary and any areas of extraction
- The existing right-of-carriageway including a 3m buffer which is located in the north-east of the site as well as the area east of this right-of-carriageway
- The existing electricity easement at the southern end of the site including a 3m buffer, and the entire vegetated area to the south of this easement

No dredging below the groundwater table is proposed with only dry (surface) sand extraction being employed.

Preparation of the site and proposed sand quarry operations would broadly comprise:

- Construction of a new left-in left-out intersection onto Nelson Bay Road
- Establishment of processing and sales area including installation of onsite office (Atco structure), installation of screening and wash facilities, designation of stockpiling areas, associated ancillary structures, and use of the existing dwelling at the site for a manager's residence
- Staged vegetation clearing and topsoil stripping in accordance with the approved staging plan with topsoil stored onsite to be used for future rehabilitation works
- Dry extraction down to a maximum of 0.7m above the predicted ground water table
- Ongoing rehabilitation.

Day-to-day operations would require two (2) articulated haul trucks (Volvo A40G) loaded by a hydraulic excavator (Volvo EC350) to transport sand from the extraction area to the on-site processing facility being a full electric screen and wash plant. Only one haul truck will be in the relevant sand extraction area at any one time with the other being in the processing and sales area.

Equipment will include excavators, front-end loaders, haul trucks, conveyors and water carts. Operations will utilise modern, well-maintained equipment incorporating advanced noise attenuation and water saving measures as well as fuel efficiency technology to reduce operational impacts on the surrounding environment.

Up to 6,000tpa of VENM / ENM certified material is proposed to be brought from offsite for onsite processing typically by prior arrangement.

The site benefits from a Water Access Licence (WAL5960) for 40ML per annum which is proposed to be used for sand washing purposes. Approximately 85% of extracted sand will be washed requiring a total of approximately 32ML per annum which is within the current Water Access Licence.

All essential services are available, or able to be made available, at the site including electricity, water tanks for potable water, pump-out system for sewage management associated with additional WCs, stormwater management and suitable vehicular access.

Sales would be by haulage truck at a maximum of 10 loaded trucks per hour equating to a maximum of 120 loaded trucks per day but with an average of 46 loaded trucks per day. All transport trucks exiting the site would travel east along Nelson Bay Road and complete a U-turn at the Port Stephens Drive roundabout. Haulage trucks will be prohibited from using Marsh Road.

The site will be accessed by way of a new left-in left-out intersection onto Nelson Bay Road. The existing access to the site at the electricity easement is proposed to be retained for light vehicle access for the quarry, access to the manager's residence, as well as post-quarry access to the dwelling.

Progressive rehabilitation of exhausted areas will take place in accordance with the approved rehabilitation plan. The proposed post-quarry use of the site is to return the site to its current condition, being the same ratio of vegetated land and land used for the purpose of extensive agriculture.

Table 7 sets out a summary of the proposal. A copy of the plan set for the proposal is at **Appendix 9**.

Table 7: Summary of Proposal

Project Element	Summary of Project	
Proposed Development	Extractive Industry (Sand quarry)	
Resource	Sand	
Site Area	40.9ha	
Extraction Area	31.4ha	
Extraction Method	Dry (surface) extraction only	
Annual Production	Up to 530,000tpa	
Offsite resource throughput	6,000tpa of VENM / ENM certified material brought from offsite for onsite processing	
Quarry Life	10 years	
General Infrastructure	• New left-in left-out intersection • Weighbridge • Processing plant infrastructure • Refuelling bay including up to 35,000L aboveground bunded diesel tank • Manager's residence (existing)	
Product Transport	Transport by truck with maximum of 120 laden trucks per day to cater for peak capacity but with an average of 46 laden trucks per day.	
Water Management	An array of water storages are proposed to contain and control runoff at the project – including bunding and storage for reuse of water.	
Construction Workforce	70 to 100 workers	
Operational Workforce	15 full time ongoing employees	
Hours of Operation	Sand processing, washing and production	• 7:00 am to 5:00 pm, Monday to Friday • 7:00 am to 4:00 pm, Saturdays
	Sales	• 6:00 am to 6:00 pm, Monday to Friday • 7:00 am to 4:00 pm, Saturdays • Closed Sundays and Public Holidays
	Maintenance activities	• 24 hours 7 days a week, so long as maintenance activities are not audible for nearby sensitive receivers
Site Rehabilitation	Progressive rehabilitation	
Capital Investment Value	\$25,875,365.64 (excl GST)	

3.3 Project Area

The site 3631 Nelson Bay Road Bobs Farm within the Port Stephens LGA, approximately 27km east of the township of Raymond Terrace. There is an existing easement which runs through the north-east of the site to provide access to 3679 Nelson Bay Road and 724 Marsh Road. An electricity easement runs east-west at the south of the site.

A plan of the site is at **Figure 7** which includes the proposed sand extraction boundary, buffers and easements, the location of the processing and sales areas within the site, new access including deceleration and acceleration lanes, and key surrounding development. The area of the site containing the existing dwelling house and ancillary sheds are proposed to be retained for use as a manager's residence and so are duly shown as part of the quarry use, but not for proposed extraction.

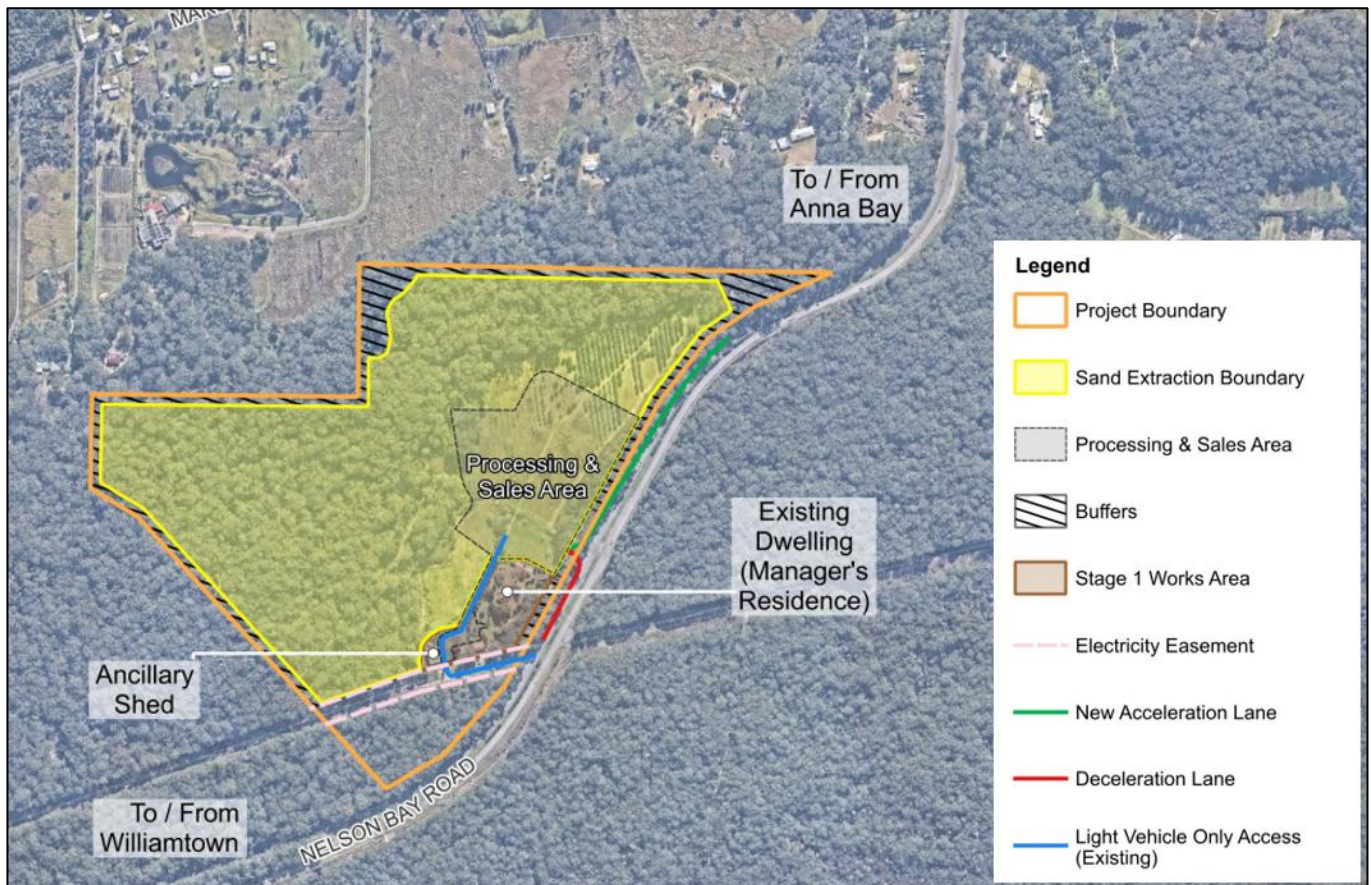


Figure 7: Site layout

3.4 Physical Layout and Design

The layout and design of the processing and sales area is shown at **Figure 8**. This area of the site is where screening, washing and stockpiling of sand will take place, as well as the location of ancillary structures and development including for water storage, weigh bridge, site office, hardstand areas, and fuel storage.

The location of the processing and sales area aligns with the location of the proposed new access to the site for haulage trucks, as well as internal haul routes for trucks associated with transporting excavated sand from the relevant extraction stage to the processing and sales area.

The layout and design of the processing and sales area includes provision for a weighbridge and separate access back to the stockpile area for overloaded trucks to offload excess resource at the overload tip off.

Key elements of the processing and sales area include hardstand areas for parking, site office, water recycling infrastructure and processing of fines, surge feed, feed dump, screens, fuel cell and fuel bay, and stockpiling areas for landscape sand and civil sand, white sand, washed sand, and glass sand.

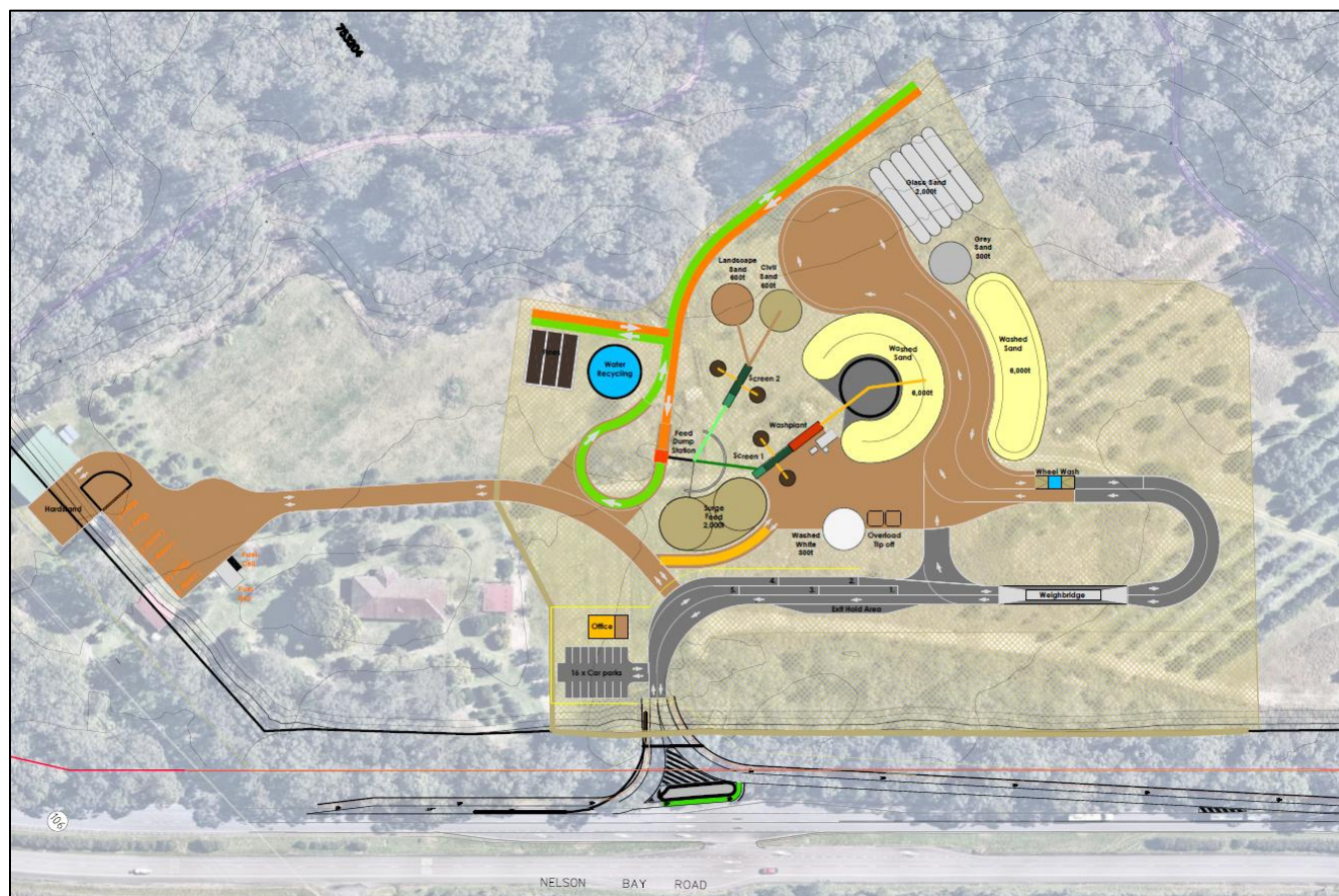


Figure 8: Processing and Sales Area Plan

Access

All access to the site is proposed directly from Nelson Bay Road involving the construction of a new left-in left-out intersection into the site directly from Nelson Bay Road which will accommodate articulated haulage vehicles for the transport of sand. The existing access to the site via the electricity easement is proposed to be retained for access to the manager's dwelling as well as light vehicle access to the site. Haulage trucks would be prohibited from using the retained light vehicle access.

The location of the proposed new access has been sited to ensure that the new deceleration lane commences after the existing access at the electricity easement. This location avoids conflicts with light vehicles using the light vehicle access while ensuring a sufficient length of deceleration for haulage trucks to safely enter the site.

The location of the proposed acceleration lane has been sited to ensure that haulage trucks have a sufficient length of acceleration lane to achieve the required 80km to safely merge with traffic while also avoiding any overlap with the existing right-of-carriageway which services 3679 Nelson Bay Road and 724 Marsh Road.

Excerpts of the proposed intersection are at **Figure 9** and **Figure 10**. A copy of the proposed intersection's Strategic Design Plan Set is at **Appendix 10**.

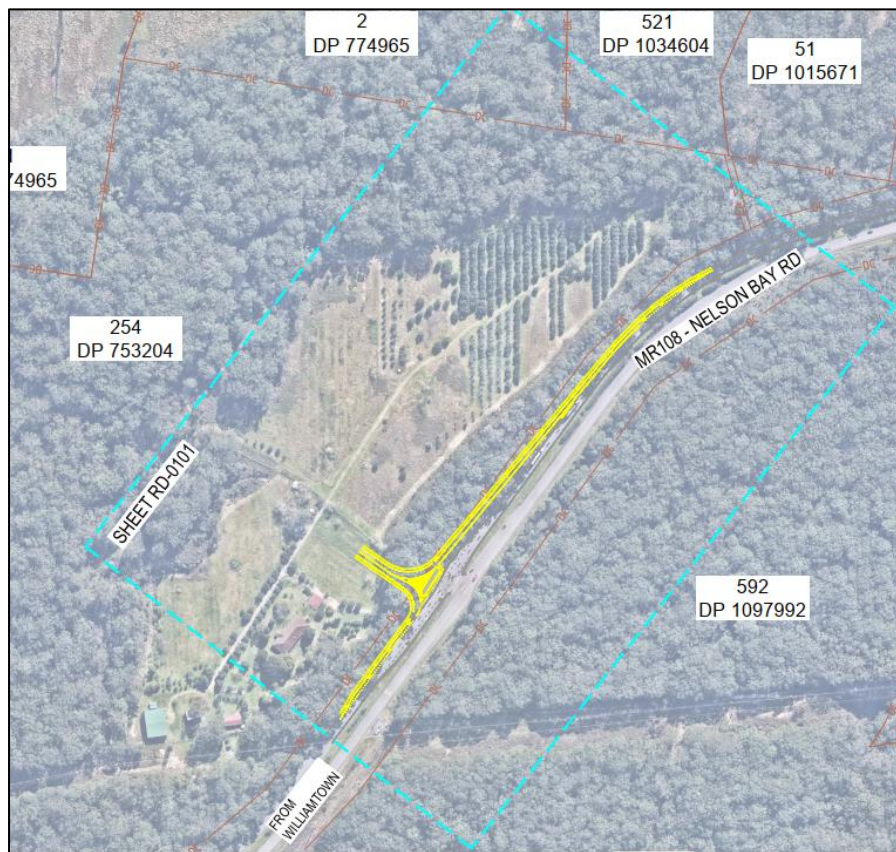


Figure 9: Intersection Location

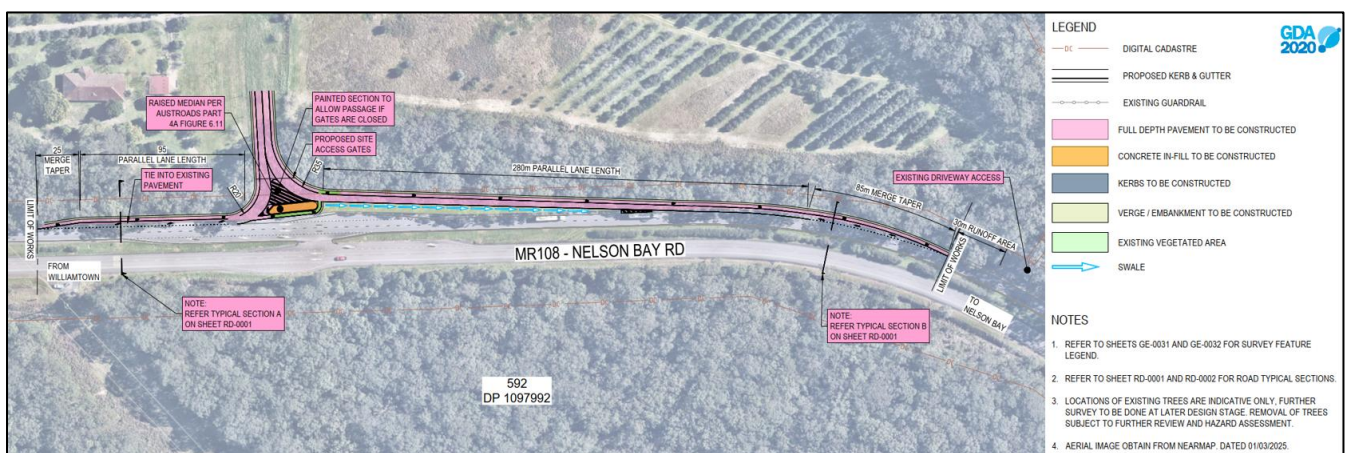


Figure 10: Intersection Detail

3.5 Uses and Activities

This section describes the key steps for sand extraction, processing and sales activities associated with the quarry.

3.5.1 Extraction Activities

Sand Extraction

After the designated area for sand extraction has been prepared by having vegetation and topsoil removed and stockpiled within the site for future use, an excavator extracts from the face at the final quarry floor level being 0.7m above the predicted groundwater level using conventional dry extraction methods only. Sand material is loaded into a dump truck for haulage within the site to the processing and sales area. Only one truck would be present in the extraction area at one time.

3.5.2 Processing and Sales Activities

Sand processing activities relate to the process for screening, washing and stockpiling of sand within the processing and sales area.

Dry Processing

For sand which is to undergo dry processing (approximately 15%), a truck offloads sand into a grate at the feed dump station which automatically moves the sand to Screen 2 via a conveyor. Screening of sand occurs over an electric powered vibrating inclined 4mm screen with oversized material being ejected either side of the screen (**Photo 2**). Oversized materials (sticks, roots, sand balls) are collected by a loader and hauled via Moxey to be used as part of rehabilitation. Dry processed sand is then stockpiled via conveyors ready for the sales loader to load directly into sales trucks.



Photo 2: Screening Process

Wet Processing

For sand which is to undergo wet processing requiring sand washing (approximately 85%), a truck offloads sand into a grate at the feed dump station which automatically moves the sand to Screen 1 via a conveyor. Screening of sand occurs over an electric powered vibrating inclined 4mm screen with oversized material being ejected either side of the screen. Oversized materials (sticks, roots, sand balls) are collected by a loader and hauled via Moxey to be used as part of rehabilitation.

Screened material is directly fed into the electrically powered wash plant where it is agitated by 3,000 litres per minute of water to remove silts from the sand particles. Washed material is dewatered via an inclined screw and vibrating dewatering deck which discharges onto the conveyors where it forms the sales radial stockpile (**Photo 3, Photo 4 and Photo 5**). Additional dewatering occurs under the stockpile via subsoil drains and is returned for water recycling.

Washed sand is then stockpiled via conveyors ready for the sales loader to load directly into sales trucks.



Photo 3: Screening, Filtering and Washing (left); Sand Washing Water Prior to Recycling (right)



Photo 4: Dewatering Process (left); Conveyor and Stockpiling (right)

Water Recycling

The process incorporates water recycling and water saving measures whereby dirty water is recovered from the wash plant, stockpile recovery and sludge bays and is plumbed to the treatment system (the water recycling area) where organic flocculants and coagulants are added to the conical tanks to accelerate the settling of silts.

The clean water weirs off the top of the settling tanks and is directed to the clean water storage tanks for reuse (**Photo 7**), to commence the washing process again. Additional water to maintain balance will occur as required from water accessed via the site's Water Access Licence which will be stored in water tanks. Factoring in water saving measures, the sand washing process requires approximately eighty-two (82) litres of water to produce one (1) tonne of sand. The settling tanks are periodically emptied via automated discharge to sludge / fines settling bays for dewatering.



Photo 5: Recycling tanks

Sludge / Fines

Sludge / fines are discharged into concrete block bays with a gate where over three (3) to five (5) days it dries to a spadable consistency. The generation of fines is 30-50kg per tonne of sand washed or approximately 240t per week.

The fines are then loaded out and distributed and blended with the topsoil as part of rehabilitation which aids in moisture retention in the finished surface.

Sales

Delivery trucks who are inducted and have established accounts will enter the site via the proposed new intersection from Nelson Bay Road. Drivers weigh in on the unmanned weighbridge, respond to Workplace Health and Safety questions, and select the product for purchase. Haulage trucks proceed through the site in accordance with the site's traffic management plan, calling up and stopping when required. Delivery trucks are directed to the product being collected via the sales loader which stores the truck's information which has been relayed from the weighbridge system.

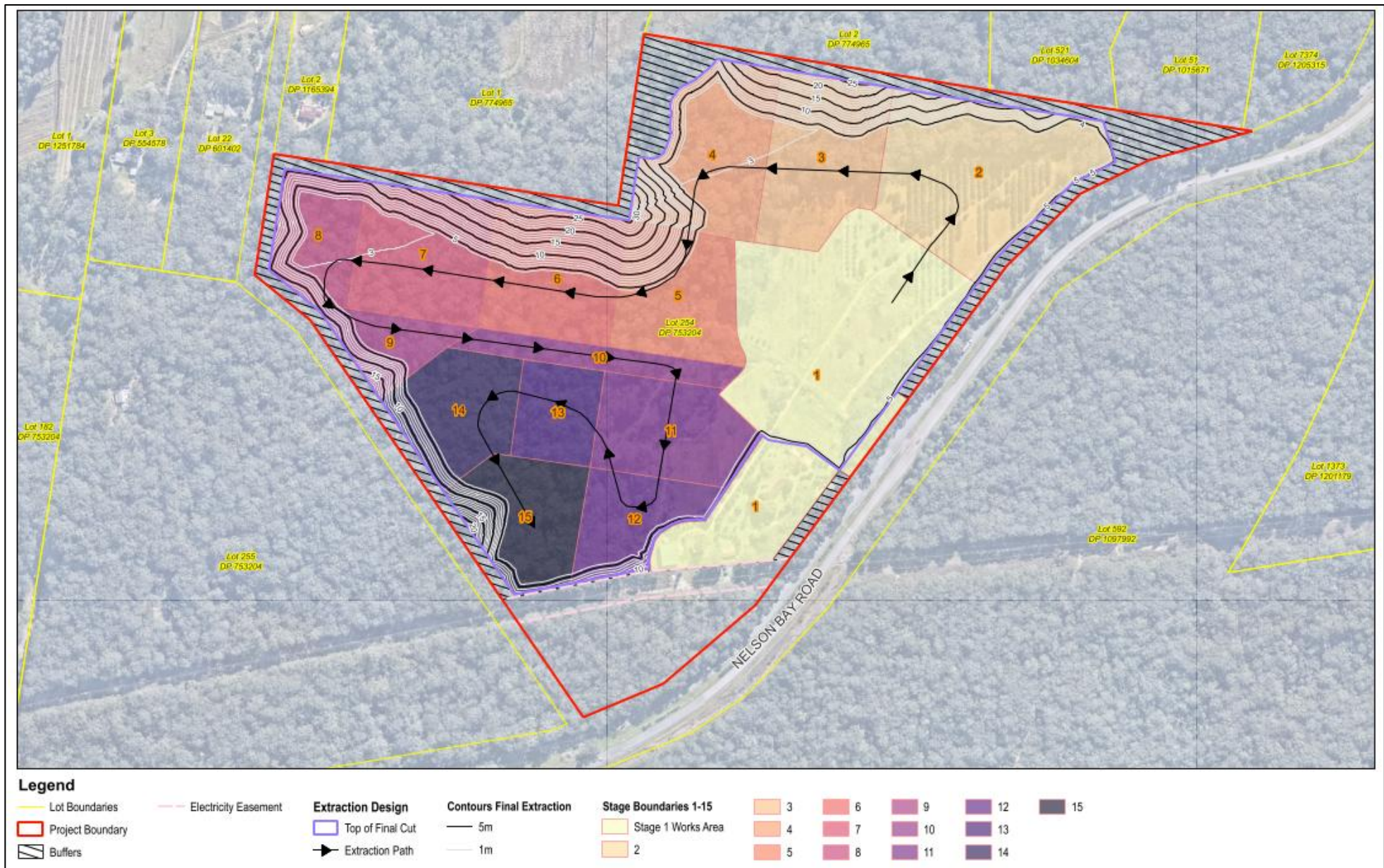
The sales loader will load the truck accurately considering maximum axel weights. The weighbridge will confirm the weight and if loaded successfully a final docket will be produced and the truck can exit the site. In the event overload has occurred, the truck will re-enter the stockpile area by making a right turn after the weighbridge to tip off excess material and the truck commences the weighing process again prior to exiting the site.

3.6 Staging

The development is proposed to take place over 15 stages as described in this section. For clarity, staging detail relates to operational staging and a staged development consent is not being sought.

An excerpt of the Staging Plan for the project is at **Figure 11** and illustrated within the plans provided at **Appendix 9**. Cross-sections for the project have been prepared to illustrate staging for the project and their locations are shown at **Figure 12**.

Timing and staging of extraction are proposed to take place generally in accordance with the Staging Plan. However, flexibility is required to be able to respond to market demand for different types of sands located across the site. As a scenario of this, while extraction may have progressed to Stage 4, due to demand for a type of sand found within a different future stage, extraction may be undertaken in a non-sequential stage but only up to a maximum amount of cleared land at any one time.



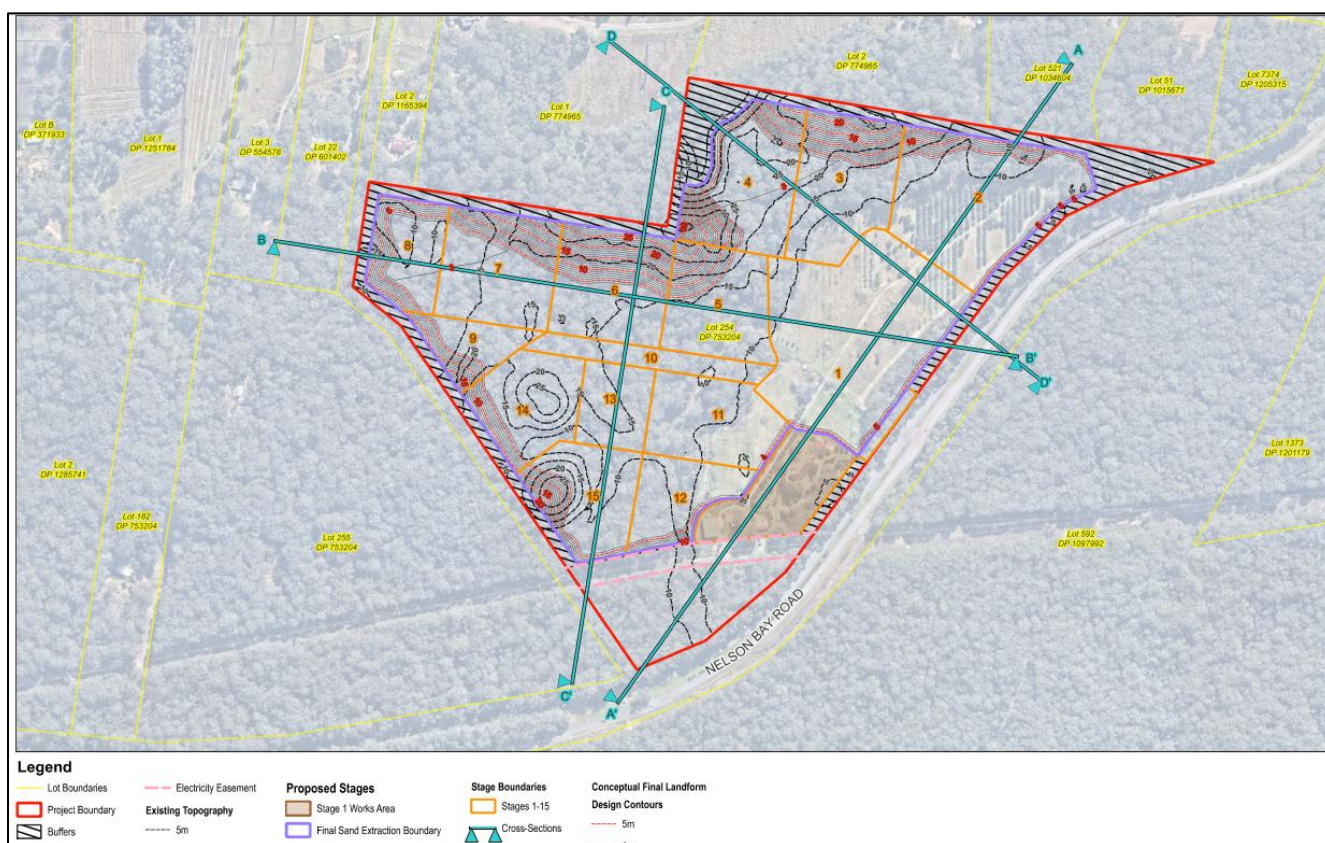


Figure 12: Cross-Section Plan locations

Stage 1 – Processing and Sales Area

Stage 1 principally comprises establishing the Processing and Sales Area where sand washing and stockpiling processes will take place. Part of the area designated as Stage 1 includes the area of the existing dwelling to be used as a manager's residence and other existing ancillary development. These structures will be associated with processing and sales operations but will not comprise part of any sand extraction area.

The part of Stage 1 to be used for processing and sales will be prepared by first clearing vegetation in the area and extracting and stockpiling sand down to 0.7m above the predicted groundwater level (anticipated to be approximately 2m-3m below the existing ground level at this part of the site). The processing and sales area will then be covered with 0.3m of gravel to prepare a pad for the installation of infrastructure required including screens, weighbridge, office and other infrastructure. The final relative level (RL) for Stage 1 will be approximately 1m above the predicted groundwater table.

As part of the quarry closure and rehabilitation, the 0.3m of gravel for the processing and sales area pad will be replaced with 0.3m of topsoil.

Figure 13 is a cross-section demonstrating the above.

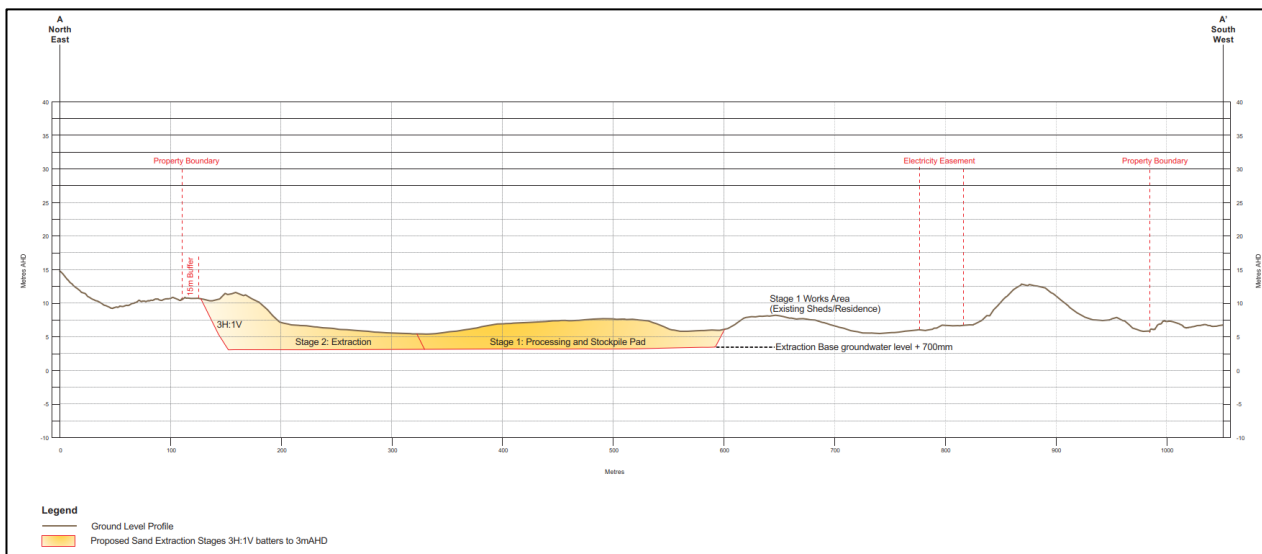


Figure 13: Cross section A

Stage 2 to Stage 4

After the Processing and Sales Area pad associated with Stage 1 is established, surveyor pegs will be used to identify the northern top of cut boundaries for subsequent stages to ensure operators stay within the extraction area and clearing activities are undertaken in accordance with extractive operations described at **Section 3.5**.

Sand will be extracted from the RL of 0.7m above the predicted groundwater table with sand material continuing to be extracted from this RL. Dry sand will flow down to the excavator to be loaded onto the haul truck to be taken to the processing and sales area. The quarry will use two trucks for transporting sand within the quarry; however, only one truck will be in the extraction area at any one time. When a truck is in the extraction stage, the other will be in the processing and sales area.

It is proposed that extraction would halt at the completion of Stage 2 until onsite noise monitoring has taken place to determine acoustic mitigations required, if any, for subsequent stages. This recommended noise mitigation is explained further at **Section 6.2**.

Proposed Stage 4 is at the north of the site adjacent the area of the site which contains PCT 4006: Northern Paperbark-Swamp Mahogany Saw Sedge Forest which is identified as a Threatened Ecological Community (TEC). This PCT also aligns with a Groundwater Dependent Ecosystem (GDE) in this part of the site. This northern area of the site is also mapped as flood affected land. To maintain a buffer to this PCT, the GDE, and not to impact land identified as being subject to the 1% AEP flood level, Stage 4 is proposed to maintain a top of cut along the 8.5m AHD contour. Extraction would then maintain an associated 3H:1V batter to within the extraction area down to the quarry floor and so would not impact PCT 4006, the GDE or increase flood risks. **Figure 14** is a cross-section demonstrating the above.

As extraction progresses, final landforms will be created comprising a 3H:1V batter from the top of cut to the quarry pit floor and rehabilitated as soon as practicable with topsoil and vegetation which was stockpiled onsite as part of the preparation of each stage. Stockpiled topsoil to be used for rehabilitation will be used in accordance with the recommendations of the Soil Management Plan (**Appendix 11**).

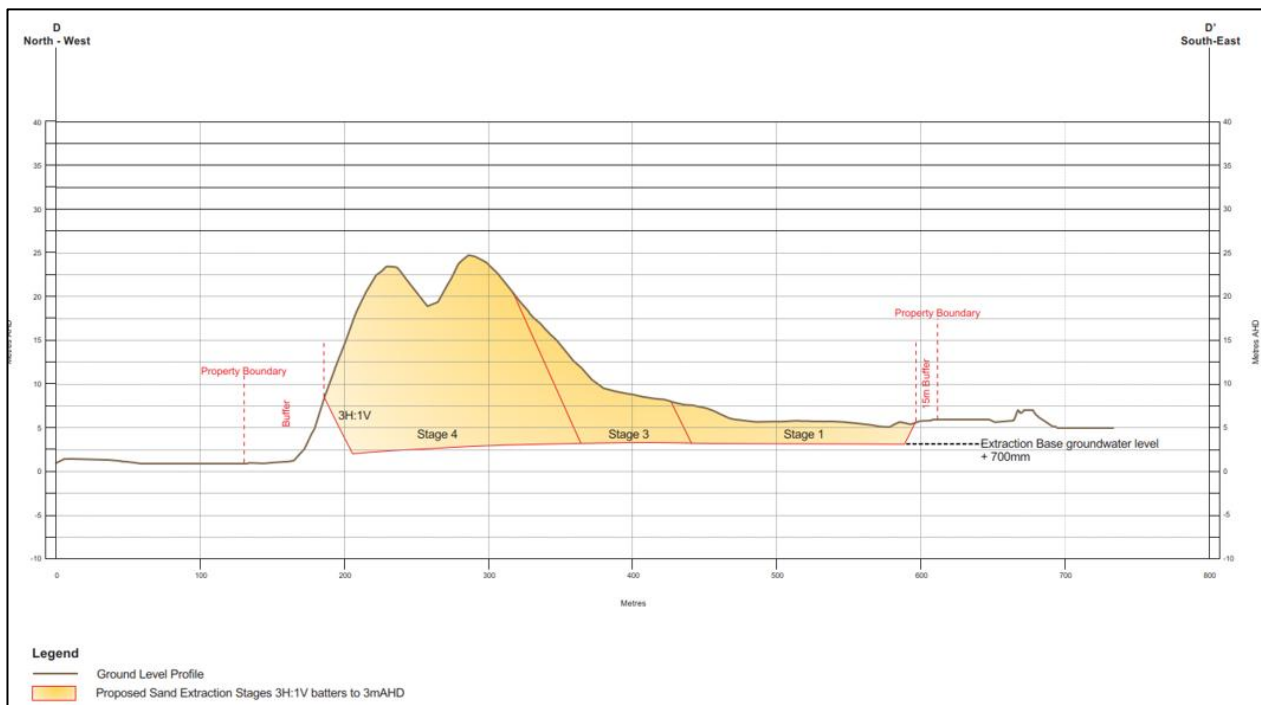


Figure 14: Cross section D (Stage 1, Stage 3 and Stage 4)

Stage 5 to Stage 15

Extraction will continue for each stage from the final RL of 0.7m above the predicted groundwater table. Dry sand will flow down to the excavator to be loaded onto the haul truck to be taken to the Processing and Sales Area. The quarry will use two trucks for transporting sand within the quarry; however, only one truck will be in the extraction area at any one time. When a truck is in the extraction stage, the other will be in the Processing and Sales area.

As extraction progresses, final landforms will be created comprising a 3H:1V batter from the top of cut to the quarry pit floor and rehabilitated as soon as practicable with topsoil and vegetation which was stockpiled onsite as part of the preparation of each stage. Stockpiled topsoil to be used for rehabilitation will be used in accordance with the recommendations of the Soil Management Plan (**Appendix 11**).

Figure 15 and Figure 16 are cross-sections demonstrating the above during these stages.

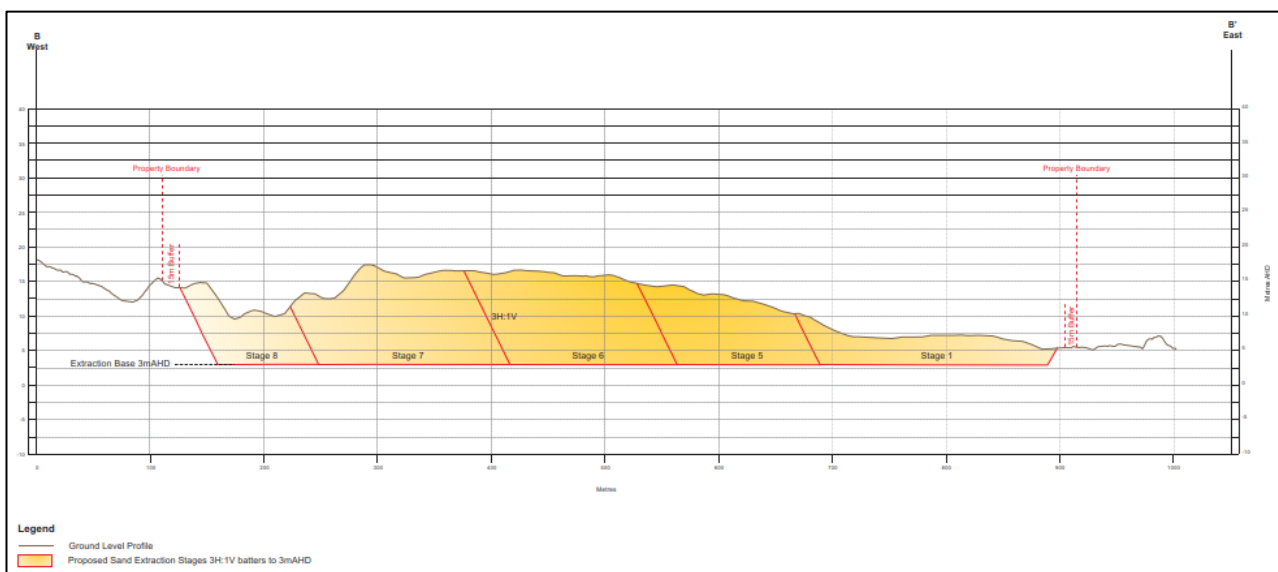


Figure 15: Cross section B (Stage 1, Stage 5, Stage 6, Stage 7 and Stage 8)

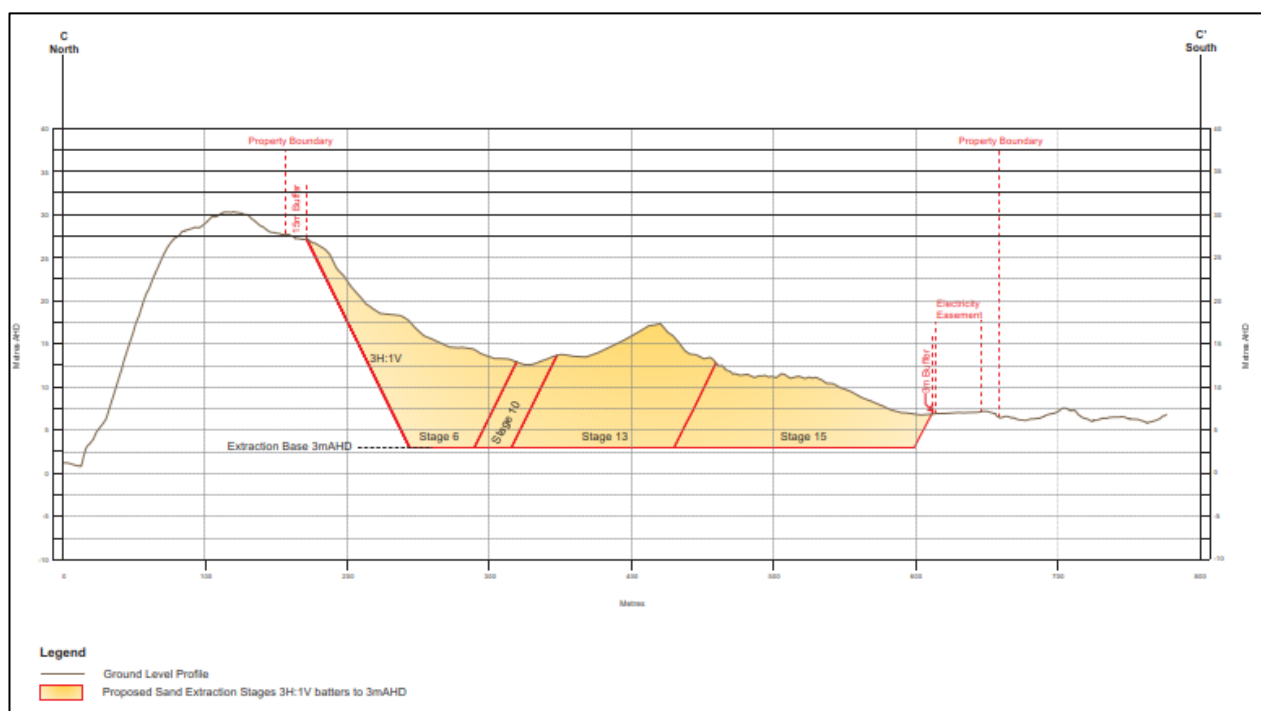


Figure 16: Cross section C (Stage 6, Stage 10, Stage 13 and Stage 15)

3.7 Final Landform, Rehabilitation and End Use

Rehabilitation of the site and establishing of the final landform will take place in accordance with the Rehabilitation Strategy provided at **Appendix 12**. Excavation will maintain 3H:1V batters from the top of cut to the quarry floor with these areas being progressively rehabilitated to form the final quarry landform.

The primary rehabilitation goal is to create a final land use which comprises a combination of rehabilitated native vegetation and managed grassland areas. The final land use is intended to reflect the existing balance of vegetated and non-vegetated (grassland / agricultural) areas across the site.

Progressive rehabilitation will be undertaken to minimise the extent of disturbance at any one time to enable the timely stabilisation and restoration of disturbed areas. Rehabilitation during active quarrying will comprise management of topsoil, flora and fauna and waste and once sand extraction is complete within the approved areas, temporary infrastructure such as haul roads will be removed.

The final landform will be established by shaping the relevant area of the site prior to reapplication of topsoil and seeding.

Rehabilitation monitoring and management will include post-closure inspections, vegetation establishment surveys, weed assessments, groundwater level confirmation, corrective measures such as infill planting or additional stabilisation, weeds and feral animal control, erosion and drainage control works, environmental monitoring and repair of fencing, access tracks and other general related land management activities.

The proposed end use for the site will be for agricultural purposes within managed lands areas including retention of a small hardstand area, intersection node, and limited car parking area retained as part of the final land use. Revegetated areas will be maintained and monitored in accordance with requirements of the Rehabilitation Plan and biodiversity requirements.

Conceptual final landform contours and final land uses plan are shown at **Figure 17** and **Figure 18**.

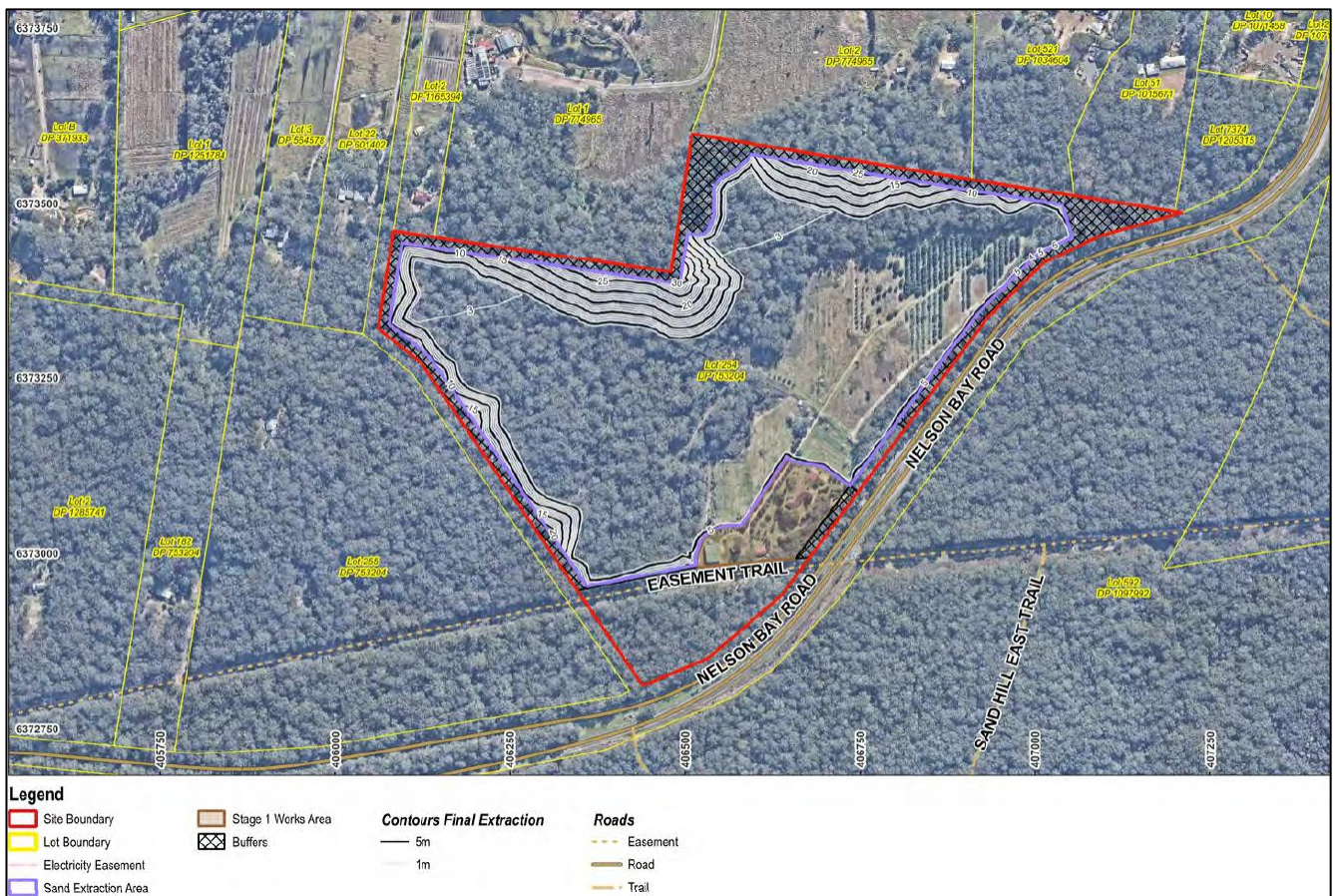


Figure 17: Final topography

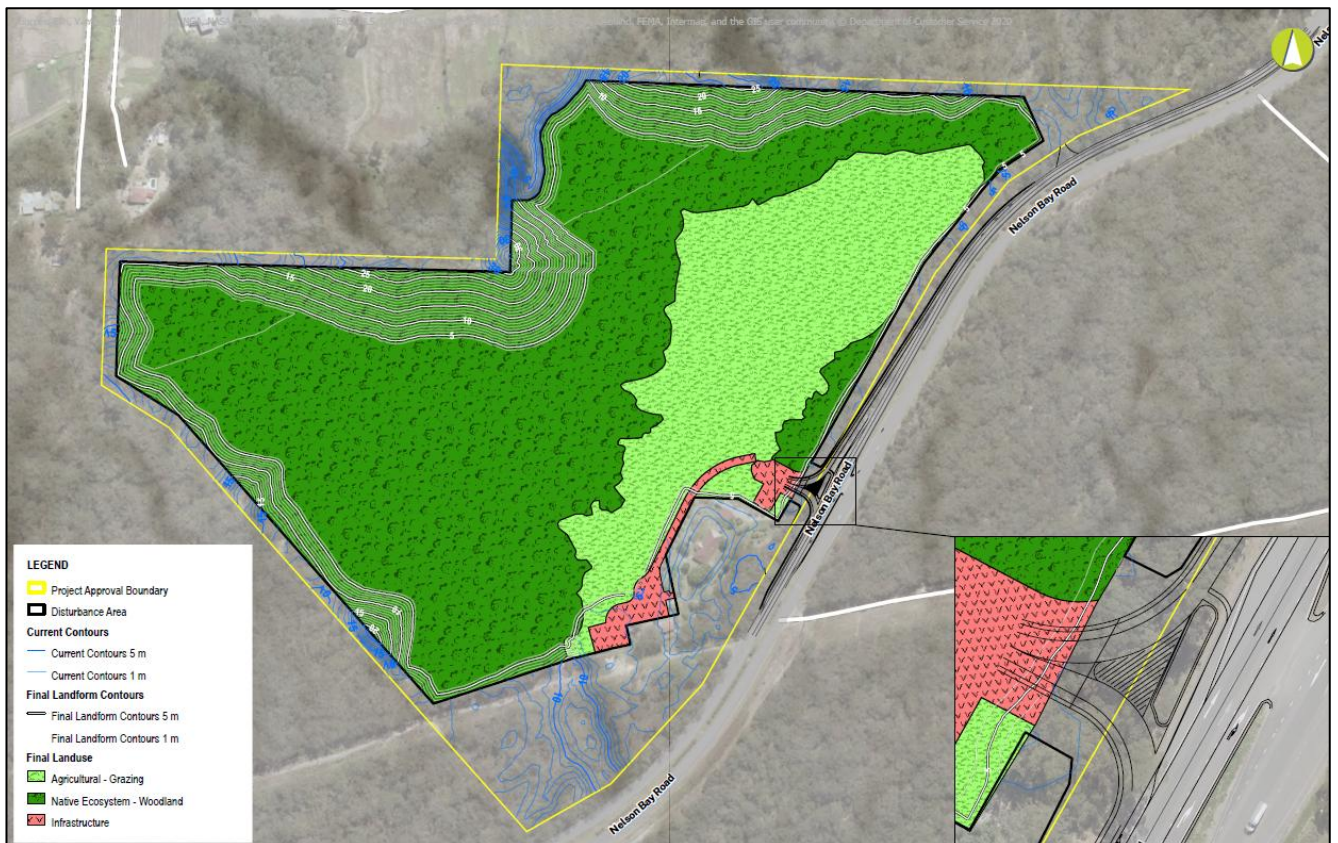


Figure 18: Final Landform and Land Use

3.8 Waste Management

Waste generation associated with the project would primarily comprise of –

- Minor construction waste during site establishment
- General operational waste from staff amenities
- Maintenance related wastes from plant servicing
- Sediment and fines generated during sand washing processes

Waste volumes associated with the project are expected to be minor and typical of dry sand quarry operations in rural areas. Waste would be managed in accordance with the waste hierarchy principles of avoidance, reuse, recycling and appropriate disposal.

Legislative and Policy Context

The SEARs require a waste management assessment, including estimates of the quantity and nature of the waste streams that would be generated or received by the development and any measures that would be implemented to minimise, manage or dispose of these waste streams.

Waste management associated with the proposed development will be undertaken in accordance with relevant NSW legislation and policy, including –

- Waste Avoidance and Resource Recovery Act 2001 (WARR Act)
- Protection of the Environment Operations Act 1997 (POEO Act)
- EPA Waste Classification Guidelines (EPA, 2014)
- NSW Waste and Sustainable Materials Strategy 2041

The WARR Act establishes a waste hierarchy prioritising:

1. Avoidance of waste generation
2. Resource recovery and reuse
3. Recycling
4. Energy recovery
5. Disposal as a last resort

Waste generated by the proposed development would be managed in accordance with this hierarchy.

Waste transport and disposal would be undertaken by appropriately licensed contractors to facilities authorised to receive the relevant waste types. Any waste transported off-site will be classified in accordance with the NSW EPA Waste Classification Guidelines (2014) before disposal.

Waste Generation

Waste generation associated with the proposed development would occur during both the construction and operational phases of the project. The quantities of waste generated are expected to be relatively minor given the nature of the proposed dry sand extraction operations.

Construction Waste

Construction activities would involve the establishment of site infrastructure including:

- Preparation of the Processing and Sales Area (Stage 1)
- Internal access roads. Site compound and hardstand areas.
- Plant and equipment installation.
- Fuel storage infrastructure.

Construction waste may include:

- Packaging materials.
- Scrap metal.
- Surplus construction materials.
- Minor vegetation clearing waste.

Vegetation cleared during site establishment would be reused onsite for progressive rehabilitation where practicable for rehabilitation works or erosion control. Any surplus material unsuitable for reuse would be transported to an appropriately licensed waste facility.

Operational Waste

Operational waste streams are expected to include those typical of quarry operations. Operational waste types may include –

- General domestic waste from staff amenities.
- Scrap metal and equipment components.
- Used oil filters and oily rags.
- Minor quantities of waste oil or lubricants.
- Packaging materials from maintenance supplies.

These waste streams would be segregated and stored in appropriate containers within the site compound prior to collection by licensed waste contractors. Waste generated by workers would be collected weekly by contracted collection of a 4m³ skip bin in addition to oil recycling collection as required and a scrap metal recycle bin on site.

Process Waste

Sand washing operations generate fine sediments which are captured within the wash plant settlement system. These materials are retained onsite and reused in landform shaping and progressive rehabilitation. As these materials are beneficially reused onsite, they are not considered a waste stream requiring off-site disposal.

Overall, waste quantities are expected to be minor and typical of extractive industry operations. Exact quantities would vary depending on operational activities and maintenance requirements. **Table 8** describes expected waste streams.

Table 8: Expected Waste Streams

Waste type	Source	Estimated quantity	Waste Classification (EPA)	Management / Disposal Method
Vegetation clearing waste	Site establishment	Minor	General solid waste (non-putrescible)	Reused onsite for rehabilitation, erosion control or mulching
Construction materials	Site establishment	Minor	General solid waste (non-putrescible)	Recycled or disposed at licensed facility
Scrap metal	Equipment maintenance	Minor	General solid waste (recyclable)	Collected and recycled
Packaging waste	Maintenance supplies	Minor	General solid waste (non-putrescible)	Collected and disposed via licensed contractor
General domestic waste	Staff amenities	Minor	General solid waste (putrescible)	Removed by licensed waste contractor
Waste oil	Equipment servicing	Small quantities	Hazardous waste / liquid waste	Collected by licensed waste contractor for recycling
Oil filters and oily rags	Equipment servicing	Minor	Hazardous waste	Stored in sealed containers and removed by licensed contractor
Sand fines / sediment	Wash plant sediment system	Generated periodically	General solid waste (inert)	Reused onsite in rehabilitation and landform shaping

Waste Classification

Waste generated by the proposed development would be classified in accordance with the NSW EPA Waste Classification Guidelines. Waste streams are expected to comprise predominantly General Solid Waste (non-putrescible) such as scrap metal, construction materials and packaging.

Minor quantities of special waste or hazardous waste may arise from equipment maintenance activities, including waste oil, oily rags and used filters. These materials would be stored in accordance with Dangerous Goods and Environmental Protection requirements and collected by licensed contractors for appropriate recycling or disposal.

Storage and Handling

Waste materials generated onsite would be stored within designated waste storage areas located within the operational compound.

Waste management controls would include the provision of labelled waste bins and containers, and segregation of recyclable materials where practicable. They would also include the storage of hazardous wastes within bunded areas, secure storage to prevent windblown litter, and regular removal of waste by licensed contractors.

Hazardous materials associated with plant maintenance would be stored within bunded storage areas consistent with the requirements of AS1940. These measures would minimise the risk of contamination of surrounding land and water resources.

Transport and Disposal

Waste generated by the proposed development would be removed from the site by licensed waste contractors. Waste transport would utilise the existing site access onto Nelson Bay Road. Waste volumes are expected to be small and waste transport would occur infrequently relative to general quarry product haulage traffic.

All waste would be transported to facilities licensed to accept the relevant waste types in accordance with the POEO Act and EPA waste transport requirements.

Minimisation and Resource Recovery

The proposed development would implement a number of measures to minimise waste generation and maximise resource recovery, including:

- Reuse of cleared vegetation for rehabilitation or erosion control.
- Reuse of sand fines within site rehabilitation works.
- Recycling of scrap metal and equipment components.
- Appropriate segregation of recyclable waste streams.
- Use of licensed recycling facilities where available.

These measures would reduce the quantity of waste requiring off-site disposal.

Environmental Risk

Potential environmental risks associated with waste management include the accidental spills of oils or lubricants, windblown litter, improper disposal of waste materials and the contamination of soil or water.

These risks are considered low and would be managed through appropriate waste storage facilities through a bunded storage of hazardous materials area. Spill response procedures and staff training and environmental management procedures will be applicable and maintained throughout the life of the development. Regular waste collection will occur and be documented.

Given the limited quantities of waste generated and the implementation of standard waste management procedures, potential impacts associated with waste handling, storage and disposal are expected to be minor and localised to the site.

Assessment of Waste

Waste generation associated with the proposed development is expected to be minor and typical of dry sand quarry operations.

Waste streams would primarily consist of construction waste generated during site establishment, general operational waste, minor maintenance-related wastes and sediment fines captured through the washing process. Further details on the reuse of sediment fines are provided in the Rehabilitation Strategy (**Appendix 12**).

These wastes would be managed through established waste handling procedures and removed from the site by licensed contractors where required. Reuse of suitable materials onsite, including vegetation and sediment fines, would minimise the need for off-site disposal. Waste management practices would be consistent with the waste hierarchy and relevant NSW regulatory requirements.

3.9 Consumables Storage

Storage of an amount of consumables onsite will be needed for the project including diesel and flocculants required for water recycling. These items will be appropriately stored in bunded areas and are summarised at **Table 9**.

Table 9: Materials and quantities to be stored onsite

Material	Quantity
Diesel fuel	Up to 35,000 L
Hydraulic oil	<200 L
Engine oil	<200 L
Flocculant	4,000 L
Coagulant	4,000 L

3.10 Operating Hours

Proposed hours of operation are set out at **Table 10**.

Table 10: Proposed Hours of Operation

Operation	Days	Hours
Sand extraction, washing and processing	Monday to Friday	7:00am – 5:00pm
	Saturdays	7:00am – 4:00pm
	Sunday/Public Holidays	Closed
Sales	Monday to Friday	6:00am – 6:00pm
	Saturdays	7:00am – 4:00pm
	Sunday/Public Holidays	Closed
Maintenance	Any day	Any time, providing maintenance activities are inaudible at any privately-owned residence

3.11 Site Servicing

Power

The site is already serviced with mains power.

Water Supply

The site benefits from a Water Access Licence (WAL) for 40ML which is proposed to be used for sand washing (see Appendix C of **Appendix 22** for a copy of this licence). Based on the proposed 530,000 tonnes of sand to be extracted per annum, this will require approximately 32ML of water and as such is within the WAL for the site. Water tanks will be installed which will also cater for potable water needs.

Sewage

Sewage management associated with the installation of additional WCs is proposed by way of pump out by a licenced contractor.

Section 4

Statutory Context

4 Statutory Context

This section of the EIS highlights and addresses the relevant statutory requirements that are related to the proposed development. A Statutory Compliance Table identifying all relevant legislation and applicable EIS reference location is included at **Appendix 5**.

4.1 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

For a proposal which may have a likely significant impact on Matters of National Environmental Significance (MNES), a proposal should be referred to the Commonwealth for assessment pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The proposal was referred for assessment to the Commonwealth Department of Climate Change, Energy, the Environment and Water and it was determined the proposal is a controlled action with supplementary SEARs issued on 10 April 2026 by the delegate of the Commonwealth Minister for the Environment and Water (**Appendix 2**) outlining requirements for assessing MNES that must be addressed in the EIS with respect to the following –

- Koala (combined populations of Queensland, New South Wales and Australian Capital Territory (*Phascolarctos cinereus*);
- Grey-headed Flying-fox (*Pteropus poliocephalus*);
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland.

In addition to the above, other listed species within 2km of the proposed action area requiring further assessment to determine if they are likely to be significantly impacted were identified as –

- Swift Parrot (*Lathamus discolor*);
- Regent Honeyeater (*Anthochaera phrygia*);
- Spotted-tailed Quoll (southeastern mainland population) (*Dasyurus maculatus maculatus*);
- South-eastern Glossy Black Cockatoo (*Calyptorhynchus lathami lathami*);
- Yellow-bellied Glider (south-eastern) (*Petaurus australis australis*);
- New Holland Mouse (*Pseudomys novaehollandiae*).

Supplementary SEARs were issued by the NSW Department of Planning, Housing and Infrastructure on 17 April 2026 (**Appendix 2**) outlining requirements for assessing MNES that must be addressed in the EIS. The requirements of the Supplementary SEARs for MNES are addressed at **Section 6.1**.

4.2 Statutory Requirements of the Proposal

The categories at **Table 11** are used to identify the statutory requirements for the proposal..

Table 11: Key Statutory Requirements

Category	Action Required
Power to grant approval	Section 2.6 of <i>State Environmental Planning Policy (Planning Systems) 2021</i> states development specified in Schedule 1 of the SEPP is classified as SSD. The development is specified under Clause 7 of Schedule 1 of the SEPP, being: 7 Extractive industries (1) <i>Development for the purpose of extractive industry that—</i> (a) <i>extracts more than 500,000 tonnes of extractive materials per year, or</i> (b) <i>extracts from a total resource (the subject of the development application) of more than 5 million tonnes, or</i> (c) <i>extracts from an environmentally sensitive area of State significance.</i>

	The proposed extractive industry seeks to extract up to 530,000 tonnes of sand per year. As such, the proposal is declared SSD.
Permissibility	The site is zoned RU2 Rural Landscape under the <i>Port Stephens LEP 2013</i>. The proposed development is defined as <i>extractive industries</i> which are permissible with consent in the zone.
Other approvals	Approvals required for pre-construction and construction phases include: • Construction certificates. Other approvals: • Consent from the roads authority (TfNSW and Council) under Section 138 of the <i>Roads Act 1993</i> for works in the road reserve; • Environmental Protection Licence from the Environmental Protection Authority under Chapter 3 of the <i>Protection of the Environment Operations Act 1997</i>. Approvals required for occupation and operations at the site will include: • Occupation certificate; • Operational and Management Plans as required by conditions of consent. • Water Access Licence (WAL) for use of WAL water for sand washing
Pre-condition to exercising the power to grant approval	EPBC Act 1999 – Matters of National Environmental Significance The project was assessed as a controlled action under the EPBC Act (EPBC 2026/10456) and so requires approval before it can proceed. EPBC requirements are included in the Supplementary SEARs issued by DPHI under the bilateral agreement between the NSW and Commonwealth Governments and addressed at Section 6.1. State Environmental Planning Policy (Resilience and Hazards) 2021 The SEPP at Section 4.6 requires that the consent authority be satisfied that a site is not contaminated, or is suitably remediated, prior to a site being used for its proposed use. A Detailed Site Inspection (DSI) was undertaken by Martens Associates to identify historical and current activities and uses on the site and adjacent land which could potentially result in land contamination; identify areas of environmental concern (AEC) and associated contaminants of potential concern (COPC); assess the presence, nature and extent of potential contamination by undertaking soil and groundwater sampling and laboratory analysis; and, assess the suitability of the site for the proposed use. A copy of the DSI is provided at Appendix 13. The DSI found: • Copper and zinc concentrations in near-surface soils within the horticultural footprint are elevated relative to deeper natural sands and bushland background soils. • The broader Contaminants of Potential Concern suite assessed did not identify petroleum hydrocarbons, BTEXN, PAHs, PCBs, OCP/OPP, PFAS or asbestos-in-soil impacts exceeding adopted assessment criteria. • A small fragment of asbestos containing material (ACM) sheeting was identified, likely a result of placed / reworked material rather than widespread asbestos in soil contamination. The site was determined to be appropriate for the proposed use and that a Remediation Action Plan (RAP) is not required. In lieu of a RAP, a Soil Management Plan (Appendix 11) has been prepared to be implemented during construction and operations. Additional information on contamination investigations and the Soil Management Plan is at Section 6.7.

Mandatory matters for consideration	Environmental Planning and Assessment Act 1979 Section 4.15 of the EPA Act requires that in determining a development application, a consent authority is to take into consideration the relevant matters of relevance. Section 4.15(1)(b), (c) and (e) relate to assessing the significant likely impacts of the development, the suitability of the site and the public interest. As outlined in this EIS, the proposal demonstrates consistency with these considerations. Biodiversity Conservation Act 2016 Pursuant to section 7.9 of the Biodiversity Conservation Act 2016 (BC Act), SSD applications require the application of the Biodiversity Assessment Method (BAM), established under section 6.7, which is utilised to prepare a Biodiversity Development Assessment Report (BDAR), unless advised otherwise by the Planning Agency Head (DPHI) and the Environmental Agency Head (DCCEEW) that they have determined that the proposed development is not likely to have any significant impact on biodiversity values. SSD projects automatically trigger the Biodiversity Offsets Scheme (BOS), unless advised otherwise by the Chief Executive of the BCD and the Secretary of DPIE. A BDAR has been prepared in accordance with the BAM and is provided at Appendix 14. Biodiversity impacts are discussed at Section 6.1. National Parks and Wildlife Act 1974 A search of the Aboriginal Heritage Information Management System (AHIMS) database found five (5) identified surface shell scatter sites within the site as detailed within the Aboriginal Cultural Heritage Assessment Report (ACHAR) at Appendix 15. The ACHAR identified that the project will directly and totally impact five sites previously registered with the AHIMS. These sites comprise disturbed, low-density surface shell material with no substantial subsurface components. They have been assessed as having low scientific significance, being well represented locally and regionally, in poor condition, and retaining negligible research potential. An Aboriginal Heritage Impact Permit (AHIP) for disturbing an Aboriginal item or place is not required if a proposed development is permitted as SSD. As proposed within the mitigation measures in the ACHAR, unexpected finds relating to human remains should be implemented, ongoing consultation with Registered Aboriginal Parties and a cultural awareness program be included as part of site inductions. An Aboriginal Site Impact Recording Form will be completed as part of community collection. Aboriginal heritage is discussed further at Section 6.5.1. Projection of the Environment Operations Act 1991 Environment Protection Licences (EPLs) are required to be obtained under Chapter 3 to carry out certain work or conduct certain polluting activities that may relate to management of waste, air quality emissions, noise emissions and quality of water. The proposed quarry will require an EPL under <i>Schedule 1, 19 – Extractive activities</i>, as the development involves the extraction and processing of more than 30,000 tonnes of extractive material per year. As such, an EPL will need to be obtained from the Environmental Protection Authority (EPA) following development consent with licence conditions to be complied with during all activities and operations. Water Management Act 2000 By the operation of Section 4.41 of the EP&A Act, the proposed development will not require a water use approval under Section 89 of the WM Act, a water management approval under Section 90 or a controlled activity approval under Section 91. Notwithstanding, the site benefits from an active Water Access Licence (WAL-5960) for 40ML per annum and associated Works Approval under 20WA203266. The bore itself has a water supply and use approval for Farming and Irrigation of 20CA202365. It is proposed to use water associated with the Water Access Licence for sand washing purposes.
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Roads Act 1993

The application proposes construction of a new left-in left-out intersection onto Nelson Bay Road (a classified State road) and as such requires consent under Section 138 of the Roads Act 1993 from the appropriate roads authority, and with respect to a classified road, not without the concurrence of TfNSW.

Heritage Act 1977

An excavation permit is required to disturb or excavate any land where it is known or there is reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed. A permit is also required to disturb or excavate any land on which the person has discovered or exposed a relic.

A small portion of the site overlaps the Area of Archaeological Potential for the former 1943-1944 camp but with the current proposal having a reduced development footprint compared to the previous SSD application, archaeological integrity is expected to be low. The nearest mapped item of local heritage significance is the Stockton Beach Dune System located south of the site.

While this is not mapped as an item of local heritage significance, a Statement of Heritage Impact was prepared and is included at **Appendix 16**. The assessment found that the given the dismantling of the former camp, the mobile dune environment, later agricultural modification and current horticultural development, the likelihood of encountering intact or significant archaeological relics is low. With regard to the Stockton Beach Dune System, the site lies outside the boundary of this nearest statutory heritage item and will not affect its significance. No material effects are predicted for the non-statutory Newcastle Bight Coastal Area. Historic heritage is discussed further at **Section 6.5.2**.

Rural Fires Act 1997

The site is mapped as bushfire prone land (**Figure 19**). Section 100B of the Rural Fires Act 1997 relates to the requirement for a bushfire safety authority on bushfire prone land for subdivision or development which is a special fire protection purpose. Notwithstanding the proposal is not for a purpose which requires a bushfire safety authority, Section 4.41 of the EP&A Act exempts SSD applications from this requirement. Planning for Bushfire Protection (PBP) does not include specific bushfire protection measures for certain classes of structures and includes the proposed Atco structure. Despite this, an assessment against the aims and objectives of PBP was undertaken and found the proposal complies with the aims and objectives of PBP in terms of asset protection zones, bushfire attack levels, access and road network, services, and bushfire emergency management if recommended mitigation measures are implemented.

Bushfire risks and hazards have been addressed in **Section 6.10.1** and the Bushfire Assessment provided as **Appendix 17**.

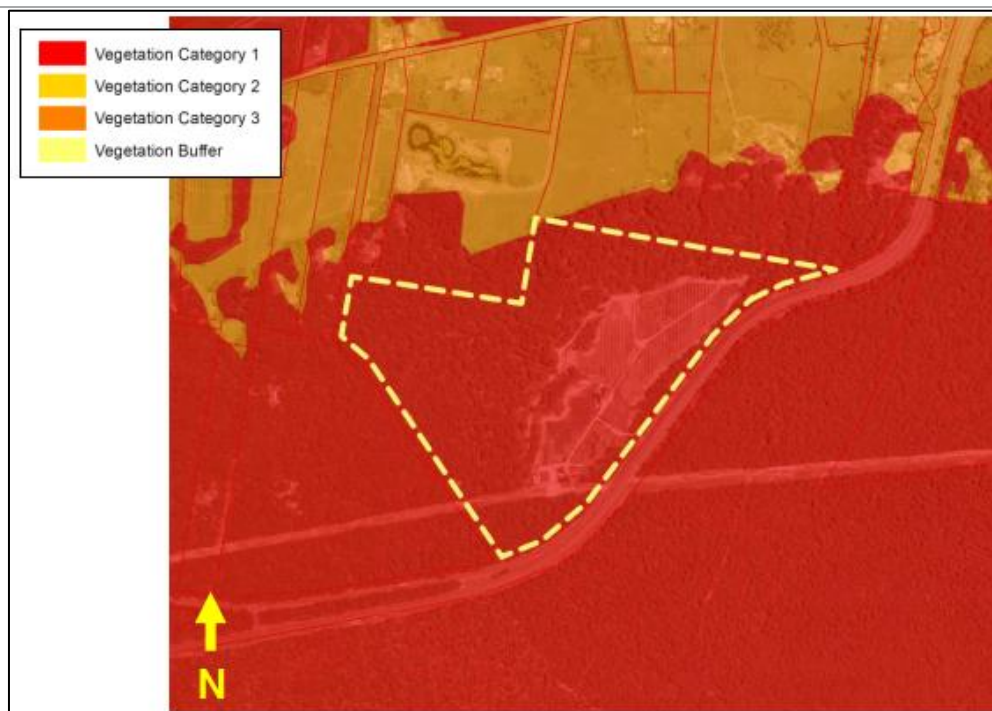


Figure 19: Bushfire prone land map

State Environmental Planning Policy (Biodiversity and Conservation) 2021

Part 6.2 of the SEPP relates to development in regulated catchments and requires that in granting consent consideration be given to impacts on regulated catchments to ensure no adverse impacts, and that development will have a neutral or beneficial effect on the quality of water entering a waterway.

The site is located immediately north, but outside of, the drinking water catchment. Notwithstanding, the Hydrogeological Impact Assessment (**Appendix 18**) and Surface Water Assessment (**Appendix 22**) assessed the proposal's potential impacts on water resources and found that the proposal will not have any adverse impacts on water resources.

State Environmental Planning Policy (Primary Production) 2021

Chapter 2 of the SEPP relates to primary production and rural development including State significant agricultural land. At the time of drafting this EIS, Schedule 1 of the SEPP which relates to identification of State significant agricultural land did not include any areas of NSW as State significant agricultural land.

State Environmental Planning Policy (Resources and Energy) 2021

Notwithstanding the proposed use is permitted with consent in the PSLEP, the SEPP permits extractive industries with development consent on any land on which agriculture or industry are permissible.

Section 2.17 requires the consent authority to consider the compatibility of the quarry with surrounding land use. The EIS includes an assessment of this in the form of a Land Use Compatibility Risk Assessment associated with the Land Resource Assessment and as detailed at **Section 6.7**.

Section 2.20 requires the consent authority to consider the potential impacts on water, threatened specific, biodiversity and greenhouse gas emissions. These impacts are assessed in the following supporting technical reports:

- Hydrogeological Impact Assessment (**Appendix 18**)
- Biodiversity Development Assessment Report (**Appendix 14**)
- Greenhouse Gas Assessment (**Appendix 19**).

All potential impacts associated with the above has been determined not to have an adverse impact or can be successfully managed through appropriate mitigation measures.

Section 2.33 requires the consent authority to consider conditions relating to rehabilitation. To address this a Rehabilitation Strategy has been prepared (**Appendix 12**). Rehabilitation will progressively take place after the resource from relevant stages has been exhausted. The objective of the Rehabilitation Strategy will be to broadly return the site to its current ratio of vegetated and non-vegetated areas. Post quarry uses are proposed to be consistent with current uses at the site and the sites RU2 Rural Landscape zone. Rehabilitation is discussed in greater detail at **Section 3.7**.

State Environmental Planning Policy (Planning Systems) 2021

Section 2.6 of the Planning Systems SEPP states development specified in Schedule 1 is classified as SSD.

The development is specified under Clause 7 of Schedule 1 of the SEPP, being:

7 Extractive industries

(1) Development for the purpose of extractive industry that—

- (a) extracts more than 500,000 tonnes of extractive materials per year, or*
- (b) extracts from a total resource (the subject of the development application) of more than 5 million tonnes, or*
- (c) extracts from an environmentally sensitive area of State significance.*

The proposed sand quarry seeks to extract 530,000 tonnes of extractive materials per year. As such, the proposal is declared State Significant Development.

State Environmental Planning Policy (Transport and Infrastructure) 2021

A Traffic Impact Assessment has been prepared and is provided at **Appendix 20**. The proposed development does not qualify as a traffic generating development with relevant size and/or capacity under Section 2.122 -Traffic Generating Development. Traffic is discussed further at **Section 6.6**.

A referral to the energy provider may be required pursuant to Clause 2.48(1) & (2) regarding development carried out in proximity to an easement for electricity purposes.

Port Stephens Local Environmental Plan 2013

The Port Stephens Local Environmental Plan 2013 (PSLEP) is the principal environmental Planning Instrument that governs land use, permissible development and development standards across the LGA.

Land Zoning and Zone Objectives

The site is zoned RU2 Rural Landscape (**Figure 20**) with the proposal aligning with the land use definition of *extractive industry* in the PSLEP. The zone objectives for the RU2 zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To facilitate a variety of tourist and visitor-orientated land uses that complement and promote a stronger rural sector appropriate for the area.

Extractive industries are permissible with consent in the RU2 zone and as part of progressive rehabilitation of the site the proposal will maintain the rural landscape character of the land.

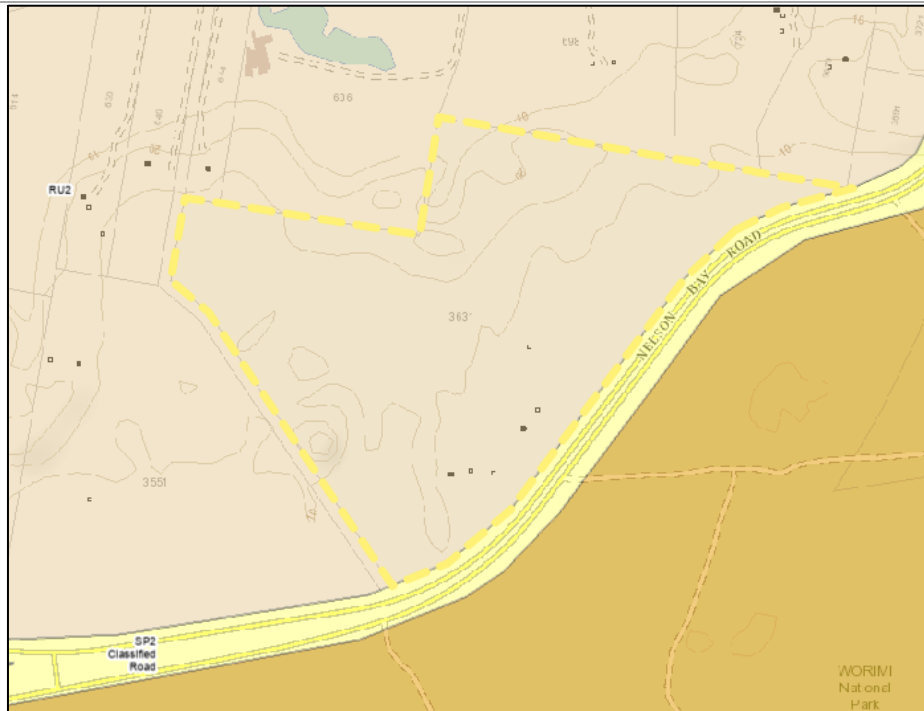


Figure 20: Land Use Zone

Clause 5.10 Heritage Conservation

A small portion of the site overlaps the Area of Archaeological Potential for the former 1943-1944 camp but with the current proposal having a reduced development footprint compared to the previous SSD application, archaeological integrity is expected to be low. The nearest mapped item of local heritage significance is the Stockton Beach Dune System located south of the site.

While the former 1943-1944 camp is not mapped as an item of local heritage significance, a Statement of Heritage Impact was prepared and is included at **Appendix 16**. The assessment found that the given the dismantling of the former camp, the mobile dune environment and later agricultural modification and current horticultural development, the likelihood of encountering intact or significant archaeological relics is low. With regard to the Stockton Beach Dune System, the site lies outside the boundary of this nearest statutory heritage item and will not affect its significance. No material effects are predicted for the non-statutory Newcastle Bight Coastal Area. Heritage is discussed further at **Section 6.5.2**.

Items of Aboriginal heritage significance are addressed above under 'National Parks and Wildlife Act 1979' and within the ACHAR at **Appendix 15**.

Clause 5.21 Flood Planning

A small area of the north of the site is mapped as being subject to the 1%AEP event (**Figure 21**). The area of the site mapped as flood affected is excluded from the proposed extraction area and as such the proposal will not affect the mapped flood planning area. Flooding is also discussed at **Section 6.4**.

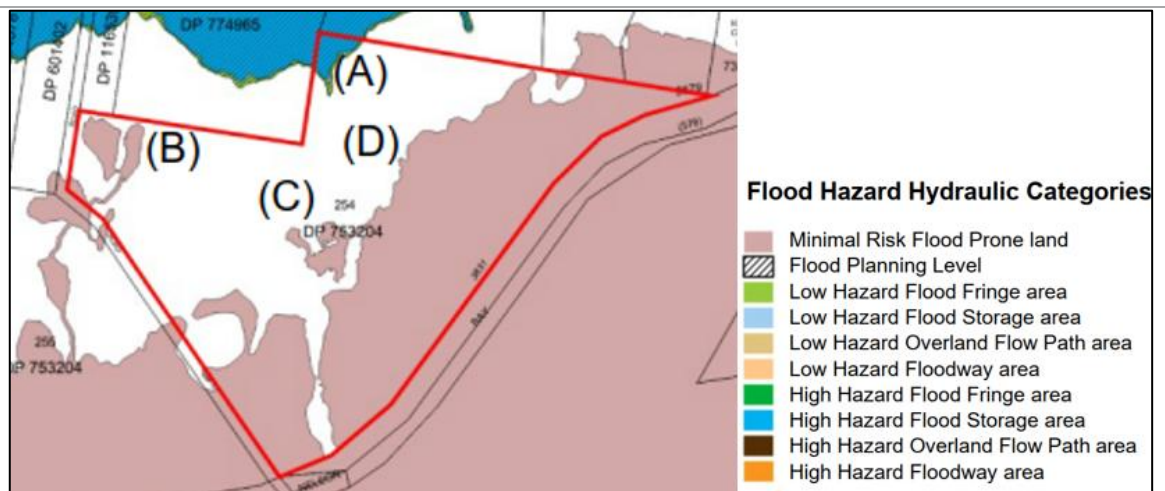


Figure 21: Flood Mapping

Clause 5.22 Special Flood Considerations

The proposal is not for a 'sensitive and hazardous development' as defined in the clause. As such, the requirements of the clause to assess flood related impacts on sensitive and hazardous development between the flood planning area and the maximum probable flood do not apply.

Clause 7.1 Acid Sulfate Soils

Historical exceedances associated with the previous SSD application indicated Potential Acid Sulfate Soil material may occur locally above the 2mAHD review level. Investigations undertaken in 2026 as part of the Additional Geotechnical and Acid Sulfate Soils Assessment (**Appendix 21**) prepared in support of this current SSD application found some indicators consistent with possible oxidisable sulfides but subsequent SCR testing of relevant horizons did not identify exceedances of the adopted action criteria. In general, recent testing data reported comparatively low sulphur values.

As such, a broad site-wide acid sulphate soils treatment response is not warranted; however, a targeted acid sulphate soils management plan will be required.

Clause 7.2 Earthworks

The proposed quarry involves earthworks from construction through to operation and rehabilitation, including:

- Construction of new intersection onto Nelson Bay Road
- Earthworks to create the Processing and Sales Area
- Ongoing extraction broadly in accordance with the staging plan for the site
- Rehabilitation of the site incorporating appropriate topography to facilitate drainage lines as well as vegetation replanting.

The clause requires the consent authority consider a proposal's impacts as a result of earthworks including on drainage patterns, future redevelopment of the land, the quality of fill, impacts on adjoining properties, likelihood of disturbing relics, proximity to and potential for adverse impacts on drinking water or environmentally sensitive areas, and appropriate measures to mitigate impacts.

As detailed within this EIS and appended specialist reports, the proposed quarry and associated earthworks are not expected to have detrimental impacts on environmental functions and processes, neighbouring uses, and cultural or heritage items.

Clause 7.6 Essential Services

Essential services for the development are available or adequate arrangements made to make available for the following:

	Water – Static water tanks will be installed for potable water requirements. Water available by way of the site's Water Access Licence will be used for sand washing purposes. Electricity – The site is already connected to electricity services. Management of Sewage – Onsite WCs and facilities will be serviced by pump out system. Stormwater drainage or onsite conservation – Appropriate stormwater drainage is demonstrated in the Surface Water Management Plan at Appendix 22. Suitable vehicular access – Light vehicle access will be maintained by way of the existing vehicle access at the electricity easement. Haulage vehicles will access the site by way of a new proposed left-in left-out intersection onto Nelson Bay Road.
	Port Stephens Development Control Plan 2025 In accordance with Clause 2.10 at Part 2.2 of the Planning Systems SEPP, Development Control Plans do not apply to State Significant Development. As such, the Port Stephens DCP 2025 does not apply.

4.3 Developer Contributions

Local developer contributions as they relate to haulage do not apply to Nelson Bay Road being a State road. The Housing and Productivity Contribution (HPC) applies to housing and some non-residential development types which result in an increase in floor area. As such, developer contributions are not levied under the Port Stephens Local Infrastructure Contributions Plan (7.11 plan or 7.12 plan) or the HPC.

Section 5 Engagement



5 Engagement

This chapter provides a summary of consultation and engagement activities carried out and amendments to the proposal which resulted from this consultation. The section summarises who has been consulted, how consultation was carried out, issues raised, and how issues were responded to.

The Social Impact Assessment (SIA) was prepared by Key Insights Pty Ltd to assess social impacts and includes details on consultation and stakeholder engagement that was undertaken. A copy of the SIA is included at **Appendix 23**.

5.1 Stakeholder Engagement Strategy

Stakeholder engagement was undertaken in accordance with the *Social Impact Assessment Guideline* (July 2025) and *Undertaking Engagement Guidelines for State Significant Development* (March 2024) with the approach for stakeholder engagement focussing on communication, facilitating positive relationships and effectively managing community concerns or issues. Informed by this approach, a Social Impact Scoping (Constraints Assessment), Stakeholder Engagement Plan and Social Impact Assessment Methodology were prepared to inform ongoing stakeholder engagement for the project. The key elements of the strategy were –

Accessible Information	Preparation of accurate and easy-to-access information across a range of media, including monitoring of results.
Two-way Communication	Targeted distribution of information and receipt of feedback to ensure an informed community and discussion.
Valued Relationships	Opportunities for stakeholders to meet the Proponent and team, discuss issues and work in partnership or be supported.
Effective Monitoring and Response	Timely and measured monitoring and response to community concerns or issues.

Community and agency consultation and engagement has been undertaken for the proposal by the Proponent and Social Impact Researcher in accordance with the Stakeholder Engagement Plan for the project and requirements of the SEARs and are outlined in the following sections.

5.2 Early Consultation

Engagement commenced early in the project (October 2025 – December 2025) prior to receiving SEARs for the project. Because of the history of the site associated with a previous application for a sand quarry, potential key stakeholders and interested groups were understood in terms of those who had lodged a submission to the previous application.

Early consultation comprised a review of submissions associated with the previous SSD application and to undertake a thematic review of submissions to ascertain key previous concerns to address these as part of the current proposal. Notable stakeholders identified through this early review were local progress groups and Bobs Farm Primary School. Key concerns raised previously related to proposed dredging below the groundwater table, use of Marsh Road for access, the size of the project area, annual throughput, and quarry life. This information was used to inform the current proposal and many of the issues raised for the previous application were able to be resolved as part of preliminary designs and operations for the current application. Direct calls with key community groups and Bobs Farm Public School were undertaken to ensure early updates and opportunities for involvement.

Table 12 presents a summary of early engagement undertaken to advise key stakeholders on the current proposal, the purpose of each consultation method, and how any actions taken aligned with consultation objectives as outlined in the Stakeholder Engagement Strategy.

Table 12: Early Engagement

Engagement Tool	Target	Purpose	Strategy Element
Information sheet	Local landowners Key stakeholder groups	To advise on the key elements on the proposal and avenues to ask questions and give feedback.	Accessible information
Online survey	Local landowners Key stakeholder groups	To understand key concerns around potential impacts to inform the quarry design and mitigation measures and preferred method of communication about the project.	Accessible information Two-way communication Effective monitoring and response
Website landing page	Local landowners Key stakeholder groups	To provide information and updates on the project.	Accessible information
Direct contact (phone calls and emails)	Key community groups and institutions who made a submission to the previous application	To advise on the proposal and highlight improvements of the current proposal which addresses concerns associated with the previous application	Accessible information Two-way communication Valued Relationships

5.3 Post-SEARs Consultation

After SEARs were issued on 18 December 2025, agencies requiring consultation were identified. Below outlines agency and community consultation which took place as part of post-SEARs consultation.

5.3.1 Agency Consultation

The SEARs listed agencies which required consultation. **Table 13** provides a summary of post-SEARs agency consultation and the outcome for each.

Table 13: Agency Consultation

Agency Stakeholder	Detail	Outcome
Aboriginal Stakeholders	Aboriginal Cultural Heritage Assessment Report being undertaken including meetings with Registered Aboriginal Parties	Notification and consultation with Registered Aboriginal Parties undertaken in accordance with relevant guidelines. See ACHAR for further detail (Appendix 15)
Port Stephens Council	Consultation actioned via Major Projects Portal in January 2026	Response received 2 February 2026. Council noted the proposed scale of clearing for the proposal and the number of threatened entities that occur in the locality. Council noted advice regarding the scale of the development will be provided once the level of assessment that is required by the SEARs is completed.
National Parks and Wildlife Service	Consultation actioned via Major Projects Portal in January 2026	Response received 25 February 2026. National Parks and Wildlife Service requested that information on the project be forwarded to the Worimi Conservation Lands Park Manager. This was actioned with a response from the Officer pending.
Environment Protection Agency	Consultation actioned via Major Projects Portal in January 2026	Response received 11 February 2026. EPA feedback was specific pre-lodgement consultation provided the proposal is prepared in accordance with the SEARs.
Transport for NSW	Consultation actioned via Major Projects Portal in January 2026	Response received 27 January 2026. TfSW feedback was to consider alternative access opportunities to Nelson Bay Road, as well as required

		amendments to strategic design drawing technical drafting requirements. Alternative access opportunities and as outlined in the EIS resulted in relocating the proposed new access to the site further south on Nelson Bay Road.
Conservation Programs, Heritage and Regulation (CPHR) division within the Department of Climate Change, Energy, the Environment and Water (DCCEEW)	Consultation actioned via Major Projects Portal in January 2026	CPHR responded confirming that a project inception meeting would be beneficial. An inception meeting was held on 18 February 2026. The Proponent and project team provided a summary and update on the proposal including ecology surveys undertaken to-date and remaining seasonal surveys. CPHR sought clarification on whether there would be reliance on previous ecology surveys at the site, the methodology for surveys, and raised the retention of an east-west corridor generally along the northern boundary and avoidance of high-quality areas. These matters are addressed at Section 6.1.
DCCEEW (Water)	Consultation actioned via Major Projects Portal in January 2026	Response received 13 January 2026. Feedback received was that DCCEEW (Water) will review the EIS once submitted.
Hunter Water Corporation (HWC)	Consultation actioned via Major Projects Portal in January 2026	Response received 5 March 2026. HWC advice was a Section 50 application would be required if connecting to Hunter Water's infrastructure; that HWC does not allow direct customer connections to 300mm truck watermain; and that preparation of a hydraulic report outlining annual water consumption would be needed if the proposal seeks to connect to Hunter Water's water infrastructure. The proposal seeks to use WAL water for sand washing purposes and water tanks for potable water and water for dust suppression.
Heritage NSW	Consultation actioned via Major Projects Portal in January 2026	Response received 7 April 2026 from HNSW also on behalf of the Heritage Council of NSW. HNSW advised the ACHAR will be reviewed when submitted and that further comment may be made following review of the ACHAR but until the EIS is submitted no further comment is provided.
Heritage Council of NSW	Consultation actioned via Major Projects Portal in January 2026	
Rural Fire Service	Consultation actioned via Major Projects Portal in January 2026	Response received 5 March 2026. RFS recommended a bushfire assessment report be prepared and provided no further advice prior to submission of the EIS. A bushfire report was prepared in support of the proposal (Appendix 17).
Fire & Rescue	Consultation actioned via Major Projects Portal in January 2026	Response received 29 January 2026. Fire & Rescue noted that insufficient information is available regarding fire safety and emergency responses management prior to submission of the EIS and so no comment is provided at this stage.
Department of Primary Industries (Agriculture)	Consultation actioned via Major Projects Portal in January 2026	Response received 12 January 2026. DPI (Agriculture) advised that no further engagement is required until the EIS is provided for review.

5.3.2 Commonwealth Consultation

The proposal was referred to the Commonwealth Government (DCCEEW) for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The assessment determined the proposal to be a controlled action and as such Supplementary SEARs were received (**Appendix 2**) (EPBC2026/10456).

The BDAR prepared in support of the proposal includes an EPBC Act Supplementary Assessment to address the requirements of the Commonwealth Government (**Appendix 24**) and is discussed at **Section 6.1.2**.

5.3.3 Community Consultation

Subsequent to the project receiving SEARs, further refinements on quarry design and operations were able to be made prior to further targeted and broad community consultation.

A drop-in session was held for the project on 7 March 2026 at the Salt Ash Community Hall as an opportunity to meet the Proponent and members of the project team, view information material on the proposal including proposed areas and methods for extraction, staging, operations and mitigation methods. Details of the drop-in session were notified in the local newspaper, on social media posts (Face Book), and an 'in-case-you-missed-it' letter advertising the drop-in session was circulated as a letterbox drop to landowners surrounding the site and along Marsh Road approximately five (5) days prior to the drop-in session. Approximately thirty (30) members of the community participated in the drop-in session and feedback received was used to inform further refinement of the quarry design and operations. Attendees at the drop-in session were able to leave contact details and from this a contact list for the project was compiled for the Social Impact Researcher to give going updates.

Subsequent to the drop-in session an update newsletter was prepared which gave information on the outcomes of the drop-in session, thematic review of feedback received, next steps for the project, and opportunities for further engagement. In addition to this, interested attendees from the drop-in session were invited to visit the Proponent's current sand quarry operations at 398 Cabbage Tree Road Williamstown to understand first-hand how operations would take place at the subject site.

The Proponent also met onsite with the owners of the two residential properties whose access is via the existing right-of-carriageway in the north-east of the site. Concerns raised by these landowners during the drop-in session related to visual and safety impacts. Following meeting with landowners, the Proponent has committed to construct a 2m high vegetated bund between the proposed quarry and the right-of-carriageway to shield visual impacts, repair the 3m wide gravel base right of carriageway within the property boundary and to install a chain link fence either side of the right of carriageway. Details of this proposed outcome including site plan and cross sections were prepared and shared with relevant landowners (**Figure 22**).

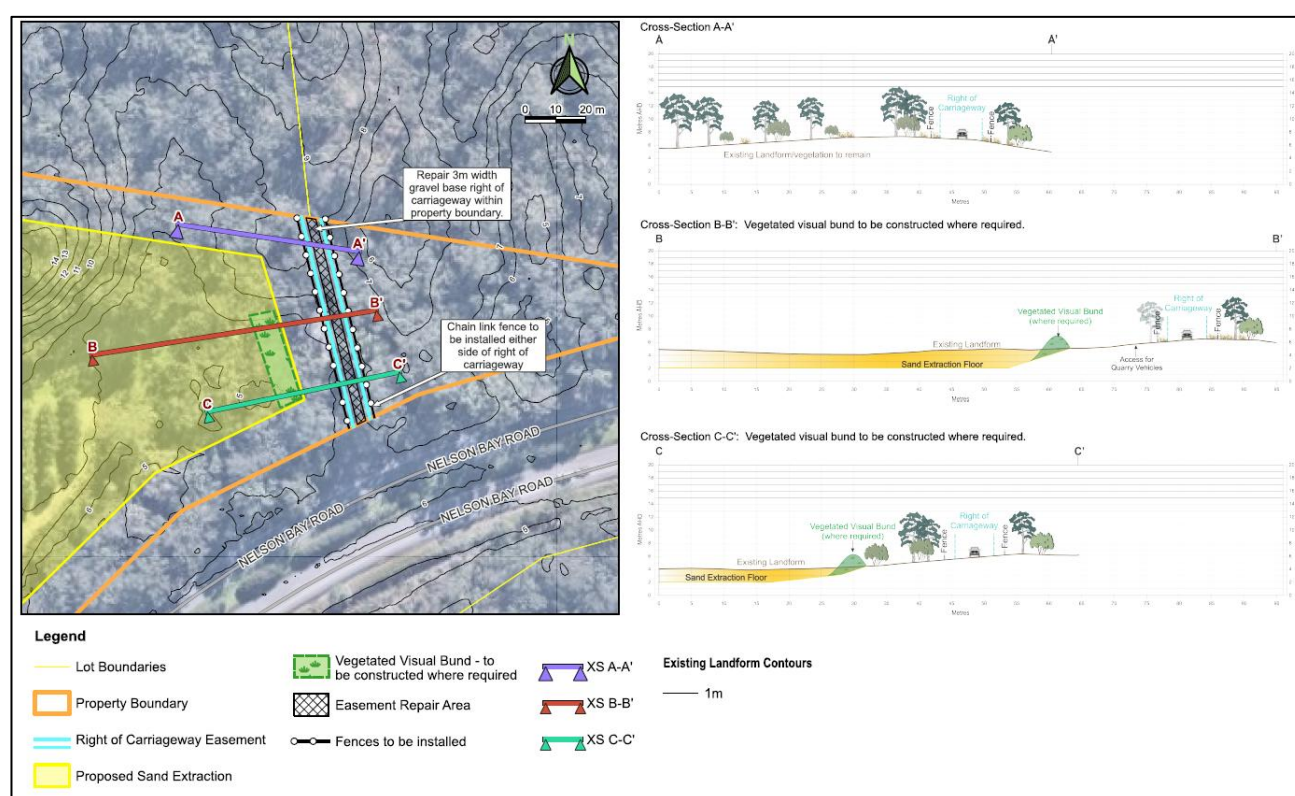


Figure 22: Details of proposed repair and construction at right-of-carriageway to respond to landowner concerns

A summary of details of community consultation as part of community consultation is contained in the Social Impact Assessment at **Appendix 23**. A summary of post-SEARs engagement including engagement tool, target audience, purpose, and how each approach addressed the objectives of the SIA is at **Table 14**.

Table 14: Post-SEARs Engagement

Engagement Tool	Target	Purpose	Strategy Element
Information sheet	Local landowners Key stakeholder groups	To advise on the key elements on the proposal and avenues to ask questions and give feedback.	Accessible information
Online survey	Local landowners Key stakeholder groups	To understand key concerns around potential impacts to inform the quarry design and mitigation measures while the design was being determined, and preferred method of communication about the project.	Accessible information Two-way communication Effective monitoring and response
Updates to website landing page	Local landowners Key stakeholder groups	To provide ongoing updated information on the project and other updates.	Accessible information
Direct contact (phone calls and emails)	Key community groups and institutions who made a submission to the previous application	To follow up previous contact, updates on the project status and future opportunities for consultation.	Accessible information Two-way communication Valued Relationships
Drop-in session including: - notice in the local newspaper - notice on local social media - Letterbox drop	Local landowners Key community groups and institutions who made a submission to the previous application	To provide an opportunity to meet the Proponent and some of the project team, view information print outs of the proposal and ask questions in person	Accessible information Two-way communication Valued Relationships
Onsite meetings	Local landowners	To meet onsite to discuss and understand key concerns in a local context	Two-way communication Valued Relationships Effective monitoring and response
Community Newsletter	Local landowners Key community groups	To provide an update on the outcomes of the drop-in session, summary of feedback heard and next steps	Accessible information Valued Relationships Effective monitoring and response

5.4 Views of the Community

The key matters raised by the community during engagement are detailed in the Social Impact Assessment (**Appendix 23**) and summarised at **Table 15**.

Table 15: Summary of Community Views

Impact	Response	EIS reference
Positive Impacts		
Most commonly stated positive impacts	- Significant contribution to an in-demand resource that facilitates construction of housing and other infrastructure sustaining the local economy. - Replacement employment for Williamtown Quarry. - Construction jobs and flow-on economic impact to the local community. - Potential local business partnerships including Indigenous employment. - Business opportunities for local business particularly during construction.	

- Potential local social capital projects or sponsorships with local organisations and social infrastructure such as Bobs Farm School.
- Adoption of sustainable site practices contributing to broader environmental goals.
- Royalties to government and financial contributions that could lead to infrastructure improvements.
- Potential to strengthen community cohesion through regular engagement and honouring environmental and operational commitments.

Potential Negative Impacts

Environmental impacts associated with clearing of the site	Operations at the site would take place broadly in accordance with an approved staging plan and proposed to be tied to a maximum area of the site which is permitted to be cleared at any one time prior to staged rehabilitation works commencing. Based on the location of sand types across the site and changes in market demand for different sand types, some flexibility in staging sequencing is sought. This may mean that a portion of a stage will be left intact and the remaining maximum amount which can be cleared at any one time allocated to a different area of this site. High value areas of the site have been avoided including the area south of the existing electricity easement as well as the area east of the existing right-of-carriageway at the north-east of the site. The north of the site contains an area of vegetation associated with an identified Threatened Ecological Community (TEC) and groundwater dependent ecosystem which have been wholly avoided from proposed clearing and sand extraction. The proposed area for extraction was also amended from what was initially proposed to create a greater buffer between this TEC and the area of proposed extraction at Stage 4 of the quarry.	Appendix 9 Plan Set Section 6.1 Biodiversity
Health and well being impacts due to noise and dust	The noise assessment for the proposal recommends that operations not continue past Stage 2 until onsite noise monitoring has taken place to determine acoustic mitigations required for subsequent stages, if any. An air quality impact assessment was prepared to assess dust impacts. Silica dust was raised as a concern but is not noted that silica dust impacts are a result of crushing and grinding activities which are not proposed as part of the application.	Section 6.3.1 Air Quality Section 6.2.1 Noise
Road safety caused by Nelson Bay Road being a 'one way in one way out' road and the number of trucks	A traffic impact assessment was prepared for the application. It is noted that Nelson Bay Road is part of the approved network for B-double vehicles and as noted in the traffic impact assessment, downstream truck impacts associated with the proposal will be negligible as operations at the subject site would only come online at the same time as the Proponent's current quarry operations at Cabbage Tree Road cease.	Section 6.6 Traffic Impacts
Significant proposed operating hours	The proposed hours of operation are consistent with the Proponent's current operations at Cabbage Tree Road. In addition, the proposed access to the site is via Nelson Bay Road which is an approved B-double State road and so operations at the site will not impact residences and uses on nearby local roads. All trucks receiving sand at the site will be required to agree to abide by safety and operation requirements for the quarry which will reduce any impacts associated with the proposed operating hours.	Section 6.2.1 Noise
Impacts on landowners who use the existing right of carriageway through the north-east of the site as a result of the location of the proposed acceleration lane	The proposed new left-in left-out intersection overlapped the existing right-of-carriageway which runs through the north-east corner of the site and services 3679 Nelson Bay Road and 724 Marsh Road. To avoid potential safety issues where these landowners could exit through the acceleration lane on to Nelson Bay Road, the location of the proposed access to the site was moved further south. The result of this is that trucks exiting the site will have fully merged onto Nelson Bay Road prior to the right-of-carriageway.	Per this response and as shown on site plans

Inadequate rehabilitation of the site	Rehabilitation at the site will be undertaken in accordance with an approved rehabilitation plan requiring that rehabilitation commence at the completion of each stage. This will mean that at the time operations at the site cease, the earliest extracted areas of the site will already have had many years of rehabilitation.	Section 3.7 Rehabilitation
Impacts on community cohesion associated with low levels of trust in approval bodies	The robustness of the EIS has been informed by the requirements of the SEARs and the assessment of the application will be undertaken with rigour by the relevant assessment agencies.	Per this response
Impacts on tourism branding for Port Stephens	The proposal is essentially a continuation of the Proponent's current operations at Cabbage Tree Road nearby and so does not constitute a net increase in the level of sand quarry activities in the region and so is not considered to impact on tourism branding for Port Stephens.	Section 3.7 Rehabilitation Section 6.10 Social Impacts
Sense of cultural loss as the history of the site is absorbed into new land uses	The proposal seeks consent for a quarry life of 10 years, after which the site will be rehabilitated in accordance with the rehabilitation plan and land uses proposed for cleared areas at the site consistent with land uses permitted with consent in the RU2 zone.	Section 3.7 Rehabilitation Section 6.10 Social Impacts
Impact on the former Timorese refugee camp located near the site during WWII	A historic heritage report was prepared in support of the proposal which noted the northern portion of the site may have been associated with the former refugee camp but that a majority of the area associated with the camp was north of the subject site. Despite the former camp not being identified as having local or State heritage significance, an unexpected finds protocol will be put in place for during operations.	Section 6.5.2 Historic Heritage
Visual impacts if the quarry will be visible	The proposed extraction area was designed to maintain a minimum 15m buffer around the boundary of the site. A visual impact assessment was prepared which found that the proposal will not have any adverse visual impacts subject to the construction of an entrance gate to shield views into the site from drivers along Nelson Bay Road. In addition, the quarry design was amended for the area at Stage 4 by maintaining a natural bund along the 8.5m AHD contour which shields any potential visual impacts to the Shark, Ray & All Creatures Rescue to the north of the site.	Section 6.9 Visual
Safety associated with adjoining land owners being able to access the site and quarry pit	Boundary fencing will be provided as a deterrent for access with the design and type of fencing is to be informed by ecology considerations. While access to the site will be monitored and discouraged, it is noted that the battering grade associated with the edges of the extraction area will be maintained at 3H:1V which is consistent with a natural sand dune and so does not present inherent safety risks associated with steep slopes created as a result of the quarry.	Per this response
Vibration impacts on the integrity of buildings	The Noise and Vibration Impact Assessment report prepared in support of the application determined there would be no impacts experienced on buildings in the vicinity as a result of vibrations	Section 6.2.2 Vibration Impacts

A separate Community Engagement Table is provided at **Appendix 6**.

5.5 Subsequent Consultation

Following submission of this EIS, public exhibition will take place for a period of a minimum of 28 days in accordance with Clause 9 of Schedule 1 of the EPA Act. This exhibition period will allow for government agencies, the community and any other interested parties to review the EIS and its supporting reports to understand the proposal, the assessment of potential impacts and proposed mitigation measures.

Where meetings with relevant agencies would be beneficial to work through concerns these will be arranged. A submission to the EIS can be made which will be considered by DPHI who will be assessing the application as well as

the Proponent who will be given the opportunity to respond to all submissions in the form of a Response to Submissions report. Through the response to submissions process this may result in further design or operational amendments in response to consultation.

If approved, it is anticipated that the existing post-consent consultation and avenues for enquiry and feedback which are available for the Proponent's current quarry operations at Cabbage Tree Road would be implemented for the subject proposal. These include –

- Establishing a Community Consultative Committee to be operated in general accordance with DPHI's Community Consultative Committee Guideline (June 2023).
- Updates to the Newcastle Sand website to include information on the project as well as provide links to required auditing information and results.
- Establishing a Complaints Register
- Newsletter updates with contact details of key contacts to members of the community wish to make direct contact with representatives of Newcastle Sand as well as important updates.

The Proponent's website for the Cabbage Tree Road quarry site duly makes available project information, audit outcomes, and meeting minutes et cetera easily accessible. These measures and avenues for consultation would be similarly implemented for the subject proposal.

Section 6

Assessment of Impacts



6 Assessment of Impacts

Technical studies have been procured as relevant to address the key issues identified in the SEARs. A Mitigation Measures Table incorporating mitigation measures for the proposed development is provided at **Appendix 7**.

6.1 Biodiversity

A Biodiversity Development Assessment Report (BDAR) was prepared by Wedgetail Project Consulting (Wedgetail) and is provided as **Appendix 14**. The purpose of the BDAR was to assess flora and fauna at the site, the direct and indirect biodiversity impacts of the proposal on flora and fauna present including any Serious and Irreversible Impacts, and recommend management and mitigation measures for the proposal to avoid, minimise, and offset impacts.

The proposal was referred to the Commonwealth Government for assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and was determined to be a controlled action (EPBC 2026/10456) with Supplementary SEARs issued on 17 April 2026 to include assessment requirements for the project as a controlled action. The requirements of the Supplementary SEARs are addressed in the EPBC Controlled Action Supplementary Assessment prepared by Wedgetail and included at **Appendix 24**.

6.1.1 Biodiversity Assessment

Assessment and Findings

The BDAR was undertaken in two (2) key stages being Stage 1 Biodiversity Assessment and Stage 2 Impact Assessment.

Stage 1 first determined native vegetation, Threatened Ecological Communities (TECs) and vegetation integrity across the assessment area (the subject site and within 1,500m of the site), habitat suitability for threatened species, and identifying prescribed impacts. The assessment area and impact area within the site is shown at **Figure 23** and **Figure 24**.

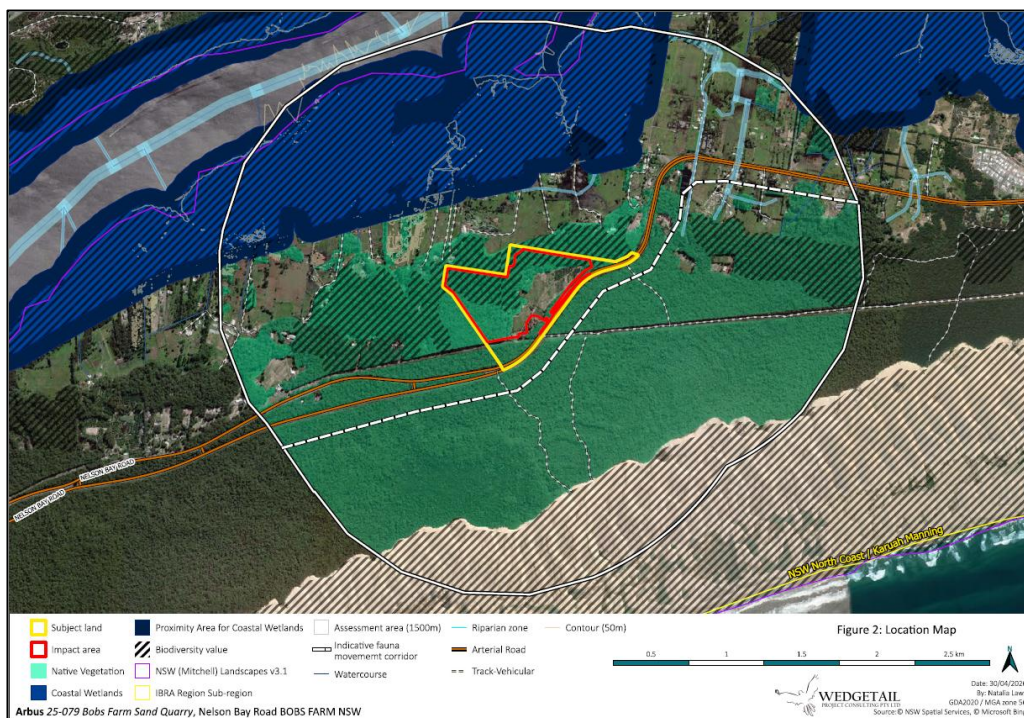


Figure 23: Assessment area

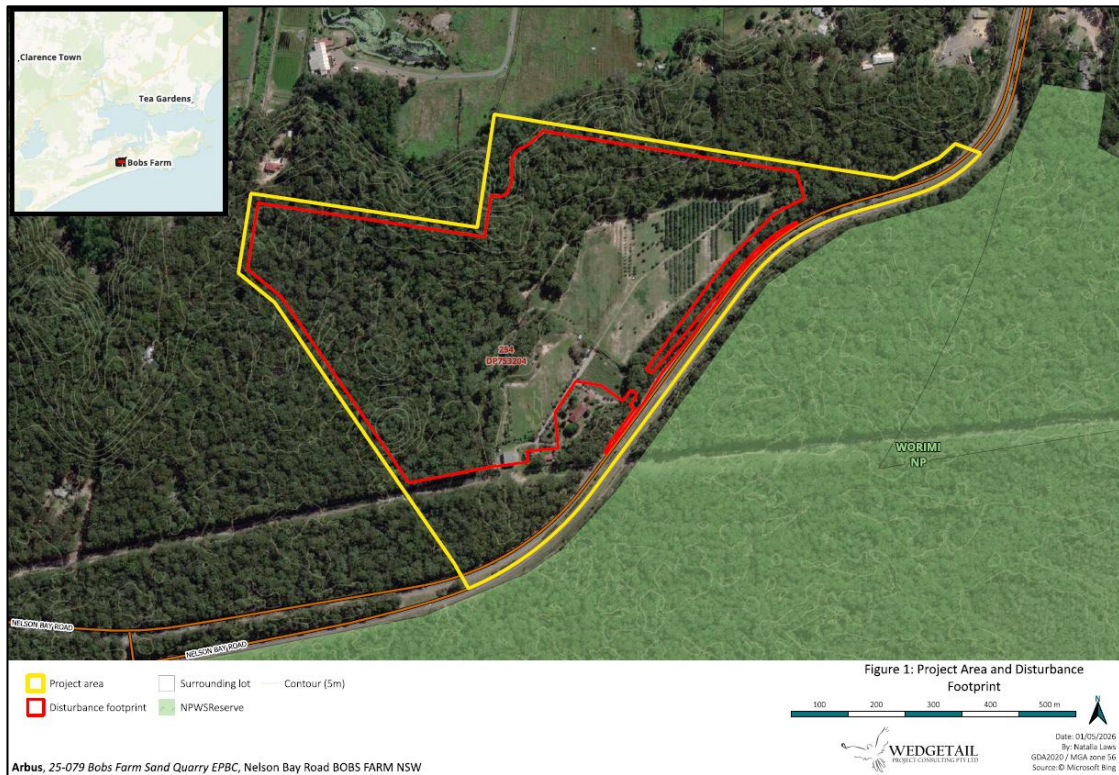


Figure 24: Disturbance area within the site shown in red

After this base assessment was established, Stage 2 comprised assessing the impact on biodiversity values and prescribed impacts after the quarry's siting and design to avoid and minimise impacts were considered. From this, an assessment of direct impacts, indirect impacts, prescribed impacts, as well as an assessment for Serious and Irreversible Impacts (SAIL) to biodiversity values was undertaken.

Finally, offset requirements including an impact summary and biodiversity credit report outlined ecosystem and species credits which would be required to offset impacts to native vegetation as a result of the proposal.

The assessment and findings of these two (2) stages are outlined below.

Stage 1 Biodiversity Assessment

Methods for Stage 1 were to first map the extent of native vegetation within the site; delineate vegetation boundaries including dominant species, structure and condition; and to determine Plant Community Types (PCT) and TECs. Vegetation zones were then defined based on relatively homogeneous areas of the same vegetation type and condition within the site. The location of these PCTs and vegetation types is shown at **Figure 25**.

After PCT and integrity values of native vegetation at the site were understood, a habitat constraints assessment and field surveys were undertaken for threatened flora and threatened fauna. The aim of these assessment was to determine the presence of the following specific habitat constraints –

- The location and suitability of hollow-bearing trees particularly with regard to suitable nesting hollows for threatened owls and cockatoos
- Presence of Flying Fox camps
- Presence of large eucalypts suitable for raptor nests
- Presence of waterbodies and habitat for threatened frogs and Southern Myotis
- Presence and suitability of potential microbat root habitat, suitable rock faces, cliffs, caves, and suitable human structures.

The survey methods to determine the above were undertaken in accordance with the BAM and are detailed in the BDAR.

In terms of landscape features, the assessment area was found to comprise part of the Sydney-Newcastle Barriers and Beaches, a quaternary coastal sediments on long recurved quartz sand beaches between rocky headlands backed by sand dunes. There are no mapped coastal wetlands within the site; however, Port Stephens Estuary (Nationally Important Wetland) is located approximately 500m to the north of the subject land. Based on the shape of the Tomaree Peninsula being an east-west oriented landscape feature, the subject site likely contributes to facilitating east-west movement of local fauna along this peninsula. No areas of outstanding biodiversity value occur at the site.

The assessment area comprises 1,771.97ha with 970.56ha (55%) of this being native vegetation cover. The subject site is 40.9ha with native vegetation comprising 32.92ha of the site, and 12.82ha being non-native vegetation (exotic vegetation including African Olive, Avocado Tree, Mango Tree, garden ornamentals, and grassland) and existing infrastructure.

Two (2) PCTs were identified at the site being PCT 3544 – Coastal Sands Apple-Blackbutt Forest, and PCT 4006 – Northern Paperbark-Swamp Mahogany Saw-sedge Forest. Features of these PCTs are –

PCT 3544: Coastal Sands Apple-Blackbutt Forest –

Tall dry sclerophyll forest occurring on Holocene sand dunes characterised by a canopy dominated by Eucalyptus pilularis (Blackbutt) and Angophora costata (Smooth-barked Apple), with a midstory of Banksia serrata (Old Man Banksia), Monotoca elliptica (Tree Broom-heath), and Endiandra sieberi (Hard Corkwood). The shrub layer and groundcover is dominated by ferns (Pteridium esculentum [Bracken Fern]) and shrubs (Breyenia oblongifolia [Breyenia], Leucopogon lanceolatus [Lance Beard-heath], Pimelea linifolia [Rice Flower]), with a low cover of grasses (Themeda triandra [Kangaroo Grass], Imperata cylindrica [Blady Grass], and Lomandra longifolia [Spiny Mat Rush]).

PCT 4066: Northern Paperbark-Swamp Mahogany Saw-sedge Forest –

Tall, forested wetland with a mixed canopy of Melaleuca quinquenervia (Broadleaved Paperbark), Eucalyptus grandis (Flooded Gum), and Livistona australis (Cabbage Palm), with occasional Eucalyptus pilularis (Blackbutt) on the edge of the narrow community (ecotone). The vegetation occurs on the back barrier sand flats in the north-western corner of the Subject Land, within a low area of the subject land subject to more frequent inundation. As such, the ground layer is dominated by a mix of wetland species characteristic of a forested wetland including Gahnia clarkei (Saw-sedge). This vegetation community contains elements of both a forested wetland and wet sclerophyll forest community (mesic species and high cover of Eucalyptus grandis), and this is likely the result of the community's small size and likelihood that it represents an ecotonal area between dry sclerophyll, wet sclerophyll and forested wetland communities.

Two vegetation zones were identified for PCT 3544 being Vegetation Zone 1, comprising intact PCT with all vegetation strata present within occasional dense patches of exotics (Moderate condition state). Vegetation Zone 2 comprised regenerative form managed under the existing powerline easement and adjacent more intact areas within the subject site.

PCT4066 was not further delineated into any Vegetation Zones.

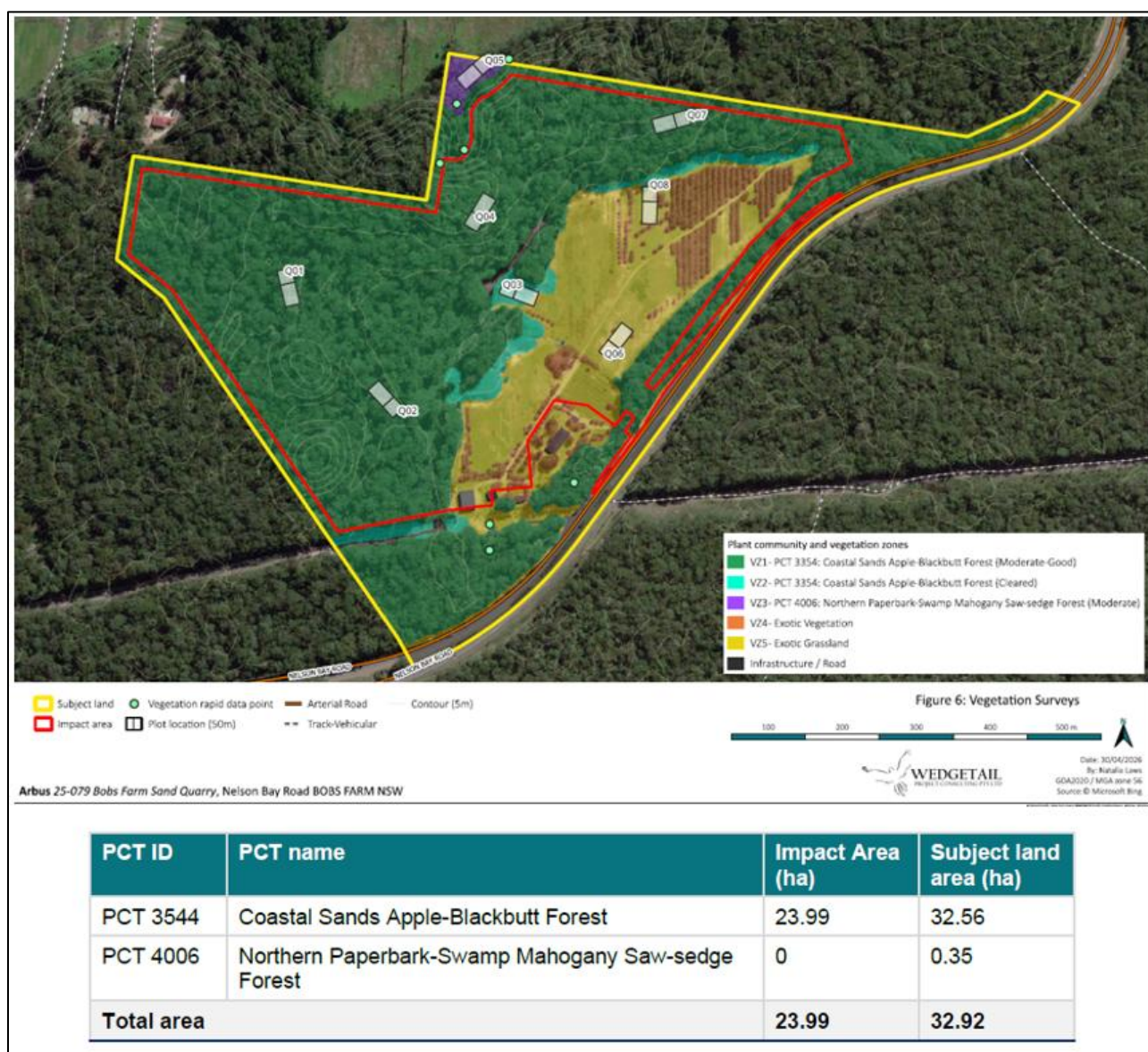


Figure 25: Location of PCTs and exotic vegetation / grassland

Habitat Suitability for Threatened Species

An assessment of habitat suitability was undertaken which first assessed *ecosystem credit species* for species that can be predicted to be present at the site by the type and condition of vegetation. This assessment did not require targeted surveys. *Species credit species* were assessed by compiling a list of Candidate Species Credits pertaining to threatened species that cannot be reliably predicted by the vegetation present. Threatened species known to occur in proximity to the subject site and are considered to have a high potential of occurring at the site were included as Candidate Species for further assessment.

Twenty (20) candidate flora species were retained for further assessment. Thirty-one (31) predicted fauna species were retained for further assessment.

Targeted surveys for identified candidate species were completed in accordance with the *Surveying threatened plants and their habitats – NSW survey guide* for the BAM. **Table 16** outlines candidate flora species and predicted fauna species, detail on survey findings, and area of habitat determined to be suitable within the site.

Table 16: Summary of threatened species identified

Identified species	Listing	Detail
Sand Doubletail (<i>Diuris arenaria</i>)	Vulnerable (BC Act)	A total of 108 specimens were recorded, all of which were outside impact areas.
Masked Owl (<i>Tyto Novaehollandiae</i>)	Vulnerable (BC Act)	Recorded during spotlighting and call playback surveys
Powerful Owl (<i>Ninox strenua</i>)	Vulnerable (BC Act)	Recorded during spotlighting and call playback surveys
Squirrel Glider (<i>Petaurus Norfolcensis</i>)	Vulnerable (BC Act)	Recorded during spotlighting surveys on eleven (11) remote cameras
Koala (<i>Phascolarctos Cinereus</i>)	Endangered (BC Act & EPBC Act)	Assumed present. Recorded during detection dog surveys
Grey-headed Flying-fox (Pteropus poliocephalus)	Vulnerable Endangered (BC Act & EPBC Act)	Species recorded flying over the site during spotlighting surveys
Southern Myotis (<i>Myotis macropus</i>)	Vulnerable (BC Act)	Recorded during anabat surveys
Eastern Cave Bat (<i>Vespadelus Troughtoni</i>)	Vulnerable (BC Act)	Recorded during anabat surveys
Little Bentwinged Bat (<i>Miniopterus Australis</i>)	Vulnerable (BC Act)	Recorded during anabat surveys
Large Bentwing-bat (<i>Miniopterus orianae oceanensis</i>)	Vulnerable (BC Act)	Recorded during anabat surveys
Greater Broad-nosed Bat (<i>Scoteanax rueppellii</i>)	Vulnerable (BC Act)	Recorded during anabat surveys
Eastern False Pipistrelle (<i>Falsistrellus tasmaniensis</i>)	Vulnerable (BC Act)	Recorded during anabat surveys
White-bellied Sea Eagle (<i>Haliaeetus leucogaster</i>)	Vulnerable (BC Act)	Species recorded flying over the site
Yellow-bellied Sheath-tail-bat (<i>Saccolaimus flaviventris</i>)	Vulnerable (BC Act)	Recorded during anabat surveys
Varied Sittella (<i>Daphoenositta chrysoptera</i>)	Vulnerable (BC Act)	Recorded within the Subject Land during targeted bird surveys

One (1) additional species was recorded outside of the Subject Land during surveys, *Diuris praecox* (Newcastle Doubletail) (Vulnerable under the BC Act and EPBC Act). The species was recorded along the powerline easement to the west of the Subject Land during surveys completed in 2013. No records of the species occur within the Impact Area.

Of the fifteen (15) recorded threatened species, four (4) required offsetting and further assessment. These four (4) species were –

- Masked Owl (*Tyto novaehollandiae*)
- Powerful Owl (*Ninox strenua*)
- Squirrel Glider (*Petaurus norfolcensis*), and
- Koala (*Phascolarctos cinereus*).

The extent of proposed vegetation for clearing which is suitable for all four (4) species requiring further assessment is 22.99ha.

Prescribed impacts requiring consideration were identified as non-native vegetation (fruit trees used by Grey-headed Flying-Fox), habitat connectivity, and waterbodies, water quality and hydrological processes.

Stage 2 Impact Assessment

In accordance with the BAM, Stage 2 assessed how the proposal avoids and minimises direct and indirect impacts and Serious and Irreversible Impacts (SAIL) impacts. These assessments and findings are outlined below.

Avoid and Minimise

Avoid and Minimise is defined in the BAM (2020) as –

- **Avoid** - measures taken by a proponent such as careful site selection, or actions taken through the design, planning, construction and operational phases of the development to completely prevent impacts on biodiversity values, or certain areas of biodiversity.
- **Minimise** – a process applied throughout the development planning and design life cycle that seeks to reduce the residual impacts of development on biodiversity values.

The proposal will impact a total of 32.49ha which includes 0.26ha of existing infrastructure, 2.10ha of exotic vegetation and 6.14ha of exotic grassland. Direct and indirect impacts to native vegetation are avoided and minimised in the following ways –

1. Minimising impact to higher condition vegetation and areas of TEC, prioritising impacts within lower condition vegetation where possible, noting –
 - Parts of the site comprising PCT 3544 which will be avoided from the proposed extraction area include –
 - The southern portion of the site south of the electricity easement,
 - A minimum 15m buffer between site boundaries and any areas of extraction
 - The area east of the existing right-of-carriageway in the northeast of the site
 - All of the 0.35ha of PCT 4006 within the site will be retained.
2. Retention of 27% of identified hollow-bearing trees particularly in the southern corner of the site, within the road reserve and retained vegetation in the north-east corner of the site.
3. Avoiding impacts to wetland areas associated with PCT 4006
4. Minimising impacts to threatened species including the following EPBC listed species –
 - *Diuris praecox* (Newcastle Doubletail) – the species was not recorded within the Subject Land, however broadly suitable habitat occurs within the powerline easement. No additional impacts (beyond existing uses) to the powerline easement are proposed under the proposed development.
 - Koala (*Phascolarctos cinereus*) – while scats were recorded within the site, the vegetation within the site broadly represents only foraging habitat for the species.
 - Grey-headed Flying-fox (*Pteropus poliocephalus*) – the vegetation within the site is considered foraging habitat for the species.
5. Minimising impacts to suitable habitat for the following EPBC Act listed threatened species (not recorded within the Subject Land, only suitable habitat) –
 - Spotted-tailed Quoll (*Dasyurus maculatus*) – the vegetation within the site is considered possible habitat for the species with only a moderate likelihood of occurrence.
 - New Holland Mouse (*Pseudomys novaehollandiae*) – the vegetation within the site is considered potential habitat for the species, however the species has not been recorded within the site during targeted surveys with only a moderate likelihood of occurrence.
6. Using dust suppression water carts to minimise indirect impacts caused by excessive dust.
7. Staging clearing and extraction along with progressive revegetation. This allows for the maintenance of connectivity east-west across the site. This revegetation approach is based on successful revegetation being undertaken at the Proponent's existing quarry at 398 Cabbage Tree Road, Williamstown
8. Developing a Biodiversity Management Plan for rehabilitation and management of retained areas.

Impact Assessment

Residual direct impacts to biodiversity values after avoid and minimise measures are included have been assessed as not causing an increase in the protection status of threatened species such as causing impacts to be considered Serious and Irreversible Impacts. The proposal will impact the vegetation integrity score of PCT 3544 within the site as a result of the proposal.

Indirect impacts likely to occur on native vegetation were assessed as being the potential for transfer of weeds and pathogens to and from the site as well as noise, vibration, lighting, waste and air pollution impacts to adjacent sensitive habitat areas. These impacts are assessed as having a low likelihood of occurrence and consequence under management.

Prescribed impacts were assessed as relating to habitat connectivity; waterbodies, water quality and hydrological processes; and, vehicle strikes. Habitat connectivity will be maintained by way of retained vegetation corridors to the north and south of the site (minimum 40m wide) as shown at **Figure 26**.

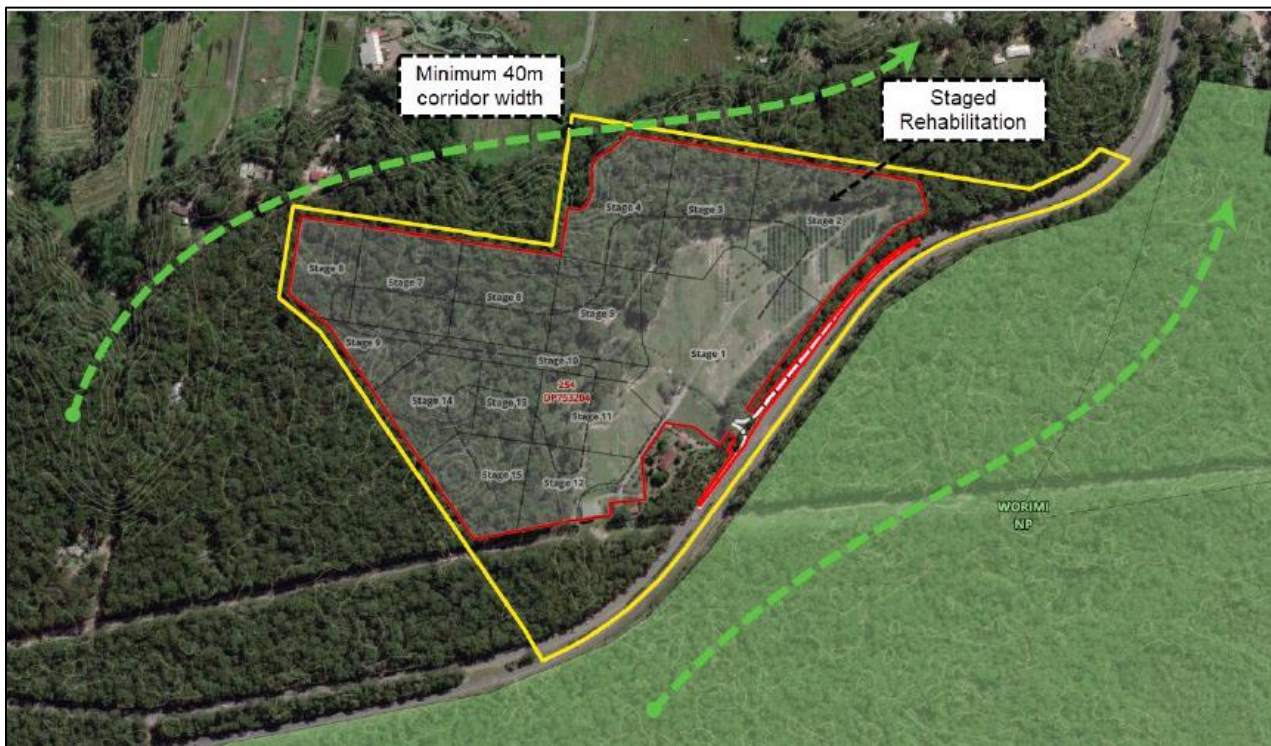


Figure 26 : Habitat connectivity

Impacts to Groundwater Dependent Ecosystem (GDE) will be avoided by proposing extraction not within the north of the site where a GDE is mapped. A final landform of one (1) metre above the predicted groundwater level will not result in impacts on groundwater aquifer by way of drawdown. This finding was also made as part of the Water Resources assessment (**Section 6.4**). Vehicle strikes to native fauna are unlikely as quarry operations will only take place during daylight hours.

Serious and Irreversible Impacts (SAIL)

Under the BAM, SAIL are high-consequence development impacts on threatened species or ecological communities that are most at risk. The assessment of SAIL is guided by four (4) principles in the BC Act, being –

- | | |
|-------------|---|
| Principle 1 | <i>Species or ecological community currently in a rapid rate of decline</i> |
| Principle 2 | <i>Species or ecological communities with a very small population size</i> |
| Principle 3 | <i>Species or area of ecological community with very limited geographic distribution</i> |
| Principle 4 | <i>Species or ecological community that is unlikely to respond to management and is therefore irreplaceable</i> |

Sand Doubletail is a small ground orchid known from the Tomaree Peninsula near Newcastle, NSW found in coastal heath and dry grassy eucalypt forest on sandy flats. It is currently known from three main locations, two of which are reserved but occur in areas subject to disturbance. Other scattered individuals are known to occur outside reserves. Light purple to mauve flowers appear through the months of August to September, and are 20-30 mm wide. Flowering stems can be up to 40 cm high. Usually there are two leaves, 15-50 cm long by 2-6 mm wide, growing from the base of the plant.

A total of 108 specimens of the species have been recorded within the site, all of which were outside of the proposed impact area and so all direct impacts to the species are avoided. The proposal is unlikely to result in impacts to the species habitat as the species' total extent of occurrence is 21,426km² with a total area of occupancy of 72km² with the proposal not resulting in any change in these distributions.

As such, the proposal will not result in direct impacts to *Diurus arenaria* and so is unlikely to result in significant impact to this SAIL species.

Impact Summary and Biodiversity Credits

A summary of impacts that require offsetting – ecosystem credits and species credits – is outlined below. Exotic vegetation and exotic grassland are not subject to offsetting.

Ecosystem credits for offsetting are replicated at **Figure 27**. As shown, a total of 552 ecosystem credits are required for impacts to PCT 3544 (Vegetation Zone 1).

Vegetation zone	PCT name	TEC	Impact area (ha)	Current VI score	Future VI score	Change in VI score	Biodiversity risk weighting	Number of ecosystem credits required
1	PCT 3544: Coastal Sands Apple-Blackbutt Forest	N/A	22.99	64.1	0	-64.1	1.5	552
2	PCT 3544: Coastal Sands Apple-Blackbutt Forest	N/A	1.00	10.7	0	-10.7	1.5	0
Total credits								552

Figure 27: Ecosystem credits

A summary of the impacts on threatened species and the required species credit species is replicated at **Figure 28**. As shown, a total of 2,948 species credits are required.

Common name	Scientific name	BC Act status	EPBC Act status	Loss of habitat (ha) or individuals	Biodiversity risk weighting	Number of species credits required
Masked Owl	<i>Tyto novaehollandiae</i>	V	-	22.99 ha	2	737
Powerful Owl	<i>Ninox strenua</i>	V	-	22.99 ha	2	737
Squirrel Glider	<i>Petaurus norfolcensis</i>	V	-	22.99 ha	2	737
Koala	<i>Phascolarctos cinereus</i>	E	E	22.99 ha	2	737
Total credits						2,948

Figure 28: Species credits

Management and Mitigation Measures

A summary of management and mitigation measures are outlined below. A full excerpt of management and mitigation measures is included in the BDAR and replicated within the Mitigations Table at **Appendix 7**.

- Clearing of native vegetation
 - When clearing native vegetation, areas are to be delineated to avoid unnecessary clearing with associated signage and inductions around 'no-go' areas.
 - Clearing along boundaries of excavation areas is to have regard to Tree Protection measures
 - A suitably licensed and trained fauna handler is to be present during any clearing works where clearing is for vegetation greater than 3m in height.

- Removal of hollow-bearing trees / habitat resulting in fauna injury and mortality
 - Pre-clearance surveys are to be undertaken to determine the presence of fauna habitat features (i.e. nests or hollows) as well as during any clearing
 - A suitable Hollows Offset Program to be included in the Biodiversity Management Plan which is to include provision for 793 replacement hollows of a suitable type (reclaimed hollows from site and / or nest boxes as well as ongoing maintenance; the erection of suitable posts within the rehabilitation area; and, Replacement Hollows Report to be prepared at year 10 of the quarry
- Impacts to surface and groundwater quality and quantity due to sediment and / or contaminant runoff
 - Erosion and sediment controls employed as needed
 - Excavation to 0.7m above the groundwater table with the exception of poles and piers required for construction
 - Appropriate contamination mitigation measures including all site-vehicles carrying spill kits, limiting the use of pesticides where possible, and employing appropriate hydrocarbon controls onsite for containment of spills.
- Vehicle collision with fauna
 - Speed limits within the site to be limited to 40km/h with appropriate signage and site inductions
- Transfer of weeds and pathogens to and from the site
 - All vehicles working outside established hardstand areas must arrive to site clean
 - Ensure measures to limit soil and seed material transfer
 - Identify weed infestations and map these in the Biodiversity Management Plan.
- Noise, vibration, lighting, waste and air pollution impacts to adjacent sensitive habitat areas
 - Measures to mitigate impacts on flora and fauna from noise, vibration, waste, light and air pollution by way of a carry-in carry-out policy for rubbish and waste; restriction of public access into the site including pets; fence sensitive areas to delineate 'no go' areas; operations only within operating hours; lighting to comply with relevant standards and to be reduced to a minimal level and directed away from vegetated areas during construction and operation; noise minimisation practices in accordance with a Noise Management Plan; and, dust control measures to be implemented such as covering loads where required.

6.1.2 EPBC Act Supplementary Assessment

The project was determined to be a "controlled action" under Section 75 of the EPBC Act on 26 March 2026 with the EPBC Act controlling provision for the proposed action being *listed threatened species and communities* (Section 18 and 18A) and assessment taking place under the Bilateral Agreement between NSW and the Commonwealth in accordance with Supplementary SEARs (EPBC 2026/10456) (**Appendix 2**).

This section of the EIS outlines this further assessment, findings and recommended additional measures to compensate for residual significant impacts on Matters of National Environmental Significance (MNES) in accordance with the EPBC Act Environmental Offsets Policy (2012) / endorsed offset framework.

The EPBC referral considered that there is likely to be significant impact on the following MNES –

- Koala (*Phascolarctos cinereus*) (combined populations of Qld, NSW and the ACT) (Endangered)
- Grey-headed Flying-fox (*Pteropus poliocephalus*) (Vulnerable)
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland (Endangered)

It was also considered by the EPBC referral that the proposed action may result in significant impacts to the following –

- Swift Parrot (*Lathamus discolor*) (Critically endangered)
- Regent Honeyeater (*Anthochaera phrygia*) (Critically endangered)
- Spotted-tailed Quoll (*Dasyurus maculatus*) (Endangered)
- South-eastern Glossy Black Cockatoo (*Calyptrorhynchus lathami lathami*) (Vulnerable)
- Yellow-bellied Glider (south-eastern) (*Petaurus australis australis*) (Vulnerable)
- New Holland Mouse (*Pseudomys novaehollandiae*) (Vulnerable)

Assessment and Findings

The methodology for assessment comprised –

- Detailed assessment of relevant MNES including surveys completed and identification of suitable habitat in the project area and disturbance footprint and presence of Important Populations of Habitat Critical to the Survival of the MNES
- Detailed proposed measures to avoid, mitigate and manage impacts to MNES
- Detailed assessment of impacts to MNES (direct, indirect and cumulative)
- Residual significant impact assessment in light of Significant Impact Guidelines, and
- Detailed measures to compensate for residual significant impacts on MNES in accordance with the EPBC Act Environmental Offsets Policy (2012) / endorsed offset framework.

Findings of the above investigations undertaken are presented below.

Assessment of MNES

Targeted surveys were completed for listed MNES in accordance with the BAM, Threatened Biodiversity Database Collection and relevant NSW and Commonwealth guidelines and are detailed in the BDAR (**Appendix 14**).

Koala (*Phascolarctos cinereus*)

Surveys for koalas included a habitat assessment, detection dog surveys, spotlighting surveys and remote cameras. Desktop surveys used the Bionet Threatened Species Records, Port Stephens Comprehensive Koala Plan of Management, and Species of National Environmental Significance and Selected Marina and Cetacean Species mapping.

A total of 22.9ha within the disturbance footprint and 31.31ha within the project area are identified as marginal foraging habitat which represents a small proportion of associated PCTs available for foraging habitat in the locality. Habitat for the koala is highly variable with suitability regionally variable and influenced by the availability of nutritional quality of food trees, presence of suitable resting trees and microclimates, age structure of habitat, management history and barriers to dispersal.

The project area contains one (1) 'high use' tree (*Eucalyptus pilularis*), and two (2) 'low use' trees (*Angophora costata* and *Melaleuca quinquenervia*). No koalas were detected during surveys; however, signs of koalas (scats) were detected during the completion of detection dog surveys.

The vegetation does not represent important refuge for koalas and is unlikely to represent habitat essential for foraging, breeding social behaviour or dispersal. As such, vegetation at the site was assessed as being supplementary foraging habitat but not 'habitat critical to the survival of the species'.

Grey-headed Flying-fox (*Pteropus poliocephalus*)

Surveys for Grey-headed Flying-fox included habitat assessment for foraging habitat, camp search, and spotlight surveys. Desktop surveys The Flying fox Foraging Habitat Mapping NSW, Bionet Threatened Species Records, and Species of National Environmental Significance and Selected Marina and Cetacean Species mapping.

The project area contains a number of myrtaceous tree species which may provide foraging habitat for the species. However, no breeding habitat (camps) were identified and therefore it is unlikely to contain a key source population for breeding, or one that is necessary for maintaining genetic diversity. The project area is also not located at the limit of this species' range. As such, it is unlikely the vegetation within the Project Area comprises an important population of the Grey-headed Flying-fox.

A total of three (3) listed foraging species were recorded within the project area, of these none are listed important winter flowering foraging species. The vegetation in the project area represents supplementary Spring-Autumn foraging habitat for the species and is unlikely to represent important habitat or habitat critical to the survival of the species.

Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland

This vegetation occurs on the mainland and islands near to the coast (within 20 km) from Southeast Queensland to south-eastern NSW. From Southeast Queensland to the Sydney Basin Bioregion, the canopy is typically dominated or co-dominated by *Melaleuca quinquenervia* and / or *Eucalyptus robusta*.

Surveys for Coastal Swamp Sclerophyll Forest of New South Wales and Southeast Queensland included vegetation mapping, sampling plots and vegetation integrity plots. Desktop assessments completed were *Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland ecological community Conservation Advice* and Commonwealth Environment Protection and Biodiversity Conservation Act 1999 Species Profile and Threats Database.

This PCT vegetation at the site was found to meet the minimum condition thresholds for the Endangered Ecological Community.

Swift Parrot (*Lathamus discolor*)

The Swift Parrot breeds mostly on the east and south-east coast of Tasmania during summer and migrates to mainland Australia in autumn. During winter the species disperses across forests and woodlands, foraging on nectar and lerps mainly in Victoria and New South Wales.

Surveys for Swift Parrot included habitat assessment (foraging habitat) and vegetation integrity plots as well as targeted bird surveys undertaken in 2014-15 as part of the previous SSD application. Desktop assessments completed included the Bionet Threatened Species Records, NSW Important Area Mapping, and Species of National Environmental Significance and Selected Marina and Cetacean Species mapping.

In accordance with the National Recovery Plan for the species, “habitat critical for the survival of the species” is defined as important breeding or foraging habitat. Swift Parrot is known to only breed in Tasmania and therefore the project will not impact breeding habitat.

In terms of foraging habitat, the project area contains one (1) foraging tree species (Blackbutt *Eucalyptus pilularis*) which comprises 16% of Vegetation Zone 1 as identified in the BDAR for PCT 3544. Therefore, this area of the site broadly meets the definition of “*habitat critical to the survival of the species*”. However, the nearest record of Swift Parrot is >5km to the north of the Project Area. As such, while the vegetation is potential foraging habitat for the species it is unlikely to represent important foraging habitat based on the lack of historical records for the species within the locality. Therefore, it is unlikely to represent “*habitat critical to the survival of the species*”.

Regent Honeyeater (*Anthochaera phrygia*)

Surveys for Regent Honeyeater included Habitat Assessment (foraging habitat) and vegetation integrity plots, targeted visual and auditory bird surveys in January 2026 with opportunistic bird surveys being completed during morning and afternoon trap checking, and prior to spotlighting surveys (dusk surveys). Observations were validated by experienced fauna ecologists visually, with the aid of binoculars or aurally from call identification.

No mapped Important Bird Areas for the Species (i.e. key breeding areas or other breeding areas) are mapped within the project area. The vegetation within the project area does not contain key foraging species for the Regent Honeyeater, as such the vegetation is unlikely to meet the definition of “any foraging habitat in areas where the species is likely to occur”. Therefore, the vegetation within the Project Area does not meet the definition of “Habitat critical to the survival of the species”.

Spotted-tailed Quoll (*Dasyurus maculatus*)

Surveys for Spotted-tailed Quoll included habitat assessments (foraging and latrine search), remote cameras, and spotlighting surveys. Desktop assessments completed included the Bionet Threatened Species Record and Species of National Environmental Significance and selected marine and cetacean species.

The disturbance footprint and project area contain broadly suitable foraging habitat for the Spotted-tailed Quoll; however, the project area does not occur within proximity of any listed important populations for the species and the species was not recorded within the Project Area during targeted surveys. In addition, there are only five (5) records of the species within 5km of the Project Area. As such, it is unlikely the proposed disturbance footprint comprises an important population of the Spotted-tailed Quoll or habitat critical to the survival of the species.

South-eastern Glossy Black Cockatoo (*Calyptorhynchus lathami lathami*)

Surveys for South-eastern Glossy Black Cockatoo included habitat assessments (foraging habitat and nest search), and targeted bird surveys in January 2026 with opportunistic bird surveys being completed during morning and afternoon trap checking, and prior to spotlighting surveys (dusk surveys). Observations were validated by experienced fauna ecologists visually, with the aid of binoculars or aurally from call identification.

The disturbance area contains minimal suitable foraging habitat and while suitable breeding hollows occur in the disturbance area, the species has not been recorded during targeted surveys and only two (2) records of the species occur within 5km of the project area. As such, the disturbance area is unlikely to represent key habitat for foraging, breeding, roosting or dispersal for the species. It is considered unlikely that the vegetation within the project area represents habitat that is key to maintaining genetic diversity or the long-term persistence of the species within the locality.

As such, it is unlikely the disturbance footprint comprises an important population of the Glossy-black Cockatoo or habitat critical to the survival of the species.

Yellow-bellied Glider (south-eastern) (*Petaurus australis australis*)

Surveys for Yellow-bellied Glider (south-eastern) included habitat assessments (foraging habitat, hollow-bearing trees and feeding search), spotlighting surveys, and call and playback surveys.

The disturbance footprint and project area contain broadly suitable foraging habitat for the Yellow-bellied Glider; however, there are no records of the species within 5km of the project area. An assessment against the key features for yellow-bellied glider (south-eastern) is presented at **Table 17**.

Table 17: Yellow-bellied Glider (South-eastern) Assessment

Feature	Assessment
Habitat – large contiguous areas of floristically diverse eucalypt forest	Two (2) known foraging species occur within the Project Area; <i>Eucalyptus pilularis</i> (Blackbutt) and <i>Eucalyptus grandis</i> (Flooded Gum). However the species has not been recorded within the Project Area, no records occur within 5 km of the Project Area and no signs of foraging were recorded within the Project Area.
Future Climate Change Refuges – areas identified as refuges under future climate change scenarios	The vegetation within the Project Area is not identified as future refuge under climate change
Short-term post-fire refuges – short or long-term post-fire refuges (i.e., unburnt habitat within or adjacent to recently burnt landscapes) that allow the species to persist, recover and recolonise burnt areas	The vegetation within the Project Area is unlikely to represent important post-fire refuge for the species within the locality owing to the site's exposure and absence of sheltered refugia.
Habitat corridors – habitat corridors required to facilitate dispersal of the subspecies between fragmented habitat patches and/or that enable recolonization or movement away from threats	The vegetation likely represents a local movement corridor (north-east / south-west). Through an iterative process of avoidance
Evidence of feeding – areas in which some trees have evidence of use for sap extraction by yellow-bellied glider	No evidence of Yellow-bellied glider foraging was detected within the Project Area

The project area is not associated with any identified and listed important populations for Yellow-bellied Glider.

New Holland Mouse (*Pseudomys novaehollandiae*)

Surveys for New Holland Mouse included habitat assessment and vegetation integrity plots, Elliott Trapping, Pitfall Trapping and remote cameras.

The vegetation within Vegetation Zone 1 as described in the BDAR meets more than one of the listed ecological functions above, therefore the habitat is likely to “*have the potential to be habitat critical to the survival*” of the species. No New Holland mice were recorded during the completion of targeted surveys within the Project Area. A total of four (4) records of the species occur within 5 km of the Project Area, as such a habitat assessment was completed with reference to the ecological functions referenced in the National Recovery Plan for the species. An assessment against the important features for New Holland Mouse is presented at **Table 18**.

Table 18: New Holland Mouse Assessment

Feature	Assessment
Foraging habitat – vegetation with appropriate density and diversity to be able to support a population, such as native vegetation with seasonal abundance of edible flowering, fruiting, and seeding plants.	The vegetation within the Project Area is consistent with “vegetated sand dunes” with high floristic diversity with leguminous perennials. As such, the vegetation is likely to represent broadly suitable foraging habitat for the species.
Breeding habitat – substrate for the species to be able to create burrows, or alternatively, ‘surface nests’ in low-lying vegetation that is suitable for successful reproduction and rearing of young.	The project area is characterised by sandy soils suitable for burrowing. As such, the vegetation within the project area is likely representative of suitable breeding habitat for the species.
Habitat for the long-term maintenance of the species – including areas that are not subject to prolonged drought or at risk of extreme droughts in future	The vegetation within the project area is unlikely to represent potential climate refugia for the species.
Habitat for the maintenance of genetic diversity – includes all current habitats where the species is extant as they contain populations necessary to achieve maximum genetic diversity and increase resilience of the species against future threats.	As the species has not been recorded within the project area the site is unlikely to represent habitat for a population necessary to achieve maximum genetic diversity and increase resilience of the species against future threats.
Habitat for translocation – can be identified using habitat modelling followed by ground-truthing at the local-scale and can include locations that have accounted for future changes due to climate change regimes as well as the exclusion of invasive predators	The vegetation within the Project Area is likely suitable habitat for translocation considering the presence of broadly suitable foraging habitat, and potential breeding habitat. The species is likely to also utilise rehabilitated areas following extraction (known to have peak abundance 7-9 years post-rehabilitation)

Avoid, Mitigate and Manage Impacts to MNES

A total of 32.49ha will be impacted by the proposed disturbance footprint including 0.26ha of existing infrastructure, 2.10ha of exotic vegetation, and 6.14ha of exotic grassland. Direct and indirect to native vegetation have been avoided and minimised through the following –

- Minimising impacts to higher condition vegetation and areas of TEC
- Retention of 27% of hollow bearing trees in the southern corner of the project area, road reserve, retained vegetation to the each of the right of carriageway within the site, and vegetated buffers
- Avoidance of PCT 4006 in the northwest of the site
- Minimise impacts to suitable habitat for Spotted-tailed Quoll and New Holland Mouse (EPBC listed species) as these species were not recorded within the site with the site comprising suitable habitat only.
- Use of water carts to minimise impacts associated with dust
- Staged extraction and progressive revegetation over the life of the quarry
- Rehabilitation and management of retained areas.

Further mitigation and management of impacts will be achieved through recommendations associated with clearing of native vegetation, removal of hollows, impacts to surface water, vehicle collisions with fauna, transfer of weeds and pathogens to and from the site, as well as noise, vibration, lighting, waste and air pollution to adjacent sensitive habitat.

Full excerpts of mitigation measures are included in the EPBC Assessment Report at **Appendix 24** and replicated at **Appendix 6**.

Assessment of Impacts to MNES

Direct impacts to EPBC listed species were assessed as impacting 22.99ha of vegetation and habitat by way of clearing for the following species –

- Koala
- Grey-headed Flying-fox
- Swift Parrot
- New Holland Mouse

A total of 23.99ha of vegetation and habitat impacted by way of clearing for the following species –

- Spotted-tailed Quoll
- South-eastern Glossy Black Cockatoo

No impact was identified for the following species –

- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
- Regent Honeyeater
- South-eastern Glossy Black Cockatoo

Indirect impacts were identified as being accidental clearing outside of disturbance area; general edge effects of clearing (e.g. clearing, light, noise, weeds); noise, dust or light spill; and, movement of weeds and pathogens from the site to adjacent vegetation.

Significant Impact Assessment

The assessment found there would not be any significant impact on critically endangered, endangered species and ecological communities, or vulnerable species. A summary of this assessment is replicated at **Table 19**.

Table 19: Significant Impact Assessment

Direct Impact	BC Act Status	EPBC Act Status	Habitat Type	Extent (ha, number of individuals)	Significant impact
Koala (combined populations of Qld, NSW and the ACT)	E	E	Foraging habitat, habitat critical to the survival of the species	22.99ha	No
Grey-headed Flying-fox	V	V	Foraging habitat, habitat critical to the survival of the species	22.99ha	No
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	EEC	EEC	Class B1 TEC, Area Critical to the Survival of the TEC	0ha	No
Swift Parrot	CE	CE	Potential foraging habitat, habitat critical to the survival of the species	22.99ha	No
Regent Honeyeater	CE	CE	None	0ha	No
Spotted-tailed Quoll	E	E	Broadly suitable habitat, habitat critical to the survival of the species	23.99ha	No
South-eastern Glossy Black Cockatoo	V	V	Marginal foraging habitat	23.99ha	No
Yellow-bellied Glider	V	V	None	0ha	No
New Holland Mouse	V	-	Broadly suitable habitat, habitat critical to the survival of the species	22.99ha	No

As demonstrated at Table 17, there would be no significant impact on any critically endangered, endangered species and ecological communities, or vulnerable species.

Offsetting

Offsetting for the proposed action will be completed in accordance with the NSW Biodiversity Offset Scheme (BOS). Details on offsets are at the BDAR at **Appendix 14** and the EPBC MNES assessment at **Appendix 24**.

A summary of offsets as a result of the proposal is –

- 552 Ecosystem Credits for impacts to the Coastal Dune Dry Sclerophyll Forests. The assessment is being undertaken under the Bilateral Agreement and as such the BOS applies to the proposed development. In accordance with the BOS, these ecosystem credits account for impacts on the Grey-headed Flying-Fox (*Pteropus poliocephalus*); Swift Parrot (*Lathamus discolor*); Regent Honeyeater (*Anthochaera phrygia*); Spotted-tailed Quoll (*Dasyurus maculatus*); South-eastern Glossy Black Cockatoo (*Calyptorhynchus lathami*)

lathami); Yellow-bellied Glider (south-eastern) (*Petaurus australis australis*); and New Holland Mouse (*Psuedomys novaehollandiae*).

- 737 species credits required for impacts on koalas (*Phascolarctos cinereus*)

6.2 Noise and Vibration

A Noise and Vibration Impact Assessment was prepared by Vipac Engineers and Scientists Limited (Vipac) and is included at **Appendix 25**. The assessment was completed to determine the potential impacts of the proposal on noise-sensitive receptors in the surrounding area.

In response to queries raised during community consultation regarding potential vibration impacts as a result of the proposal, the report also includes a vibrations assessment to ascertain the proposal's potential to impact on human comfort as well as structural integrity of nearby buildings and their contents.

Vipac undertook the noise and vibration impacts for the previous application for a sand quarry at the site (now withdrawn). Data from the previous assessment were used to inform the current application's assessment and recommendations and are duly referenced.

6.2.1 Noise Impact Assessment

Noise monitoring data captured in 2019 for the previous application (now withdrawn) was considered to be representative of the current ambient noise levels in the surrounding area and were used for the current proposal. Noise monitoring at that time was undertaken for a period of one week between 1 October and 8 October 2019 and conducted in accordance with relevant assessment methodologies.

Noise logging was undertaken to determine the existing environmental noise levels of potentially affected areas and to enable an assessment of the potential noise impacts on the receiving environment.

Assessment and Findings

Noise modelling was undertaken using the SoundPLAN computational noise modelling software package which is accepted for use by the NSW Environment Protection Agency for environmental noise modelling purposes. A site survey was used within the model and noise sensitive receivers plotted to assess potential impacts. Sound power levels of machinery and equipment to model impacts were taken from relevant accepted standards as well as data from Spectrum Acoustics who provides acoustic assessment for the Proponent's current quarry operations at the Cabbage Tree Road sand quarry. All measurements have been conducted in accordance with modified ISO 6395 methodology.

The proposed staging plan for the quarry was used to assess noise impacts. **Figure 29** sets out the sound power levels applied for machinery and equipment to be used in association with the quarry, sound power reference sources, and the approximate source height of the machinery and equipment.

Description	Sound Power levels		Sound Power Reference Source	Approx Source Heights
	$L_w, L_{Aeq}(dB(A))$	$L_w, L_{A1}(dB(A))$		
Volvo EC350E Excavator	104	-*	Spectrum Acoustics	2m
Volvo A40G x 2 Articulated Dump Truck	106 (per vehicle)	-*	Spectrum Acoustics	2m
Sales Loader (Volvo L220 x 2)	109 (per vehicle)	119	Spectrum Acoustics**	2m
Reverse Alarm x 2	105*** (per alarm)	115	Note 1	2m
Conveyor System Head Drive	97	-*	BS5228-1-2009	3m
Screens	101	-*	Spectrum Acoustics	3m
Pump x 2	100 (per pump)	-*	BS5228-1-2009	0.5m
Export Road Truck	103	113	Spectrum Acoustics	2m
McLanahan Wash Plant	101	-*	Spectrum Acoustics****	3m
McLanahan De-watering Screen	101	-*		3m

Figure 29: Sound power levels used for noise assessment

Twenty-nine noise sensitive receivers were identified in proximity to the site with the nearest rural dwellings to the extraction area located approximately fifty-five (55) metres to sixty (60) metres from the site associated with Sensitive Receivers R-15 and R16 (**Figure 30**). The location of two (2) approved tourist accommodation cabins are also noted at R13 and R14 which have not been constructed but conservatively included as part of the assessment.

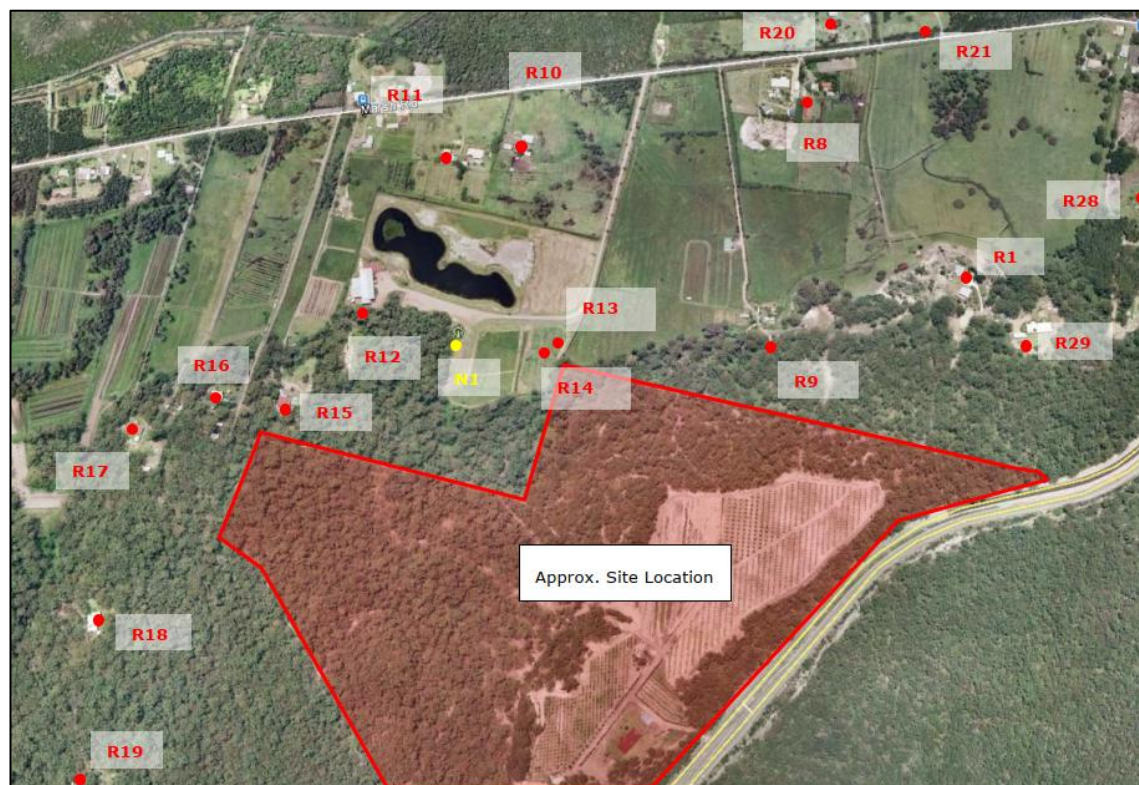


Figure 30: Location of surrounding nearby receivers

The noise assessment considered a neutral and a worst-case scenario for construction noise and operational noise. These assessments were based on weather conditions for the area, sound power levels for machinery and equipment in relation to the location of sensitive receivers to quarry stages, the proposed sand extraction operations, and an operational frequency of 15-minutes. The NSW EPA distinguishes between construction noise and operational noise based on the temporary nature of the work, specific hours of operation, and different assessment guidelines. Construction Noise is temporary, associated with building or infrastructure, and managed via the NSW Interim Construction Noise Guideline. Operational Noise is ongoing, associated with industrial or commercial activity, and managed under the Noise Policy for Industry.

Based on the location of nearby sensitive receivers, the model considered construction and operation noise impacts for Stage 1, Stage 2, Stage 4 and Stage 8 of the quarry. Only construction noise impacts were assessed for Stage 1 as this stage comprises the establishment of the processing and sales area required for future operational extraction activities and so does not comprise part of the quarry's operations.

Predicted Construction Phase Noise Impacts

Construction noise was generally predicted to exceed criteria during non-standard construction hours and as such the assessment recommended that construction remain within standard hours of construction. The NSW Interim Construction Noise Guideline 2009 recommends standard hours for normal construction work as Monday to Friday from 7am to 6pm, Saturdays from 8am to 1pm and no work on Sundays or public holidays.

Standard hours construction noise is predicted to exceed at receptors R10, R13 and R14 during adverse weather conditions at Stage 4, and R15 in Stage 8 during both standard hours in neutral and worst-case weather conditions. No receptors were classified as 'highly noise affected'.

Predicted Operational Phase Noise Impacts

Predicted operational phase scenarios were undertaken based on quarry operations as outlined at **Section 3**, noting that extraction will take place from the bottom of the quarry pit (0.7m above the predicted groundwater level) as opposed to top-down excavation meaning equipment would operate behind pit walls during each stage.

The assessment for operational phase noise impacts associated with Stage 2 showed there were no non-compliances on any nearby sensitive receivers even during a worst-case scenario.

Results of the noise modelling for Stage 4 and Stage 8 showed that there may be some daytime exceedances predicted for some nearby sensitive receivers without mitigations based on the assumptions modelled. No nighttime exceedances would be experienced.

The Proponent's existing quarry at Cabbage Tree Road has employed ongoing onsite noise monitoring to determine noise exceedances to nearby sensitive receivers as well as whether predicted impacts and exceedances have resulted in actual non-compliances. As outlined in the recommended noise mitigations provided, a formal operational hold point is recommended at the completion Stage 2 to verify actual site noise emissions under real operating conditions before progressing to deeper and more receptor-proximate stages of the quarry. It is anticipated that Stage 1 (establishment of the processing and sales area pad) and Stage 2 excavation will take approximately 18 to 24 months to complete and as such significant time is available to undertake onsite noise monitoring. During this time, actual site noise emissions under real operation conditions can be monitored to determine specific noise mitigations required, if any. Based on findings, acoustic mitigations will be investigated and implemented prior to progressing beyond Stage 2 and any future subsequent stages.

Sleep Disturbance Assessment

Noise prediction modelling was carried out to assess the potential sleep disturbance impact on nearby sensitive receivers during the night period. The night period is defined as 10pm until 7am, and as such the sleep disturbance assessment considers noise impacts associated with operations between 6am and 7am.

Operational noise levels at all receptors are predicted to comply with the sleep disturbance criteria with the exception of R13 where 2dB(A) exceedance is predicted during Stage 8 operations under adverse weather conditions. Mitigation measures are recommended to address this minor exceedance and include onsite weather data monitoring and where wind speeds are observed to be unfavourable then operations should be reconsidered to pause / provide respite or relocated to another area of the stage during those conditions to avoid adverse impact.

Traffic Noise Impact

Noise modelling was undertaken to assess the potential noise impacts associated with additional vehicle movements on Nelson Bay Road. Increases in predicted traffic noise levels were found to be within acceptable limits with negligible increases of up to 0.3dB(A) during the day and evening and 0.1dB(A) during the night.

Given the resultant small increase in traffic as a result of the proposal, the increased traffic as a result of the quarry along Nelson Bay Road is predicted to comply with relevant road traffic noise criteria.

Impacts on Fauna

There are no current government policies or guidelines that provide recommended noise and vibration level thresholds or limits in relation to noise impact on terrestrial fauna. Notwithstanding, the predicted noise impacts are not expected to cause adverse responses to animals or livestock.

Management and Mitigation Measures

A summary of recommended noise impact mitigations for the proposal is below with full excerpts of noise mitigation recommendations in the Noise Impact Assessment Report and replicated in the Mitigations Table at **Appendix 7** –

- Operational Hold Point
A hold point at the end of Stage 2 with the purpose of ensuring noise impacts on nearby sensitive receivers is suitable and adopting noise mitigations, as appropriate and if required, prior to commencing further stages.
- General Operational Management Measures
General operational management measures to be incorporated into the operation of the quarry including using the topography of the site to assist with acoustic shielding for both operations and internal haul routes; limiting operations during adverse weather conditions; and, using mobile temporary acoustic barriers where high noise activities are expected.
- Construction and Operation Management Plans
Adopt a Construction and Operational Noise and Vibration Management Plan (CONVMP) to formalise construction and operation related noise mitigation measures.
- Stage Noise Forecasts
Prepare Stage Noise Forecasts that include predicted noise levels and mitigations for future stages and distribute these to relevant stakeholders as an information sheet and letterbox drop prior to future operations commencing.

6.2.2 Vibration Impact Assessment

A Vibration Impact Assessment was prepared by Vipac Engineers and Scientists Limited (Vipac) and is included at **Appendix 25**. The assessment was completed in response to concerns raised by the community to determine the potential impacts of the proposal on surrounding development as a result of vibration.

Assessment and Findings

Machinery to be used for construction and operations has the potential to cause some vibration and so an assessment of these potential impacts was undertaken in terms of impacts on nearby residents, buildings and contents. The effect of construction vibration on buildings can be separated into three (3) main categories –

- Perceptibility of the occupants to the vibration and the possibility of them being disturbed or annoyed
- Vulnerability of buildings and structures to vibration induced damage
- Vulnerability of the contents of the building that includes types of equipment, activities and processes

The Department of Environment and Conservation's (now EPA) *Assessing Vibration – Technical Guideline* (2006) and British Standard 6472-1:2008 Guide to Evaluation of Human Exposure to Vibration set down the base vibration levels at which there would be minimal interference to occupants. Human disturbance criteria for continuous vibration is significantly lower than threshold damage levels for buildings as humans are able to perceive vibration levels that are well below those that could cause any risk to buildings or their contents.

Ground vibration predictions for different types of vibration were calculated from accepted semi-empirical algorithms for predicting propagation of ground vibration. Ground vibration predictions for other types of construction machinery were based on previously measured data by Vipac or sourced noise data for construction machinery from various vibration databases and literature references. The assessment used data associated with vibratory rollers for the purposes of a worst-case assessment and it is expected that vibrations generated by the hydraulic excavator and articulated haul trucks will be significantly less. As such, where compliance is achieved for a vibratory roller, then compliance is expected for hydraulic excavators and articulated haul trucks which will be used as part of quarry operations.

Using the worst-case transient start-up / shutdown operation scenario of up to 20-tonne vibratory rollers, the range of predicted ground vibration levels were 1 to 1.5mm/s at a 50-metre distance, with levels less than 0.5mm/s beyond 100 metre distance. Predicted worst case vibration levels from vibratory roller operation meet the human comfort criteria and are well below structural damage criteria for all nearby buildings.

Figure 31 summarises the anticipated level of vibration associated with the plant and equipment to be used for quarry operations but are indicative as vibration magnitudes will dissipate at varying levels dependent on ground conditions and source level variations associated with operational conditions of equipment.

Activity	Description	Typical Ground Vibration Level
Clearing and grubbing	Clearing of vegetation, trunk and root removal, processing of timber waste	In general, the activities carried out during this stage of works generate low levels of vibration and areas close to residences are generally already cleared. Vibration impact is considered unlikely.
	Bulldozers/excavators ripping	1mm/s to 2mm/s at distances of approximately 5 metres. At distances greater than 20 metres, vibration is usually below 0.2mm/s.
Extraction	Excavator	<1mm/s at distances of approximately 10 metres
	Truck traffic (on normal smooth road)	0.01mm/s to 0.2mm/s at the footings of buildings located 10m-20 metres from a roadway (note that very large surface irregularities can cause levels up to five to ten times higher).

Figure 31: Vibration levels of equipment

Vibration monitoring would need to be undertaken if works are to be carried out within 50m of residences where vibration may be generated by equipment. Beyond 100m there is a low probability of annoyance for all activities.

Sensitive Receivers R13 and R15 are within 40m and 50m of the site respectively and associated with tourist accommodation dwellings (approved but not constructed). Based on the vibration levels assessed, it is unlikely there would be any vibration impacts generated by the excavation activities that would give rise to annoyance or structural damage at any time of structural receivers for the following reasons –

- a minimum 15m vegetation buffer between the site boundary and any areas of excavation is included which means the minimum distance between the nearest Sensitive Receiver is 55m
- sensitive Receiver R13 is located adjacent proposed Stage 4 which includes a larger vegetation buffer between the site boundary and proposed area for extraction associated with the mapped Threatened Ecological Community within the site.

Management and Mitigation Measures

No specific management or mitigation measures are necessary for vibration impacts. A Construction and Operational Noise and Vibration Management Plan (CONVMP) is recommended for the proposal and so while vibration impacts are assessed as not impacting on any nearby Sensitive Receivers, the CONVMP can include measures for the management of vibrations in the unlikely event that operations were to take place within 50m of any Sensitive Receivers.

6.3 Air Quality

In accordance with the SEARs, an assessment of the proposal's impact on air quality was undertaken, as well as a separate assessment on the proposal's contribution toward greenhouse gas emissions.

6.3.1 Air Quality

An Air Quality Impact Assessment was prepared by Vipac Engineers and Scientists Limited (Vipac) and is provided at **Appendix 26**. The purpose of the report was to evaluate the potential impacts of air pollutants generated from the proposal and to provide recommendations to mitigate any potential impacts that might have an impact on nearby Sensitive Receptors.

Air quality impacts from dust (a generic term used to describe fine particles that are suspended in the atmosphere) were assessed separately between *operation activities* and *construction activities*. Operation activities relate to day-to-day activities and can result in impacts principally caused by wind-borne dust, vehicle usage, materials handling and

transfers. Construction activities relate to temporary works such as – in the case of the subject proposal – constructing the processing and sales area as part of Stage1 and the proposed new intersection. Construction activity impacts are inherently temporary and localised with impacts principally relating to annoyance due to dust deposition; elevated concentration of airborne particulate matter as a result of dust-generating activities; and, exhaust emissions from construction equipment.

Emissions assessed are listed below with project air quality goals for these replicated at **Figure 32** –

- Total Suspended Particles (TSP) – particulate matter with a diameter up to 50 microns
- PM₁₀ – Particulate matter less than 10 microns in size
- PM_{2.5} – Particulate matter less than 2.5 microns in size
- Dust Deposition – Deposited matter that falls out of the atmosphere
- Respirable Crystalline Silica (RCS)

Pollutant	Basis	Criteria	Averaging Time	Source
TSP	Human Health	90 µg/m ³	Annual	Approved Methods
PM ₁₀	Human Health	50 µg/m ³	24-hour	Approved Methods
	Human Health	25 µg/m ³	Annual	Approved Methods
PM _{2.5}	Human Health	25 µg/m ³	24-hour	Approved Methods
	Human Health	8 µg/m ³	Annual	Approved Methods
RCS	Human Health	14 µg/m ³	24-hour	Draft Approved Methods
	Human Health	3 µg/m ³	Annual	Draft Approved Methods
Dust deposition	Amenity	Maximum incremental increase of 2 g/m ² /month	Annual	Approved Methods
	Amenity	Maximum total of 4 g/m ² /month	Annual	Approved Methods

Figure 32: project air quality goals

Assessment and Findings

The air quality assessment was undertaken by developing a model for the site using data sourced from the Williamstown Royal Australian Air Force (RAAF) Automatic Weather Station (site number 061078) located approximately 15.5km west of the subject site, and a review of data from the Newcastle Air Quality Monitoring System (AQMS) located 28.5km to the south-west of the site. This AQMS was selected being the closest monitoring station to the project site and located broadly at a similar distance from the coast and expected to be less impacted by industrial and port operations than other stations in the region. Data from these two systems were used to determine the most representative meteorological year for use in the preparation of the dispersion model which assessed wind speed and direction, atmospheric stability and mixing height.

The air quality impact assessment assessed dust generating activities associated with quarry (site clearance, excavation, loading/unloading trucks, wind erosion, transfer points, conveyors, screening, and vehicle movements) and used the following methodology –

- An emissions inventory of TSP, PM₁₀, PM_{2.5} and deposited dust compiled using National Pollutant Inventory and United State Environmental Protection Agency AP-42 emissions estimation methodology
- Air dispersion modelling using estimation emissions
- An Assessment of the atmospheric dispersion modelling results against the air quality assessment

Two (2) operational scenarios representing maximum daily activities were modelled and assume concurrent extraction, haulage and processing operations occurring at the highest anticipated activity levels within the site. Allowance for two haul trucks operating continuously from extraction areas to processing areas during operational hours was also included. The modelled scenarios were –

Scenario 1: Extraction at Stage 8 pit with concurrent processing and associated stockpiling activities at Stage 1

Scenario 2: Extraction at Stage 4 pit with concurrent processing and associated stockpiling activities at Stage 1

These scenarios were modelled based on proximity of the stages to sensitive receptors and so were modelled based on their potential for the greatest impacts on surrounding sensitive receptors. In addition to this, extraction, truck loading and hauling sources were modelled with their locations positioned at the boundary of the respective stage extraction boundary closest to receptors.

Nearby receptors for the air quality assessment are shown at **Figure 33**. There are four (4) residences between 40m to 60m from the site along the northern boundary. Two (2) of these are associated with tourist accommodation residences (R13 and R14) which have approval but have not been constructed. To note is that with the inclusion of vegetation buffers between the site and extraction areas, the distance between sensitive receivers is at least 65m.

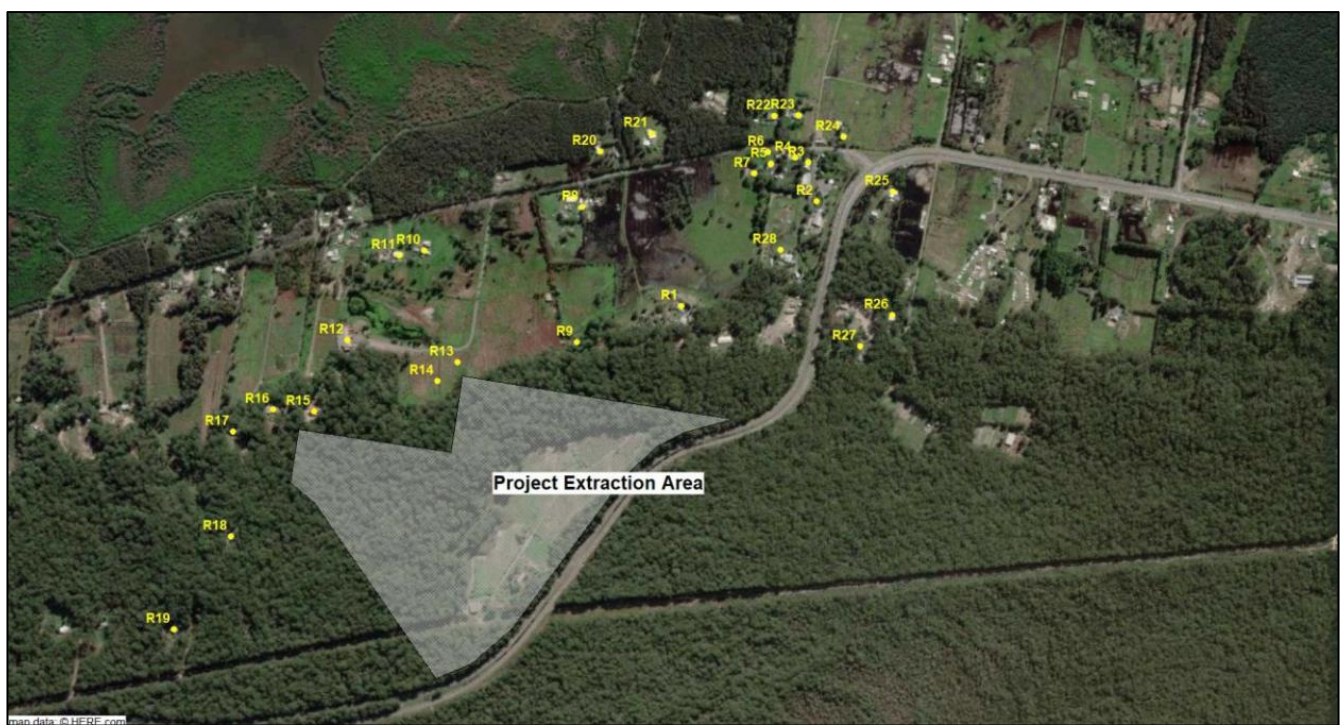


Figure 33: Nearby Sensitive Receptors

Emission estimations for individual activities were derived from NPI Emission Estimation Technique manuals and US EPA AP42 documentation. The annual calculated missions for TSP, PM₁₀ and PM_{2.5} are replicated at **Figure 34**.

Respirable Crystalline Silica forms as a result of crushing, grinding or cutting (not proposed as part of the project); nevertheless, an assessment for Respirable Crystalline Silica was undertaken using a conservative assumption (a 100% fraction of the predicted PM_{2.5} emissions).

Fugitive Source	Scenario 1			Scenario 2		
	TSP	PM ₁₀	PM _{2.5}	TSP	PM ₁₀	PM _{2.5}
Wind erosion (Pit, exposed area & Stockpiles) - Processing	1799	899	450	1799	899	450
Wind erosion (Pit, exposed area & Stockpiles) - Extraction	647	323	162	1430	715	358
Excavators/Shovels/Front-end Loaders (processing)	149	70	10	149	70	10
Excavators/Shovels/Front-end Loaders (extraction)	149	70	10	149	70	10
Miscellaneous transfer points (loading to stockpiles)	298	141	20	298	141	20
Screening	402	135	8	402	135	8
Miscellaneous transfer points (including conveying) - loading to sales trucks	298	141	20	298	141	20
Wheel generated dust (Hauling internal)	21968	5599	560	11298	2879	288
total	25559	7309	1230	15822	5051	1164

Figure 34: Scenario 1 and Scenario 2 outcomes for TSP, PM₁₀ and PM_{2.5}

Air Dispersion Modelling

A 3-dimensional dispersion wind field model (CALPUFF) was used to simulate the impacts of the project TSP, PM₁₀, PM_{2.5}, Respirable Crystalline Silica, and dust deposition. Impact assessments were undertaken for pollutants without elevated background (Level 1), and those that have elevated background concentrations close to or above the relevant ambient air quality criteria (Level 2). A summary of findings is presented at **Table 20**.

Table 20: Summary of Air Dispersion Model Findings

Type	Assessment finding
TSP	Model predictions are well below the criteria of 90µg/m³ for both modelled scenarios. TSP emissions are not predicted to adversely impact upon sensitive receptors
PM ₁₀	- The Level 1 assessment showed the annual average PM₁₀ are below the criteria of 25µg/m³ - Cumulative 24-hour average PM₁₀ are above the criterion of 50µg/m³ however the measured 24-hour background PM₁₀ (50.7µg/m³) was already above the criteria. This exceedance can be justified by the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW which allows existing ambient air pollutions to exceed the impact assessment criteria from time to time. Furthermore, the greatest contribution of the quarry emissions to the cumulative PM₁₀ is relatively low. - The 24-hour and annual average PM₁₀ emissions are not predicted to cause additional exceedances of the relevant criteria and on this basis are not expected to adversely impact on sensitive receptors.
PM _{2.5}	- The Level 1 assessment maximised predicted 24-hours annual average PM_{2.5} for both modelled scenarios at the five (5) most impacted receptors. - Model predictions for annual average PM_{2.5} are below the criteria of 8µg/m³ - Cumulative model predictions for 24-hours average PM_{2.5} are above 25µg/m³ criteria for both scenarios; however, measured 24-hour background PM_{2.5} of 30µg/m³ is already above the criteria of 25µg/m³. This exceedance can be justified by the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW which allows existing ambient air pollutions to exceed the impact assessment criteria from time to time. Furthermore, the greatest contribution of the quarry emissions to the cumulative PM_{2.5} is relatively low (maximum 2.65µg/m³ for Scenario 1 and 6.22µg/m³ for Scenario 2). - The 24-hour and annual predictive average PM_{2.5} emissions are not predicted to cause additional exceedances of the relevant criteria and on this basis are not expected to adversely impact on sensitive receivers.
Respirable Crystalline Silica	- The model predictions for Respirable Crystalline Silica (RCS) are below the 24-hour and annual averages of 14 µg/m³ and 3µg/m³ respectively. - RCS emissions from the proposal are not predicted to adversely impact on the sensitive receptors.
Dust Deposition	- Model predictions for incremental and cumulative monthly average dust deposition are well below the criteria of 2/g/m²/month and 4g/m²/month. - Dust deposition for the project is not predicted to adversely impact on sensitive receptors.

Management and Mitigation Measures

While exceedances of the relevant criteria are unlikely at the identified sensitive receptors, the assessment recommends consideration of the following based on proximity to existing and future sensitive receptors –

- General Dust Control Measures
General control measures to be incorporated into daily operations including review of operations in weather conditions; mitigating impacts from exposed and disturbed areas; protocols for handling of materials to limit dust; and, use of water carts of haul roads; and, overall site maintenance.
- Dust Monitoring Procedure
Real-time continuous dust monitoring and monthly dust deposition samples.
- Community Consultation
It is recommended that community consultation with the closest receptors is undertaken to inform potentially affected individuals about the project and the steps being taken to minimise risks.

Full excerpts of recommended mitigations are within the Air Quality Impact assessment and replicated at **Appendix 7**.

6.3.2 Greenhouse Gas Emissions

A Greenhouse Gas Assessment was prepared by Vipac Engineers and Scientists Limited (Vipac) (**Appendix 19**). The purpose of the report was to calculate the greenhouse gas emissions of the construction and operation of the proposal over the proposed 10-year life of the project.

Assessment and Findings

The *Commonwealth National Greenhouse and Energy Reporting Act 2007* introduced a single, national reporting framework for reporting of information related to greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production. The *Commonwealth National Greenhouse and Energy Reporting Act* requires facilities to submit an annual report in energy consumption, production and greenhouse gas emissions if any of the following thresholds are met: 25,000 tonnes or more of carbon dioxide equivalence; production of 100 terajoules or more of energy; or, consumption of 100 terajoules or more of energy.

The scope for assessment of impacts associated with greenhouse gas emissions relate to the following scopes –

Scope 1 emissions	direct emissions including from fuel used by vehicles
Scope 2 emissions	indirect emissions from the generation of the electricity purchased and consumed by an organisation
Scope 3 emissions	indirect emissions for organisations that: - burn fossil fuels - consume purchased electricity

The assessment of impacts associated with the proposal considered the following which contribute to greenhouse gas emissions: purchased power; quarry equipment fuel; transport fuel emissions; and, haulage fuel. A summary of annual emissions as a result of these activities is presented at **Figure 35**.

From the assessment the following was determined –

- The annual emissions are estimated at 2,169.8 tonnes of CO₂e which is below the mandatory reportable threshold
- The life of project emissions are estimated to be 21,698 tonnes of CO₂e
- When compared to Australia's reported greenhouse gas emissions for 2026 (446.4 million tonnes), the estimated project annual emissions are approximately 0.00049% of Australia's total emissions.

Activity	Annual Emission (t CO ₂ -e/year)	Life of Project Emissions (t CO ₂ -e)
Equipment Fuel	945	9,450
Transport Fuel (Staff)	24	244
Electricity	6.84	68.4
Haulage	1,194	11,941
Total	2,169.8	21,698

Figure 35: Summary of annual emissions

Management and Mitigation Measures

No specific management or mitigation measures were recommended.

6.4 Water Resources

This section of the EIS addresses water resources impacts of the proposal. To support the assessment, a 'Hydrogeological Impact Assessment' and 'Additional Geotechnical and Acid Sulfate Soils Report' were prepared by Martens Associates (**Appendix 18 & Appendix 21**). Martens Associates prepared several hydrogeological assessments between 2013 and 2020 in support of the previous application for a sand quarry (now withdrawn). In addition, a Surface Water Assessment was prepared by VGT to assess water resource impacts (**Appendix 22**).

Assessment and Findings

Previous investigations

Previous investigations were undertaken by Martens Associates for the previous SSD application (now withdrawn). A summary of these investigations at the site is provided for completeness of investigations as some works associated with previous investigations were used as part of recent investigations for the current proposal. It should be noted that previous investigations considered proposed dredging below the groundwater table which is not proposed as part of the current application.

Three (3) hydrogeological assessments for the site were undertaken in 2014, 2015 and 2020. Previous assessments involved field investigations including borehole monitoring and groundwater level monitoring of seven (7) groundwater Monitoring Wells (MW) (locations at **Figure 36**) across two groundwater level monitoring periods. Monitoring Period 1 was from August 2013 to October 2014, and Monitoring Period 2 was between February and June 2020. Between 2014 and 2025 falling head slug tests to estimate aquifer hydraulic conductivity were undertaken as well as four (4) rounds of groundwater quality sampling. Two (2) rounds of groundwater quality sampling took place across all wells in 2020.

Median groundwater levels ranged from approximately 1.0m AHD (MW104) to 2.8m AHD (MW5) across both monitoring periods with levels during Monitoring Period 2 generally around 0.5m lower than during Monitoring Period 1. Groundwater levels during monitoring period 1 were generally stable, consistent with near-average rainfall conditions with a general rising trend observed during monitoring period 2 in response to increased rainfall in May and June 2020.

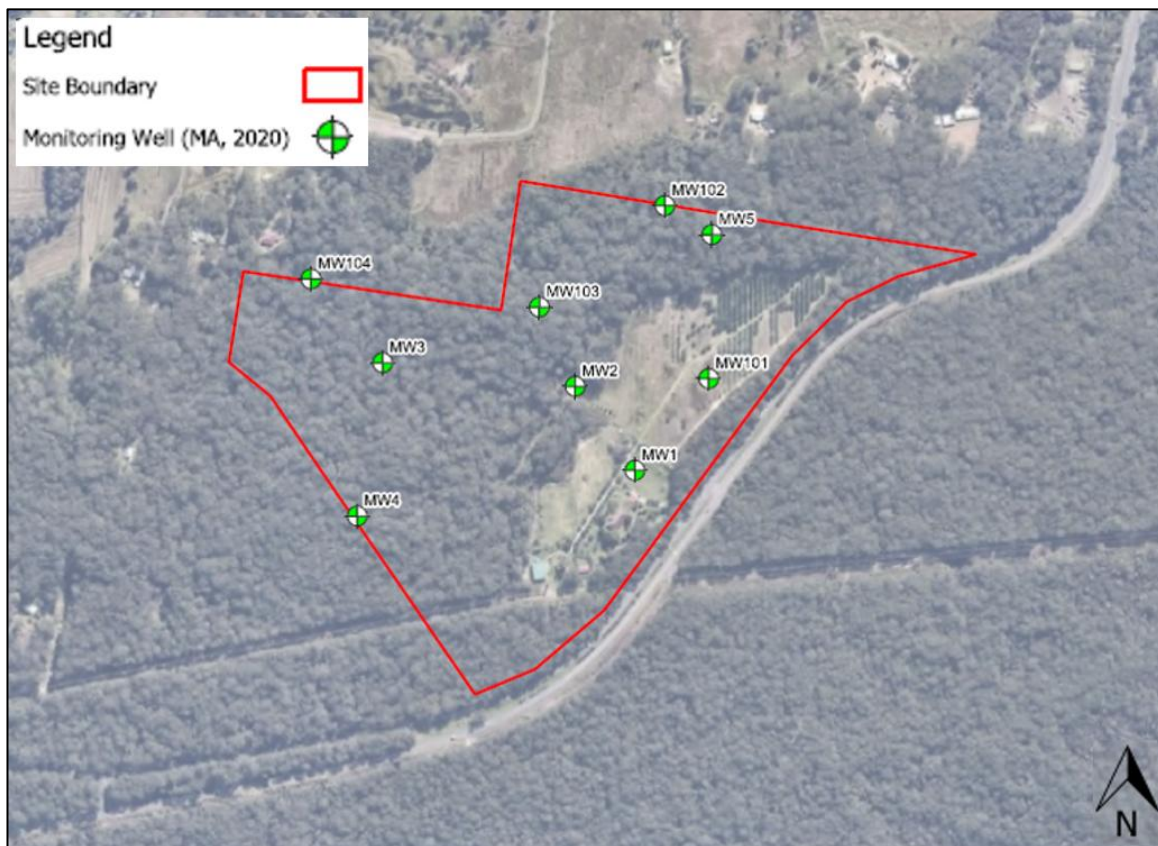


Figure 36: Monitoring Network (2020)

A summary of groundwater monitoring statistics for both monitoring periods (2013-14 & 2020) is shown at **Figure 37**.

Well ID	Ground Level	Min.	10 %-ile	Median	Mean	90 %-ile	Max	Range (m)
MW1	5.82	1.65	1.79	2.46	2.41	2.84	3.10	1.45
MW2	11.72	1.94	2.04	2.29	2.28	2.49	2.64	0.71
MW3	15.48	1.54	1.93	2.17	2.18	2.33	2.40	0.86
MW4	9.45	1.48	1.52	1.97	1.84	2.16	2.21	0.73
MW5	18.25	2.23	2.45	2.69	2.67	2.91	2.95	0.72
MW101	6.77	1.49	1.56	1.63	1.67	1.89	1.96	0.47
MW102	25.63	2.39	2.44	2.50	2.49	2.52	2.57	0.18
MW103	31.35	2.27	2.31	2.33	2.33	2.35	2.39	0.13
MW104	11.83	0.88	0.96	1.02	1.03	1.08	1.15	0.27

Figure 37: Summary of groundwater monitoring statistics from 2013-14 and 2020

Saturated hydraulic conductivity testing was undertaken at MW1 – MW5 on 1 October 2013 indicating that subsoil conditions are generally consistent with clean to silty sand.

Six (6) rounds of groundwater quality sampling were completed between 2013 and 2020 with key findings summarised as follows –

- Groundwater is acidic with pH ranging from 3.5 to 6.7
- Groundwater is generally fresh with a 90th percentile salinity of 478 mg/L though a maximum of 1,200mg/L indicates saline intrusion is possible
- Total nitrogen concentration were elevated at MW1, MW2 and MW101 (up to 43 mg/L) likely attributable agricultural sources including fertiliser application.

- Total phosphorus concentrations similarly elevated at MW1 and MW101 (up to 5.3mg/L), also likely reflecting agricultural influence.

Previous assessments determined groundwater quality risks were manageable with appropriate engineering controls and found to comply with the NSW Aquifer Interference Policy.

Current investigations

Current investigations undertaken to inform the current application have taken place since the end of 2025 and are ongoing. The below addresses the requirements of the SEARs with regard to water resources in the context of the current proposal and its proposed quarry design and operations.

Site Water Balance, Water Sharing, Operational Details, and Licences

The site is within the Karuah River Water Source Water Sharing Plan (WSP) (**Figure 38**). Objectives for Water Sharing Plans are to ensure the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations.

A site water balance considers water demands, water take from any resource, disposal methods, water supply infrastructure and water storage. In this regard, sand washing within the processing and sales area will be the primary consumer of water and will recycle water at approximately 3,000L per minute. Water losses are anticipated as associated with dust suppression, evaporation / infiltration of stockpiles and losses due to the moisture context of the finished product transported offsite. Water for dust suppression purposes will be applied at a rate of up to 2L per square metre per hour to trafficked areas. It is estimated that water demand will range from nil on wet days to approximately 140kL per day during periods of high evaporation.

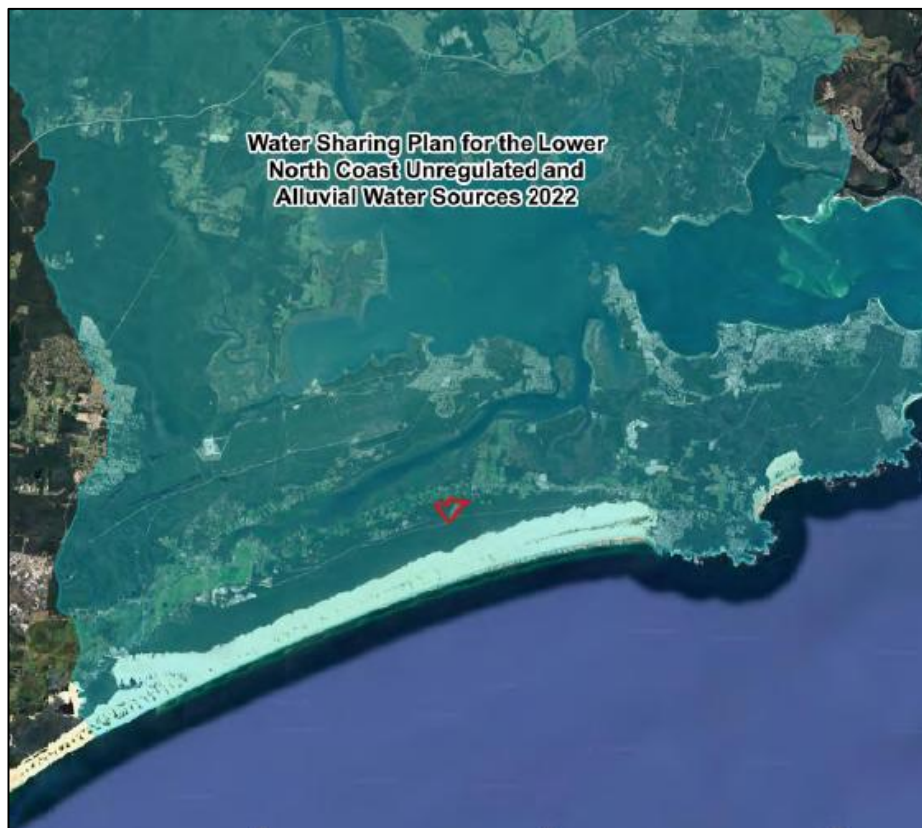


Figure 38: Water Sharing Plan (site shown in red)

Incident rainfall will be collected in rainwater tanks from rooftops. Rainwater tanks are estimated to collect approximately 400kL per month (4ML per annum). Limited water will be required for potable purposes. Based on current usage at the Proponent's Cabbage Tree Road site, usage will be less than 1.5kL per day.

Rainfall captured over access tracks and roads would be directed to swales alongside the road and will infiltrate the soils. Water tanks to collect rainwater will also satisfy the requirement for a 20,000L static water tank for bushfire fighting purposes.

A water licence search (*Water Management Act 2000* and *Water Act 1912*) was undertaken (see Appendix C within **Appendix 22**) which identified the licences and approvals for the site. The site benefits from Water Access Licence (WAL) Number 5960 issued under the *Water Management Act 2000*. The status of this WAL is 'current' and 'continuing' with approval to extract 40ML from the Stockton Groundwater Source. Subject to conditions, the WAL permits water to be taken at any time or rate. The current licence permits WAL water to be used for the purpose of agriculture associated with the site's use as an orchard. It is proposed that through this SSD application, the approved use of WAL water be amended as appropriate to permit WAL water to be used for sand washing and other quarry operational purposes.

Conceptual Groundwater Model

Groundwater monitoring for the current assessment was undertaken at seven (7) monitoring wells as shown in **Figure 39**. Monitoring was completed using data loggers which recorded at 15-minute continuous intervals supplemented by regular manual dip metre measurements for data logger calibration. Monitoring at MW1, MW101, MW104 and MW commenced on 6 November 2025. Monitoring of MW201, MW202 and MW203 commenced on 27 February 2026.

A summary of results is replicated at **Figure 40** which indicated –

- Median groundwater elevations during the monitoring period ranged between 1.4m AHD and 3.4m AHD corresponding to depths to groundwater of approximately 2.6 to 15.1 metres below ground level depending on local ground surface elevation. Relatively shallow groundwater was generally observed in lower lying areas of the site.
- 90th percentile groundwater elevations ranged from approximately 1.6m AHD to 3.8m AHD representing likely high groundwater conditions during the monitoring period.
- Groundwater levels have gradually declined by approximately 0.5m to 1.0m since monitoring commenced in November 2025, likely reflecting the wetter conditions experienced earlier in 2025 followed by relatively drier conditions over the summer months.
- Current median groundwater levels at MW1, MW101, MW104, MW5 are generally higher than those recorded during previous monitoring by up to approximately 1m, consistent with wetter than average conditions experience in 2025.

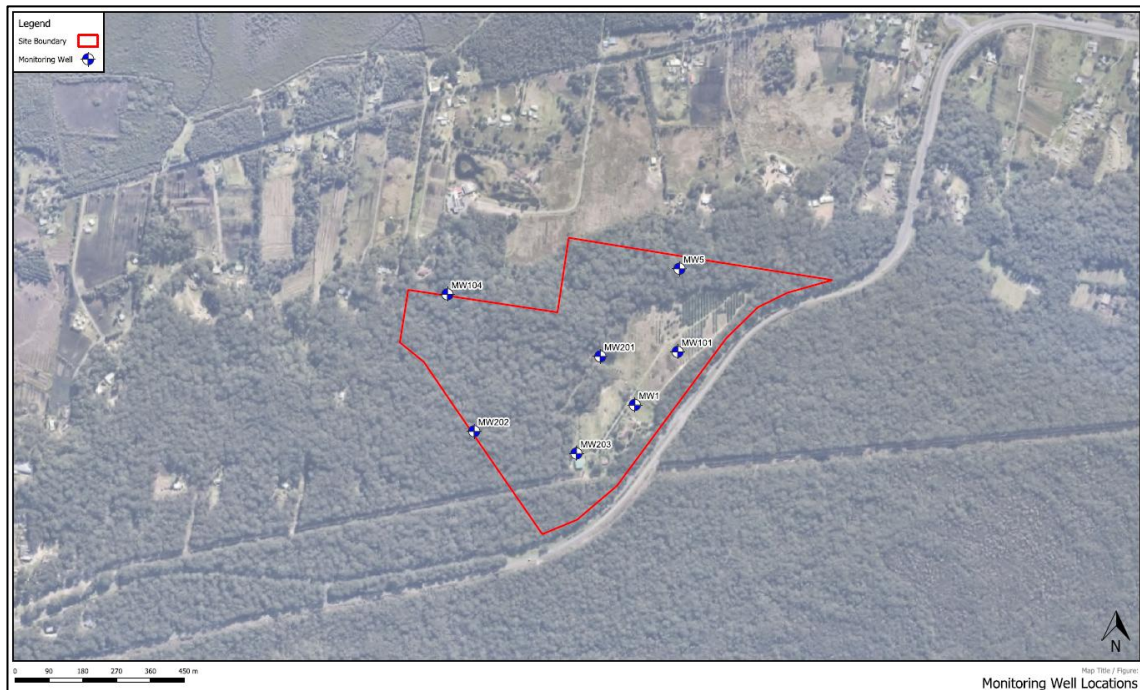


Figure 39: Locations of Monitoring Wells (MW)

Well ID	Min.	10 %-ile	Median	Mean	90 %-ile	Max	Range (m)
MW1	2.89	2.99	3.34	3.37	3.76	3.91	1.02
MW101	2.06	2.11	2.40	2.41	2.68	2.80	0.74
MW104	1.21	1.26	1.39	1.40	1.56	1.64	0.43
MW201	2.92	2.93	2.96	2.96	3.00	3.00	0.08
MW202	2.34	2.35	2.39	2.39	2.43	2.44	0.09
MW203	2.75	2.76	2.80	2.80	2.84	2.86	0.11
MW5	2.80	2.83	3.17	3.15	3.39	3.52	0.72

Figure 40: Summary of groundwater monitoring statistics (all levels in metres AHD)

Average K_{sat} testing at each MW ranged from 1.25 - 7.65m/day consistent with fine to medium grained sand encountered at the site and broadly consistent with results from previous slug testing for the previous application.

The groundwater model for the site used MODFLOW and used updated inputs and calibration to reflect the current proposal. The current model generally represents a Class 2 model confidence classification and so was suitable for impact assessment. A Class 2 classification was deemed justified based on the following –

- Calibration statistics are acceptable and within recommended criteria
- Mass balance error is less than 1.0% of the total
- Groundwater head observations and geotechnical data coverage area reasonable in the vicinity of the proposed development.
- Model parameters are generally consistent with conceptualisation.

Modelling uncertainties were noted as pertaining to groundwater investigation data being limited to within the site boundaries with relatively limited offsite groundwater level information available, and hydraulic conductivity likely to vary both laterally and vertically within the subsurface profile. Notwithstanding these, the model was considered to provide an acceptable representation of groundwater conditions for the purposes of the assessment, with any uncertainty addressed through adoption of conservative and sensitivity-based modelling scenarios.

Excavation was modelled by setting the ground level within the excavation footprint to an indicative 'top of cut' surface by applying a 0.7m offset above the calibrated existing conditions groundwater head as well as appropriate batters. The 0.7m buffer was based on agency feedback from the (then) Department of Planning, Industry and Environment - Water for the previous application for the site who recommended that extraction be limited to a height that maintains at least a 0.7m buffer above the groundwater table with the final landform being a minimum of one (1) metre above the groundwater table consistent with other approved projects of the area.

Three (3) potential post-quarry scenarios were considered –

Scenario 1 – Baseline Rehabilitation	Recharge of 20% of rainfall adopted consistent with calibrated rural / agricultural land conditions and representing rehabilitation with vegetation broadly comparable with existing conditions
Scenario 2 – Low Recharge Scenario	Recharge reduced to 5% of rainfall representing disturbed, compacted or actively managed conditions where effective infiltration is limited. This scenario provided a conservative estimate of potential groundwater drawdown
Scenario 3 – High Recharge Sensitivity	Recharge was increased to 40% of rainfall representing condition where exposed sandy materials allow increased infiltration following removal of vegetation.

These three (3) scenarios are depicted at **Figure 41**, **Figure 42** and **Figure 43** respectively.

Proposed condition model results indicated that –

- Predicted groundwater change at the nearest GDE (Paperbark Swamp Forest) is negligible (<0.1m) under both baseline and low recharge scenarios (Scenario 1 and Scenario 2)
- Under the high recharge scenario (Scenario 3), groundwater levels are predicted to increase by up to approximately 0.2m in the corner of the GDE which is not expected to result in adverse impacts as groundwater levels remain well below the ground surface and Paperbark Swamp Forest is recognised to be tolerant of fluctuations in groundwater levels.

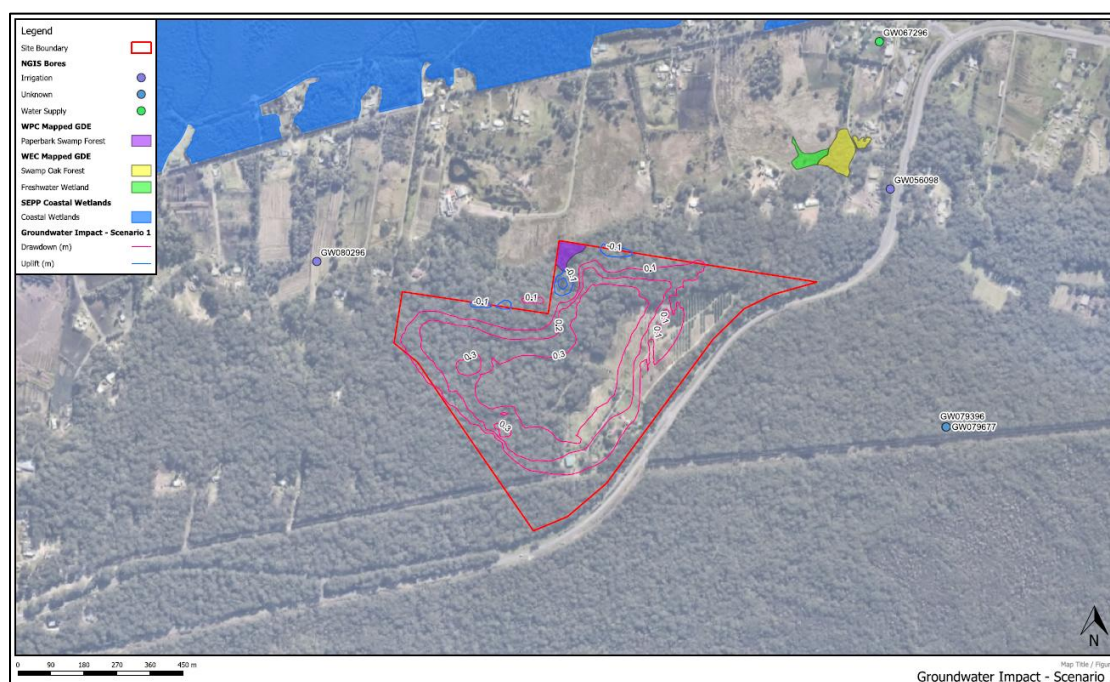


Figure 41: Scenario 1 (Baseline Rehabilitation)

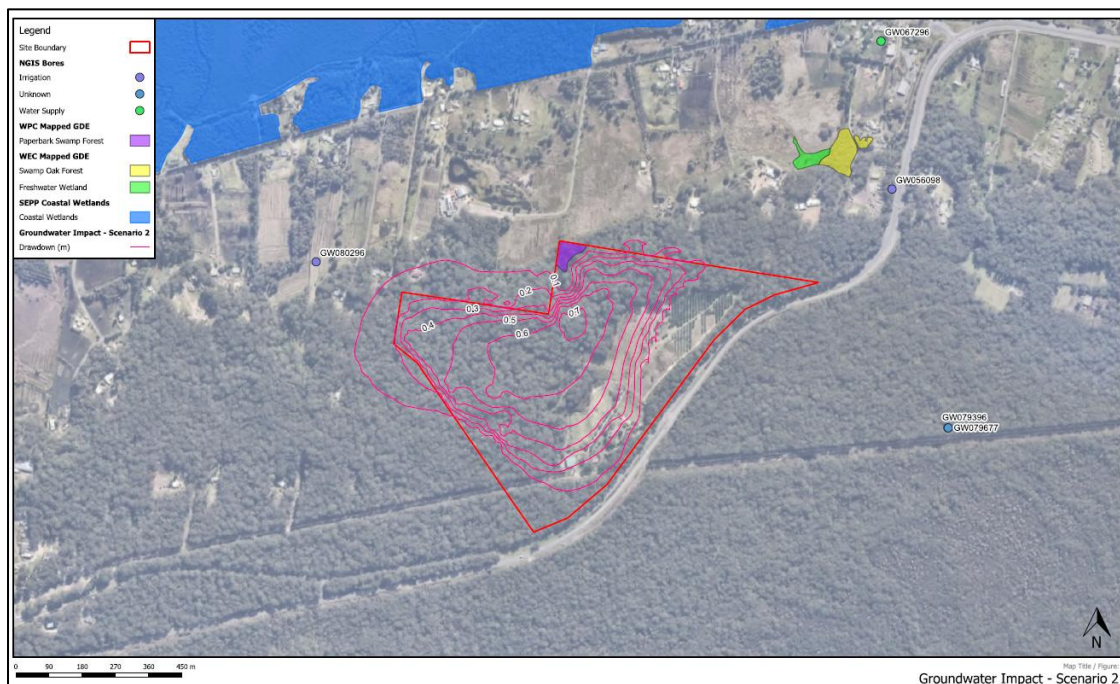


Figure 42: Scenario 2 – Low Recharge Scenario

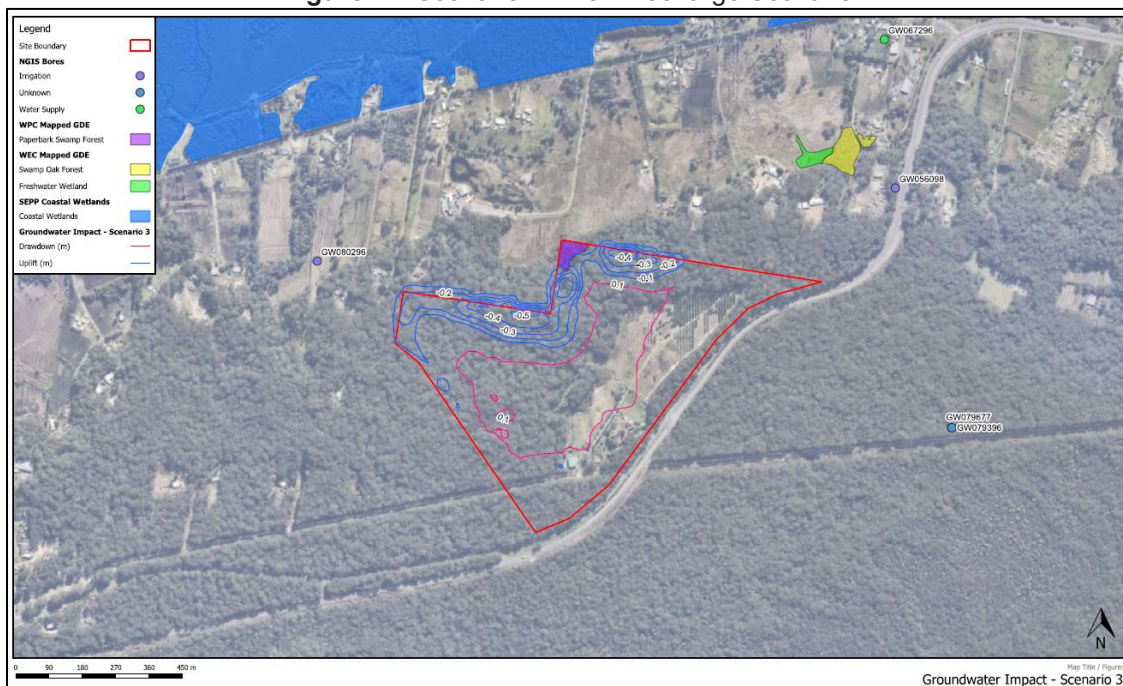


Figure 43: Scenario 3 – High Recharge Sensitivity

Impacts to Existing Surface and Groundwater Resources and Proposed Buffer

No surface water discharge will be required from the site operations as water will be recycled for processing and dust suppression. Surface water captured on the site over the disturbed area will infiltrate the sandy soils and recharge the groundwater system.

The potential impacts of soils erosion would be the loss of soils from the site and entrainment of sediment to the downstream environment. Loss of soil from the site would have a localised impact predominantly to the maintenance of vegetation and agricultural productivity. Erosion potential was identified as being principally limited to the worked areas of the quarry with eroded soils and sediment being captured within the quarry pit where due to sandy soils surface water transporting sediment would be rapidly infiltrated into the sandy soils.

Sediment controls such as silt fences, table drains and level spreaders would be established along sections of the haul roads and as a result of the proposed extraction level across the site being lower than the surrounding area, there would not be any surface water flows off the site. Due to the high permeability of the underlying sand aquifer, it was determined there would be negligible potential for concentrated run-off for sediment transportation.

The proposed buffer of 0.7m between the predicted groundwater table and lowest point of extraction has been adopted based on agency feedback from the (then) Department of Planning, Industry and Environment - Water for the previous sand quarry application at the site. Agency advice at that time recommended that extraction be limited to a height that maintains at least a 0.7m buffer above the groundwater table with the final landform being a minimum of one (1) metre above the groundwater table consistent with other approved projects of the area. The proposal adopts this recommendation.

Flooding

A small portion at the north of the site adjacent Stage 4 of the proposed quarry staging is mapped as being subject to the 1% AEP flood event. Proposed excavation for Stage 4 would comprise extraction down to the 8.5m AHD contour level which would then batter at 3H:1V grade into the quarry pit. This method for extraction at Stage 4 would mean that a natural barrier between 1% AEP flood liable land and the quarry would be maintained which will prevent any potential increase in flood impacts within the site.

Impacts to Aquifers, Watercourses, Riparian Land, Water-Related Infrastructure and Other Water Users

The Aquifer Interference Policy (AIP) details the role and requirements for administering the *Water Management Act 2000* regarding water licencing and assessment processes for aquifer interference activities. The AIP applies to all activities that penetrate, interfere with, obstruct, abstract water from, or dispose of water to, an aquifer and requires proposed demonstrate that minimum impact considerations specified under the AIP can be met.

The assessment considered impacts on the water table, water pressure, and water quality and found that groundwater drawdown caused by the proposal will comply with the minimal groundwater impact considerations set out in the AIP for a 'highly productive coastal sands groundwater source'.

Groundwater drawdown was modelled as largely confined to the quarry footprint with negligible predicted onsite impacts to GDEs or offsite impacts. Ongoing groundwater monitoring is recommended as part of ongoing quarry operations.

No loss of water supply to groundwater users as a result of drawn down is expected to extend significantly beyond the quarry and as such is unlikely to impact any nearby registered bores or groundwater users.

With the absence of discharge off the site, negligible flood impacts and sediment and erosion controls in place, the assessment determined there would be negligible cumulative impacts to surface water experienced by the current system due to surrounding low density and agricultural land uses.

Cumulative impacts are unlikely as groundwater impacts are predicted to be localised.

Water Quality Hazards

A Detailed Site Inspection (DSI) was prepared to inform the current proposal (**Appendix 13**). The DSI included a single round of groundwater screening to identify any indication of groundwater impacts associated with current or historical site activities and provide preliminary contaminated land context relevant to the proposed extraction of sand and operational use of groundwater at the site for sand washing purposes.

Groundwater quality sampling for the current assessment was completed to provide screening level information on groundwater quality due to the presence of surrounding groundwater users and potential for vertical migration in sand-dominant soils. Groundwater sampling was undertaken from three (3) existing monitoring wells on 5 November and 6 November 2025.

The preliminary assessment for a range of analytes found –

- Groundwater is generally acidic with pH values reported between 4.5 to 6.5. These results being broadly consistent with previous groundwater quality sampling.
- Concentrations of various heavy metals exceeded default guideline values in all wells including for aluminium, cobalt, copper, iron, lead, and zinc.
- The risk of polyfluoroalkyl substances (PFAS) was low.

Because excavation will not intercept groundwater the potential risk to sensitive receptors posed by groundwater is expected to be low. No credible site-related groundwater contamination sources were identified and on this basis the results do not indicate significant groundwater contamination that would be expected to represent a material contaminated land constraint to the proposed use of groundwater for sand washing.

Acid Sulfate Soils

The majority of the site is mapped as subject to Acid Sulfate Soils Class 4 with a small area of Class 3 in the north of the site adjacent Stage 4 of the proposal's staging plan.

Under the Acid Sulfate Soils risk map provisions, further assessment is generally required for works on Class 3 land that extend beyond one (1) metre below ground level or are likely to lower the groundwater table by more than one (1) metre below natural ground surface, and for works on Class 4 land that extend beyond two (2) metres below ground level or are likely to lower the groundwater table by more than two (2) metres below natural ground surface.

Acid sulfate soil testing was undertaken in 2015 for the previous SSD application (now withdrawn) and was used for comparative data. In addition to the previous investigations, recent field investigations were undertaken on 12 March 2026. These works included drilling of three boreholes (BH201 to BH203) to approximately 14.0 metres below ground level and installation of three groundwater monitoring wells (MW201 to MW203) at the borehole locations.

A total of 30 soil samples from the 2026 investigation (from 2m AHD and above) were selected for field screening using pH_f and pH_{fox} methods, with twelve (12) samples subsequently selected for Chromium Reducible Sulfur (SCR) testing. These more recent results provide additional information regarding the potential presence and distribution of acid sulfate soils within soil horizons relevant to the current quarry proposal and have been considered together with the relevant historical acid sulfate soils data.

No pH_f results of less than 4.0 were identified in the reviewed dataset, indicating that the field screening did not identify widespread existing acidity consistent with actual acid sulfate soils within the soil horizons considered relevant to the current proposal. Notwithstanding the above, a number of samples recorded pH_{fox} values of less than 3.0, and many samples also exhibited a $pH_f - pH_{fox}$ reduction of greater than 1 pH unit. These results are consistent with the possible presence of oxidisable sulfides and indicate that Potential Acid Sulfate Soils (PASS) may be present in parts of the soil profile. On this basis, laboratory assessment of selected samples was considered necessary.

Laboratory data indicated that most samples did not exceed the applicable action criteria for coarse to medium textured soils. However, a limited number of historical samples did report elevated sulfur and / or acidity values above the adopted action criteria. A small number of additional historical samples also reported elevated peroxide-derived acidity and/or sulfur values above the adopted action criteria.

The more significant historical exceedances were associated with a limited number of samples. These samples indicated that PASS material may occur locally within parts of the profile above the conservative 2m AHD review level. Acid sulfate soils testing undertaken in 2026 provides an additional line of evidence that while field screening identified some indicators consistent with possible oxidisable sulfides, the subsequent SCR testing of relevant horizons did not identify exceedances of the adopted action criteria. In general, the recent laboratory data reported comparatively low sulfur values, low net acidity and low liming demand. This more recent dataset does not reproduce the stronger historical exceedances within the soil horizons considered relevant to the current proposal.

The assessment determined that while there were indications that localised / isolated Potential Acid Sulfate Soils may be present in parts of the soil profile relevant to the current proposal, a broad site-wide acid sulfate soils treatment response is not warranted and a targeted Acid Sulfate Soils Management Plan would suffice.

Soil Salinity

Field observations did not identify obvious evidence of the presence of saline soils at the site such as vegetation growth which appeared healthy and uninhibited; water marks or salt crystals on the ground surface.

Twenty-one (21) soil salinity tests were undertaken, all of which had a Salinity Class Indication of 'non-saline'.

Soil Dispersivity

A soil dispersivity assessment was undertaken to assess the soil's structural stability. The assessment did not identify obvious evidence of the presence of dispersive soils at the site.

Soil Aggressivity

A soil aggressivity assessment was to assess how naturally occurring chemicals, salts, and physical properties in the soil and groundwater may degrade buried infrastructure, such as concrete foundations, piles, and metallic pipes. The results of laboratory analysis of electrical conductivity and pH.

The results indicated soils above groundwater to be mildly aggressive to concrete and non-aggressive to steel, and soils below groundwater to be moderately aggressive to concrete and moderate to mildly aggressive to steel.

Water Management System

No degradation of groundwater quality based on standard practice for stormwater, pump-out system for onsite facilities (WCs), and potential contamination (e.g. hydrocarbons managed through appropriate storage, handling procedures and spill response measures to prevent impacts to groundwater).

Onsite facilities will be accommodated with portable amenities which will be installed onsite and serviced by way of contractor pump out. No additional sewerage or on-site septic system would be required or is proposed.

The assessment determined there would be no degradation of groundwater quality based on pump-out system for onsite facilities (WCs).

Impacts to Downstream Sensitive Receivers

Downstream use is primarily rural with off-site watercourses generally only used for stock water or recreational purposes and not large-scale irrigation. The capture of surface water on the site was assessed as unlikely to adversely impact downstream water users as there will be no discharge off the site.

The proposed final landform impact on surface water is not expected to be significant. The final landform will be a self-contained depression where surface water is captured and retained within the final landform footprint and perimeter slopes being no greater than 3H:1V and stabilised native vegetation. There will not be any surface water drainage lines leading off-site in the final landform that could impact the downstream environment and there will be no waterbodies in the final landform.

Management and Mitigation Measures

The following management and mitigation measures are recommended for the project –

- **Contaminants**
 - Prepare and implement a Soil Management Plan (SMP) for stripping, stockpiling, handling, segregation, reuse and disposal of soil (see **Section 6.7.2**).
 - Implement and Asbestos / Unexpected Finds Protocol (UFP) for all stripping and earthworks, with emphasis on bushland / track areas and any zones where placed / reworked material is encountered.

- Six-weekly groundwater level monitoring at 1-hour intervals for MW104, MW202 and MW203 with data downloaded at least quarterly and compiled for reporting along with manual dip measurements.
 - Groundwater level trigger values should be reviewed and refined following a minimum of three to six months of additional pre-quarrying monitoring to confirm baseline conditions.
 - Groundwater samples should be collected from all available MWs after purging, using laboratory supplied bottles with appropriate preservatives and no headspace.
 - Quarterly water quality analytes of nominated parameter groups (Physical parameters; Major ions; Nutrients; Heavy metals (dissolved); Hydrocarbons) with a minimum of three baseline sampling rounds taken prior to commencement of works to establish trigger values for the analytes.
- **Acid Sulfate Soils**
 - Preparation of a targeted Acid Sulphate Soils Management Plan to address Potential Acid Sulfate Soils

6.5 Heritage

6.5.1 Aboriginal Heritage

An Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared by McCardle Cultural Heritage Pty Ltd and is included at **Appendix 15**. The purpose of the ACHAR is to identify areas of Aboriginal cultural heritage value, to determine possible impacts on Aboriginal cultural heritage value identified (including potential subsurface evidence) and to develop management recommendations where appropriate.

As part of the previous SSD application, an ACHAR was prepared by AECOM in 2015. The current ACHAR acknowledges and builds on this previous work as well as feedback from Heritage NSW (HNSW) that was provided during consideration of the previous ACHAR.

Assessment and Findings

Previous investigations

The previous assessment identified five (5) new Aboriginal archaeological sites which consisted exclusively of low-density surface scatter of marine and estuarine midden shell within the project area's elevated dune field. All sites were located on unsealed light vehicle tracks but one site incorporated remnant land surfaces on either side of tracks in places.

All five (5) Aboriginal archaeological sites identified were expected to be directly impacted by the project area and a comprehensive salvage programme incorporating surface collection of three (3) of the sites and surface collections and archaeological excavations at two (2) of the sites was undertaken at the time.

During test excavations, depths did not exceed 100cm with a minimum depth of 30cm excavated and no shell or other cultural material found. RAPs who were in attendance were satisfied the methodology undertaken at that time was consistent with past findings and as a result excavation ceased when culturally sterile sediments were determined. During the assessment of the previous SSD application, HNSW advised that all test pits needed to be excavated down to one (1) metre below the surface to identify whether additional cultural materials were present. These additional investigations were not undertaken as part of the previous SSD application prior to that application being withdrawn.

Current investigations

The ACHAR prepared by McCardle Cultural Heritage Pty Ltd for the current SSD application comprised an updated ACHAR which also responds to previous feedback from HNSW regarding concern around the depth of excavations undertaken as part of the previous application. Renewed notification and consultation with RAPs took place as part of the new ACHAR.

To address previous feedback from HNSW, the following excavation methodology was developed to respond to HNSW's requirements and the results of the previous excavation –

- Test pits were located using GPS.
- Previously excavated test pit soils were mechanically removed to 5cm above the previous termination depth and stockpiled adjacent to each test pit.
- Each test pit excavated by machine in 10cm spits to a maximum depth of one (1) metre below ground surface.
- All excavated material sieved through appropriate mesh sizes and cultural materials collected for analysis
- All test pits documented through written records, photography and scaled drawings.
- Any recovered cultural materials to undergo detailed analysis including typological classification and raw material identification.

Excavations were undertaken in accordance with the above methodology with **Figure 44** presenting a summary of Aboriginal sites and test excavation results and the potential for deeper deposits.

AHIMS	Test Pit #	Original depth (cm)	Subsurface cultural materials	Additional subsurface potential	End depth (cm)	Subsurface cultural materials	Additional subsurface potential
38-5-0353	1	65	no	no	65-100	no	no
38-5-0352	2	55	4 shell fragments (25cm)	no	55-100	1 small fragment 60cm	no
38-5-0351	3	65	no	no	65-100	no	no
38-5-0350	4	85	no	no	85-100	no	no
38-4-2016	5	60	no	no	60-100	no	no

Figure 44: a summary of Aboriginal sites and test excavation results

The extended test excavations revealed that subsurface disturbance at greater depths was limited to bioturbation processes (movement through insect activity and root action) with no evidence of mechanical disturbance to the subsurface soil profiles. The absence of major subsurface disturbance beyond bioturbation indicated the subsurface deposits across the project area retain comparatively good stratigraphic integrity.

The thoroughness of the test excavation programme, combined with the relatively intact nature of the subsurface profiles identified provides a sound basis for concluding that if Aboriginal cultural materials were present in the subsurface deposits of the project area, they would in all likelihood have been identified during the excavation programme. The absence of cultural materials from the test excavation results therefore reflects the genuine scarcity of such evidence within the project area rather than any failure of detection as a result of poor preservation conditions.

This determination can be meaningfully compared with findings of previous archaeological assessments and recorded sites from the surrounding region for consistency and similarities and differences in site patterning, site types, landform preferences and artefact assemblage characteristics to contextualise the project area's archaeological record within its broader regional and local setting and to establish the representativeness of the evidence identified.

The scarcity of cultural material identified in the project area and its character as a low-density background scatter consistent with transitory hunting and gathering use. The findings align with regional patterns demonstrating that site numbers, densities and assemblage diversity decrease markedly with distance from access to reliable water sources and preferred landforms such as accessible dunes overlooking the interbarrier depression.

The predictive model based on current survey results determined –

- The potential for ceremonial, bora, carved tree, scarred tree, and stone arrangement sites is very low
- There was no evidence of burial sites and whilst the potential for skeletal remains to occur is low to moderate, this can be addressed through an unexpected finds protocol
- Sites of traditional cultural significance were not identified by the RAPs involved in the investigation and

registered Aboriginal stakeholders did not disclose specific knowledge or cultural values or places within the project area.

- Despite anticipated higher concentration of archaeological evidence in the norther portion of the project area due to its proximity to interbarrier depression, this prediction was not borne out.
- The broader patter of very low-density surface evidence and extremely sparse subsurface material across the project area as a whole is consistent with the model's prediction of background scatter associated with transitory hunting and gathering use across the project area.

A summary of the significance assessment of the sites identified at the site is at **Figure 45**. Five (5) of the eleven (11) RAPs consulted during the project assigned cultural and spiritual significance.

Site	Site Type	Representativeness	Integrity	Research pot.	Scientific sig.
38-5-0353	low-density shell	well represented	poor	low	low
38-5-0352	low-density shell	well represented	poor	low	low
38-5-0351	low-density shell	well represented	poor	low	low
38-5-0350	low-density shell	well represented	poor	low	low
38-4-2016	low-density shell	well represented	poor	low	low

Figure 45: Summary of significance assessment

Management and Mitigation Measures

The following management and mitigation measures are recommended for the project –

- Decisions about the management of sites and potential archaeological deposits should be made in consultation with the appropriate Aboriginal community
- Site inductions should include an induction on the cultural heritage of the project areas and statutory legislation protecting sites and places of significance. An Aboriginal cultural heritage induction package may be included in the Environmental Management Plan.
- Procedures should be put in place for the continued consultation and involvement with the Aboriginal stakeholders which can be incorporated as part of the Environmental Management Plan.
- An unexpected finds protocol should be implemented should any human remains be uncovered during works
- A community collection of surface sites will be undertaken prior to any works being undertaken at relevant locations and an Aboriginal Site Impact Recording Form (ASIRF) will be completed following the community collection.

6.5.2 Historic Heritage

A Statement of Heritage Impact (SOHI) was prepared by EMM Consulting and is included at **Appendix 16**. The purpose of the SOHI was to identify any historic heritage in the vicinity of the development and an assessment of the likelihood of and significance of impacts on heritage items.

Assessment and Findings

A search of statutory and non-statutory heritage registers did not identify any historic heritage items in the project area. The nearest statutory item is the Stockton Beach Dune listed under Schedule 5 of the PSLEP (Item 134) located south of the site on the southern side of Nelson Bay Road.

A non-statutory heritage listing intersects the southern margin of the project area associated with the Bobs Farm cadre and evacuation camp. The purpose of the cadre camp was to train recruits for commando units during World War II but the camp was never used for its intended purpose. Any archaeological remains associated with the former cadre and evacuation camp – should such material exist – would be localised and conditional and of local heritage significance at most.

The Newcastle Bight Coastal Area was formerly listed on the Register of the National Estate as an indicative place prior to the Register's closure. The listing is non-statutory and retained for archival purposes only.

The proposal will not result in any direct impacts to historic heritage items or archaeological relics because no such items occur with the project area. The proposal will not result in any indirect impacts on the locally listed heritage item (Stockton Beach Dunes) as this item lies outside the site boundary and the proposal will not result in the modification of dune landforms, heritage fabric, or landscape processes. Any potential indirect effects (e.g. dust) will be mitigated through standard construction controls and impacts are assessed as little to none.

Management and Mitigation Measures

Notwithstanding the site does not contain any mapped items of local heritage significance, will not impact any listed heritage items located adjacent the site, and the likelihood of any remnants of the former cadre camp which was formerly located somewhere in the vicinity of the site being low, the SOHI includes the following mitigation and management measures –

- Incorporate an Unexpected Finds Procedure into the Construction Environmental Management Plan
- Implement the Unexpected Finds Procedure during works.

6.6 Traffic and Transport

A Traffic Impact Assessment (TIA) was prepared by Seca Solution and is included at **Appendix 20**. The purpose of the TIA was to determine the future traffic generated for the development, assess impacts on the local road network due to additional flows, review the access arrangements for the development, and to assess any other transport impacts associated with the development including a safety review.

Access to the site is proposed via a new left-in left-out intersection onto Nelson Bay Road with all haulage trucks exiting the site to travel east along Nelson Bay Road to make a U-turn at the Port Stephens Drive roundabout.

Assessment and Findings

Existing Conditions

The site is used for horticultural purposes with an existing dwelling house and so traffic generated from this use is minimal.

The site is adjacent Nelson Bay Road (B-63 – MR 00108) which is the key link between the Nelson Bay area and Newcastle, Williamtown Airport and the Pacific Highway. Nelson Bay Road has a speed limit of 80km/h in the vicinity of the site and provides two lanes of travel in both directions with a sealed shoulder. The site is in relatively close proximity to the M1 Motorway extension to Raymond Terrace which is anticipated to be finalised soon.

As part of the study work, traffic surveys were undertaken at the roundabout intersection of Nelson Bay Road and Port Stephens Drive during morning and afternoon periods on Wednesday 18 February 2026 during school term time to establish the existing and normal traffic conditions for the area. Two-way traffic flows on Nelson Bay Road (west of Port Stephens Drive) were –

- 1,776 vph (vehicles per hour) in the morning peak between 7:30am and 8:30am (54% of vehicles heading westward toward Newcastle)
- 1,974 vph in the afternoon peak between 3:15 and 4:15 pm (51% of vehicles travelling eastbound)

Daily traffic flows along Nelson Bay Road at Bobs Farm were extrapolated from previous traffic count data from 2014 and found to be in the order of 16,850 vehicles per day. Of these, the vast majority are light vehicles with the heavy vehicle component representing approximately 5% of the overall traffic movements in the AM peak and less (3%) in the PM peak.

Published accident data for the five (5) year 2020-24 shows there were six (6) recorded accidents in the vicinity of the site and Marsh Road, none of which involved heavy truck vehicles.

With regard to parking, there is no restriction to parking along Nelson Bay Road with a sealed shoulder allowing vehicles to stop if needed, and ample onsite parking due to the site's rural uses.

There are bus stops and associated facilities located on both sides of Nelson Bay Road including to the west of the site to service patron demands for buses that operate along Nelson Bay Road.

Proposed Development

The proposal includes construction of a new left-in left-out intersection from Nelson Bay Road into the site for heavy vehicles to accommodate the proposal. Retention of the existing light vehicle access to the site via the electricity easement at the southern end of the site is also proposed. The proposed new intersection will provide sufficient deceleration and acceleration into and out of the site while avoiding conflicts with existing accesses including the right-of-carriageway in the north-east of the site. The location of the site access and associated acceleration lane length will mean that trucks will have fully merged onto Nelson Bay Road prior to the right-of-carriageway.

Haulage trucks will not remain onsite and as such sufficient parking is available onsite for the vehicle parking requirements for the proposal.

Consent is sought for up to 120 laden trucks per day to accommodate peak periods and it should be noted that such levels of throughput and sales could not be sustained consistently based on the proposed maximum annual extraction of 530,000tpa. As such, based on 40 tonnes per laden truck the proposal could generate 13,250 laden trucks per year, which – divided by 288 days per year (48 weeks at 6 days per week) – would result in an average of 46 loaded trucks per day. Staff arrivals are expected to be spread across several hours in the morning and departures similarly in the afternoon, anticipated to be 5 to 8 per hour.

The destinations of sand resource extracted at the site are also anticipated to be west of the site and shown at **Figure 46**. All haulage trucks will exit the site and travel east along Nelson Bay Road to make a U-turn at the Port Stephens Drive roundabout. Trucks will be prohibited from using Marsh Road which will be enforced through the Operational Management Plan including Drivers Code of Conduct.

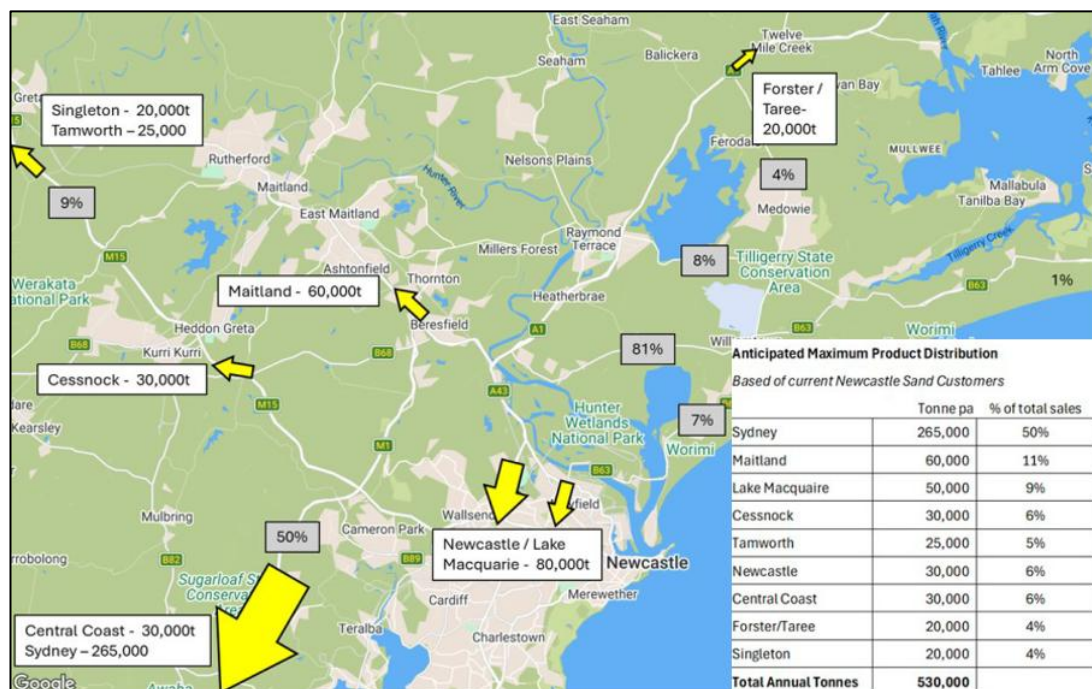


Figure 46: Anticipated destination split for resource

Traffic and Parking Impacts

Based on the proposed access, average daily truck movements, peak periods, daily staff movements and the destination location of sand resource, the TIA determined that the proposal could result in a 1.7% increase in vehicle movements per day during peak operations which is well within the network capacity and so will not have an adverse impact on the surrounding network noting the existing road network in the immediate vicinity is well developed having been duplicated over recent years. It should also be noted that any impacts on the surrounding network associated with the Proponent's Cabbage Tree Road site will have ceased prior to operations at the subject site commencing and that impacts associate with construction traffic will be temporary.

The Port Stephens Drive roundabout operates well with minimal delay and an increase of up to 10 laden trucks per hour during peak periods will have a negligible impact on the operation of the roundabout.

For access routes through to Newcastle / Raymond Terrace and Maitland, all of the major intersections are controlled by traffic signals or roundabouts and operate well with minimal delays and congestion. Any impacts on these routes are considered to have an acceptable impact.

Any cumulative impacts associated with the proposal in the context of other quarries in the region are negligible, particularly as a result of the M1 Pacific Motorway extension to Raymond Terrace upgrades.

Impacts on road safety will be low noting that Nelson Bay Road is an approved B-Double route and that proposed new access into the site will be appropriate for receiving trucks. Safety associated with residential and educational uses on nearby local roads will be ensured by way of prohibiting trucks from using Marsh Road though the site's Operational Plan of Management and Drivers Code of Conduct.

Management and Mitigation Measures

The TIA determined that the existing surrounding road network is sufficient for the proposal and no road upgrade works are required to accommodate the traffic movements associated with the proposal.

6.7 Land Resources

This section of the EIS considers the potential land resource impacts of the proposal including impacts on soils and land capability (including erosion, contamination and biosecurity risk, potential impacts on landform (topography), and the compatibility of the development with other land uses in the vicinity.

6.7.1 Land Resources Assessment

A Land Resources Impact Assessment was prepared by VGT Environmental Compliance Solutions and Laboratories (VGT) in support of the development and is provided at **Appendix 27**. The purpose of the assessment was to describe the proposed land resources management system for the site including impacts on soils and land capability, potential impacts on landforms, and the compatibility of the development with other land uses in the vicinity by way of an assessment against the requirements of Section 2.17 of SEPP (Resources and Energy) 2021 and a Land Use Compatibility Risk Assessment and to clarify how potential impacts generated by the development will be managed.

An Additional Geotechnical and Acid Sulfate Soil Assessment and Detailed Site Inspection were prepared by Martens Associates (**Appendix 21** and **Appendix 13**) which assessed components of the land resources assessment.

Assessment and Findings

A site-specific land soil capability assessment was undertaken using the Land and Soil Capability Assessment Scheme which defines land soil capabilities based on the biophysical features of the land.

Historical Land Use, Land and Soil Characteristics

Historically the site was fully vegetated until approximately 2004 when part of the site was established for agricultural purposes (olive and fig farm) alongside rural residential pursuits. In terms of regional geology, the site is within the Stockton Dune which lies on the Tomaree Peninsula which is a relatively low-lying coastal area characterised by extensive unconsolidated sand dunes and estuarine deposits. The subject site itself consists of a series of rounded dunes of varying heights separated by lower areas with significant sand deposits laid down by wave and marine processes. The site has predominantly two (2) soil landscapes, being the Boyces Track Soil Landscape to the north and the Hawks Nest Soil Landscape to the south (**Figure 47**).

Boyces Track Soil Landscape is broadly characterised by steep dunes with speckled loose loamy sand overlying bleached loose light grey sand which then overlies faintly mottled sand, which overlies dull yellow-orange sand. Landscape limitation of this soil landscape include the potential for high wind erosion; mass movement (if disturbed); steep slopes; non-cohesive soils; foundation hazard; and, the potential for groundwater pollution hazard (if developed).

Hawks Nest Soil Landscape is broadly characterised by gently undulating, low dunes with the potential for localised higher water tables, waterlogging and potential acid sulphate soils. Dunes comprise bleached loose sand over mottled sand and over greyish yellow-brown sand. Landscape limitation of this soil landscape include high wind erosion hazard; non-cohesive soils; localised high water tables; waterlogging; and, potential groundwater pollution hazard.

The majority of the site slopes toward the east with some portions sloping to the north, west and southwest. Slopes are typically low (0-5%) in the eastern portion and higher (typically 10-50%) over the remainder of the site. Site elevations range from approximately 35m AHD at the higher knolls in the northwest to approximately 2m AHD at a depression in the site's north. To note is the lowest point of the site is associated with a swamp TEC at the site which is excluded from proposed extraction and includes a buffer between this area and quarry operations. No watercourses, drainage features or surface ponding are noted onsite.

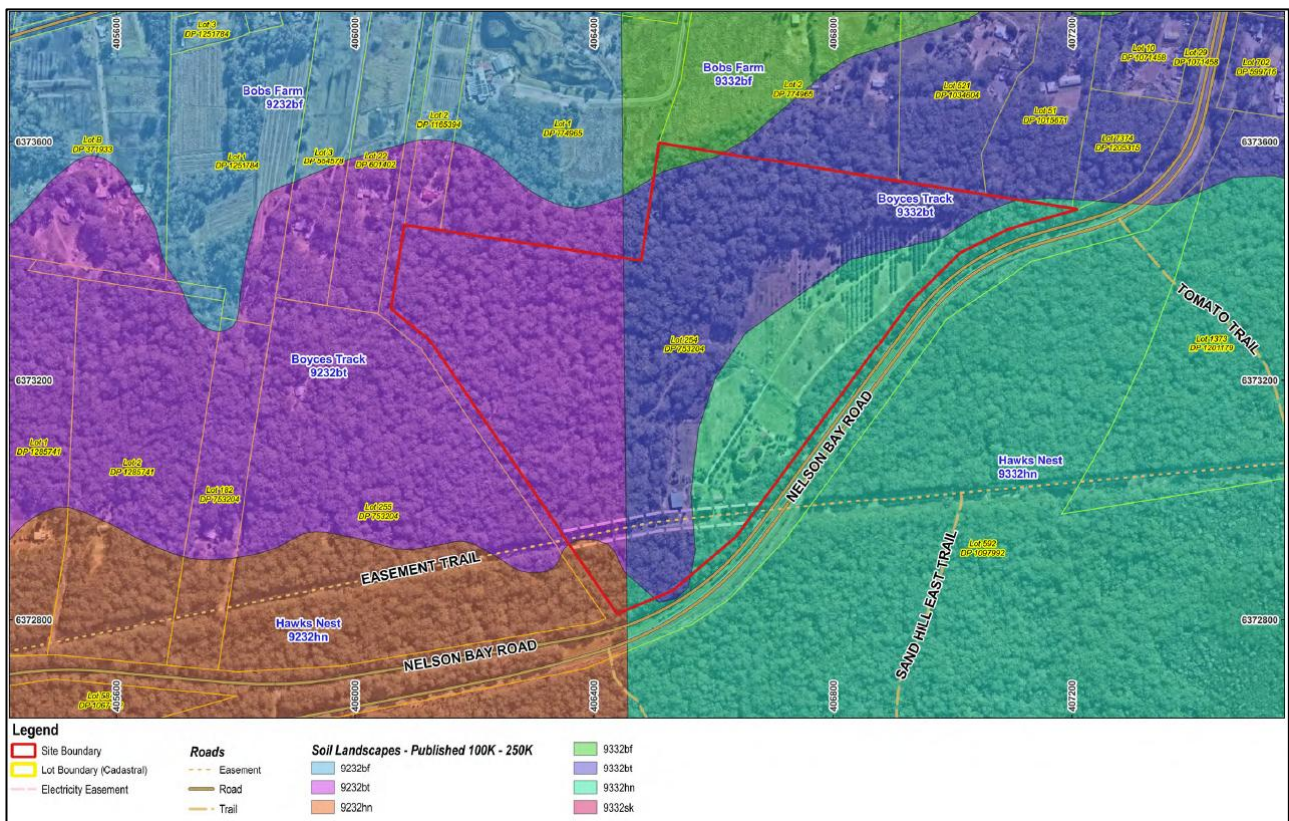


Figure 47: Soils Landscapes across the site (Boyces Track (9232) and Hawks Nest (9332))

Land and Soil Capability Assessment

The Land and Soil Capability (LSC) assessment scheme comprises eight (8) different classes of biophysical characteristics that give an indication of suitable land management practices that can be applied without causing degradation of the soils on-site. These classes are defined from Class 1 – Extremely high capability land to Class 8 – Extremely low capacity land. The final LSC class of the land is based on the most limiting factor, i.e. the aspect with the highest Land Capability Classification score.

The site's current LSC was assessed as Class 7, meaning the site has extremely severe limitation for most land uses and unsuitable for any type of cropping or grazing.

Land Use Conflict Risk Assessment

A Land Use Conflict Risk Assessment (LUCRA) was undertaken by VGT (**Appendix 27**) to identify the potential for land use conflict issues and the risk of occurrence before the proposal proceeds and the risks for disputes arise. The Department of Primary Industries Land Use Conflict Risk Assessment (LUCRA) Guide was used to address separation distances and management practices to minimise dust, noise impacts on sensitive receptors including surrounding agricultural land uses.

The LUCRA process uses a risk ranking matrix of 1 to 25 to assess the environmental, public health and amenity impacts where a rank of 1 represents the lowest magnitude and 25 the highest. The objectives of the LUCRA is to identify and define controls that lower the risk ranking score to 10 or below.

The LUCRA assessed probability against likelihood of occurrence to determine the potential for adverse land use conflict during the key stages of Land clearing, Extraction of Materials, Haulage, and Rehabilitation. The LUCRA identified several potential instances of land use conflict between the site and existing surrounding land uses with some potential conflicts inherently low without mitigation needed, and others where the potential for conflict is greater being reduced through the implementation of control measures.

All potential impacts were identified as being suitably mitigated with appropriate management strategies with the exception of bushfire risks which will remain in a bushland setting. A summary of potential impacts and proposed management strategies are summarised at **Table 21**.

Table 21: summary of potential impacts and proposed management strategies

Potential conflict	Management Strategy
Nuisance dust	- Water carts - Real time air quality monitoring - Progressive revegetation - Site boundary vegetation buffers
Sand migration	
Noise impacting neighbours	- Land clearing only during consented hours - Plant and equipment to meet industry standards
Downstream water quality and quantity impacts	- Sediment and erosion controls to be installed prior to disturbance - Progressive rehabilitation
Visual impacts on neighbours	- Site boundary vegetation buffers - Majority of dwellings shielded by way of vegetation and topography
Weed incursion and feral animals	Regular inspections
Risks associated with bushfire	- Asset Protection Zones maintained - Refuelling undertaken in hardstand areas - Fire extinguishers stored with plant and equipment
Vegetation removal decreasing the ecological value of the site	- Progressive revegetation - No clearing outside approved extraction boundary 15 metre vegetation buffers retained
Removal of land for rural landscape uses	Rehabilitation of the site nominates returning the site to its current Rural Landscape use after extraction works are completed.
Waste and litter impacting neighbours	Domestic litter will be collected by contractor
Effluent impacts on land and water	Toilet facilities onsite which will be serviced by licensed contractor
Emergency incidents such as spills impacting land or water	- Spill kits held on-site - All fuels and oils stored in bunded areas - Refuelling in hardstand areas - Staff emergency training
Revegetation is incompatible with surrounding land uses	Revegetation during progressive rehabilitation with plant species commensurate with pre-existing vegetation communities

Topography and Geotechnical Stability

Vegetated buffers a minimum of 15m wide will be retained around the site boundary and extraction will be restricted to 0.7m above the predicted groundwater level. Final landform batters will be a maximum of 3m horizontal to 1m vertical (3H:1V) which will progress down to a relatively flat quarry floor. A geotechnical hazard risk assessment for the proposed works was completed in accordance with the qualitative risk matrices provided in Section 7 of the Australian Geomechanics Society (AGS) (2007) guidelines which considered soil creep and gross instability (slide). A summary of this assessment is at **Figure 48** and shows no adverse finding in terms of risk to life or property.

Description	Treatment Measures	Likelihood ¹	Risk to Life		Risk to Property	
			Established Probability ²	Risk	Consequence	Risk
Soil creep	Maintain vegetation of undeveloped areas. Maintain good site drainage.	Possible ¹	5.35×10^{-7}	Tolerable	Minor	Low
Gross Instability (slide)	Good hill slope engineering practice. Maintain good site drainage. Do not load crest of excavation batter. Limit vibrations near batters. Do not over-steepen batters (maximum batter slope of not greater than 18° i.e. about 1V:3H).	Unlikely ¹	8.20×10^{-7}	Tolerable	Moderate	Low

Figure 48: Summary of slope instability risk assessment

To ensure stability at the site, extraction will proceed from the furthestmost point of the extraction area and retreat. This avoids unnecessary movements over the final surface which can compact and damage the base layer prior to spreading topsoil and minimises geotechnical risks related from ground movement such as hazards including subsidence, landslips, toppling, settlement, heave, slumping and fracturing.

There is no history of underground activities being undertaken at the site and so the risk of subsidence is negligible.

The risk of dewatering or heave (in clay rich soils) was also found to be negligible given the sandy matrix and that the operation will not intersect groundwater nor are there any underground working on the site. The sands are not prone to swelling when wet which is the prime cause of heaving. The uppermost sand strata was also determined not to contribute chemical leachates which would be harmful to rehabilitation or the environment.

Land Capability

The impact of the proposed final landform on land capability was assessed and determined to have a beneficial rise from a LCS class of Class 7 (very low capability land) to Class 6 (low capability land) in its rehabilitated landform, but still retains a lower capability assessment primarily due to the diminution of slopes within the majority of the final void compared to the existing landform.

Although the land is anticipated to have some limitations associated with wind erosion on battered slopes, acidification, and mass movement, these do not preclude the return to the previous land uses of forest and horticulture as these can be mitigated by way of progressive rehabilitation measures proposed for the project, and ensuring final slope batters do not exceed 3H:1V and reducing slope lengths in accordance with Managing Urban Stormwater Soils and Construction principles and the rehabilitation plan.

The floor of the final landform once revegetated is unlikely to be prone to erosion impacts or mass movement.

Soil acidification was determined to be unlikely if Potential Acid Sulphate Soils are located below the extraction floor but can also be managed with the application of ameliorant.

The rehabilitated land will be suitable for the proposed post-quarry use for low level grazing and agricultural orchards principally through proposed batters of 3H:1V and progressive revegetation, with other future land uses identified as not being overtly precluded because of the proposed final landform and rehabilitation management practices.

Geochemical Constraints

The assessment found the site geochemistry provides a minor risk of pH levels below optimum levels for rehabilitation and there is almost negligible risk of spontaneous combustion due to the absence of carbonaceous material at the site.

Soils are somewhat dispersive and will be stored appropriately to minimise erosion if soils cannot be used immediately for rehabilitation work and require temporary stockpiling and amelioration. The geochemistry is not expected to present any difficulties with regard to topsoil management.

Biosecurity

Biosecurity objectives for NSW are to manage biosecurity risks from animal and plant pests and diseases, weeds and contaminants by preventing their entry into NSW.

Two (2) priority weed species listed under the *Biosecurity Act 2015* have been identified at the site as lantana (*Lantana Camara*) and Bitou Bush (*Chrysanthemoides Monilifera* subsp. *rotundata*). Weed, pest inspections and control will be undertaken on a regular basis by licenced contractors in response.

Contamination

Soil investigations and sampling were completed by Martens Associates on 5 November and 6 November 2025 (first round) involving surface soil collection of 91 surface samples using hand tools and excavation of 11 shallow test pits using hand excavation methods. As a result of the first round of sampling, additional soil investigation and sampling completed on 7 January 2026 (second round) and outlined in the Detailed Site Inspection (**Appendix 13**) which included the excavation of 20 additional shallow test pits using hand excavation methods.

The Conceptual Site Model for the site identified two (2) Areas of Concern (AEC), being the area of the site associated with the former and existing market gardens and orchards (AEC A), and the former and existing buildings and structures and associated curtilage (AEC 2). The results of these updated assessments were reported by area / soil types to reflect the Conceptual Site Model and to support interpretation against the adopted methods. Soil Analytical Results were grouped based on five (5) soil unit types set out below with the location of AECs shown at **Figure 49** –

AEC A	Soil Unit 1	Horticultural near-surface soils
	Soil Unit 2	Deeper natural sand soils within the horticultural footprint to assess whether horticultural impacts persist at depth
AEC B	Soil Unit 3	Structure / curtilage soils associated with existing structures and footprints of former structures, where a broader Contaminants of Potential Concern suite was assessed
Bushland Areas	Soil Unit 4	Bushland “natural” soils areas to provide an indication of local background metal concentrations in areas unlikely to have been impacted by horticultural activity or fill
	Soil Unit 5	Bushland “possible fill” locations where observations indicated potential localised placement of material.

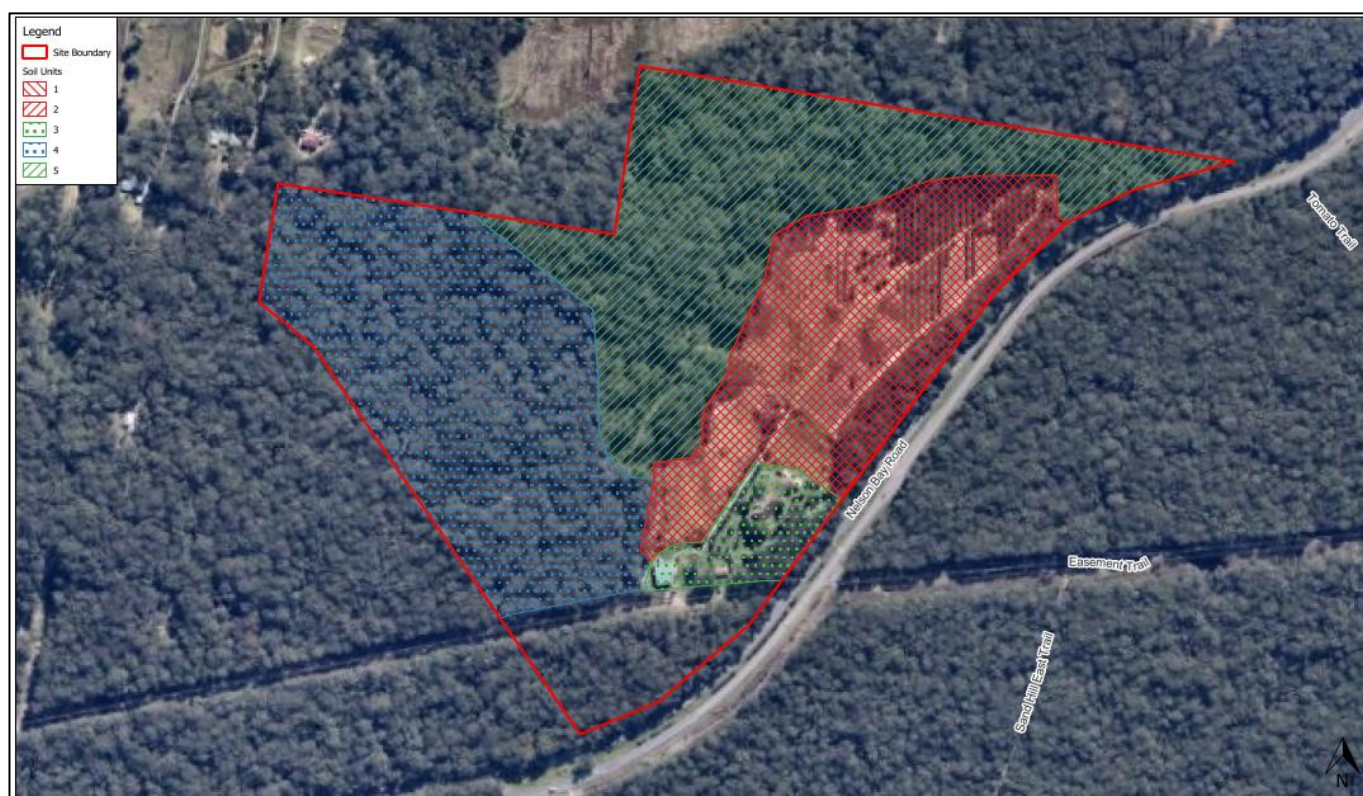


Figure 49: Location of Soil Unit types across the site

The results of the DSI found –

- Copper and zinc are elevated in near-surface soils within Soil Unit 1 associated with the horticultural footprint relative to bushland natural soils and deeper natural sands
- Two discrete near-surface samples within Soil Unit 1 reported marginal exceedances of nickel. These exceedances were isolated and not supported by the broader composite screening dataset or followed-up targeted sampling results.
- Deeper natural sands with the horticultural footprint generally reported lower copper and zinc concentrations than-near surface horticultural sands indicating the impacts are predominantly surficial.
- Analytical results of soils associated with existing structures (Soil Unit 3) identifies only one (1) minor exceedance of copper and two (2) minor exceedances of nickel in near-surface soils
- Bushland natural samples reported very low heavy metal concentrations and provide meaningful background comparison for AEC A.
- A single fragment of Asbestos Containing Material was identified but not identified as indicative of widespread asbestos in soils impact based on available evidence.

Management and mitigations measures to these findings are addressed **Section 6.7.2**.

Management and Mitigation Measures

The following management and mitigation measures were recommended –

- Soil chemistry is to be investigated prior to revegetation to determine if ameliorants are required.

- Weed and pest control will be undertaken by licensed contractors. Chemicals for weed and pest control will not be stored on site and only minor amounts are used.
- Fuel is stored on site in a covered and bunded fuel cell. Refuelling is to be conducted within the bunded hardstand area and contractors are to carry spill kits at all times.
- Minimal volumes of oils / solvents or lubricants are stored on site for the operation of the processing plant.
- If excavation extends into the zone of influence, then these excavations should take into consideration requirements of the *Development Near Rail Corridors and Busy Roads – Interim Guideline, 2008*). Alternatively, batter angles may need to be further reduced.
- Prepare and implement a Soil Management Plan (SMP) for stripping, stockpiling, handling, segregation, reuse and disposal of soil.

6.7.2 Soil Management Plan

The findings of the onsite soil contamination testing noted elevated near-surface concentrations of copper and zinc at the site associated with the horticultural use of the site and a fragment of Asbestos Containing Material (ACM) and a Soil Management Plan (SMP) was recommended. A Soil Management Plan has been prepared by Martens Associates in response to this recommendation and is included at **Appendix 11**.

The SMP was developed to translate the findings of the DSI into clear requirements for soil stripping, segregation, stockpiling, blending / conditioning, validation and reuse (particularly for rehabilitation growth media) and to manage unexpected finds including localised ACM.

The SMP uses the five (5) Soil Unit types identified for the site and overlays these with the staging plan for the site. Soil Units across the site which align with the quarry staging plan is shown at **Figure 50**.

Broadly, the SMP details minimum actions required for works during each stage to address the findings of the DSI. Where quarry stages comprise different Soil Unit types within the one quarry stage, the SMP requires separation of these stages into sub-stages. The SMP includes soil handling procedures for –

- *Pre-stripping controls* – apply to each stage and require the marking out of Soil Unit sub-areas, and establishing stage stockpile areas and assigning stockpile IDs.
- *Stripping sequence and segregation requirements* – topsoil stripping and soil segregation requirements according to the Soil Unit present at the location of works.
- *Blending / conditioning procedure for rehabilitation growth media for Soil Unit 1* – relates to the area of the site used for horticultural uses where topsoil is to be reused as rehabilitation growth medium and blending / conditioning may be required to reduce copper / zinc concentrations to produce fit-for-purpose growing media.

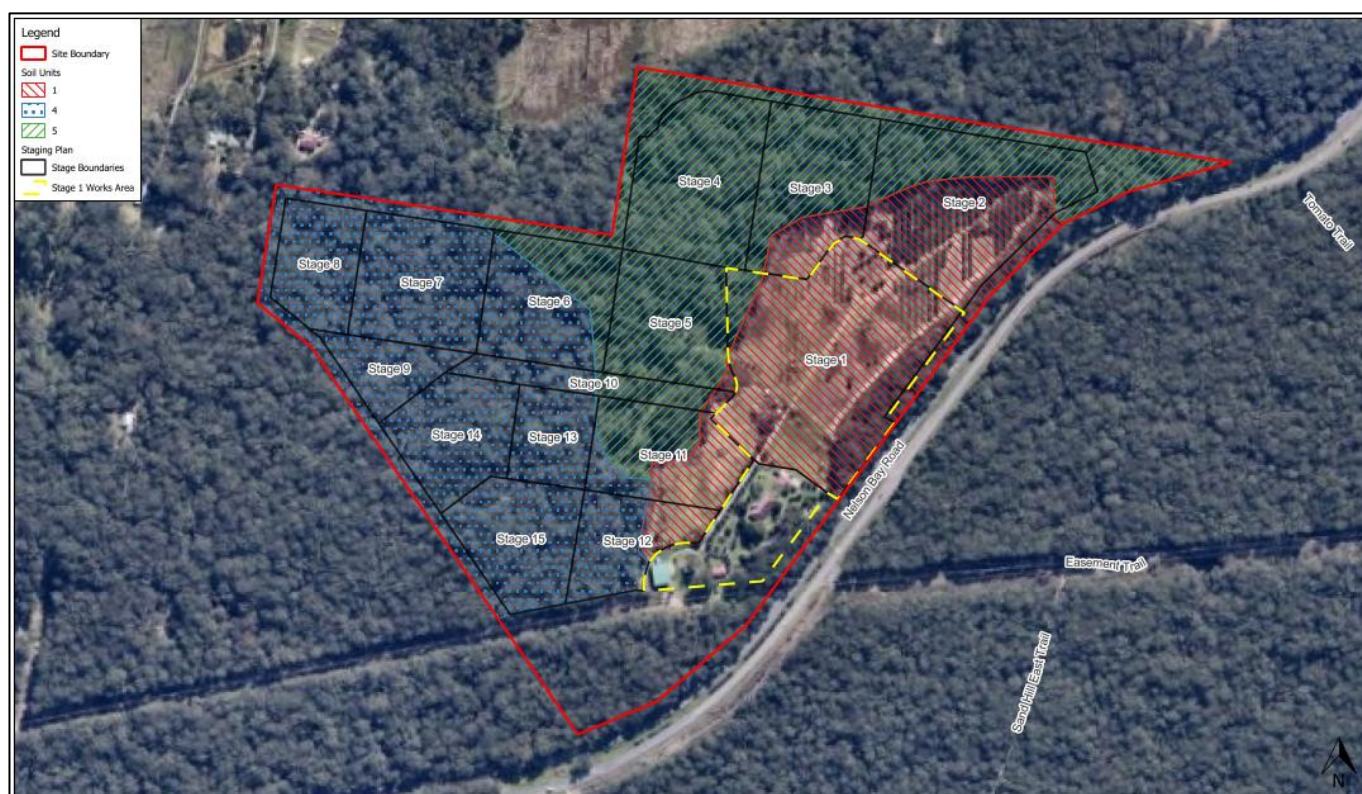


Figure 50: Soil Units and Staging Plan

Unexpected Finds Protocol and Asbestos Management

An Unexpected Finds Protocol (UFP) will apply to all stages, and the additional asbestos specific requirements for Stage 11 where the asbestos fragment was located during the DSI. The intent of the UFP is to ensure that any unexpected contamination or hazardous materials are managed appropriately and consistently and that soil / material pathways (reuse, blending, disposal) remain appropriate.

The UFP would form part of quarry operations for all stages once works commenced at the site and require management actions such as sampling, isolation of material, and sign off by an environmental consultant for the following–

- Suspected Asbestos Containing Material
- Demolition debris / buried waste
- Evidence of chemical contamination (odour / staining / sheens)
- Atypical fill / placed material (shale / gravels / rock fragments)

The asbestos fragment located at the site was found within the area of Stage 11 within the quarry staging plan. Specific soil management requirements are required for Stage 11 for an asbestos-focused hold point to reduce uncertainty prior to bulk stripping / earthworks. Targeted inspections of exposed ground surface and any shallow disturbed areas following vegetation clearance would be required for Stage 11 with works only able to proceed after clearance from an environmental consultant.

6.8 Hazards

6.8.1 Bushfire

The site is mapped entirely as bushfire prone land. A Bushfire Assessment was prepared by Bushfire Hazard Solutions and is provided at **Appendix 17**. The purpose of the report was to determine if the proposal complies with the relevant specifications and requirements of Planning for Bushfire Protection (PBP) 2019.

Because the proposal includes the installation of a new office (Atco structure) as well as use of the existing dwelling as a manager's residence associated with the proposal, the proposal was assessed against the specifications and requirements of PBP.

Assessment and Findings

The assessment considered slope and vegetation type within 140m of the processing and sales area as shown at **Figure 51**. Vegetation was assessed as comprising highly modified land (orchard and managed gardens) and natural bushland. Bushland at the site is mapped as 'Coastal Sands Apple-Blackbutt Forest' which is a Forest formation for the purposes of bushfire assessment. Vegetation identified as posing a hazard was found to be located to the south-east within Worimi National Park and to the north-west within the subject site. Effective slope within the 140m assessment area surrounding the processing and sales area was between 0-5 degrees slope and so effectively flat land.

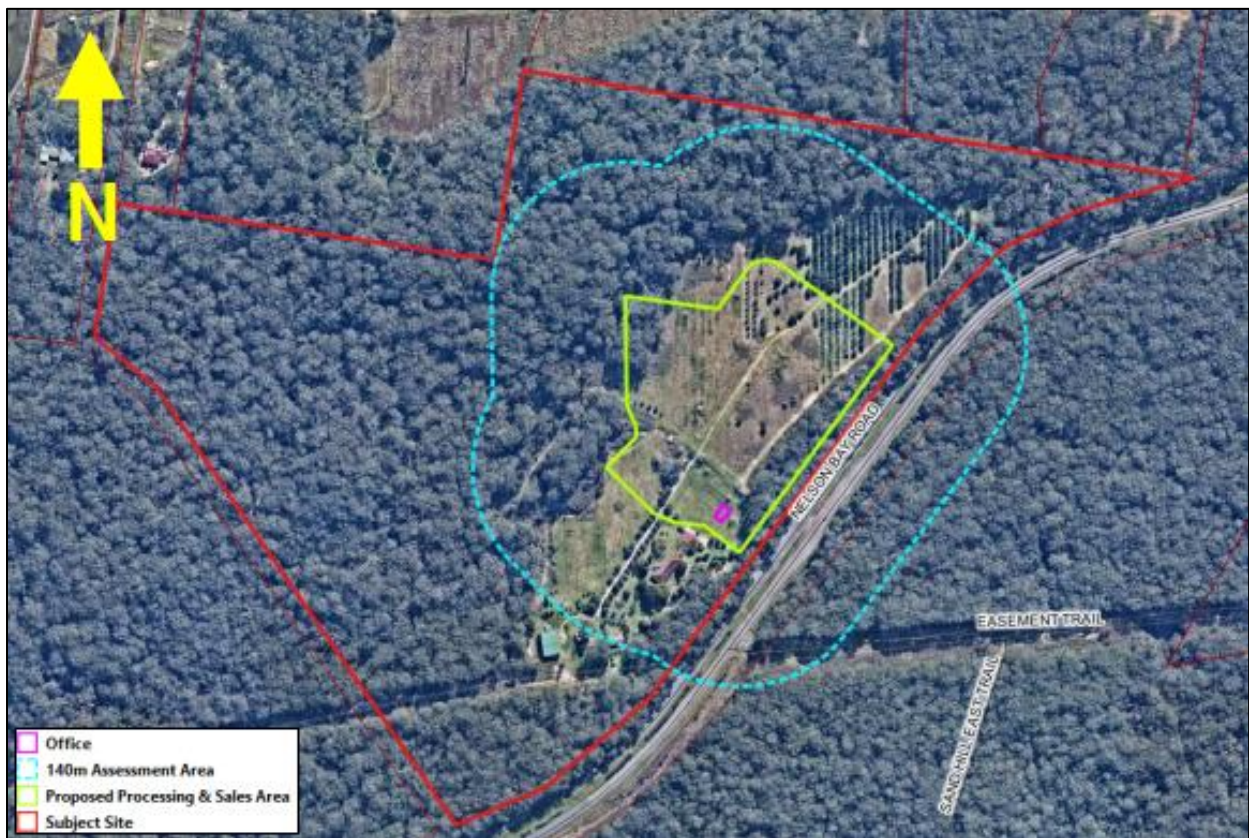


Figure 51: Bushfire assessment area

PBP does not include specific bushfire protection measures for certain classes of structures (Class 5 to Class 8) which includes the proposed office as an Atco structure nor for extractive industries as a land use. Notwithstanding, an assessment against the aims and objectives of PBP was undertaken and found that the proposal complies with – or if recommendations and mitigation measures are adopted the proposal can comply with – the aims and objectives of PBP in terms of asset protection zones, bushfire attack levels, access and road network, services, and bushfire emergency management.

While the dwelling at the site is existing, the proposed change of use to a manager's residence required assessment and it was determined that upgrades to improve ember protection are necessary which can be achieved by enclosing all openings (excluding roof tile spaces) or covering openings with a non-corrosive metal screen mesh with a maximum aperture of 2mm, and fitting external doors with draft excluders.

Management and Mitigation Measures

The Bushfire Report recommends the following mitigation measures for the proposal –

- Maintain an Asset Protection Zone (Inner Protection Area) for a minimum of 100m from the processing and sales area or until the property boundary, whichever comes first
- Construction of the new office structure to BAL-12.5 and upgrading of the existing dwelling to be used as a manager's residence to comply with BAL-12.5
- Maintenance of any landscaping in accordance with Table 7.4a of PBP
- Preparation of a bushfire emergency management plan consistent with the NSW RFS Guidelines for the Preparation of Emergency / Evacuation Plans.
- Installation of a 20,000 litre static water supply

6.8.2 Hazardous Goods

A Hazardous Goods Assessment was undertaken with regard to the transport, handling and storage of hazardous and dangerous goods, in accordance with the Planning Secretary's Environmental Assessment Requirements (SEARs).

This assessment was undertaken having regard to –

- State Environmental Planning Policy (Resilience and Hazards) 2021, including Section 4.6 *Hazardous and Offensive Development*, which requires consideration of whether a development is compatible with surrounding land uses in view of potential hazards and risks.
- Relevant Dangerous Goods legislation and the Australian Dangerous Goods (ADG) Code, which govern the transport, handling and storage of hazardous and dangerous goods.
- DPHI's risk-based approach to hazards, whereby the level of assessment is proportionate to the nature and scale of the identified risks.

The proposed development represents a like-for-like transfer of plant and operational practices from the Cabbage Tree Road Sand Quarry, including the storage of diesel fuel in self-bunded tanks and the use of mobile quarry equipment. As such, the hazard profile of the development is consistent with that previously assessed and approved for Cabbage Tree Road. No additional hazardous material types are introduced, and while the volume of diesel storage is greater than previously assessed, it remains within the typical range for extractive industry operations and does not alter the overall hazard profile of the development.

Assessment and Findings

Under SEPP (Resilience and Hazards) 2021, development must be screened to determine whether it constitutes a Potentially Hazardous Industry (PHI) and a Potentially Offensive Industry (POI).

A screening assessment was undertaken comprising –

- Qualitative review of the hazardous materials proposed, the nature of the operation and potential hazard scenarios, and
- Qualitative review of the hazardous materials proposed, the nature of the operation and potential hazard scenarios, and

Comparison of Hazardous Material Quantities Against Screening Thresholds

The proposed Bobs Farm Sand Quarry is a dry extractive industry operation involving the storage of limited quantities of diesel fuel and maintenance consumables typical of quarry operations. No chemical manufacturing, processing, pressurised storage, explosive materials or bulk hazardous transfer facilities are proposed.

A screening against hazardous industry threshold quantities has been undertaken. **Table 22** lists the hazardous materials and dangerous goods proposed for onsite storage and their associated threshold trigger classifications.

Table 22: Screening Assessment against Hazardous Industry Planning Thresholds Quantities

Substance	DG Classification	Maximum Quantity Proposed	Typical PHI Screening Threshold*	Exceeds Threshold?
Diesel fuel	Class 3 Flammable Liquid (C1 combustible under AS1940)	32,000 L	250,000 L (bulk flammable liquid storage)	No
Hydraulic oil	Combustible liquid	<200 L	250,000 L	No
Engine oil	Combustible liquid	<200 L	250,000 L	No
Flocculant	Not typically classified as DG	4,000 L	Not applicable (non-DG)	No
Coagulant	Not typically classified as DG	4,000 L	Not applicable (non-DG)	No

* Screening thresholds derived from the Hazardous Industry Planning Advisory Papers (HIPAP) used by the NSW Department of Planning to determine whether development may constitute a Potentially Hazardous Industry.

Current Safety Data Sheets (SDS) for all hazardous materials would be maintained onsite and made available to staff and emergency responders at all times.

The screening results indicates that the maximum diesel storage capacity of up to 35,000 litres –

- Represents approximately 14% of the 250,000 L screening threshold typically associated with bulk flammable liquid storage.
- Will be stored within a compliant self-bunded above-ground tank (minimum 110% capacity).
- Does not involve pressurised systems or large-scale continuous transfer operations.
- Is consistent with fuel storage commonly associated with rural and extractive industry land uses.
- All other materials are stored in minor quantities typical of routine equipment maintenance and are significantly below hazardous industry planning thresholds. No toxic, explosive, reactive, or highly hazardous chemicals are proposed to be stored onsite.

Based on the screening assessment –

- The development does not exceed hazardous industry screening thresholds.
- The development does not constitute a Potentially Hazardous Industry under SEPP (Resilience and Hazards) 2021.
- The development does not constitute a Potentially Offensive Industry.
- A Preliminary Hazard Analysis (PHA) is not required.

A qualitative hazard risk assessment is therefore considered proportionate and appropriate for the scale and nature of the proposal. Section 4.6 of SEPP (Resilience and Hazards) 2021 also requires that development involving hazardous materials be assessed for compatibility with surrounding land uses.

The site is located within a rural landscape characterised by agricultural and rural land uses, conservation land, and road transport corridors.

There are no hospitals, high-occupancy public facilities or sensitive institutional uses in proximity to the proposed hazardous material storage areas. There is a substantial separation distance between the diesel storage location and the nearest rural residential receptors, including Bobs Farm School. The school is approximately 1.3km from the diesel storage location and 680m from the site boundary.

The scale of hazardous material storage is consistent with other rural extractive industry operations in the region. Hazard scenarios are limited to minor spill or fire events, with consequences expected to be localised and manageable within the site boundary.

No credible off-site hazard escalation pathways have been identified.

Transport of Dangerous Goods

Diesel fuel would be delivered to the site by licensed fuel suppliers using standard road tankers. Deliveries would occur on an as-needed basis consistent with operational demand. Diesel fuel would be delivered by licensed fuel suppliers in accordance with the Australian Dangerous Goods Code.

It is anticipated that –

- Diesel deliveries would typically occur once every four to five weeks, equating to approximately 20 dangerous goods vehicle movements per year.
- Maximum delivery volume of up to 35,000L per delivery.
- No transport through high-density residential, school, or hospital precincts is required.
- Oils and lubricants would be delivered infrequently as packaged goods and would represent a negligible number of dangerous goods vehicle movements.
- Deliveries would travel on Nelson Bay Road, a State-classified arterial road that provides regional connectivity between Newcastle and Port Stephens. Nelson Bay Road is a four-lane divided carriageway, designed to accommodate heavy vehicles and freight traffic, to a left in left out access to the quarry.

Storage Locations and Site Layout

Hazardous materials would be stored within designated areas of the site that have been selected to minimise risk to personnel, the environment and surrounding land uses.

Key design controls include –

- Double-skinned/self-bunded diesel tank (minimum 110% capacity)
- Refuelling within a contained hardstand area
- Spill kits located adjacent to refuelling and maintenance areas
- Separation from drainage lines and environmentally sensitive areas
- Secure storage in lockable compounds

These measures are consistent with AS1940 requirements and industry best practice.

Surrounding Land Uses and Sensitive Receptors

Surrounding land uses in the vicinity of the site include rural land, conservation land and local road corridors. The nearest sensitive receptors comprise rural residential properties located at substantial separation distances from hazardous material storage and handling areas (**Figure 52**).

A manager's residence is proposed within the site, however, this dwelling forms part of the development and is not considered an external sensitive receptor. The diesel storage tank would be located within the operational compound and separated from the residence by an appropriate distance consistent with AS1940:2017. For a diesel storage volume of approximately 32,000 litres, the recommended separation distance to a building is approximately 5 metres. The layout of the site ensures that this minimum separation distance is achieved, and appropriate controls including bunding, fire protection and operational procedures would be implemented. Given the limited scale of hazardous material storage and compliance with relevant standards, no unacceptable risk to occupants of the manager's residence has been identified.

The nearest rural residential receptors are located along Marsh Road and Nelson Bay Road. The diesel storage tank is located within the process and sales area and is separated from the nearest dwelling by several hundred metres. Given the limited scale of hazardous storage and separation distances, no credible off-site hazard impact pathways have been identified. The development is therefore considered compatible with surrounding land uses in accordance with SEPP (Resilience and Hazards) 2021.

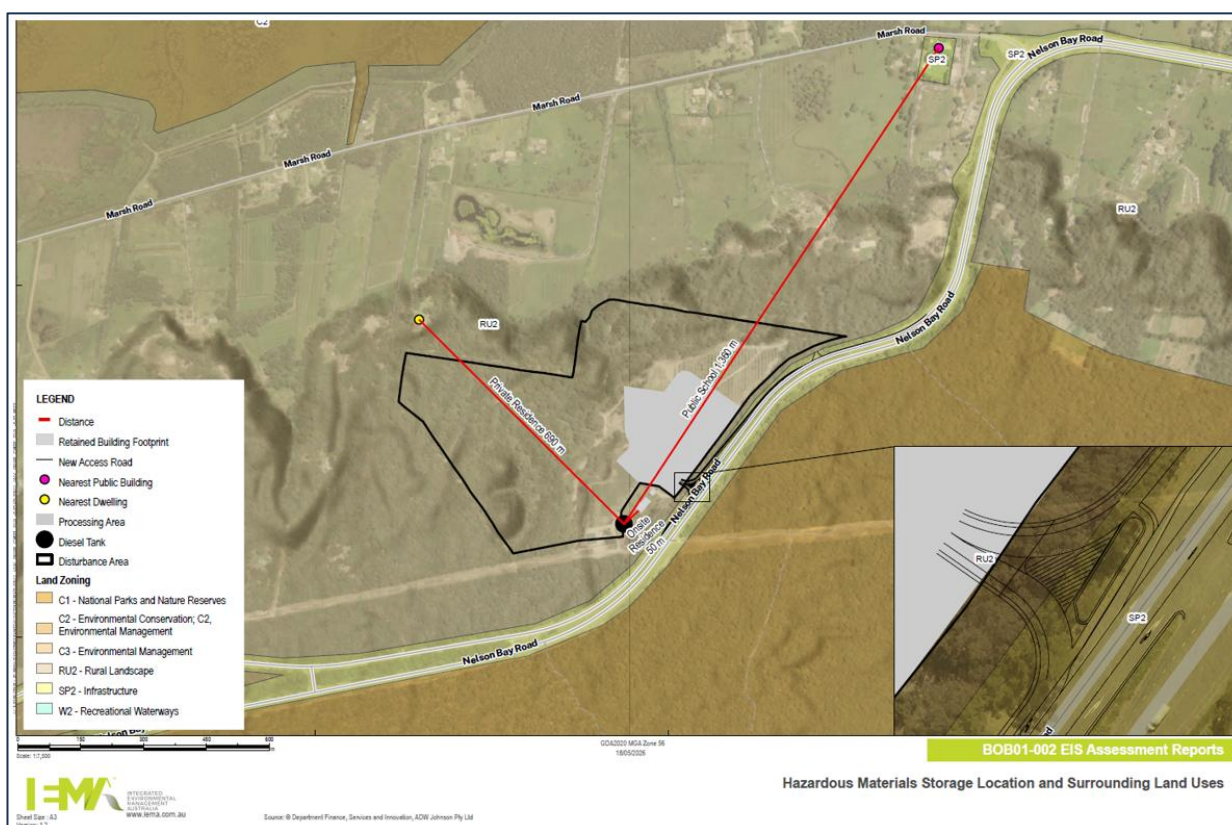


Figure 52: Surrounding land uses and sensitive receivers

Qualitative Hazard Risk Screening

A qualitative risk screening has been completed to identify hazard scenarios (Table 23).

Table 23: A qualitative risk screening has been completed to identify hazard scenarios.

Hazard Scenario	Likelihood	Consequence	Risk Level	Control Measures
Minor fuel spill during refuelling	Possible	Minor	Low	Bunding, spill kits
Diesel tank failure	Rare	Moderate	Low	Self-bunded tank (110% capacity) AS1940 compliant storage. Spill response equipment onsite
Mobile plant fire	Possible	Minor	Low	Fire extinguishers & response procedures
Transport incident (fuel delivery)	Rare	Moderate	Low	Licensed DG operators, bunded tank, trained operators, spill response plan
Bushfire affecting infrastructure	Rare	Moderate	Low	Asset protection zone, fire extinguishers, emergency procedures

The qualitative risk screening indicates that potential hazard scenarios associated with the storage and handling of fuels, operation of mobile plant, and transport of dangerous goods are low risk. Identified hazards would be managed through standard industry controls including bunded fuel storage, spill response equipment, and compliance with dangerous goods transport regulations. Consequences of potential incidents would be localised to the site and no credible off-site escalation scenarios have been identified.

Residual risks are therefore considered low and manageable.

Requirement for a Preliminary Hazard Analysis

Having regard to the type and quantity of hazardous materials proposed, the absence of bulk dangerous goods storage or processing, and the results of the qualitative risk screening, the proposal does not meet the threshold for further detailed hazard analysis under SEPP (Resilience and Hazards) 2021. The development does not present a level of hazard that would result in unacceptable risk to public safety or surrounding land uses. As such, a Preliminary Hazard Analysis (PHA) is not required.

Bushfire Risk

The site is located within a mapped bushfire hazard area. Bushfire risk has been considered separately and would be managed through appropriate asset protection zones, vegetation management, site access arrangements and emergency response procedures, developed in consultation with NSW Rural Fire Service.

The site is identified as bushfire prone land on Port Stephens Council's Bushfire Prone Land Map, and bushfire risk has been assessed in accordance with Planning for Bush Fire Protection 2019 (PBP). A detailed Bushfire Assessment Report has been prepared for the development (**Appendix 17**). The assessment confirms that the proposed development can achieve compliance with the requirements of PBP, including provision of Asset Protection Zones (APZs), appropriate building construction standards and emergency management measures. APZs provided to the proposed infrastructure exceed the minimum requirements, and adequate access and water supply for firefighting will be provided.

On this basis, bushfire risk is considered to be manageable and does not pose a constraint to the development.

Emergency and Spill Management

The project would implement:

- Spill response procedures.
- Staff training in fuel handling.
- Maintenance of firefighting equipment.
- Incident reporting protocols.
- Compliance with Dangerous Goods legislation.

Groundwater and surface water monitoring programs provide an additional safeguard against contamination risk.

Management and Mitigation Measures

The following management and mitigation measures are recommended –

- A double skin diesel storage tank (110% capacity) designed to contain spills or leaks.
- Designated refuelling and maintenance areas including a concreted bunded area.
- Separation from drainage lines and sensitive environmental features.

6.9 Visual

A Visual Impact Assessment (VIA) has been prepared by IEMA and is provided at **Appendix 28**. The purpose of the assessment is to assess the potential visual impacts associated with the proposal on surrounding sensitive receivers and public viewpoints. The assessment evaluates the visibility of the proposed disturbance area and associated infrastructure using geographic information system (GIS) viewshed modelling and considers the effectiveness of existing landscape screening.

Assessment and Findings

Land uses surrounding the site are characterised by predominantly rural landscapes comprising agricultural land uses, rural residential properties, conservation areas and existing extractive industries associated with the coastal sand deposits of the Stockton Bight region.

Land uses in the immediate locality include small-scale agricultural activities such as horticulture together with dispersed rural dwellings generally located on larger rural landholdings.

The topography of the site is characterised by elevated dune ridge crests and lower relief sand plains with dune ridges predominantly occurring to the north and west of the site and sand plains to the east. Elevations across the site range from approximately 5m AHD to around 35m AHD along the dune ridges. The site has gentle slopes of 0-5% across the eastern portion of the site and steeper gradients of up to 10-15% on the dune ridges.

From a visual perspective the site is relatively well contained by existing vegetation with a band of mature vegetation along the southern boundary adjacent Nelson Bay Road which will be retained as a 15m vegetation buffer within the site with the exception of the area for the proposed new access.

The methodology for the VIA used a structured, staged approach consistent with established landscape and visual assessment practices using spatial data sets including LiDAR to prepare a surface model, setting up of a viewshed analysis for sensitive receivers – dwellings within 3km of the site and road users along Nelson Bay Road spaced at regular intervals – to prepare a visibility model to assess visual impacts. The assessment assumed an observer height of 2m for a person, visibility under ideal conditions (no fog, rain or haze) with direct line of sight.

The assessment considered the following likely visual impacts of the development on private landowners in the vicinity of the development as well as likely visual impacts of the key vantage points in the public domain, including with respect to any new landforms using the following two (2) questions –

Question 1: Are there any observer locations that can view the disturbance caused by the quarry?

Question 2: Can traffic travelling on Nelson Bay Road see into the site?

Question 1: Are there any observer locations that can view the disturbance caused by the quarry?

A visual analysis of surrounding receivers was undertaken as shown at **Figure 53**. The analysis included all sightlines and not just a representative sample. As stated, all observers were given a height of 2m to simulate the upper end of a typical person's height.

The result of the analysis was there was no visibility to the area of disturbance from any of the sensitive receivers when a realistic model is used. The analysis found that when vegetation associated with the minimum 15m buffer from site boundaries to areas of extraction is considered there was no visibility to the area of disturbance from any of the sensitive receivers.

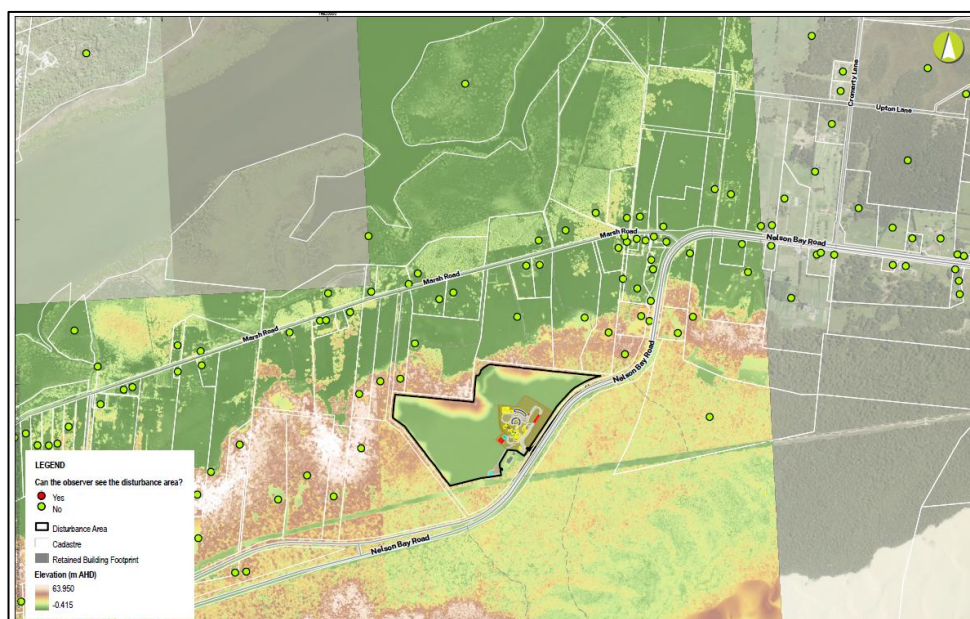


Figure 53: Visual analysis of surrounding receivers

Question 2: Can traffic travelling on Nelson Bay Road see into the site?

The analysis incorporated the full disturbance area including both extraction stages and surface infrastructure using 10m interval assessments along Nelson Bay Road (67 observation points) to determine the potential theoretical visibility from Nelson Bay Road. Observer locations were established along the northbound lane centreline at regular intervals and shown at **Figure 54**.



Figure 54: Observer locations

The outcome of the analysis is shown at **Figure 55** which demonstrates that as a result of clearing associated with the new access, visibility into the site will be possible only at the point of the new access into the site and only a fleeting view considering Nelson Bay Road has a speed limit of 80 kilometres per hour. Visibility into the site along Nelson Bay Road is restricted as a result of the 15m vegetation buffer along this boundary which will be maintained. Visual impacts associated with the site entrance can be mitigated by way of installing a solid rolling sensor gate or equivalent.

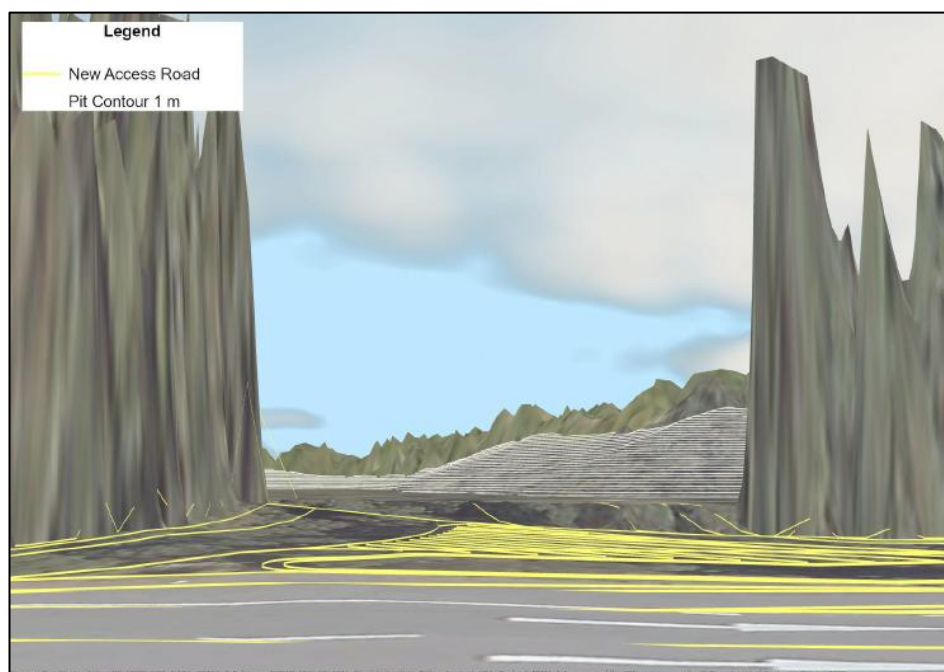


Figure 55: View impact analysis

Management and Mitigation Measures

The VIA includes the following recommendations –

- Retention of vegetation buffers at a minimum of 15m along the site boundary.
- Installation of a solid gate or fencing at the site access to restrict views from Nelson Bay Road
- Maintenance of vegetated screening along Nelson Bay Road

6.10 Social Impacts

A Social Impact Assessment (SIA) was prepared by Key Insights Pty Ltd for the proposal and is included at **Appendix 23**. The SIA was prepared in accordance with the NSW Social Impact Assessment Guideline for State Significant Projects (July 2025) and comprised two key phases.

The first phase was a social impact assessment scoping which was prepared early in the project to identify likely social impacts and how social impacts would be assessed. The second phase assessed these impacts and identified appropriate responses.

Assessment and Findings

The site is in the suburb of Bobs Farm within the Port Stephens LGA and is characterised by long-standing agricultural activity, aquaculture, rural living and proximity to significant Worimi cultural landscapes. In terms of demographic profile, Bobs Farm has a higher proportion of trades people (17.1%) than for NSW (11.9%) with other key industries of employment being defence, aged care residential services, retail, and other social assistance services.

Commercial sand quarrying in Port Stephens has been occurring for more than 35 years with the Salt Ash-Bobs Farm-Williamstown corridor having been a continuous sand extraction zone since the early 1990s and multiple long-running sand quarries in this corridor undergoing expansion or modification. This outcome is consistent with local strategic planning objectives that the region's natural resources be managed to support long-term environmental health while enabling responsible economic development.

Quarry sand is crucial to the construction sector which underpins housing, infrastructure and commercial development; however, proximity of this resource to local and regional markets is important to ensure feasibility of supply. Having local supply of sand resource supports lower construction costs for local builders; shorter haulage distances; regional economic resilience; and, timely delivery of housing and infrastructure projects. This is recognised by industry group Cement Concrete & Aggregates Australia. The Proponent operates the existing sand quarry at 398 Cabbage Tree Road which has positively contributed to regional and local benefits since 2020.

Methodology and Key Findings

To assess social impacts as a result of the proposal, an engagement plan was developed that considered and responded to multiple communities emerging from –

- Geographic areas of influence (e.g. immediate neighbours, First Nations, local residents, school, and local businesses and suppliers)
- Communities of interest / stakeholders such as those that live in or beyond the local community but who are impacted or have an interest in the project (e.g. NGO / activist communities, the regional business community, industry, or workers or commuters in the area)

Engagement and communication methods were implemented to garner feedback on the project to inform the SIA and are described at **Section 5**. A summary of social impact findings from this engagement are outlined at **Table 24**.

Table 24: Summary of social impact inputs per stakeholder group

Stakeholder	Summary of social impact inputs	Proponent response
Worimi People	• Important to include RAPs in the Environmental Management Plan • Site inductions to include information about Aboriginal significance which should be developed with input from RAPs	• RAPs will be included in the drafting of the heritage component of any Environmental Management Plan
Near neighbours	• Highest level of concern is among near neighbours with key concerns relating to local amenity and potential health impacts particularly from noise, dust, truck movements (traffic and road safety) and visual changes to the character of the area which may impact tourism. • Concern about land clearing and impact on biodiversity • Concern for neighbouring children gaining unauthorised access to the quarry	• The operations will meet environmental standards and not present a risk for workers • The site will be secured and monitored 24/7 through an onsite manager • Rehabilitation will take place in accordance with the rehabilitation plan.
Local community	• Low level broader community interest at this stage. • Drawing on other quarry proposals it is anticipated that key concerns will related to – ◦ Environmental impacts ◦ Amenity impacts ◦ Traffic ◦ Conflicts with tourism objectives ◦ Transparency in the approvals process	• Impacts will be appropriately managed in accordance with recommended mitigation measures • Positive impacts will be linked to job creation and the local supply of sand which is critical for various purposes
Local Government	• Information sent to local Councillors and interview with key council planning staff who assisted with the project's scoping phase did not identify key social impact concerns at this stage	• Noted that feedback may be provided as part of formal review of the EIS.
Local Community Facilities	• No social impact issues were raised by Bobs Farm Primary School or the Department of Education • One teacher raised concern with the previous application for a sand quarry at the site but there were no comments on the changes to the proposal compared to the previous application	• Noted that feedback may be provided as part of formal review of the EIS.
Agriculture and farming groups	• Scepticism expressed with regard to ongoing monitoring • Lack of trust in the process • Character impacts on the area as being for farming and grazing	• A robust assessment of the application will be undertaken by DPHI and relevant agencies with further opportunities for stakeholder feedback.

Social Impact Analysis

Issues raised by key stakeholders were examined and considered against background data and with inputs from the Proponent and consultants on the project assisting with technical inputs. The initial quarry design and operations already addressed various key concerns with the previous application including proposed dredging below the groundwater table and access onto Marsh Road. These concerns and impacts are eliminated as these features do not form part of the current application.

With regard to positive social and economic impacts, it is estimated the proposal will deliver the following economic benefits –

- \$39m in output
- \$22m in value added
- \$7m in gross wages
- 78 jobs including direct jobs and indirect jobs
- Significant contribution to an in-demand resource that facilitates construction of housing and other infrastructure
- Options for local business partnerships including Indigenous employment
- Potential local social capital projects or sponsorships with local organisations and social infrastructure such as Bobs Farm Primary School
- Adoption of sustainable site practices contributing to broader environmental goals

- Potential to strengthen community cohesion through regular engagement and honouring environmental and operational commitments

Throughout the engagement for the proposal the most significant potentially adverse social impacts identified broadly related to potential impacts on amenity and character associated with environmental impacts including biodiversity, noise, dust etc; impacts on livelihood; and, impacts on culture and sense of place.

Community inputs were considered and design and operational changes were made to the project as outlined in the EIS, including –

- Negotiating boundary fencing and site security
- Relocating the proposed new access to the site further south to avoid impacts to the existing right-of-carriageway at the northeast of the site.
- Responding to concerns around noise impacts by committing to implement onsite noise monitoring to inform specific mitigation measures for each stage of the quarry
- Committing to ongoing engagement in accordance with industry standards

Positive social impact specific measures identified for issues identified are summarised at **Table 25**.

Table 25: Summary of social impact measures and residual impact significance

Consideration	Social Impact Specific Measures	Residual Impact Significance
Contribution to local and regional economy	• Use of local contractors as far as possible • Document local spend • Document local supply chains	High (positive)
Local employment	• “Locals first” employment and procurement policy	High (positive)
Near neighbour amenity and lifestyle impacts during construction and operation	• Create a hotline for calling in concerns • Complaints register and monitor resolutions and response times	Low (with mitigation)
Promote community cohesion	• Promote community cohesion through local sponsorship by creating a Local Sponsorship Policy	Medium (positive)
Health and wellbeing	• Include monitoring reports from onsite monitoring (noise and dust etc) in newsletter and on website	Medium (positive)

In summary, the SIA found that the proposal contributes various positive social impacts with near neighbours to the site experiencing the highest level of concern particularly related to amenity, noise, dust, traffic, biodiversity and potential changes to local character which were reinforced in community consultation findings including community survey and drop-in session.

Potentially adverse impacts as a result of the proposal are addressed by way of various mitigation measures as outlined in this EIS, noting that the initial quarry design and operation details for the current proposal materially mitigated or eliminated several key concerns associated with the previous application related to dredging, use of Marsh Road for access, and the quarry size and extraction amounts.

Overall, the assessment found that the project presents manageable social risks provided that strong, transparent and ongoing engagement continues with near neighbours and the school community continues; robust environmental and amenity safeguards are implemented and independently monitored; traffic impacts on Nelson Bay Road are mitigated and communicated clearly; and, progressive rehabilitation maintains landscape values and long term land use compatibility.

Management and Mitigation Measures

The follow management and mitigation measures are recommended –

- Maintain ongoing engagement with the community by way of avenues for raising concerns with the Proponent (e.g. Community Consultative Committee and complaints register) and receiving updates on the project (e.g. updates to the Proponent’s website).

6.11 Economic Impacts

An Economic Assessment for the project was prepared by Gillespie Economics and is included at **Appendix 29**. The purpose of the report was to assess the likely economic impacts of the development with regard to the significance of the resource; the cost benefit of the project whether the development will result in a net benefit to NSW taking into account fluctuation in commodity markets and exchange rates; and, the demand for the provision of local infrastructure and services.

The assessment used NSW guidelines which identified that a Cost Benefit Analysis (CBA) should be used to assess the public interest by estimating the net present value of the project to the NSW community, and a Local Effects Analysis (LEA) to assess the likely economic impacts in the locality.

Assessment and Findings

Significance of the Resource

The demand for sand is generally dependent on demand for products which require sand such as glass, concrete, cement, asphalt, and construction material which in turn is dependent on demand for construction and population growth. With significant increase in approved infrastructure projects in Sydney and other parts of NSW, there is ongoing pressure for sand suppliers to meet increasing demand.

Proximity to markets is crucial for sand quarries and the availability of sites which are well located and contain suitable resource is limited. In this regard, the site is extremely well located in close proximity to the Pacific Highway for access to local, regional and metropolitan markets and, as demonstrated in the Geological and Resource Assessment (**Appendix 8**), the sand present at the site is high quality and has various beneficial uses. As such, the subject site meets both these key requirements when assessing its significance.

The project will offset the loss of available sand resource from the Proponent's current sand quarry operations Cabbage Tree Road, and based on these operations there is demonstrable current and ongoing demand for sand resource in the region which has necessitated the current proposal.

Annual demand in the Greater Sydney Region for natural sand in 2018 was estimated at approximately 5.9 million tonnes, within the order of 38% produced from quarries located in the Stockton/Salt Ash/Williamstown area and Central Coast. Proposed annual production from the project would constitute approximately 9% of this annual demand, although part of production also services local / regional markets.

Cost Benefit Analysis

A Costs Benefit Analysis (CBA) was undertaken which involved the following key steps –

- Identification of the “with” and “without” Project scenarios, to establish the base case use without the proposed quarry, and scenario with the quarry at the site.
- Identification and valuation of the incremental benefits and costs of the Project relative to the “without” scenario or ‘base case’.
- Consolidation of value estimates using discounting to account for temporal differences.
- Application of decision criteria.
- Sensitivity testing.
- Consideration of non-quantified benefits and costs.
- Consideration of the distribution of costs and benefits.

The CBA identified costs and benefits for the following categories: net benefits from extraction and processing; net production benefits from ex-quarry transport; and, potential environmental, social and cultural impacts of extraction processing and transportation.

Costs identified related to opportunity costs of the land, costs associated with establishment and ongoing operation of the quarry, and environmental impacts. Benefits identified relate to the sale value of sand; residual value of capital land and the end of the project; revenues; and, economic benefits to suppliers and employees.

A key criterion for assessing the economic desirability of a project is its Net Present Value (NPV). NPV is the present value of benefits less the present value of costs. A positive NPV indicates that it would be desirable from an economic perspective for society to allocate resources to a project, because the community as a whole would obtain net benefits from the project. The net social benefits of the project (\$M present value @ 7% discount rate) is at **Figure 56**.

As demonstrated, the project is estimated to have net social benefits to both Australia and NSW. The risk and sensitivity analysis determined that with strong current and ongoing demand for sand together with limits on financially viable supply in proximity to major markets, the potential for a reduction in sand product value is highly unlikely.

As such, the CBA determined the project is desirable and justified from an economic efficiency perspective.

Benefits	Australia	NSW
Net Production Benefits Quarrying		
Company Tax	\$5	\$1
Residual Net Production Benefits	\$14	\$14
Sub-total	\$19	\$15
Net Production Benefits Ex-Quarry Transport		
Company Tax	\$1	\$0.4
Residual Net Production Benefits	\$4	\$4
Sub-total	\$6	\$5
Other Benefits		
Economic benefits to existing landholders other than Newcastle Sand	No impact	No impact
Economic benefits to suppliers	Unquantified	Unquantified
Wage benefits to employment	Unquantified	Unquantified
Sub-total	Unquantified	Unquantified
Total Benefits	\$24	\$20
Costs		
Greenhouse gas emissions	\$0.01	\$0.002
Air quality	Meets relevant criteria - no material residual impact	
Noise and blasting	Meets relevant criteria with appropriate management – no residual material impact	
Road transport	Cost of new access point off Nelson Bay Rd included in capital costs No material residual impact	
Surface water	No material residual impact	
Groundwater	Opportunity cost of WALs - \$0.02 No material residual impact	
Biodiversity	Impacts on biodiversity are offset – cost of offsets included in capital costs	
Aboriginal heritage	No impact to high significance items. Cost of mitigation included in capital costs.	
Historic heritage	No impact	
Visual	No material residual impact	
Net public infrastructure costs	No impact	
Loss of surplus to other industries	No impact	
Sub-total	\$0.03	\$0.02
Net Social Benefits	\$24	\$20

Figure 56: Net Present Value of the project

Local Effect Analysis

The Local Effect Analysis (LEA) considered whether the incremental benefits of the project exceed the incremental costs and therefore whether the community would, in aggregate, be better off with the project compared to without it.

The project will maintain fifteen (15) full time equivalent quarry workers currently associated with the Proponent's existing quarry operations at Cabbage Tree Road, as well as contribute to approximately forty (40) transport jobs.

In estimating the effects related to local employment, the LEA method focusses on net income (net wages) that a project provides to the local area by focussing on employment that would ordinarily be resident in the locality and estimating the net increase in income as the difference between income in the project compared to the average level of net income in the local area. At full production the total annual non-labour expenditure from the project (operating costs of the project after subtraction of wages) is \$7.5m and \$5.8m respectively for quarrying and transport.

Direct and indirect regional economic impacts of the project were assessed by identifying the direct impact or stimulus of the project so that multipliers and flow-on effects for the impacts or stimulus of the project could then be estimated. **Figure 57** summarises gross annual direct and indirect regional economic impacts for quarrying and transport for the project.

Indicator	Direct Impacts	Production Induced Flow-ons	Consumption Induced Flow-ons	Total Flow-ons	Total Impacts
Output (\$M)	27	8	3	10	39
Type IIA Multiplier	1.00	0.29	0.09	0.38	1.42
Value Added (\$M)	14	6	2	8	22
Type IIA Multiplier	1.00	0.40	0.16	0.56	1.56
Income (\$M)	6	1	0	1	7
Type IIA Multiplier	1.00	0.12	0.04	0.16	1.16
Employment (No.)	55	16	7	23	78
Type IIA Multiplier	1.00	0.30	0.13	0.41	1.41

Figure 57: Gross annual direct and indirect regional economic impacts

Regarding other effects as a result of the project, the assessment found –

- Impacts in terms of displacement of agriculture would be negligible relative to economic activity associated with the project.
- The project is not anticipated to result in long-term increased pressure on wages.
- Staff for the project would transfer from the Proponent's Cabbage Tree Road quarry and as such impacts on regional housing or increases in demand on local infrastructure services as a result of in-migration are expected to be negligible.

In total, the project is estimated to provide annual direct and annual indirect effects to the local economy of –

- \$39 million in output
- \$22 million in value-added
- \$7 million in gross wages
- 78 jobs

The main local environmental impacts are internalised into the production costs of the Proponent via mitigation, offset and compensating costs. Residual local environmental impacts after mitigation, offsets and compensations are likely to be immaterial. As such, the project is wholly supported from an economic point of view.

6.12 Cumulative Impacts

Cumulative impacts were assessed in accordance with the Cumulative Impact Assessment (CIA) Guidelines for State Significant Projects (March 2026) and comprises part of the environmental impact assessment contained in this EIS to identify, predict, evaluate and mitigate environmental, social economic and other impacts.

Cumulative impacts are a result of incremental, sustained and combined effects over time and can be both positive and negative. They can be caused by the compounding effects of a single project or multiple projects in an area, and by the accumulation of effects from past, current and future activities as they arise.

The cumulative impact assessment process involves –

- Assessing the scale and nature of cumulative impacts

- Identifying and undertaking more detailed assessment of impacts
- Developing strategies to minimise the project's contribution to any cumulative impacts, and
- Evaluate the project as a whole having regard to the findings of the standard assessment on each assessment matter, the findings of detailed cumulative impact assessment, and the combined effect of these cumulative impacts on key matters.

Assessment and Findings

The CIA Guideline outlines four (4) types of assessment approaches, being –

Incremental types

1. Incremental assessment, which involves adding the incremental impacts of the project to the baseline condition of each relevant matter
2. Combined incremental assessment, which is the combined effect of the different impacts of the project, normally on a sensitive area or receiver

Cumulative types

3. Issue-specific CIA, being the cumulative impacts of the project on key matters with other relevant future projects
4. Combined CIA, being the combined effect of the different cumulative impacts of the project on key matters, sensitive receptors or important features with other relevant future projects

For the assessment it is important to first establish immediately surrounding development and then other developments in the broader vicinity. Surrounding the site to the south is the Worimi National Park with largely rural residential developments surrounding the site elsewhere. Some non-residential uses exist in the near vicinity including the Shark, Ray & All Creatures Rescue, cellar door uses, Bobs Farm Primary School, and outdoor recreation facility (Go Karts Go). Further afield from the site include a restaurant (the former Valhalla Restaurant Bar) and Sunrise Over 55s Lifestyle Community.

In terms of sand quarries in the broader vicinity of the site, a search of the NSW Major Projects Portal identified a number of sand quarries as SSD in the broader area at various stages of being approved or under assessment. These are outlined at **Table 26** with their locations shown at **Figure 58**.

Table 26: Nearby SSD Quarries

Site	Application number	Address	Proponent	Proposal	Application Status	Relevance
1	SSD-6125	398 Cabbage Tree Road Williamtown	Newcastle Sand	Sand quarry	Approved and operating	This site is operated by the Proponent and will wind up in the coming years. The current proposal is to ensure Newcastle Sand can continue to operate in the area. For clarity, operations at Cabbage Tree Road will cease before proposed operations at Nelson Bay Road commence and as such, no cumulative impacts associated with two quarry operations being operated by Newcastle Sand will be experienced.
1	SSD-6125-Mod-4	398 Cabbage Tree Road Williamtown	Newcastle Sand	Western lateral expansion of existing quarry	Under assessment	
2	SSD-9099356	8 Oakvale Drive Salt Ash	Holcim Salt Ash Sand Operations	Sand quarry	Under assessment	Sand quarry in vicinity of the subject site.
3	MP07_0094	7 Janet Pde Salt Ash	Redisand ATB Morton Pty Limited	Sand quarry	Approved and operating	Sand quarry in vicinity of the subject site.

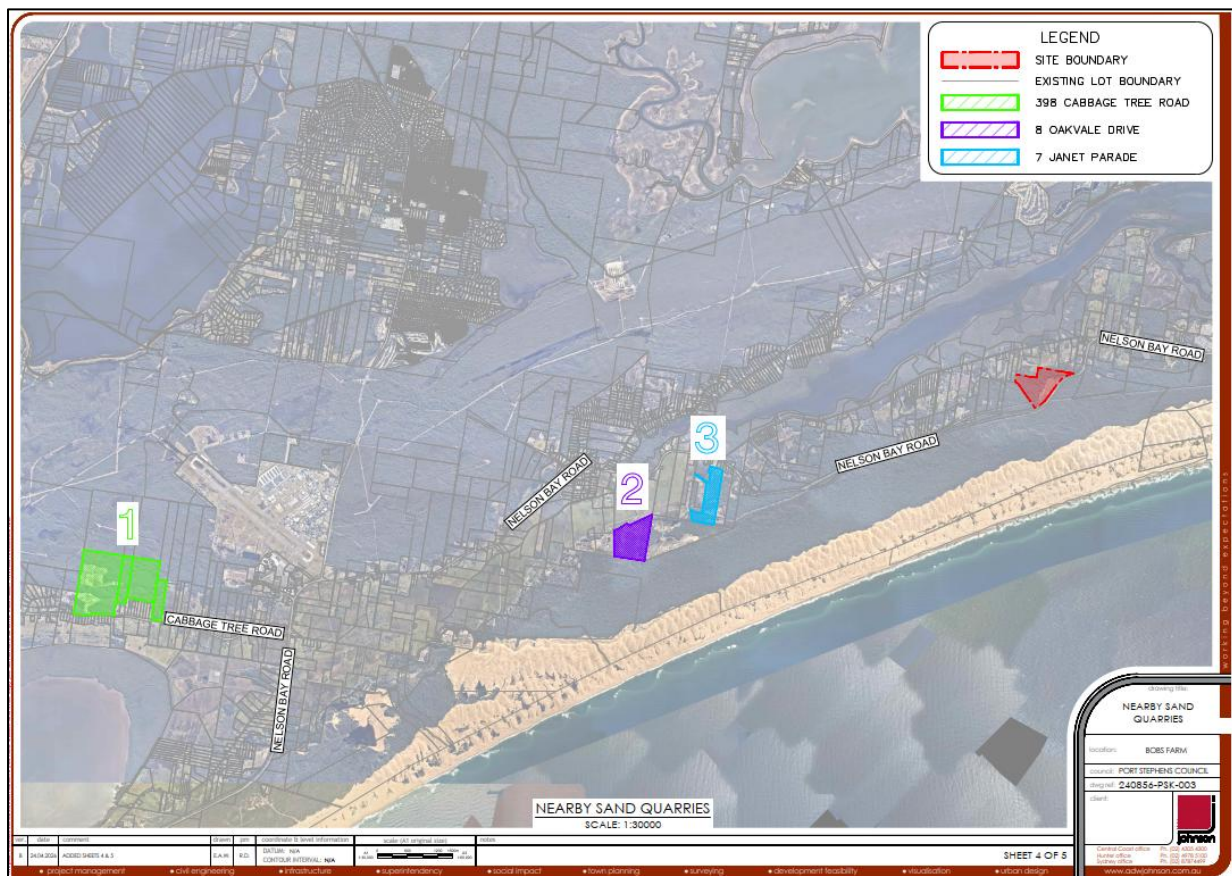


Figure 58: Nearby Quarries

Incremental Assessment

An incremental assessment was undertaken in terms of impacts of the proposal on the immediate vicinity. As outlined in this EIS, key localised impacts relate to noise, dust, biodiversity, water, soil, and visual impacts. There are no other sand quarries or developments of a similar scale or nature located immediately adjacent the site and so the potential for cumulative impacts associated with these is not required. An incremental assessment can, however, be undertaken at a high level in terms of impacts to existing immediately surrounding land uses and any localised cumulative impacts as a result.

Existing surrounding rural residential uses are primarily rural residential / hobby farms with low-impact ancillary agricultural uses potentially taking place. Existing non-residential surrounding uses are not of a nature where impacts as a result of the proposed sand quarry (with or without mitigations) are considered to have adverse cumulative impact in terms of noise, dust, biodiversity, water, soil or visual impacts. The proposed use of WAL water for sand washing purposes will also be within the WAL limit and so no change to the status quo in terms of impacts on water or water quality are expected as demonstrated in supporting technical assessments.

Supporting technical reports also include recommended mitigation measures which when implemented will mitigate or offset impact in accordance with legislative requirements and guidelines.

Combined Assessment

There are several sand quarries in the broader vicinity for which a broader issue specific CIA could be undertaken. The proposal would result in three (3) identified sand quarries being located along Nelson Bay Road (noting the existing sand quarry at 398 Cabbage Tree Road would cease prior to operations at the Bobs Farm Sand Quarry commencing). In this regard, issue specific cumulative impacts could be assessed in terms of traffic, road safety and shared infrastructure, and greenhouse gas emissions.

The Traffic Impact Assessment (TIA) (**Appendix 20**) prepared in support of the proposal found that traffic growth in the vicinity of the site has been very low, being on average 0.8% per annum, with a total 10% background growth over a ten-year timeframe. Haulage trucks associated with the proposal will travel east along Nelson Bay Road to make a U-turn at the Port Stephens Drive roundabout. Other quarries along Nelson Bay Road are not understood to rely on this operational detail and so the proposal will not be directly contributing to any cumulative impacts associated with haulage trucks making a U-turn at the Port Stephens Drive roundabout.

Most quarries in the area are for the extension to existing operations with those quarry vehicles forming part of the existing road operations. Holcim at Salt Ash proposes an increase in truck movements which is quantified in its associated reports as being up to 111 laden vehicles per day with that application's report concluding that the cumulative impact for the future 2031 year on the principal intersections and quarry access intersections being satisfactory and all intersections operating at a Level of Service A, B or C operation. In addition, the proposal would come online at the same time as the Proponent's quarry at Cabbage Tree Road coming to the end of its operational life. As such, trucks currently associated with the Cabbage Tree Road site will relocate to the subject site and so there will be no net increase in truck movements to be catered by the surrounding State and regional road network and so no cumulative increase in truck movements.

Regarding greenhouse gas emissions, the proposal has been assessed as contributing 21,698 tonnes of CO₂e over the life of the project which when compared to Australia's reported greenhouse gas emissions for 2026 (446.4 million tonnes), the estimated project annual emissions are approximately 0.00049% of Australia's total emissions. Given the negligible increase in greenhouse gas emissions as a result of the proposal, it is considered that the proposal will not adversely contribute to negative cumulative impacts in terms of greenhouse gases.

Section 7

Justification of Project

7 Justification of Project

This section of the EIS provides a justification and evaluation for the project as a whole having regard to the significant likely environmental, economic, and social impacts of the project, and principles of ecologically sustainable development

7.1 Minimisation of Impacts

The proposal incorporates various measures – both design and operational – which minimise impacts both within the site as well as on nearby development and sensitive receivers. These measures were incorporated in two key ways, being initial quarry designs to respond to key community and agency concerns regarding the previous SSD application (now withdrawn); and then ongoing iterative changes as a result of renewed community engagement and specialist technical reports.

The initial quarry design proposed dry extraction only which eliminated environmental concerns associated with formerly proposed dredging below the groundwater table, and proposed access via Nelson Bay Road only which eliminated safety and amenity concerns associated with any proposed use of Marsh Road for access. In addition to these two key changes, the current proposal also includes a reduced site area, reduced annual throughput, reduced proposed hours of operation, and reduce quarry life.

As the application was being prepared and through community engagement and specialist technical reporting, further refinements were made to minimise impacts and reduce amenity impacts. These amendments included relocating the proposed access point on Nelson Bay Road further south to avoid impacts to existing dwellings who benefit from an existing right-of-carriageway over the site and agreement by the Proponent to bitumen seal the right-of-carriageway and install a vegetated visual bund to the west of the right-of-carriageway.

7.2 Consistency with Strategic Context

The proposal directly supports the strategic vision for the area as outlined in the Hunter Regional Plan 2041 by directly contributing to the mining, energy and industrial capacity of the Hunter through retaining and promoting jobs in the area as well as ensuring projects and sub-industries which rely on sand can be provided with a stable and readily available resource.

The proposal is consistent with local strategic planning priorities for Port Stephens LGA as the proposal will contribute to jobs and opportunities, ongoing diversified economy, and the continuation of economic growth within the extractive resource industry through ongoing supply of resources for use in manufacturing and retail purposes.

7.3 Compliance with Statutory Requirements

The proposal is permissible with consent and demonstrates compliance with relevant Federal, State and local planning controls as outlined in this EIS. The proposal demonstrates compliance with the Planning Systems SEPP for SSD being development for the purposes of an extractive industry which extracts more than 500,000tpa of resource.

Approvals required for the proposal to process have been identified and can be achieved. The proposal addresses pre-conditions for approval including MNES under the EPBC Act, PoEO Act, and Roads Act.

All mandatory matters for consideration have been addressed with compliance either achieved or not applicable.

7.4 Community Views

Community views have been sought throughout the development of the proposal in accordance with the Social Impact Assessment for community engagement which included various mediums for engagement including direct engagement with key stakeholders through telephone calls, emails, and a community drop-in session.

Ongoing opportunities for engagement which have been available throughout the course of the preparation of the EIS have been information fact sheets on the Proponent's website, online survey, community newsletter update, social media post on Facebook, letterbox drop, newspaper notice, and interview with the local news channel on the project including details for the drop-in session. Opportunities for engagement will be ongoing.

Community feedback received has been duly addressed either through changes to the proposed quarry design or operational details, or through specialist technical reports which include recommended mitigations measures to reduce, mitigate or eliminate potential impacts.

7.5 Economic, Social and Environmental Impacts

As outlined in this EIS and the supporting Economic Assessment, Social Impact Assessment and other supporting technical assessments, the proposal has significant local and State benefits resulting in net production benefits to NSW of \$20m and 55 direct jobs in the local area comprising 15 quarry jobs (relocation of existing staff from current Cabbage Tree Road quarry) and 40 ex-quarry transport jobs.

Key social impacts identified related to environmental impact concerns as well as concerns around impacts on local identity and the image for the Port Stephens area. The proposed rehabilitation and post-quarry use will see the site returned broadly to its current ratio of native vegetated land and agricultural land whilst retaining some infrastructure (hardstand areas and car parking). Overall, the Social Impact Assessment determined the project presents manageable social risks provided that ongoing engagement continues with nearby neighbours, recommended environmental mitigations and safeguards are adopted.

Other environmental impacts were considered and were assessed as being not prohibitive of the proposal subject to the adoption of recommended management and mitigation measures outlined in supporting technical assessments. No adverse cumulative impacts were identified, noting that no other developments of a similar type or scale are located in the immediate vicinity or that impacts are able to be contained within the site. More broadly, cumulative impacts associated with truck movements locally as well as throughout the broader road network to local and regional markets were assessed as negligible noting the proposal will contribute only a relatively small amount of additional truck movements to Nelson Bay Road which is an approved B-double State road, and that the Raymond Terrace Bypass is slated for completion at the end of 2026 which will further reduce any potential for traffic impacts.

7.6 Ongoing Monitoring

The proposed Bobs Farm Sand Quarry will be a continuation of the Proponent's current sand quarry at 398 Cabbage Tree Road Williamtown which was approved by the Independent Planning Commission under SSD-6125 in 2018. Associated with this approval, the Proponent has a proven track record of compliance with auditing and monitoring requirements for sand quarries as evidenced on the Proponent's website which duly publishes management plans, Environmental Protection Licences, monitoring reports, independent audit outcomes, complaints register, and Community Consultative Committee minutes.

The Bobs Farm Sand Quarry will commit to the same rigour and transparency around monitoring, auditing and transparency with agencies and the community.

7.7 Uncertainties

While data logging of MWs has commenced again for the project, further MW data logging is required to support the groundwater model. This monitoring is ongoing and taking place every six (6) weeks to add to current data.

7.8 Ecologically Sustainable Development

The objectives of the EP&A Act include the facilitation of Ecologically Sustainable Development (ESD). Additionally, Part 8, Division 5 of the EP&A Regulation requires a proponent to include in an EIS the reasons justifying the development, including the principles of ESD.

Justification of the proposal against the principles of ecologically sustainable development are outlined below –

Precautionary Principle

The precautionary principle is 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. In applying the precautionary principle, public and private decisions should be guided by—

- a) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
- b) an assessment of the risk-weighted consequences of various options

The proposal satisfies this principle through the assessment of impacts and implementation of environmental management and recommended mitigation measures using available scientific information about the project area. The proposal's design and operational details were informed by community and agency feedback, including to the previous SSD application to ensure key concerns with the previous application (i.e. dredging and use of Marsh Road for access) were not part of the current proposal. Worst case scenarios were utilised to assess impacts as relevant to ensure that impacts could be fully understood. Ongoing monitoring and auditing would comprise quarry commitments and so based on data, amendments to quarry operations can be made.

Inter-Generational Equity

The principle of inter-generational equity is that the present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

The current proposal presents a superior outcome compared to the previous application for a sand quarry at the site which would have resulted in an open body of water post-quarry that had the potential to result in higher evaporation and associated impacts on reduced available drinking water and other environmental impacts. The proposed quarry design and operations, mitigation measures and rehabilitation plan mean the health, productivity and environment of the site will be maintained for future generations.

Conservation of Biological Diversity and Ecological Integrity

The principle of the conservation of biological diversity and ecological integrity is that the conservation of biological diversity and ecological integrity should be a fundamental consideration.

A BDAR and MNES assessment in accordance with Supplementary SEARs was undertaken which determined the proposal incorporates appropriate avoid and minimise measures and is unlikely to result in significant impact to any SAI species. Similarly, the assessment undertaken in accordance with Supplementary SEARs determined there would not be any significant impact on critically endangered, endangered species and ecological communities, or vulnerable species. The proposal will implement ongoing rehabilitation in accordance with the rehabilitation plan which will use vegetation which is consistent with the PCTs at the site.

Improved Valuation, Pricing and Incentive Mechanisms

The principle of improved valuation, pricing and incentive mechanisms is that environmental factors should be included in the valuation of assets and services, such as –

- a) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement, and
- b) the users of goods and services should pay prices based on the full life cycle of the costs of providing the goods and services, including the use of natural resources and assets and the ultimate disposal of waste, and
- c) established environmental goals should be pursued in the most cost effective way by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

The proposal is consistent with this principle as environmental impacts as a result of the proposal will largely be contained onsite by way of mitigation measures and where impacts would likely be experienced if no mitigation measures are proposed, costs associated with these will be borne by the Proponent and / or users of goods and services.

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