

Proposed Extension to Existing Landfill West Nowra Recycling and Waste Facility



State Significant Development Application Supporting Document

prepared for

Shoalhaven City Council

by

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Executive Summary

This Supporting Document provides information to inform a request to the NSW Department of Planning and Environment for the receipt of Secretary's Environmental Assessment Requirements (**SEARs**) for the preparation of an Environmental Impact Statement (**EIS**) associated with the proposed extension of an existing landfill located at the West Nowra Recycling and Waste Facility.

Overview

The proposed expansion forms part of a broader project to establish the existing site as the core waste treatment facility for the Shoalhaven over the next 25-40 years. An area of the site is already in the planning stages for the development of a *Resource Recovery Park* to include the receipt and processing of up to 130,000 tonnes of waste per year. The project has received SEARs and an EIS for the project is currently being prepared (refer SSD 15_7015).

The residual waste from the proposed Resource Recovery Park facility would be disposed of within the existing landfill. At present, the existing landfill area has a projected capacity of around 10 years, necessitating the development of new landfill space or a new landfill site. Following the preparation of a strategic desktop study to identify a long-term site for future development, it was found that *in parallel with consideration of a potential new landfill site (which will require long lead times for approval and operations), options should also be investigated at the existing West Nowra landfill site to significantly prolong its lifespan*. Subsequent planning has shown that the relocation of the proposed Resource Recovery Park (from the site subject to the site identified in SSD 15_7015) would enable space for a further 14 year of landfill capacity to service the Shoalhaven community without Resource Recovery Park, or an additional 30 years assuming the Resource Recovery Park's implementation. It is the expansion of the landfill area that forms the development subject to this application.

Project Outline

The vision for the West Nowra Recycling and Waste Facility is to provide a comprehensive facility for the processing and disposal of waste through the short to medium term – that is over at least 25-40 years. The landfill extension proposes the following key features:

- Addition of approximately 1.38 million cubic metres of additional landfill capacity;
- Extension of the landfill life capacity by up to 14 years at current disposal rates, or 30 years when including the reduced waste to landfill achieved through implementation of the proposed Resource Recovery Park (which is expected to take several years to come online);
- Appropriate environmental controls including leachate and sedimentation controls to ensure the facility continues to meet its operating licence;
- Providing an on-going disposal option for residual wastes that is in close proximity to the proposed Resource Recovery Park;
- Minimising the footprint to be created by waste management activities by extending the size of the existing facility, rather than establishing a new landfill (and associated infrastructure in a greenfield location; and
- Building on the existing recognition of the site as the primarily landfill location in the Shoalhaven.

In conjunction with the proposed Resource Recovery Park, the landfill extension achieves the vision of the site into the future.

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1. Introduction

This Supporting Document provides preliminary information to support a request to the NSW Department of Planning and Environment for the receipt of Secretary's Environmental Assessment Requirements (**SEARs**) for the preparation of an Environmental Impact Statement (**EIS**) associated with the proposed extension of an existing landfill located at the West Nowra Recycling and Waste Facility.

The Supporting Document has been prepared in accordance with provisions of Part 4 of the *Environmental Planning and Assessment Act 1979*, which establishes an assessment and approval process for development assessed as being of State Significance.

1.1 Project Overview

The proposed expansion of the landfill at the existing West Nowra Recycling and Waste Facility is part of a broader project to establish the site as the core waste treatment facility for the Shoalhaven over the next 25-40 years. An area of the site is in the planning stages for the development of a *Resource Recovery Park* to include the receipt and processing of up to 130,000 tonnes of waste per year. The project has received SEARs and an EIS for the project is currently being prepared (refer SSD 15_7015). The *Resource Recovery Park* project is noted (GHD 2015) as including:

- A composting facility to process up to 65,000 tonnes of waste per year from both domestic and commercial waste sources;
- A materials recovery facility for sorting up to 40,000 tonnes of dry (non-putrescible) solid wastes per year from both domestic and commercial waste sources;
- A sorting and recovery facility for approximately 15,000 tonnes per year of construction and demolition waste; and
- Other areas for processing and storing approximately 10,000 tonnes per year of other recyclable materials, such as green waste, scrap steel and concrete.

The residual waste from the facility would be disposed within the existing landfill. At present, the existing landfill area has a projected capacity of around 10 years, necessitating the development of new landfill space or a new landfill site. A strategic desktop study was undertaken in 2014 (Locale Consulting 2014) to identify a long-term site for future development. That study found that *in parallel with consideration of a potential new landfill site (which will require long lead times for approval and operations), options should also be investigated at the existing West Nowra landfill site to significantly prolong its lifespan*. Subsequent planning has shown that the relocation of the proposed Resource Recovery Park would enable a further 14 to 30 years of landfill to service the Shoalhaven community, and it forms the development subject to this application.

1.2 Project Objectives

The vision for the West Nowra Recycling and Waste Facility is to provide a comprehensive facility for the processing and disposal of waste through the short to medium term – that is over at least 25-40 years. The objectives for the landfill project component are:

- Following substantial reduction of waste to landfill created by the implementation of the neighbouring Resource Recovery Park, to allow the West Nowra Recycling and Waste Facility to continue to serve the local community's waste disposal needs further into the future;
- Minimise the impacts associated with waste facilities by avoiding the need to operate separate large scale resource recovery and landfill disposal facilities;

- Reduce the extent to which waste is transported through the Shoalhaven area by creating an all-encompassing facility;
- Minimise the social disruption associated with the need to develop an entirely new landfill facility; and
- Maximise the use of existing infrastructure and value of land already zoned for waste management purposes.

1.3 Project Location

The site of the proposed landfill expansion is at the existing Stage 4 - West Nowra Recycling and Waste Facility, 120 Flatrock Road, Longreach (though the area is commonly referred to as, and adjoins the suburbs of, West Nowra or Mundamia). The proposal is contained on Lot 1 DP 1104402. The land is approximately 5km west of the Nowra CBD and within the existing land zoned for the West Nowra Recycling and Waste Facility. The land is owned by Shoalhaven City Council. Further details of the site and its context are provided in Section 2.

2. Subject Site

2.1 Site Description

2.1.1 Location

The existing West Nowra Recycling and Waste Facility is located at 120 Flatrock Road, Longreach. The facility is licensed as a general solid waste (putrescible and non-putrescible) facility, commencing operations in 1975.

The area of the proposed landfill extension is within Lot 1 DP 1104402, being an area of around 14.5ha. The site area is to incorporate buffer areas to reduce the potential for impact on adjoining land, to protect visual amenity upon approach to the facility and to act as an environmental corridor for flora and fauna.

The site and its context to Nowra is provided in Figure 2. An aerial image of the existing site is provided in Figure 2, and photographs of the existing site and surrounds are also provided in Figure 3.

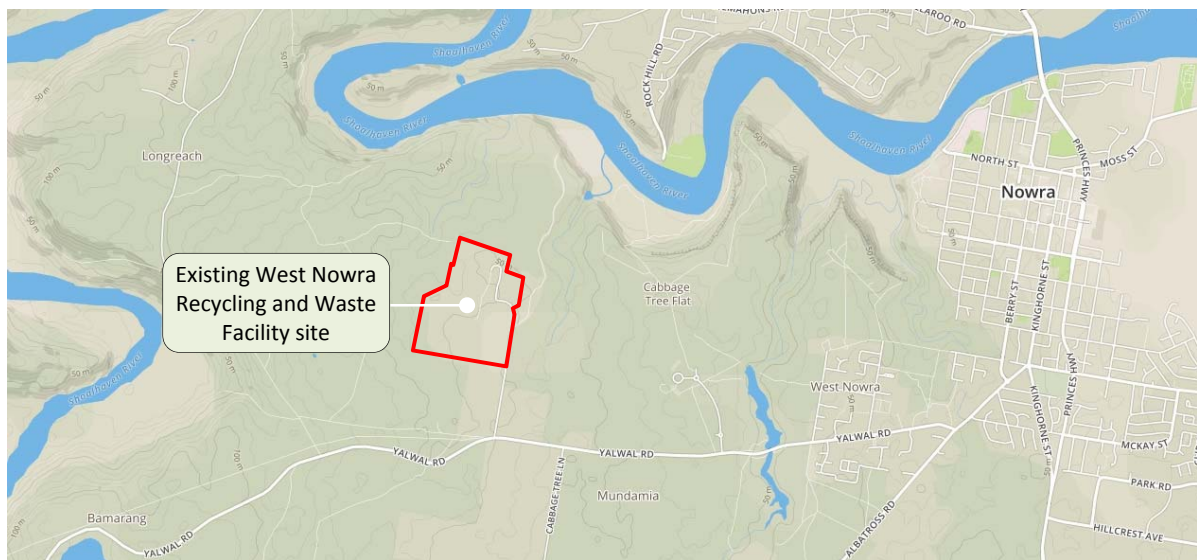


Figure 1: Site Location in Local Context

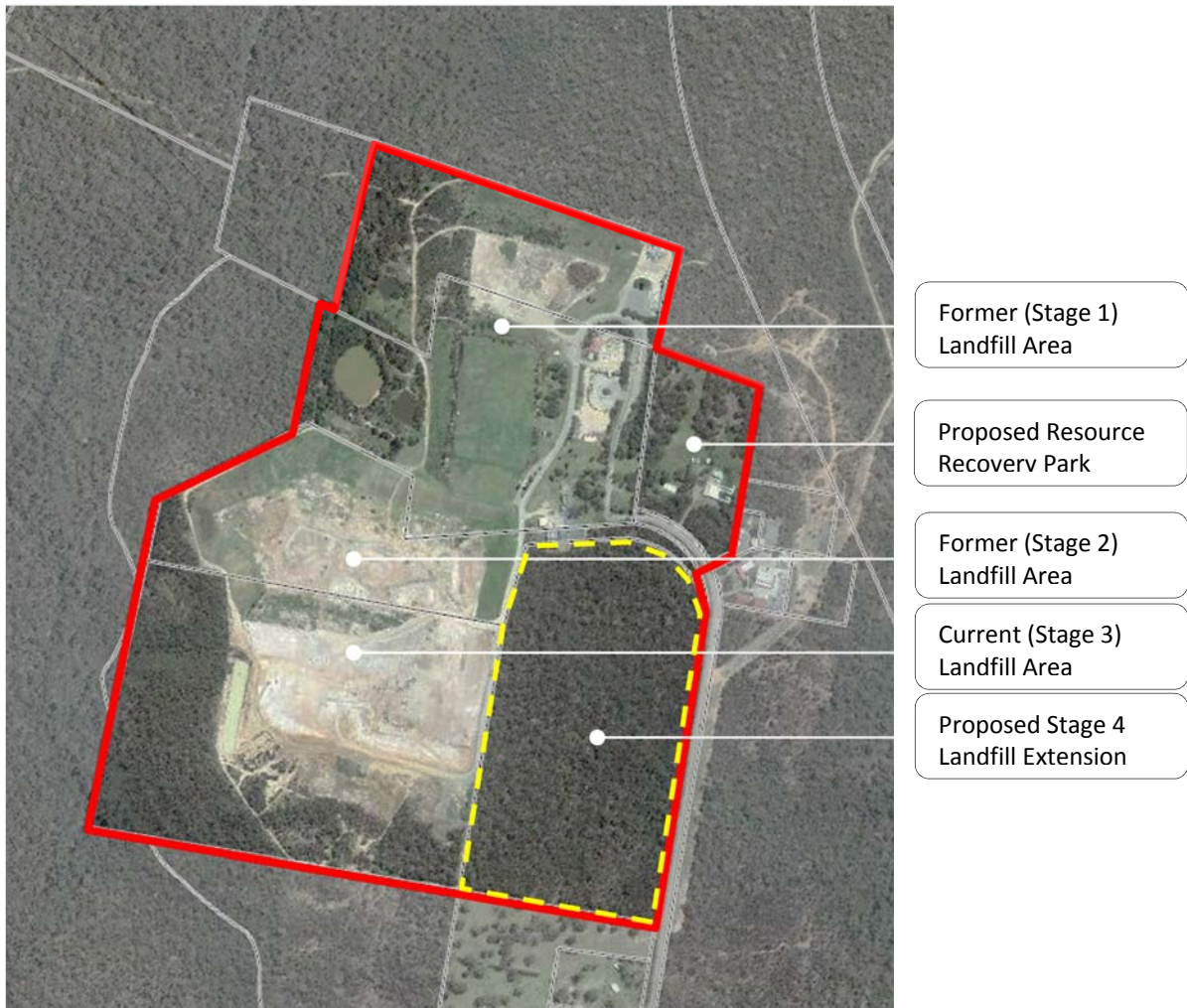


Figure 2: Existing West Nowra Recycling and Waste Facility and Project Site Area



Existing entry to waste facility – subject site on left

Figure 3: Photography of site and surrounds

Typical vegetation existing on site



View to subject site (left) from former landfill (stage 2)



View south on (Flatrock Road) – Subject site on right



View along southern boundary – Subject site on right

Figure 3 (Continued): Photography of site and surrounds

2.1.2 Site Setting and Surrounds

The subject site is currently zoned *Special Purpose 2 Infrastructure (SP2)*, annotated for “Waste / Resource Management Facilities”. The site contains Council’s primary waste management facility and landfill, with a new Resource Recovery Park proposed at the site entry area (subject to current State Significant Development application SSD 15_7015). The landfill has been in operation since 1979 and its location is well known across the Shoalhaven community. The current landfill operations were approved in 1988 with projections based on current demand suggesting a useable life of a further 10 years.

To the south of the site is rural land and approximately six rural residential style properties. The nearest dwelling is located approximately 100m from the project site boundary, and 250m from the proposed nearest point of where active landfill activity is proposed to occur, maintaining a comparable distance to the existing landfill operations. A facility designed as accommodation for men who have become alienated from mainstream society and run by the St Vincent de Paul Society (the Jim Da Silva Farm) is located approximately 500m from the site boundary. It is noted that the current landfill activities being used by Council at the site are approximately 50m closer to this facility than the proposed extension area. Rural properties to the north-east of the site are more than 1km away from the site boundary.

The Shoalhaven Campus of the University of Wollongong is located approximately 1.3 km to the south-east. The Office of Environment and Heritage (OEH) Nowra Area Office and Depot is located immediately to the east of the site, along with an existing Council operated animal shelter on the site subject to SSD 15_7015.

Other land surrounding the site is undeveloped bushland, almost completely within the environmental land use zones (E zones) with very limited development potential and including parts of the Bamarang Nature Reserve and land owned by the Nowra Local Aboriginal Land Council and Council. The land use zone plan from the Shoalhaven Local Environmental Plan (LEP) 2014 is provided in Figure 5 on page 12 and illustrates the location of these areas.

2.1.3 Site Condition

The site is currently vegetated with mixed-species eucalypt woodland and is relatively undisturbed with few weeds (Hyder 2007). Nowra Sandstone, derived from the Shoalhaven Group, underlies the site with Permian sedimentary sequences. The soils are within the Nowra Soil series, with moderately deep 50-100cm brown podzolic soils and low permeability (Hyder 2007 and Locale Consulting 2014). With on-

going monitoring and known ground conditions at the site generally being favourable for existing landfill requirements, the location of the proposed landfill extension is also seen as similarly favourable.

Further details are provided throughout this document in respect of the current site conditions.

3. Proposal Description

3.1 Project Overview

The project involves the construction of a new landfill within the existing West Nowra Recycling and Waste Facility. The new landfill area has the capacity to provide an additional 14-30 years of landfill demand based on current trends and in conjunction with the proposed Resource Recovery Park is intended to meet the disposal needs of Shoalhaven residents into the short to medium future.

The key features of the Project are:

- Addition of approximately 1.38 million cubic metres of additional landfill capacity;
- Extension of the landfill life capacity by up to 14 years at current disposal rates, or 30 years when including the reduced waste to landfill achieved through implementation of the proposed Resource Recovery Park (which is expected to take several years to come online);
- Appropriate environmental controls including leachate and sedimentation controls to ensure the facility continues to meet its operating licence;
- Providing an on-going disposal option for residual wastes that is in close proximity to the proposed Resource Recovery Park;
- Minimising the footprint to be created by waste management activities by extending the size of the existing facility, rather than establishing a new landfill (and associated infrastructure in a greenfield location); and
- Building on the existing recognition of the site as the primarily landfill location in the Shoalhaven.

The landfill extension will be managed under Council's existing *Environmental Protection Licence* (No 5877) provisions. Preliminary discussions with the Environmental Protection Authority (Wollongong Office) indicates that Environment Protection Licence can be modified and extended to cover the extended landfill area.

Upon provision of the Secretary's Environmental Assessment Requirements by the Department of Planning and Environment, Council will undertake a detailed landfill design phase to be used as a guiding document (Landfill Environmental Management Plan – LEMP) in the preparation of an EIS. It is expected that the landfill design will include the following precautions:

- A leachate barrier system;
- Leachate management;
- Groundwater monitoring;
- Site capping and revegetation;
- Gas emission management and monitoring;
- Fire management;
- Surface water management; and
- Environmental management measures for noise, odour etc.

Project implementation would be integrated with existing systems and any changes proposed as part of the proposed Resource Recovery Park.

An extract of the full plan showing the project site layout is provided in Figure 4, with full preliminary design plans provided in Appendix A.

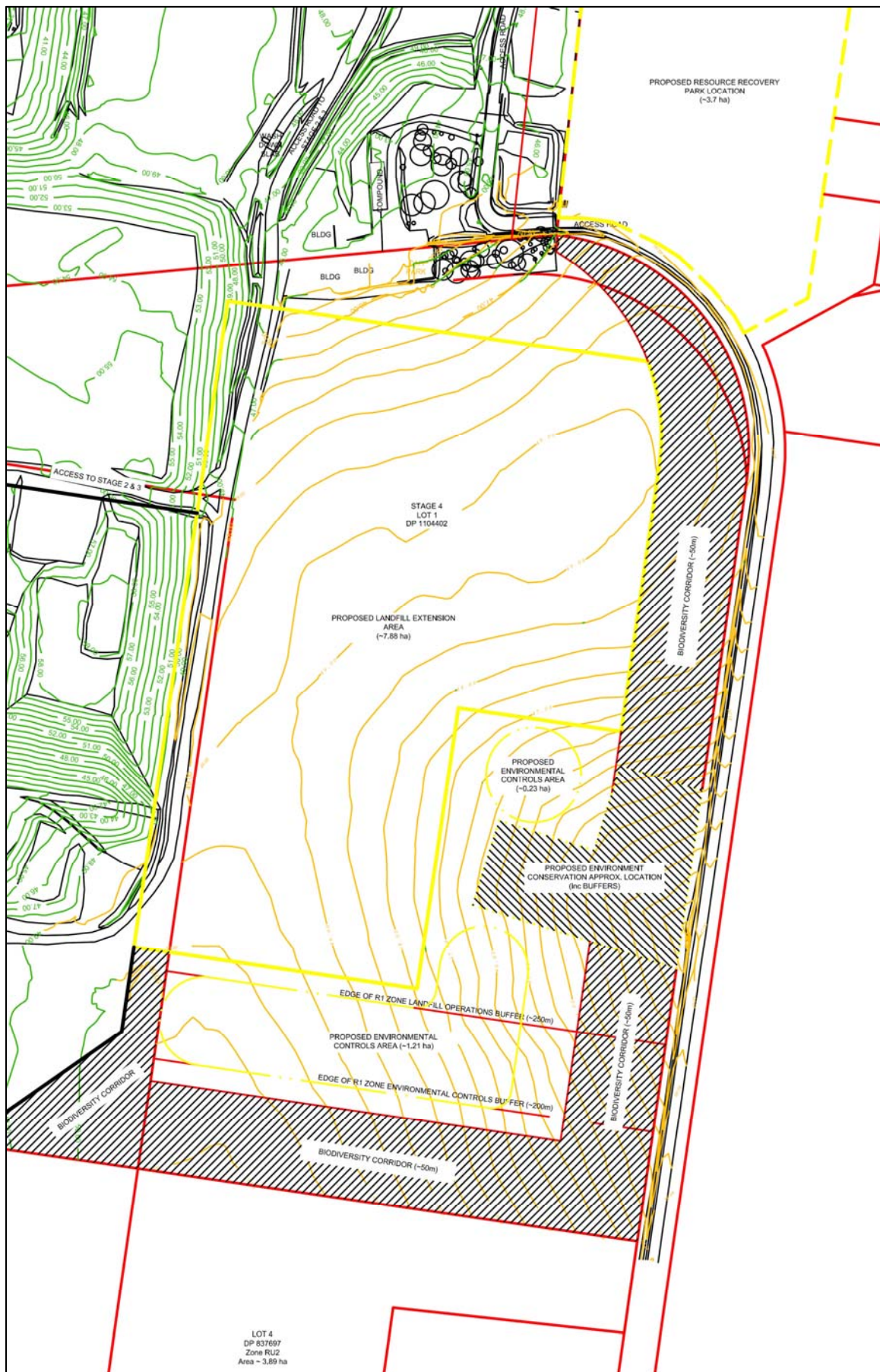


Figure 4: Project Site Plan Extract

4. Land Use Planning Overview

4.1 Approvals Process

The *Environmental Planning and Assessment Act* (EP&A Act) 1979 provides the legislative context for planning and development activities in NSW. Part 4 of the EP&A Act establishes the process and provides for the control of development that requires development consent (or otherwise). Part 4, Division 4.1 establishes the approvals process for development that is declared to be State Significant and in accordance with Section 89E, such development is to be determined by the Minister as the consent authority.

With respect to the landfill extension being proposed, State Significant Developments are identified by *State Environmental Planning Policy (State and Regional Development) 2011* (the State and Regional Development SEPP). The proposal is considered to be 'state significant development' as it is of a type listed in Schedule 1 of the State and Regional Development SEPP, specifically being consistent with item 23 – *Waste and resource management facilities*, where by the project is consistent with the following definition:

- (1) *Development for the purpose of regional putrescible landfills or an extension to a regional putrescible landfill that:*
- (a) *has a capacity to receive more than 75,000 tonnes per year of putrescible waste, or*
 - (b) *has a capacity to receive more than 650,000 tonnes of putrescible waste over the life of the site...*

The Minister is therefore the consent authority for the proposal and a development application is required to be lodged with the NSW Department of Planning and Environment. Prior to this occurring, this supporting document has been prepared to obtain the Secretary's Environmental Assessment Requirements so as to enable the preparation of an EIS consistent with requirements under sub-section 78A(8A) of the EP&A Act.

4.2 Consistency with Planning Instruments

4.2.1 State Environmental Planning Policies

State Environmental Planning Policy (State and Regional Development) 2011

As outlined above, the State and Regional Development SEPP identified those development activities that are considered to be of state or regional significance (as opposed to local development). Such developments are typically those that have greater potential for impacts, higher levels of capital expenditure, or which provide for regionalised (cross-boundary) activities. Schedule 1 outlines those developments, including for waste and resource management facilities and specifically for putrescible landfill extensions, as is the subject of the proposed development. The proposal meets the criteria as follows:

- The site currently receives approximately 65,000 tonnes per year of putrescible waste, which is predicted to increase to approximately 90,000 tonnes per year over the potential life of the facility (though potentially not reaching this point if the proposed Resource Recovery Park is progressed as planned); and
- The proposed landfill extension will result in total waste capacity over the life of the site extension to be an additional 1.38 million cubic metres.

As both the annual and total waste capacity would meet the requirements of being a state significant development, the project is considered to be a state significant development.

State Environmental Planning Policy (Infrastructure) 2007

The *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) provides for the effective delivery mechanisms to enable the implementation of infrastructure across NSW. Clause 121 of the Infrastructure SEPP confirms that waste or resource management facilities are permissible with consent on

land in a prescribed zone, a list which includes the SP2 Infrastructure zone which is the zone applicable to the subject land.

Other State Environmental Planning Policies

Other SEPPs to be considered in the preparation of an EIS for the subject development include:

- SEPP 33 – Hazardous and Offensive Development: requires consideration of hazards and risks that are associated with a proposed development. As an environment protection licence (EPL) to be issued by the NSW EPA would be required, the development is considered to be a ‘potentially offensive industry’, though by the issues of such licence, is not likely to be an ‘offensive industry’ under SEPP 33; and
- SEPP 55 – Remediation of Land: requires that consent authorities consider potential contamination of land prior to issuing development consent. The site is understood to be remnant bushland, however the aims and objectives of SEPP 55 would be considered in the preparation of the EIS.

4.2.2 Local Environmental Plans

Shoalhaven Local Environmental Plan 2014

The development proposal is located in the Shoalhaven local government area, with Shoalhaven LEP 2014 being the applicable LEP to the subject land. Shoalhaven LEP 2014 provides for a range of development provisions, including the application of a land use zone, in this instance being the *SP2 – Infrastructure* zone with an annotation of *Waste / Resource Management Facility*. The development of a waste landfill is permissible with consent in the zone, which specifically relates to this form of development. A zoning map incorporating the subject site is provided in Figure 5.

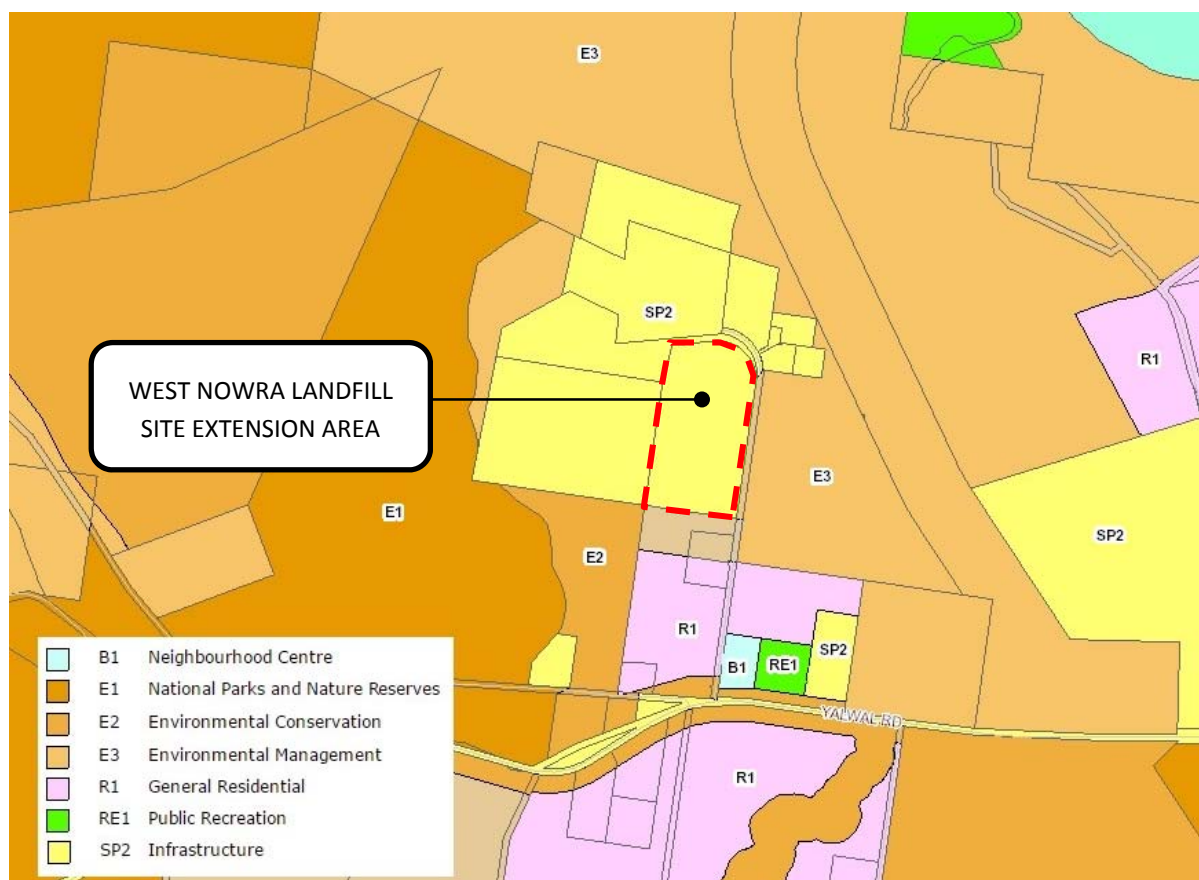


Figure 5: Land Use Zoning

4.3 Other Legislation

4.3.1 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) provides for a regime to manage the issuing of environmental protection licences when considering matters such as waste, air, water and noise pollution control. The owner or occupier of premises engaged in scheduled activities is required to hold an EPL and comply with the conditions of that licence.

Section 87 of the POEO Act provides for specific licensing arrangements for putrescible waste landfill sites where the facility is a scheduled activity. Scheduled activities are listed in Schedule 1 of the POEO Act and the proposed landfill extension (and indeed the existing landfill) would be required to hold a license under Item 39 of that schedule.

The existing West Nowra Recycling and Waste Facility, which adjoins the land subject to the current proposal, currently holds an EPL (licence number 5877). Council would seek to vary the current licence to include the additional landfill area.

4.3.2 Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act 1995* (TSC Act) requires that an assessment of significance be undertaken for all listed endangered ecological communities, threatened populations and species that would be directly or indirectly affected by the proposal. Flora and fauna studies undertaken for part of the site (GHD 2014) concluded that while there are some direct and indirect impacts on threatened biota known or likely to occur in the study area, large areas of native vegetation containing similar habitat resources are present in the locality, and vegetation would be retained and protected in the study area. The proposed design has been devised so as to avoid isolation of any areas of habitat and to maintain existing connectivity between the subject site and surrounding native vegetation. At the current level of assessment, the proposal is not considered to be likely to have a significant effect on threatened species, populations or ecological communities listed under the TSC Act. Appropriate work would be undertaken to update and validate this previous work as part of the EIS and is further detailed in Section 5.1.2.

4.3.3 Other Legislation and Policy

Other legislation and Policy documents to be considered in the preparation of an EIS for the subject development include:

- *Waste Policy and Legislation*: Including the NSW Government's *Waste Avoidance and Resource Recovery Strategy 2014-2021*, the *National Waste Policy* and the *Waste Avoidance & Recovery Act 2001*, which collectively provide a policy direction and application legislation to facilitate improved resource recovery and waste management procedures throughout the industry. The landfill expansion is part of Council's broader approach to waste management and services, meeting the objectives and directions of these policy and legislative documents. This will be further detailed as part of the preparation of the EIS.
- *National Parks and Wildlife Act 1974*: which aims to protect native flora and fauna, and the integrity of any Aboriginal heritage items in NSW. Previous assessments of the subject site (GHD 2014) suggests that no Aboriginal sites and/or places have been recorded at the site, and that based on previous studies, a survey undertaken in 2014, existing levels of disturbance, distance from permanent fresh water sources and predictive modelling, the archaeological potential is considered to be low. Further discussion on this matter is provided in Section 5 of this document, and further work to confirm this would be provided as part of the EIS;
- *Contaminated Land Management Act 1997*: provides a process for investigating and, where appropriate, remediating land areas should contamination be present. There is no known

contamination issues with the land and appropriate reporting would be made as part of preparing the EIS.

- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*: provides that any 'action' which is likely to have a significant impact on matters of national environmental significance or a significant impact on Commonwealth land requires approval from the Commonwealth Minister of the Environment. Recent assessment work undertaken at the project site (GHD 2014) suggests that there will be no impacts on any matters of national environmental significance and that referral to the Commonwealth would not be required. Further discussion on this matter is provided in Section 5 of this document, and further work to confirm this would be provided as part of the EIS.

5. Preliminary Impact Assessment

This section provides an outline of key issues that have been identified in association with the proposed landfill extension. Initial assessment have been undertaken as a desktop exercise and where possible utilising detailed recent environmental assessment information compiled for other projects on and around the subject site.

5.1 Key Issues Identified

Based on consultation with Council, information available about the proposal, environmental controls in place and proposed, and the previous environmental assessments undertaken, the priority environmental issues for further assessment are considered to include:

- Odour;
- Flora and fauna;
- Soil, water and leachate;
- Hazards and bushfire risks;
- Traffic;
- Noise;
- Greenhouse gas; and
- Heritage.

These are discussed further in the following sections.

5.1.1 Odour

An Air Quality Assessment was recently prepared as part of an EIS (GHD 2014) prepared for the site in conjunction with the proposed RRP (when proposed for the site of the proposed landfill extension). The assessment has been undertaken with consideration of the *Approved methods for the modelling and assessment of pollutants in NSW* (DEC, 2005) and an odour impact criterion of 5 odour units (OU) was not to be exceeded at residences on Flatrock and Yalwal Roads.

Dispersion modelling to predict the pattern of maximum off-site ground level odour concentrations included scenarios encompassing the RRP, landfill and green waste operations. The modelling showed that with the RRP and current landfill operations, the criterion adopted for the proposal would be contained mostly within the site, extending to the east just over Flatrock Road but meeting the criteria as there are no residences at this location. Furthermore, the predicted 99th percentile (1-hour average) odour levels showed the highest predicted concentrations were at 43 Flatrock Road with a 99th percentile predicted to be 2.6 OU for the combined future scenario of RRP plus landfilling operations.

Odour in the landfill extension area is expected to be managed in a similar way to the existing landfill cells. This includes utilising daily coverage of waste with excavated natural material. No conditions relating to odour currently exist on the Environmental Protection Licence that are likely to be extended to cover the landfill expansion area.

The proposal is expected to produce odours that are within acceptable levels. It is also noted that impacts on the OEH office adjoining the site will need to be carefully considered in subsequent assessment for the specific circumstances of the project. The Technical Framework and Notes of the *Assessment and Management of Odour from Stationary Sources in NSW* (DEC) would be used to guide the assessment process.

5.1.2 Flora and Fauna

Detailed flora and fauna assessments (GHD 2014) have been undertaken for the site where the proposed RRP was proposed and the entire site as part of a broader study area. The study included field assessment by both GHD and Council, as well as building on previous assessments undertaken by Hyder Consulting in 2007.

Flora of the area was identified by GHD as being of one main vegetation type – Red Bloodwood – Grey Gum – Stringybark – Scribbly Gum Forest (SR592). The majority of the study area was dominated by a diverse suite of sclerophyllous shrub species including *Hakea* and *Banksia* species. An area in the south-east was dominated by an understorey of *Allocasuarina littoralis*. The community is not recognised as being threatened ecological community under the *TRC Act* or *EPBC Act*.

A total of 145 indigenous and 24 introduced flora species were identified at the site during previous investigations. Only one of these, *Triplarina nowraensis* (Nowra Heath-Myrtle), is listed under the *TSC Act* and the *EPBC Act* (mapping for which was completed by Hyder Consulting (2007) and is shown in Figure 6 below). It is proposed that the area of occurrence be avoided and buffered and will be detailed in the full assessment. Much of the subject site was considered to be unsuitable for the species given the lack of impeded drainage areas. Potential habitat (i.e. not identified on site) for a further five threatened flora species was also present.



Figure 6: Threatened Species Mapping (Hyder 2007)

The same study identified a total of 90 fauna species during field surveys, including 10 threatened species under the *TSC Act* and/or the *EPC Act*. These included:

- Glossy Black cockatoo;
- Powerful Owl;
- Masked Owl (probable record);
- Grey-headed Flying-fox;
- Eastern Bentwing Bat;
- Eastern False Pipistrelle (probable record);
- Greater Broad-nosed Bat (probable record);
- Large-eared Pied Bat (probable record);
- Eastern Pygmy-possum;
- Squirrel Glider; and
- Yellow-bellied Glider.

Potential habitat for 19 additional threatened fauna species were also identified as being present.

Clearing of the site for the purposes of landfill operations would include around 7.88 hectares of vegetation, including the removal of habitat for a range of flora and fauna species, as well as a number of hollow-bearing trees. A number of termite mounds would also be removed which provide potential nesting sites for the Rosenberg's Goanna. The design of the proposed takes into account the avoidance of isolation of habitat through the retention of vegetated buffer areas that connect to surrounding native vegetation. It is further noted by the GHD report that the study area makes up a minor proportion of similar habitats in the locality.

Given the likelihood of impacts, the GHD study also undertook assessments of significance for threatened biota known or likely to occur in the study area. It found that the proposal that was then being considered for the site (a resource recovery park) would not be likely to have a significant effect on threatened species, population or ecological communities as listed under the *TSC Act*. The results also suggest that there is unlikely to be a significant impact on any Matter of National Environmental Significance and is therefore unlikely to be a controlled action under the *EPBC Act*. These studies and findings will be confirmed for the purposes of the proposed project.

It is also expected that several mitigation measures would be recommended and undertaken similar to those proposed by the GHD study. Those included:

- Pre-clearing surveys and fauna rescue protocols for removal of hollow bearing trees;
- Pre-clearing surveys and fauna rescue for ground dwelling fauna;
- Salvage of habitat features such as hollow logs;
- Installation of nest boxes in areas of retained habitat;
- Hygiene controls to prevent the introduction or spread of phytophthora and myrtle rust;
- Suppression of dust during construction and operation;
- Use of appropriate sediment control devices; and
- Management of weeds.

It is further proposed that offsets would be negotiated to compensate for residual impacts that cannot be mitigated. Preliminary studies by Council have identified potentially 30 hectares of land that is suitable for this purpose in the local area and in Huskisson. These areas and the offsetting process has have been previously discussed with OEH and Council has an ongoing dialogue with them in respect of the site and various projects that are being proposed.

Extensive work has been undertaken on the site to confirm the environmental qualities of the existing vegetation and Council has concluded that use of part of the site is considered to be possible and would meet the required standards. Confirmation of this premise and further details of any proposed offsetting would occur in conjunction with the undertaking of the EIS.

5.1.3 Soil, Water and Leachate

Previous investigations of the site conducted by Earth2Water (in GHD 2014) mention that the profile at the site consists predominately of silty-clay and sandy-clay sediments. In terms of acid sulphate soils, the area is mapped as Class 5 (low risk) with the Locale Consulting site assessment report (2014) identifying the geology as being suitable Permian sedimentary sequences, with brown podzolic soils (Nowra Soil series) being moderately deep 50-100cm. The site was assessed as having low permeability and suited for landfill purposes. This report also undertook a broadscale assessment of previous mine activities (and risk of subsidence) and karst (cave) environments, finding that neither of these are likely to be an issue in the area.

In terms of topography and watercourses, the subject site is relatively flat, being located along a ridge line that extends along Flat Rock Road. A small drainage line commences and drains to the east, coinciding with the location of the identified individuals of *Triplarina nowraensis* (Nowra Heath-Myrtle) which is to be protected. Location of mapped watercourses are identified in Figure 7.

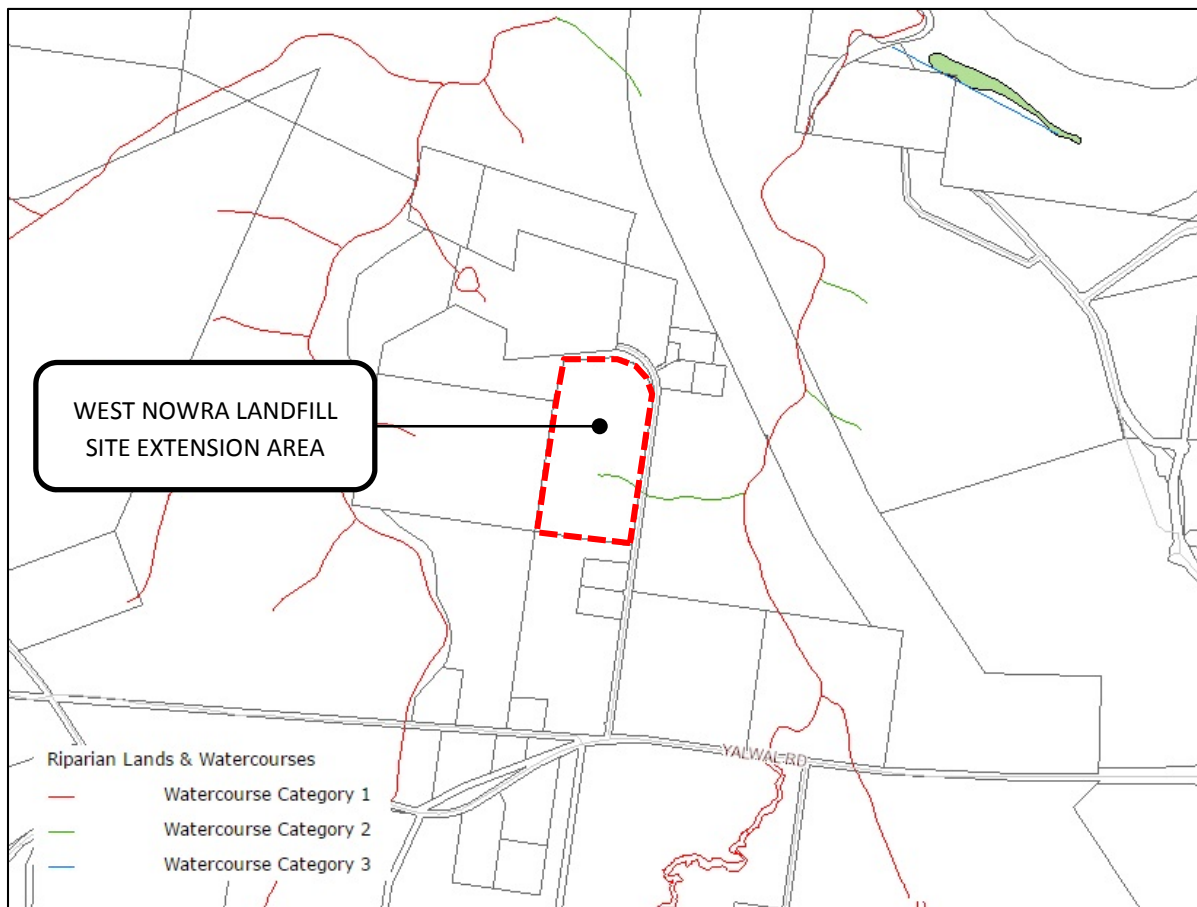


Figure 7: Watercourses – Shoalhaven LEP 2014

A number of structures have been constructed at the existing facility to manage surface water, leachate and groundwater. These include but are not limited to:

- Sediment dam - stormwater collection;
- First flush dam;
- Stage 1 & 2- groundwater collection curtain/drain;
- Leachate is piped to the leachate dam; and
- Sub-surface leachate collection drains.

Through this infrastructure and processing, the water system is largely enclosed and controlled on the site.

According to the annual report on environmental monitoring (ENRS 2014), the current site EPL includes requirements for a range of sampling and monitoring of groundwater, leachate and surface water. These include:

- Groundwater monitoring at 15 locations throughout the site;
- Leachate sampling at three locations; and
- Surface water sampling at five locations.

The sampling and monitoring of these is conducted quarterly (November, February, May and August), and annually for selected analytes with additional overflow and event based sampling conducted as required. The annual report (ENRS 2014) goes on to confirm that no non-compliances with the EPL were recorded during the reporting period and that there is unlikely to be any significant off-site impacts from activities at the site.

Details of the proposed water management and leachate management infrastructure will be provided in the EIS. Existing and indicative future locations of environmental controls (including the above infrastructure) is indicatively shown on the preliminary project plans at Appendix A.

5.1.4 Hazards and Bushfire

As the subject site is currently vegetated, the entire area is subject to bushfire potential (see Figure 8). According to the GHD Fire and Incident Report prepared as part of an EIS for part of the site (GHD 2014), the site is surrounded by continuous fire-prone vegetation which has the potential to carry large high intensity bushfire under adverse weather conditions. The report notes that the Shoalhaven Bush Fire Management Committee (BFMC) area has on average 600 bush fires per year of which 20 can be considered as major fires (SBFMC 2010).

To mitigate threats, a site perimeter road is intended to be available and used to allow access for fire fighting vehicles and equipment around the subject site. Access will also be available to the eastern portion of the site from Flatrock Road. Operational measures will also be continued (as existing) including access gates being locked at all times outside of opening hours, maintenance of boundary fences and associated fire breaks already in place, maintenance of machinery including on-site firefighting equipment and regular litter patrols. The site will also continue to operate under a *Pollution Incident Response Management Plan* which include emergency procedures for bushfire situations.

The EIS will contain a bushfire assessment report to ensure that appropriate measures are in place.

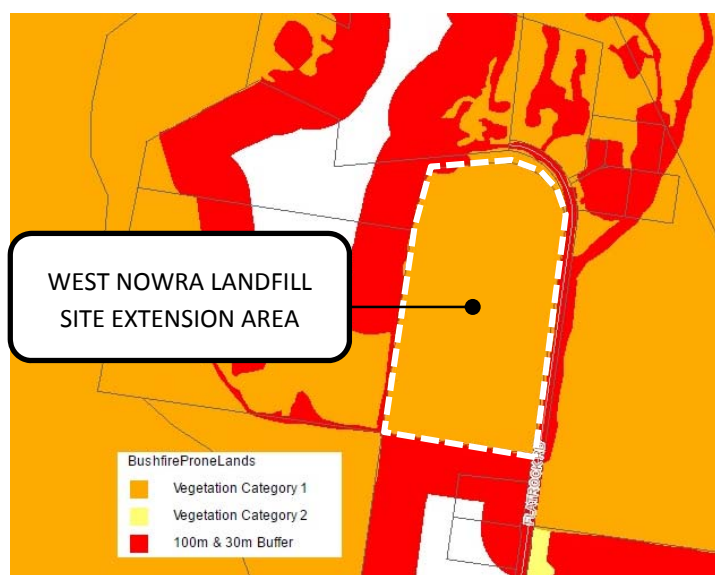


Figure 8: Bushfire Prone Land

5.1.5 Traffic

A full Traffic Impact Assessment was undertaken by GHD (2014) in consideration of developing a Resource Recovery Park at the site. The assessment identifies that the expected traffic patterns would not in themselves warrant any changes to existing intersections nor do they recommend any specific changes. It is noted that future residential development around the broader West Nowra / Mundamia area is expected to impact on the network performance and would necessitate certain improvements but which are unrelated to the subject development.

Given the landfill extension is designed to increase the life of the existing facility, the development proposal would not result in any increase in vehicle movement that is over and above natural growth (presumably included in the 2% growth as modelled in the GHD report). As such there is not expected to be any increase in traffic as a result of the proposal and this would be confirmed through the EIS process.

5.1.6 Noise

A Noise Assessment was undertaken as part of the EIS prepared as part of the Resource Recovery Park project formerly proposed for the subject site (now moved to a different location). The report measured baseline noise levels at two sensitive receiver locations with the results being combined with construction and operational information to predict potential impacts. The results found that construction noise impacts would impact one residential receiver being 4dB(A) over the recommended level – no other exceedances were modelled.

Whilst the site of the previous report was located further from the nearest receptor, the type of facility also differed, particularly in terms of the construction noise outputs in terms of noise of construction versus the ongoing operational activities that would be present with the proposed landfill extension project. It is noted that operational noise from the previous report was identified as meeting the relevant requirements and the operation of the landfill extension is considered to have a similar result. Further detailed noise assessment will be undertaken as part of the proposed EIS process including assessment against the *Industrial Noise Policy* (INP) (EPA 2000) and the *Interim Construction Noise Guideline* (ICNG) (DECC 2009).

5.1.7 Greenhouse Gas

The existing landfill operations include a greenhouse gas capture system operated by Council in conjunction with AGL Energy. Since commissioning of the system in December 2000, the facility has produced approximately 72,000 megawatt hours (MWHrs) of electricity and destroyed Methane to an equivalent of more than 326,000 tonnes of CO₂. Results over the last six years are provided in the table below.

Year	Energy Produced	Equivalent CO ₂
2013/14	6,403 MW Hrs	26,739 t CO ₂ -eq
2012/13	5,883 MW Hrs	21,474 t CO ₂ -eq
2011/12	7,208 MW Hrs	24,493 t CO ₂ -eq
2010/11	6,773 MW Hrs	23,236 t CO ₂ -eq
2009/10	5,665 MW Hrs	20,928 t CO ₂ -eq
2008/09	5,201 MW Hrs	20,128 t CO ₂ -eq

It is the intention of Council that the system would continue to be developed in conjunction with the landfill extension. Full details will be provided as part of preparing an EIS for the subject proposal.

5.1.8 Heritage

An *Aboriginal Archaeological Survey Report* was prepared by Artefact Heritage to inform and subsequently included in the GHD EIS (2014). The Report was prepared consistently with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (2010). The Report was prepared in consultation with the Nowra Local Aboriginal Land Council and found that there was no previously recorded

Aboriginal sites and/or places within the study area. The area was further assessed as having low archaeological potential and low archaeological significance.

A review of heritage items listed in Shoalhaven LEP 2014 was also undertaken, with no listed heritage items being located in the vicinity of the site. These matters will be confirmed as part of preparing an EIS for the subject proposal.

6. Consultation

In undertaking the preparation of this document, preliminary discussions were held with NSW Planning and Environment regarding the application process and the EPA regarding the proposal of extending the existing EPL to incorporate the landfill extension.

During the EIS process, it is intended that a number of additional consultations will be required and would potentially include:

- NSW Department of Planning and Environment;
- Environment Protection Authority;
- Heritage Branch, Office of Environment and Heritage;
- NSW Rural Fire Service;
- Mine Subsidence Board;
- Department of Primary Industries;
- NSW Office of Water;
- Roads and Maritime Services; and
- AGL Energy.

A community consultation plan is also intended to be undertaken in association with the preparation of the EIS, as well as the ongoing changes expected with the development of the adjoining Resource Recovery Park project. Activities anticipated as part of this process include provision of information session/s for nearby landholders and local residents generally, regular updates / mail outs regarding the projects as they progress, as well as media releases and updates via Council's website.

7. Conclusion

This document provides preliminary information in support of a request to the NSW Department of Planning and Environment to obtain the Secretary's Environmental Assessment Requirements in relation to the future expansion of the existing landfill operations at the West Nowra Recycling and Waste Facility. The document has been prepared consistent with the assessment and approval requirements of Part 4 of the *Environmental Planning and Assessment Act 1979*, and is assessed to be a development of state significance as defined by the provisions of *State Environmental Planning Policy (State and Regional Development) 2011*.

The proponent for the proposal is Shoalhaven City Council which owns and manages the existing landfill facility which has a limited life of approximately 10 years. Whilst the life of the existing facility is expected to be expanded by the introduction of the proposed Resource Recovery Park (SSD 15_7015) by around 15 years, there remains an immediate need to identify and secure a longer-term landfill potential should the project not proceed or be further delayed. In any case, the proposed landfill extension is anticipated to provide 14 to 30 years of landfill capacity and avoid the need for separating the landfill and resource Recovery Park in future years.

The objectives of the Project are to:

- Following substantial reduction of waste to landfill created by the implementation of the neighbouring Resource Recovery Park, to allow the West Nowra Recycling and Waste Facility to continue to serve the local community's waste disposal needs further into the future;
- Minimise the impacts associated with waste facilities by avoiding the need to operate separate resource recovery and landfill disposal facilities;
- Reduce the extent to which waste is transported through the Shoalhaven area by creating an all-encompassing facility;
- Minimise the social disruption associated with the need to develop an entire new landfill facility; and
- Maximise the use of existing infrastructure and value of land already zoned for waste management purposes.

Shoalhaven City Council remains committed to development of the Resource Recovery Park and to actively promoting resource recovery initiatives within their community. However there remains a need to secure long-term landfilling and disposal options which will be achieved through the proposed extension.

8. Bibliography

ENRS 2014 *Annual Environmental Monitoring Results – 30 October 2013 to 29 October 2014*, prepared for Shoalhaven City Council

GHD 2015 *Proposed Resource Recovery Park, West Nowra - State Significant Development Supporting Document*, prepared for Shoalhaven City Council

GHD 2014 *West Nowra Resource Recovery Park, Environmental Impact Statement*, Prepared for Shoalhaven City Council

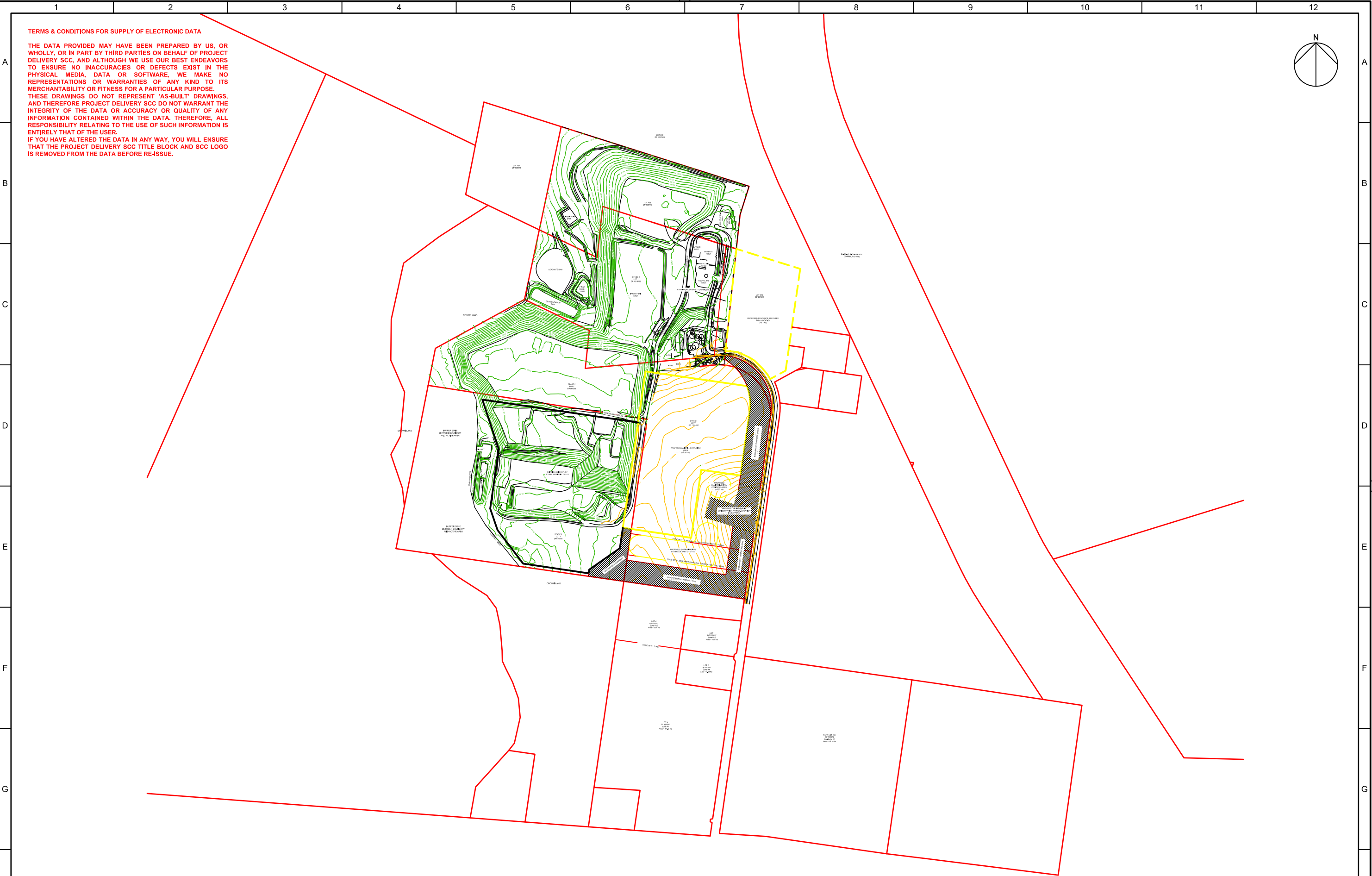
Hyder 2007 *Threatened Biodiversity Survey and Assessment - West Nowra*, Prepared for Shoalhaven City Council


Locale Consulting 2014 *Desktop Landfill Site Identification Study*, prepared for Shoalhaven City Council

Appendix A

Preliminary Project Design Plans

Prepared by Shoalhaven City Council

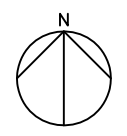



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