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Response to Submissions Report

Kariong Sand and Soil Supplies

Sand, Soil and Building Materials Recycling Facility - SSD8660

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We declare that:
The statement has been prepared in accordance with clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation* 2000.

The statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and the information contained in the statement is neither false nor misleading.

Report version	Authors	Date	Reviewer	Approved for issue	Date
v1.0	Dr J.Lethlean, and Dr M. Jackson	31/01/2020	Dr M.Jackson	Dr M.Jackson	31/01/2020
V2.0	Dr J.Lethlean, and Dr M. Jackson	31/01/2020	Dr M.Jackson	Dr M.Jackson	31/01/2020
V3.0	Dr J.Lethlean, and Dr M. Jackson	19/02/2020	Dr M.Jackson	Dr M.Jackson	19/02/2020
FINAL	Dr J.Lethlean, and Dr M. Jackson	30/07/2020	Dr M.Jackson	Dr M.Jackson	03/08/2020

Executive Summary

Kariong Sand and Soil Supplies (KSSS) is seeking development consent for the site to enable the company to receive up to 200,000 tonnes of waste for recycling each year. The proposed development will seek to expand the current facility into a best-practice recycling plant that can process a range of sand, soil and building materials, and produce a wide range of landscape supplies. The proposed facility is ideally located to receive waste materials from the Central Coast region. This will assist in achieving the NSW Government's target of an 80% recycling rate for construction and demolition waste by 2021.

Under Section 4.36 of the *Environmental Planning and Assessment Act* 1979 and Schedule 1 of the *State Environmental Planning Policy (State and Regional Development)* 2011, the proposed development is considered to be a State Significant Development, requiring an EIS to be submitted with the development application.

Central Coast Council has also advised in a pre-lodgment meeting that under the *Protection of the Environment Operations Act* 1997, the proposed development will require concurrence and licensing from the NSW Environment Protection Authority.

A development application, with EIS, was submitted to the Department of Planning and Environment (DPE) on 18th January 2019. The proposal was on public exhibition from 1st February 2019 to 21st March 2019. Comments on the proposal from NSW government agencies were received from 20th March 2019 to 14th June 2019. A revised EIS was submitted to Department of Planning, Industry and Environment (DPIE) in January 2020, and feedback was received on 20th February 2020. Subsequent discussions were held with DPIE, specifically regarding the design of the stormwater capture and treatment system. The details of the comments received are discussed in Section 3, and tables collating comments by issue are provided as Appendix 1.

In response to the comments received from government agencies, neighbouring properties and the general public, substantial design and operational improvements have been made to the development. These include:

- Extensive community consultation and engagement
- Conducting additional technical studies
  - Fire safety study
  - Additional air quality modelling
  - Upgrade of noise modelling
  - Additional biodiversity impact assessment, including additional fieldwork
  - Revision of landscape design plan
  - Update of visual impact assessment
  - Revision of civil works plans
  - Re-design of the stormwater capture and treatment system
  - Updated Water Cycle Impact Assessment and Soil and Water Management Plan
  - Hydraulic services plan
  - Re-design of site entrance and additional traffic modelling
  - Additional Aboriginal Cultural Heritage Assessment and consultation
  - Baseline Groundwater Investigation

The comments from agencies and the public received during the exhibition period have been considered and addressed in detail. The development design has been adjusted to address the comments received. Additional mitigation measures will be put in place to ensure the impacts of the facility are minimal. A summary of proposed changes that have been incorporated into the overall design and operations of the development, which have been evaluated in the updated EIS include:

- All waste materials to be received indoors, to minimise impacts on the outdoor environment (e.g. dust, litter, noise and water quality);
- Buildings to enclose the crushing and mulching operations to minimise dust and noise, including misting to maximise dust control;
- A three-sided building around the waste receival area with a misting system to ensure that water quality is protected and dust is minimised;
- Concrete kerbing on the exit to the site to prevent any trucks using Debenham Rd;
- A redesigned stormwater treatment system including four gross pollutant traps, two CDS gross pollutant traps to treat "medium-risk" stormwater, emergency spill pond, stormwater isolation valves, an enlarged detention pond with floating wetland and a membrane filtration plant to supply the site with high quality water for dust control via sprinklers above all storage bays;
- A second weighbridge and office to be built to ensure efficient traffic movements to and from the site, once waste receival increases above 100,000 tonnes per annum;
- Additional three hydrants and an additional four fire hose reels to manage any potential fire incidents;
- Establishment of emergency quarantine areas for extinguishing any waste materials on fire;
- Reduction of the noise wall height along the north east corner of the site, with the introduction of native vine plantings to improve visual aesthetics and soften the interface between the site and neighbouring rural residential properties;
- A commitment that recycling will increase in stages, only after independent testing is done to prove the facility is performing to the highest environmental standards. These stages proposed include:
    - Following development approval, waste receival to increase over time to a threshold of 100,000 tonnes per annum;
    - Consent to increase waste receival to 150,000 tonnes per annum;
    - Consent to increase waste receival to 200,000 tonnes per annum;
- Operational hours clarified as follows:
    - Opening hours (staffed): 7:00am to 6:00pm Monday to Saturday. Closed Sunday.
    - Waste deliveries: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.
    - Waste processing (sorting, crushing, grinding, screening): 8:00am to 5:00pm Monday to Friday.
    - Product sales: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.
- Continuous monitoring of air quality (dust) and noise at the site boundaries, including surface water and groundwater monitoring; and
- A commitment to establish a Community Consultative Committee with an independent chair post approval for providing a forum for the community to provide feedback on the performance of the development.

All the technical studies have been reviewed and updated to reflect the change in site design and parameters. All technical studies conclude that the final design will result in the facility having minimal impact on the environment and surrounding land users.

Overall, the project meets the environmental criteria in the relevant standards and guidelines and now meets the additional requirements listed in the agency comments. The environmental and social impact on the local area will be

negligible. The project is consistent with the objectives of the land use zoning and with the Council development strategies for the area. The new facility will provide employment, economic benefits and best practice recycling services for the local area.

CONTENTS

1. Introduction

An Environmental Impact Statement (EIS) has been prepared for the proposed development of a sand, soil and building materials recycling facility at 90 Gindurra Rd, Somersby (Lot 4 DP 227279).

The facility located at the site is approved to receive sand and soil, which is blended into specific landscape products.

Kariong Sand and Soil Supplies (KSSS) is seeking development consent for the site to enable the company to receive up to 200,000 tonnes of waste for recycling each year. The proposed development will seek to expand the current facility into a best-practice recycling facility that can process a range of sand, soil and building materials, and produce a wide range of landscape supplies. The proposed facility is ideally located to receive waste materials from the Central Coast region. This will assist in achieving the NSW Government's recycling target of an 80% rate for construction and demolition waste by 2021.

Under Section 4.36 of the *Environmental Planning and Assessment Act* 1979 and Schedule 1 of the *State Environmental Planning Policy (State and Regional Development)* 2011, the proposed development is a State Significant Development, requiring an EIS to be submitted with the development application.

Central Coast Council also advised in a pre-lodgment meeting that under the *Protection of the Environment Operations Act* 1997, the proposed development will require concurrence and licensing from the NSW Environment Protection Authority.

The company is committed to complying with all laws that affect its operations and understands that development approval and appropriate licensing is required prior to the proposed development occurring. In this regard, pursuant to Part 2, Schedule 2 of the *Environmental Planning and Assessment Regulation* 2000, KSSS, as the Proponent, has prepared an Environmental Impact Statement to support its application for development consent.

1.1. Status of development approval

A development application, with EIS, was submitted to DPE on 18th January 2019. The proposal was on public exhibition from 1st February 2019 to 21st March 2019. Comments from NSW government agencies on the proposal and first EIS were received from 20th March 2019 to 14th June 2019.

Following additional studies and revision of parts of the project, a second EIS was prepared and submitted to DPIE for further feedback. Additional written comments were received from DPIE in February 2020. Further meetings were held with DPIE to ensure the water issues were addressed to DPIE's satisfaction.

The details of the comments received are discussed in Section 3, and tables collating all written comments by issue received are provided as Appendix 1.

2. Overview of the exhibited project

2.1. Summary of project description in exhibited EIS

The facility will provide for additional sand, soil and building material recycling in the Central Coast region and will service areas across the Sydney region. The current and proposed development features of the site are listed in Table 2.1.

The facility is in the IN1 General Industrial zone of Somersby Industrial Park. The proposed development involves the development of a largely undeveloped industrial site, to enable the facility to be used for the receival, processing and recycling of construction and demolition waste, as well as supply building and landscape supplies for local projects. The facility will require an Environment Protection Licence from the NSW Environment Protection Authority.

Table 2.1. Summary of the 'current', 'proposed' and 'net change' in development features of the Kariong Soil and Sand Supplies Facility under SSD application 8660 – as exhibited in EIS in 2019.

Site feature / operating conditions	Current (as per Development Consent DA0506/233/kl)	Proposed in exhibited EIS	Net change
Types of wastes that can be lawfully received at the facility for recycling	Sand and metal	Sand and metal Soil - Virgin Excavated Natural Material (VENM) Soil – Non-putrescible solid waste meeting the CT1 threshold Concrete, tiles, masonry Asphalt Timber and stumps and rootballs Mixed building waste (masonry, concrete, brick, tiles, wood, timber and metal)	Soil - Virgin Excavated Natural Material (VENM) Soil - Non-putrescible solid waste meeting the CT1 threshold Concrete, tiles, masonry Asphalt Timber and stumps and rootballs Mixed building waste (masonry, concrete, brick, tiles, wood, timber and metal)
Annual processing limit (tonnes per annum)	No limit	200,000 tonnes per annum	200,000 tonnes per annum
Maximum amount of waste that can be stored on-site at any point in time	No limit	50,000 tonnes	50,000 tonnes
Processing equipment	Not stated	Outdoor operations: Crusher, grinder, shredder, screen, excavator, front-end loader (outdoors) Indoor operations:	Outdoor operations: Crusher, grinder, shredder, screen, excavator, front-end loader (outdoors) Indoor operations: Front-end Loader, excavator, conveyor, stackers, trommel screen, station

Site feature / operating conditions	Current (as per Development Consent DA0506/233/kl)	Proposed in exhibited EIS	Net change
		Front-end Loader, excavator, conveyor, stackers, trommel screen, station picking line with conveyor, overhead magnet, air blower, hopper and bagging machine	picking line with conveyor, overhead magnet, air blower, hopper and bagging machine
Weighbridge	None	A new 26m above ground weighbridge will be installed adjacent to the front office	A new 26m above ground weighbridge will be installed adjacent to the front office.
Fire suppression system	None	A fire hydrant is to be installed under Stage 1 of the project (DA52541/2017).	A fire hydrant is to be installed under Stage 1 of the project (DA52541/2017).
Containment of firewater	None	To be provided by on-site detention system and site bunding	To be provided by on-site detention system and site bunding
Treatment of stormwater runoff from site	Existing stormwater dam in place.	A new OSD and stormwater storage basin will be constructed to capture stormwater and sediment. The site will be contoured to ensure all stormwater run-off is collected. Stored water will be used on site.	A new OSD and stormwater storage basin will be constructed to capture stormwater and sediment. The site will be contoured to ensure all stormwater run-off is collected. Stored water will be used on site.
Operating hours **(operational hours)**	6:30am to 5:30pm Monday to Saturday	Access: 24 hrs / 7 days per week (to allow for occasional early / late delivery or truck movements which are unavoidable due to traffic delays) Opening hours (staffed): 7:00am to 6:00pm Monday to Saturday. Closed Sunday. Waste deliveries: 7:00am to 6:00pm Monday to Saturday. Closed Sunday. Waste processing (sorting, crushing, grinding, screening): 8:00am to 5:00pm Monday to Friday. Product sales: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.	Access: 24 hrs / 7 days per week (to allow for occasional early / late delivery or truck movements which are unavoidable due to traffic delays) Opening hours (staffed): 7:00am to 6:00pm Monday to Saturday. Closed Sunday. Waste deliveries: 7:00am to 6:00pm Monday to Saturday. Closed Sunday. Waste processing (sorting, crushing, grinding, screening): 8:00am to 5:00pm Monday to Friday. Product sales: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.

2.1.1. Staging of development – as exhibited

The proposed development will be staged, consisting of two defined project phases. Stage 1 will involve demolishing the existing sheds on the property and constructing an office building and warehouse. The two-stage development approach will enable the proponent in Stage 1 to occupy the site on a more permanent basis, by having an office building for staff to be based. It is noted that Stage 1 is currently underway and was approved by Central Coast Council

as a local development under DA52541/2017 on 17/11/2017. The building design and location was modified and approved by Central Coast Council on 21/09/2018 under DA52541/2017.2.

In the exhibited EIS, stage 2 was to involve the following construction activities (subject of this SSD development application):

- Clear selected vegetation from the front half of the site as determined by the Fauna and Flora and Vegetation Management Plan;
- Conduct civil and drainage works to ensure the site directs storm water into an on-site detention system;
- Re-develop the existing storm water catchment dam;
- Install a hardstand across the operational areas of the site;
- Allocate areas for vehicle parking and manoeuvring;
- Install a weighbridge;
- Install storage bunkers for receiving incoming material for processing and bunkers for storing processed products ready for sale;
- Install sorting equipment into the Secondary Sorting Warehouse;
- Install crushing and shredding machinery;
- Construct a noise barrier along the Eastern boundary of the site; and
- Construct two noise barriers within the operational areas of the site.

The general site layout per the exhibited EIS is presented in Figure 2.1.

2.1.2. Operational description of the development – as exhibited

The site will be developed into a fully integrated, best practice facility for recycling of sand, soil and building materials. The site will comprise seven separate functional areas. A summary of operations and the functional areas of the site, as presented in the exhibited EIS, is provided in Figure 2.2 and Figure 2.3 below.

Figure 2.1. Site layout for development - as exhibited.

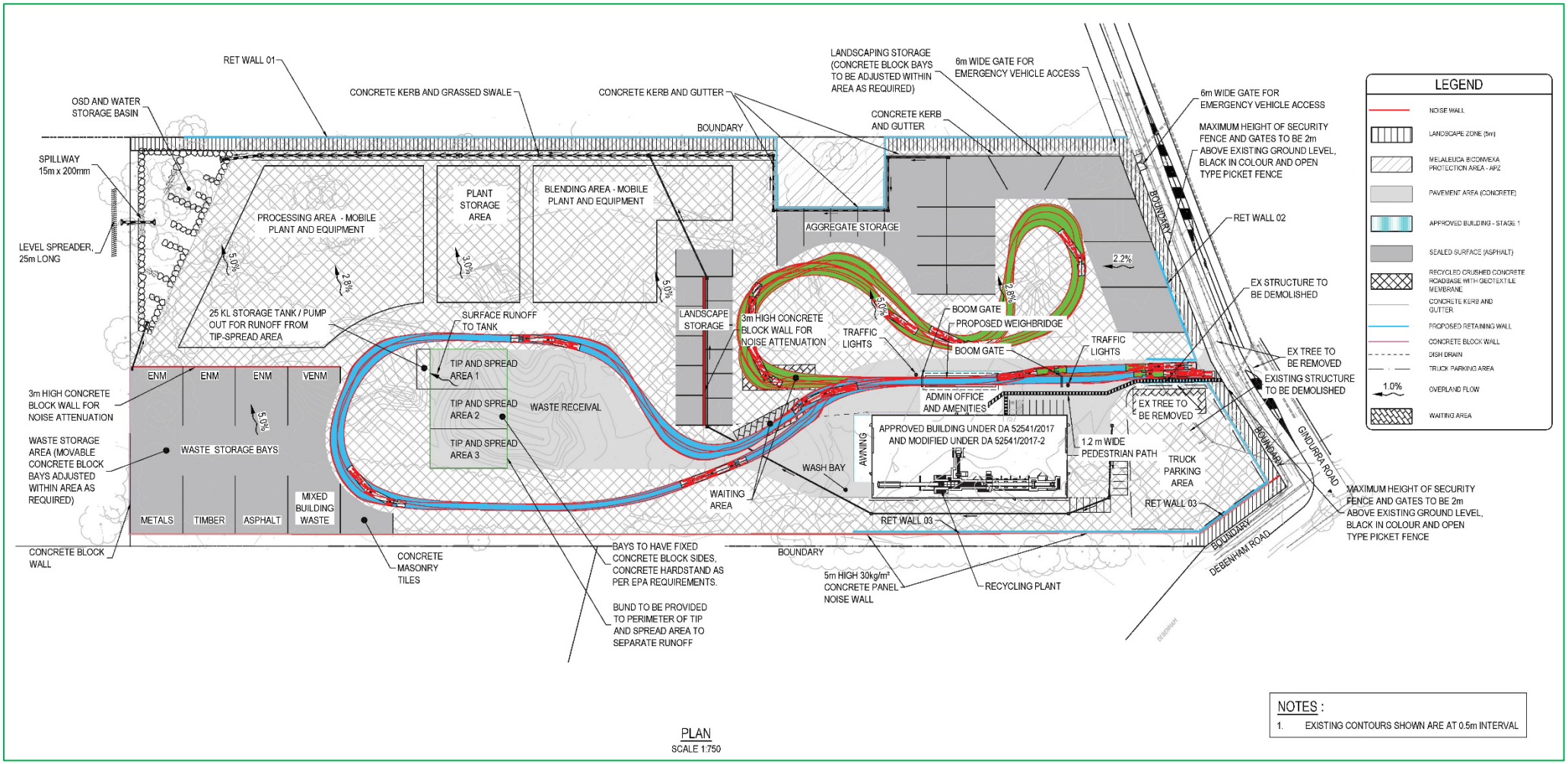


Figure 2.2. Process flow chart for recycling operations as exhibited.

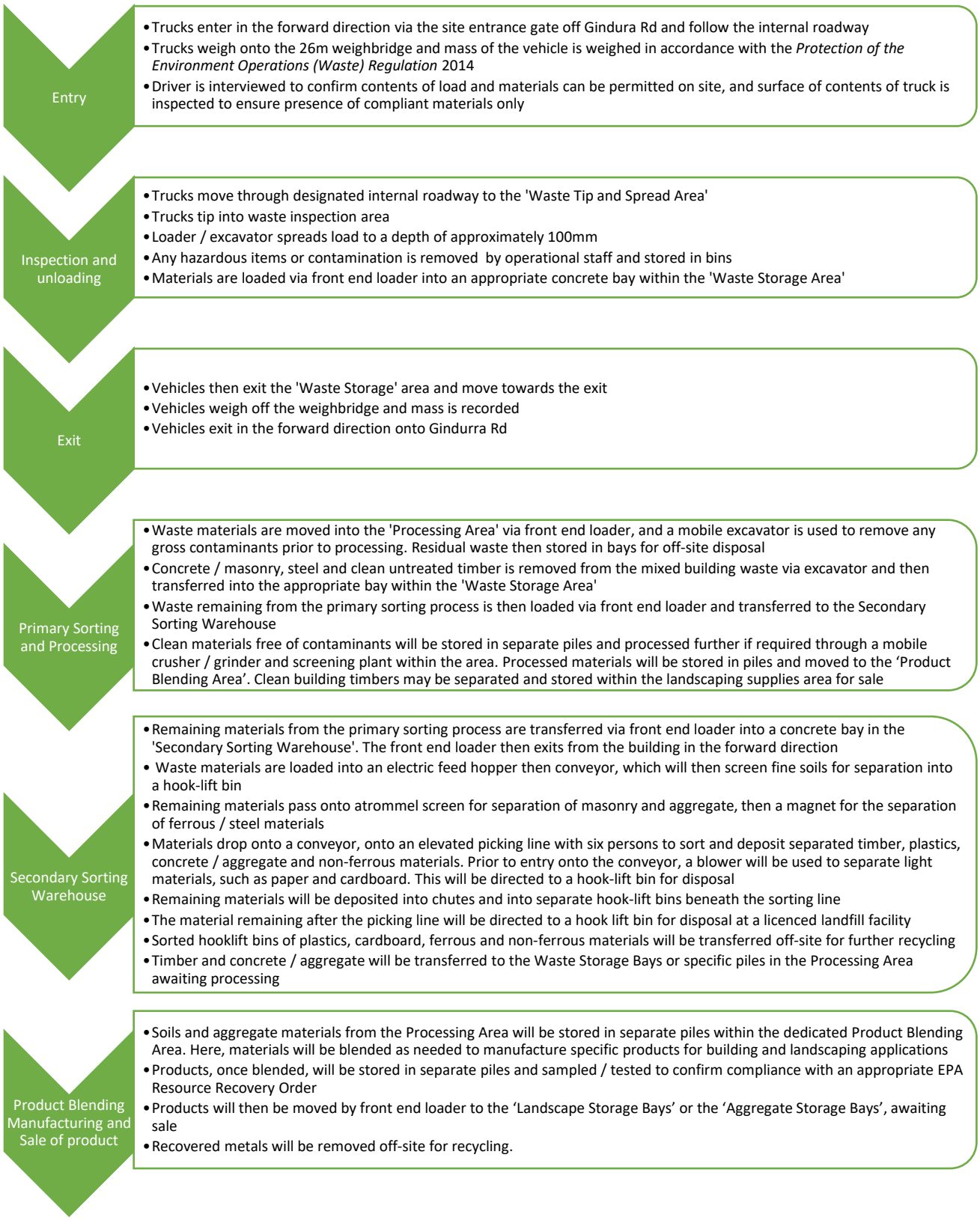
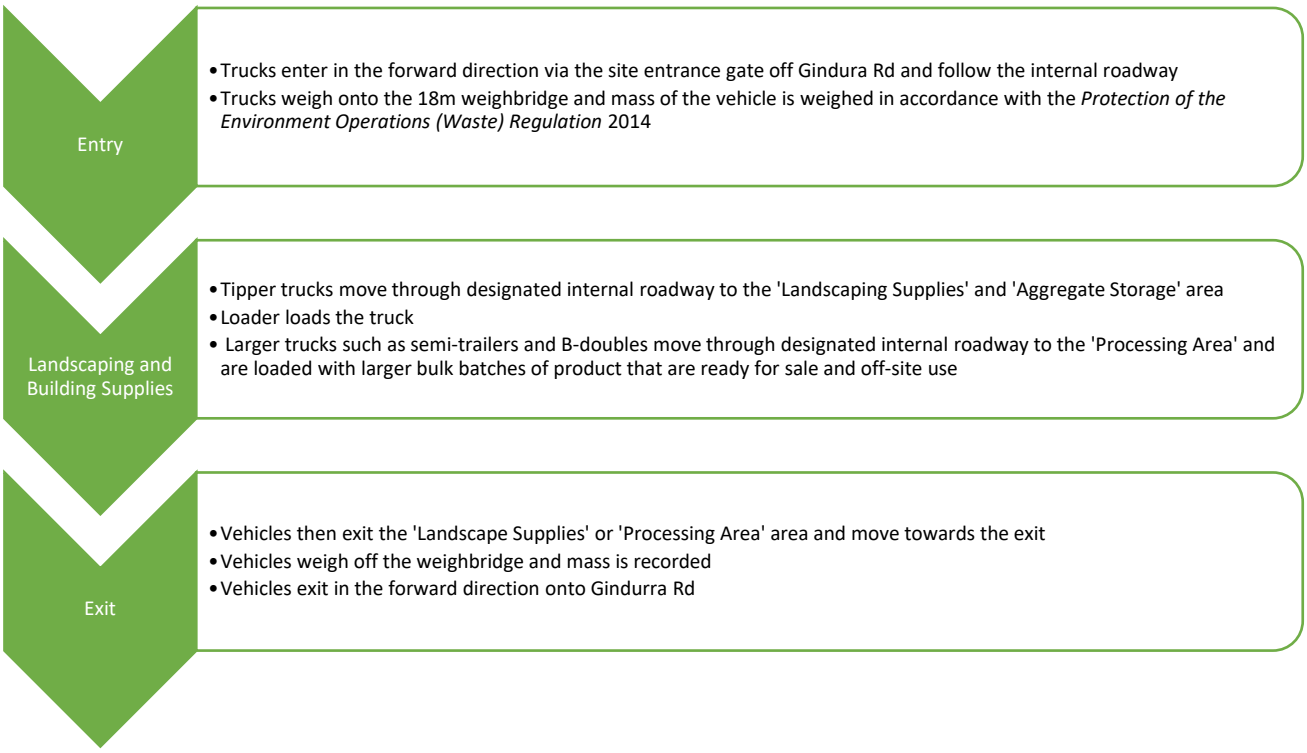


Figure 2.3. Process flow chart for landscaping and building supplies part of the operation as exhibited.



2.1. Summary of issues identified in exhibited EIS

The sections below provide a brief summary of the identified issues relating to the project, as exhibited. It should be noted that the descriptions relate to the project as originally proposed. The changes made as a result of consultation and comments received during the exhibition period are discussed in Section 5.

2.1.1. Waste Management in exhibited EIS

The waste generated during the demolition / construction phase of the project is estimated to be 18,090 m^3 of inert material (recycled concrete, rubble, and soil), 5 m^3 of scrap metal, 100 m^3 of woody garden organics and 3 m^3 of municipal solid waste (MSW). Concrete will be processed into aggregate for construction of the operational pad for the development. The metal will be recycled at a scrap metal recycling facility, off-site. The woody garden organics will be shredded to produce mulch, and either used on-site or sold. The MSW will be removed from site and disposed in a licensed landfill.

During the operational phase, up to 200,000 tpa of waste materials will be received on site for recycling. The majority will be soil or source-separated inert material. It is estimated that the recycling rate for the facility will be approximately 95%, with approximately 5,225 tpa of residual waste being removed for disposal to landfill. The recovered material will be processed into various building and landscaping products and sold from the premises.

2.1.2. Water Impacts in exhibited EIS

The on-site storm water and erosion control measures will ensure that all storm water is captured and treated on-site.

Erosion on site will be limited using concrete pavements, asphalt and crushed concrete hardstands, as well as vegetation in non-operational areas. Any sediment carried in the storm water will be captured in grassed swales,

then in sediment inlet ponds, followed by storage in an OSD basin. Sediment is to be removed regularly. A separate sediment catchment sump will be installed to collect stormwater and sediment from the waste receival and inspection area.

The on-site detention storage is proposed as part of the storage pond in the south-western corner of the site as shown on the Stormwater Management Plan. The total design storage volume of the OSD basin is 685m^3. Overflow from the OSD basin will be filtered through a Stormwater 360® Jellyfish™ device (or similar) to further capture sediment before distribution into the undeveloped bushland in the southern end of the site via a level spreader. The estimated pollutant reduction by the OSD basin is within the targets set in the *Gosford Development Control Plan* 2013.

Groundwater will be protected through the operational areas being either sealed hardstand or through the use of bentonite impregnated geotextiles under areas covered in compacted crushed concrete.

2.1.3. Soils and Contamination in exhibited EIS

A site investigation was conducted that included a review of site history, site inspection and soil sampling.

The information obtained from the review of available site history materials and site inspection identified three (3) potential Areas of Environmental Concern (AEC):

1. AEC 1 - Fill Materials of Unknown Origin - Fill materials and natural soils within the site were tested for a range of potential contaminants of concern. The samples tested reported results below the adopted criteria for the proposed development excluding 20-8613/TP3 - 0.5m, which reported a zinc concentration of 575 mg/kg which slightly exceeded the adopted ecological investigation levels. Results from three neighbouring test pits (<20m away) and all other test pits from across the site were analysed to be below the adopted criteria. The Zinc result for this sample appears to be an outlier and is considerably lower than Health Investigation Levels. Therefore, no significant risk of chemical contamination is expected across the site.
2. AEC 2 - Asbestos Containing Material (ACM) - During the sampling, multiple fragments of non-friable asbestos cement (AC) were identified on ground surfaces within the north-eastern section of the site adjacent the buildings as well as in the central section of site.
3. AEC 3 - Hazardous Building Materials - Due to the age of the onsite buildings and structures, it is likely that hazardous building materials including but not limited to asbestos containing materials and lead paint may be present within these structures.

Based on the scope and limitations of the investigation, in consideration of the site observations and sample analytical results, it was considered that the site is unlikely to pose a significant contamination risk with regards to chemical contamination. However, ACM was identified on ground surfaces within the north-eastern and central sections of site. A series of recommended mitigation measures will be implemented to reduce the risk at the site.

2.1.4. Air Quality in exhibited EIS

A risk-based assessment of the potential construction phase air quality impacts indicates that the implementation of a range of mitigation measures would be required to ensure that the risks (both health and amenity) to the surrounding community would be low or not significant.

The dispersion model predictions associated with the operational phase of the project indicate that the existing and proposed operations can be performed without additional exceedances of the air quality criteria at any residential or non-residential receptor location surrounding the project site.

A range of emissions control measures would be implemented as part of the project operation and these are discussed in detail in the main body of the report. It is considered that the measures adopted represent best practice dust control, and although additional measures may be available (such as full enclosure), these have been respectfully considered to not be appropriate for use as part of the project. The measures which are adopted have been demonstrated to ensure that the environmental objectives are achieved.

It is further recommended that a campaign of fence-line air quality monitoring is performed to provide the EPA with assurance that the site can be operated with the best practice measures outlined in the report and without giving rise to unacceptable air quality impacts.

2.1.5. Transport and Traffic in exhibited EIS

The level of operation, by 2025, was estimated to generate up to 164 vehicle trips per day consisting of staff operational vehicles, 12 tonne tippers, 32 tonne truck and dog or semis and 40 tonne B-Doubles. Over an average 8 hour working day this equates to 21 trips per hour. However, as the facility will be open for longer (11 hours per day), this is expected to be a maximum hourly traffic rate.

The site operator is anticipating that 25% of materials entering the site will come from Sydney while the remainder will be sourced locally on the Central Coast. It is expected that 100% of the products leaving the site will be used in the local area. These will be bulk loads transported in the various heavy vehicle classes listed above. There will be no sales direct to the public.

The existing road network and major intersections are currently operating at a good level of service with spare capacity and the traffic generated by the proposed development will be distributed to the road network over an 8 hour working day. The additional traffic is expected to have only a minor impact on the LoS of each of these roads and they will still be operating within their existing capacity.

From the route nominated, it is also clear that these additional trips will not have any significant impact on the operational performance of the intersections at Central Coast Highway / Kangoo Road. The intersections of the Central Coast Highway / Wisemans Ferry Road and Wisemans Ferry Road / Gindurra Road have been assessed and as each of these intersections is currently operating at acceptable levels of service with sufficient spare capacity to cater for the additional traffic generated by this proposed development the impact on the future development is acceptable.

The existing access has been reviewed on site and, given the 90 degree bend at Debenham Road, reducing vehicle speeds to less than 40km/hr sight lines at this location is appropriate.

To facilitate the right turn movement into the site it is recommended that the existing centre line marking in Gindurra Road be relocated a minimum of 3 metres south (towards the site) to provide enough width for a right turn lane into the site. The right turn lane shall provide enough storage for two B-Doubles (60 metres) with “No Stopping” signs installed. Management of vehicles internal to the site using queuing/waiting areas, traffic lights and boom gates to control access to the weighbridge is described.

2.1.6. Noise and Vibration in exhibited EIS

A noise and vibration assessment, including noise modelling, was conducted for the proposed development. The assessment found that the predicted noise emissions from the site to the surrounding environment are low. The proposed development satisfies the Project Noise Trigger Levels (PNTLs) of the NSW Noise Policy for Industry (NPI) of the NSW Environment Protection Authority during all the time periods, providing the following noise mitigation measures are included:

- 5m high noise barriers along the eastern site boundary;

- 3m high noise barriers inside the site – one adjacent to the processing zone and another two adjacent to the landscaping storage zone and tip and spread waste inspection area;
- Office/warehouse building façade construction to provide sound insulation;
- Processing building to have all doors and openings completely closed during noisy activities; and
- Processing building mechanical equipment (AC units etc.) should have a maximum aggregate sound power level of 80 dB L_{WA}.

The study concluded that the proposed materials processing facility is a complying development with respect to noise and vibration impacts and is, therefore, suitable for construction and operation.

2.1.7. Flora and Fauna in exhibited EIS

In order to facilitate the proposed works, the removal of native vegetation is required. To facilitate development of the site through each stage, the complete clearing of the entire subject site (development area) has been assumed, except for a 10 m protected buffer surrounding a population of the threatened flora species, *Melaleuca biconvexa*. A total of 2.50 ha of native vegetation is proposed to be directly impacted by the development.

Two species credit species have been confirmed on site:

1. Eastern Pygmy-possum, and
2. *Melaleuca biconvexa*

Impacts to Eastern Pygmy-possum are anticipated within vegetation zone 2 (*Red Bloodwood - Scribbly Gum / Old-man Banksia open forest on sandstone ridges of northern Sydney and the Central Coast in moderate to good condition*). A total impact of 1.41 ha to Eastern Pygmy-possum is calculated.

Fifteen (15) individuals of *Melaleuca biconvexa* have been identified on site. The population is restricted to the western edge of the Subject Site. The assessment found that no impacts are anticipated to this species as a result of the proposed development.

The proposed development has been assessed consistent with the Framework for Biodiversity Assessment, including the preparation of a site scale vegetation map and completion of the six Biometric plots and transects. The results of the assessment found that:

- 116 ecosystem credits are required;
- 28 Eastern Pygmy-Possum credits are required.

The proponent will explore the generation of credits from an on-site Biodiversity Stewardship site, before considering other options such as the purchase of credits from the market or payment to the Biodiversity Conservation Trust.

2.1.8. Fire Safety in exhibited EIS

The proposed development was assessed against the potential threat of bushfire. The proposed works relate to the construction of four unenclosed, non-habitable structures (aggregate storage bay, landscape storage bay, waste receival bay and waste storage bay). The nominated asset protection zones relate to achieving a maximum expected radiant heat load of 29 kW/m^2. This intent is achieved for the landscape storage bay and waste receival bay, however, cannot be achieved for the proposed aggregate storage bay. The proposed aggregate storage bay on the north western end of the site is located within 5m of the western boundary. In the event of a bushfire, the aggregate storage bay could be exposed to flame contact. However, the concrete storage bays should provide some radiant

heat shielding against any potential fire running from the west and south west. The proposed waste storage bay on the south eastern end of the development is located within 2m of the eastern boundary. An Asset Protection Zone (APZ) cannot be provided to the east of this structure. However, the land to the east is managed and the proposed 5m high concrete block wall / acoustic barrier will provide adequate bushfire separation from the land to the east.

The bushfire consultant recommends (where possible) that a minimum 15m APZ is provided around each proposed structure. This would provide a non-vegetated buffer to prevent potential bushfire spreading onto the subject site or fire spreading from the subject site onto the adjoining allotments. The recommended APZs are achieved for all proposed structures except for the proposed aggregate storage bay. This is a concrete open structure containing non-combustible aggregates. This structure and deficient APZ has zero influence with regards to bushfire behaviour or bushfire protection.

The proposed blending and processing areas are not defined by any building works. All proposed built structures are non-combustible and suitably located. In the event of a bushfire it is our view that the proposed development will not influence bushfire behaviour and will not increase bushfire risk for any adjoining properties.

All proposed works are to be constructed from non-combustible materials. The nominated asset protection zones are deemed to be adequate. Site access, including access via the public road system is suitable for emergency response vehicles. The development complies with Planning for Bushfire Protection (2006) with regards to the provision of water. The requirements for electricity and gas (if applicable) can also be complied with. We recommend that at bushfire emergency evacuation plan is prepared such that employees and visitors are informed about suitable egress routes away from the site in the event of bushfire. Compliance with the NCC (2016) via compliance with AS3959, the Australian Standard for the Construction of Buildings in Bushfire Prone Areas can also be achieved.

2.1.9. Heritage in exhibited EIS

1.1.1.1 Historical heritage

The assessment has identified that the study area likely contains the archaeological remains of the 1920s cottage and associated buildings in the north eastern section. The significance assessment has identified that these archaeological remains do not contain any significant fabric or research potential and therefore does not require any management. The southern border of the study area is adjacent to a state listed conservation area, Mount Penang Parklands and as such required an assessment of possible impacts resulting from the proposed development. The works are confined to the northern section of the study area with no plans to use the southern section. The significance of the Mount Penang Parklands includes the visual relationship of the conservation area with its surrounds. Therefore, the southern portion of the study area should remain undeveloped to minimise any visual impacts. Built infrastructure within the study area should not exceed the height of extant buildings. It should also be mentioned that cumulative impacts of any future developments within the surrounds of Mount Penang Parklands will contribute the loss of the Parklands significance and should therefore be managed appropriately.

1.1.1.2 Aboriginal heritage

As part of the Aboriginal archaeological assessment, background research was undertaken for the study area, including a search of the Aboriginal Heritage Information Management System (AHIMS) database and a review of regional and local archaeological survey reports. The AHIMS search identified 35 Aboriginal archaeological sites within a 5 x 5 kilometre search area that encompassed the study area. None of these recorded sites were located within the study area. Previous surveys within the local and regional areas and their findings have been assessed in association with the geology and soil landscape characteristics of the study area to provide a series of predictive statements of the study area's archaeological potential. From the results of the desktop assessment the study area was assessed to possess low to moderate archaeological potential, as it did not possess landscape features that were closely associated with site distribution patterns for the region.

An archaeological survey of the study area was undertaken on the 2 February 2018, with two representatives of the Darkinjung Local Aboriginal Land Council, Anthony Freeman and Timothy Oliver. The field investigation was conducted in accordance with requirements 5 to 10 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 'the code' (DECCW 2010). The field investigation involved the recording of the disturbances within the study area and focused on the identification of areas that may possess potential for Aboriginal archaeological sites and objects. The exposure and ground surface visibility (GSV) within the study area was also noted. Areas of exposure were investigated in order to identify any Aboriginal objects/sites that might be present upon the surface. The study area was observed to be highly disturbed by human activity within the area. Poor levels of ground surface visibly and the lack of appropriate sandstone exposures and overhangs suitable for rock engravings, shelters and grinding grooves within the area also contributed to the low potential for identifying these dominant site types within the study area.

The results of the Aboriginal Heritage assessment indicated that the study area possessed low archaeological potential.

2.1.10. Visual impacts in exhibited EIS

The existing landscape character is a mix of industrial development, rural properties and bushland ridgelines and corridors. The scale of the built form in the proposal is small compared to existing industrial developments in the Somersby Industrial Area and is more in keeping with adjacent rural residential developments.

The implemented design principles of this report seek to avoid, reduce and where possible, remedy adverse effects on the environment arising from the proposed development. Implementation of the mitigation measures, which propose a combination of primary mitigation measures (site planning principles) and secondary measures (landscaping, street trees, colour and material selections) are proposed to reduce localised negative impacts.

With the implementation of the recommended mitigation measures, the proposed development could be undertaken whilst maintaining the core landscape character of the area and have a negligible visual impact on the surrounding visual landscape.

2.1.11. Waste and chemicals in exhibited EIS

An assessment was conducted of the risk posed by the management and handling of chemicals during the construction and operational phases of the project. The assessment found that the risk of harm due to chemicals spills and leaks during the construction and operational phases of the project is deemed low. Containment measures and clean-up of the incident will address the negligible harm to environment, consistent with existing pollution incident response procedures in place at the site.

A range of mitigation measures are proposed to minimise impacts from chemicals during the different stages of the project. These measures will help mitigate against the impacts of a chemical spill or fire, thereby reducing the potential for harm to receiving waterways.

3. Analysis of submissions

A total of 1,329 submissions were received during the public exhibition period; 1308 public submissions and 21 submissions from organisations (including government agencies). The large number of public submissions is due to an organised campaign by a local group, which provided a form letter for members of the public to send in. It should be noted that there was duplicate submissions from some people.

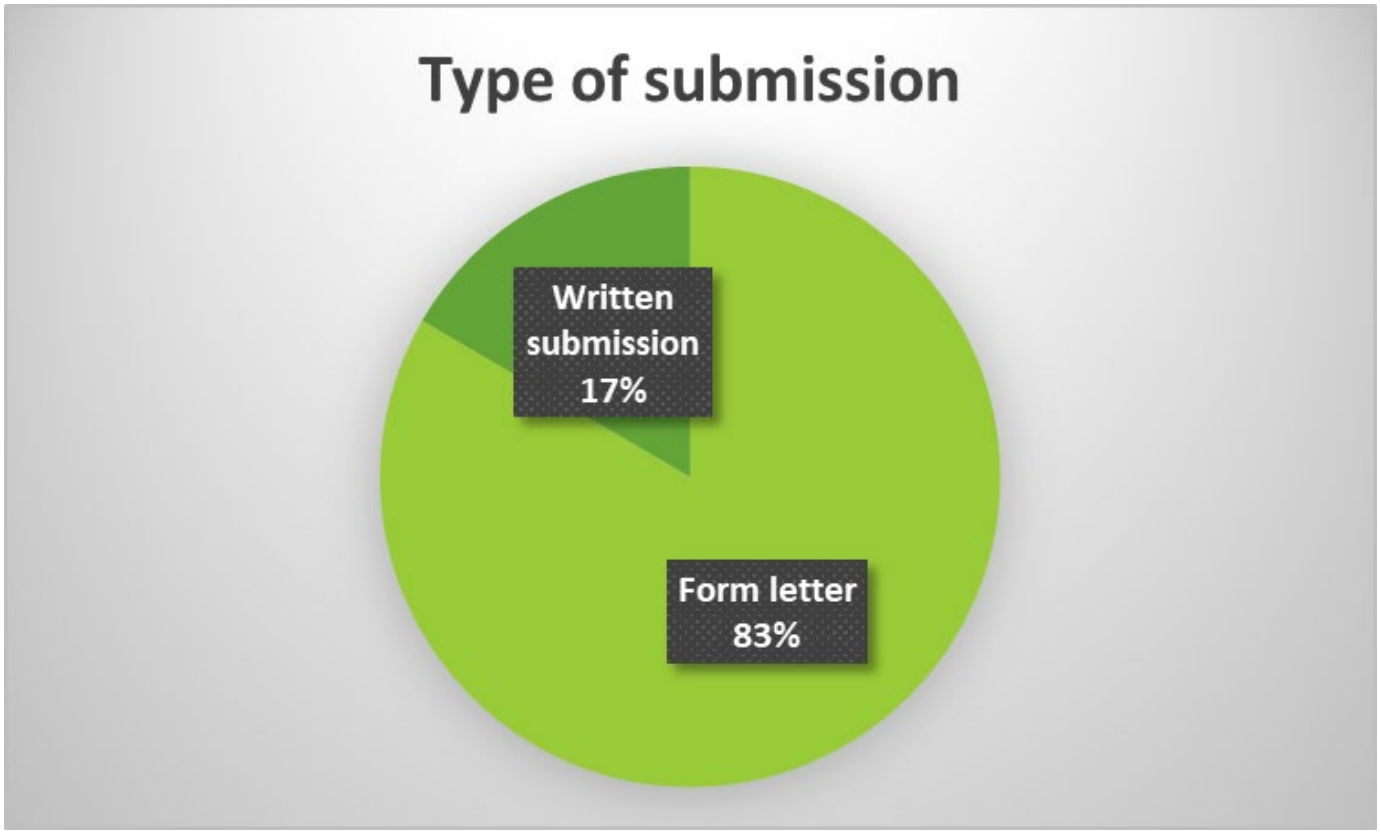
The individual submissions can be found on the DPIE website: https://www.planningportal.nsw.gov.au/major-projects/project/24101.

3.1. Statistical data about submissions

3.1.1. Individual public submissions

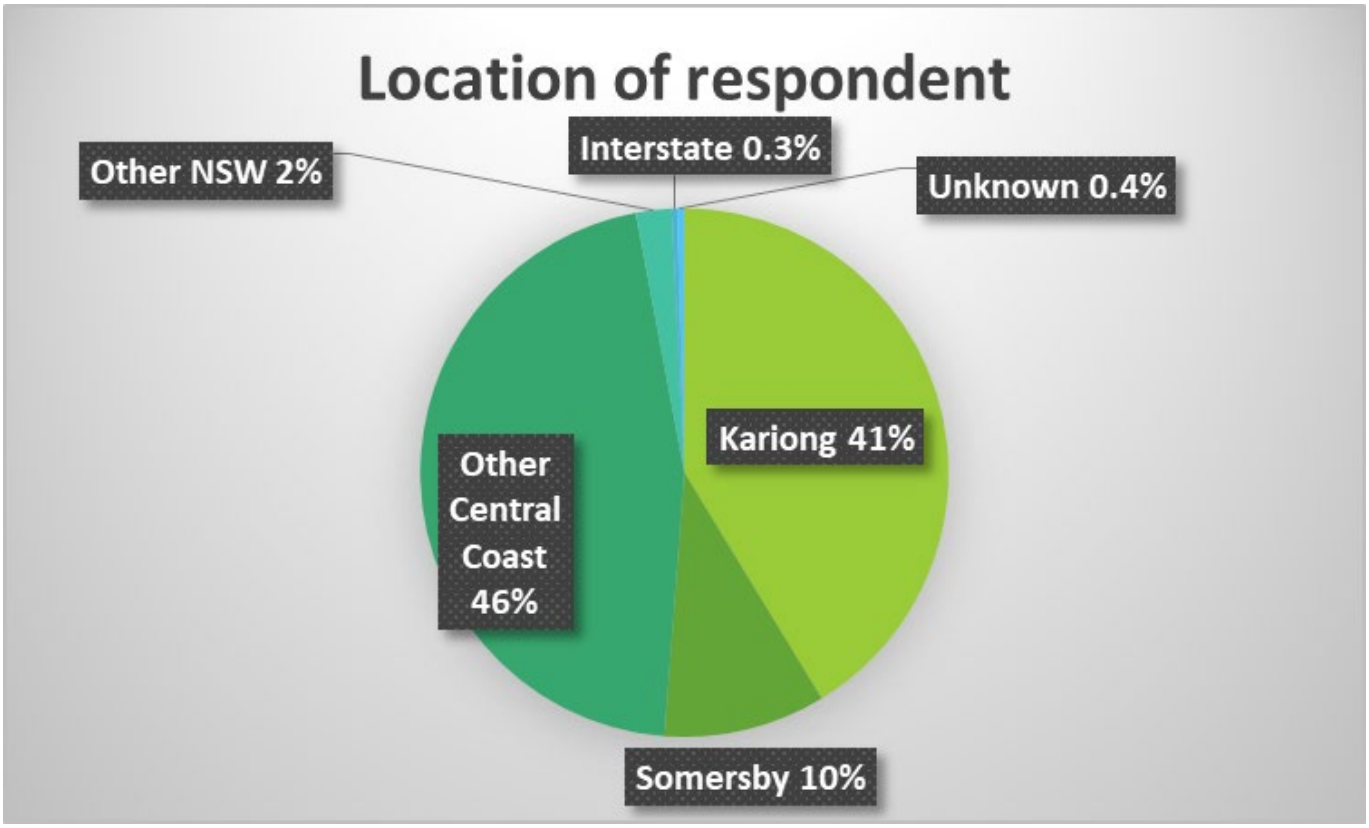
An analysis of the public submissions received within the public exhibition period found approximately 1,150 individual (non-duplicate) submissions. Of these, 959 were submitted as a form letter and 191 were submitted as a written submission (letter or email). The form letter had a list of issues where people could tick a box against the issues that concerned them. It should be noted that some of the written submissions were duplicates submitted by different people, which also indicates a level of co-ordination in some written submissions.

Figure 3.1. Breakdown of public submissions by type.



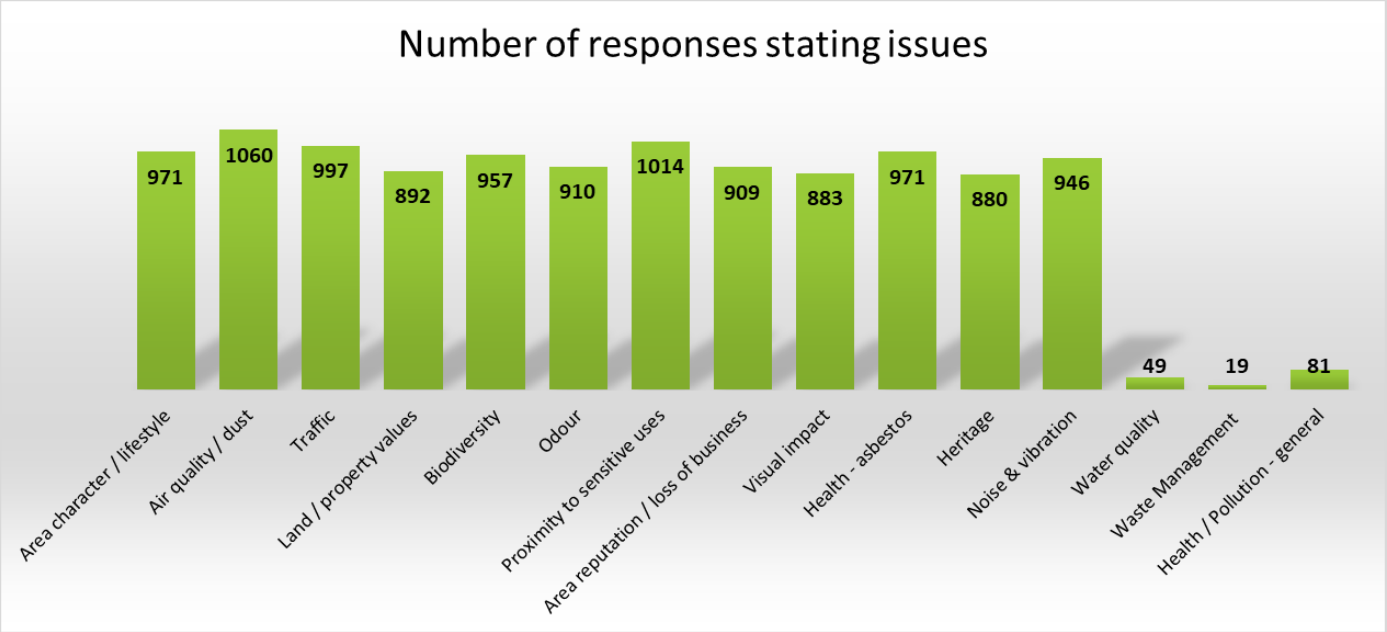
Most public submissions were from people living in the Central Coast area. However, most of the respondents live approximately 1km or further from the proposed facility. As identified in the EIS, the residential area of Kariong is over 1km from the proposed development site.

Figure 3.2. Breakdown of submissions by location of residence.



The concerns raised covered a wide range of environmental issues. The issues most submissions raised a concern about were the ones listed in the form letter. However, a number of written submissions raised these issues separately. Also, several form letters raised other issues, such as the impact on water quality and the need to better manage waste resources.

Figure 3.3. Issues raised in the public submissions.



It should be noted that at least some misinformation about the project was spread through the organised community campaigns, such that the proposal was for a landfill, not a recycling facility. This was reflected in some of the comments and feedback received on the project.

A summary of the issues raised by the public submissions is as follows.

- Area character / lifestyle – Some respondents were concerned that the development was not consistent with the overall character of the area. Many respondents had moved to the Central Coast for its semi-rural lifestyle and large tracts of undeveloped bushland.
- Air quality / dust – Most respondents were concerned about dust generated at the site, and the impact this would have on surrounding properties, as well as the surrounding environment. The issue of silica in the dust was specifically raised.
- Traffic – The increased traffic, particularly large vehicles, on local roads was a concern to residents. Respondents felt this was an increased traffic hazard.
- Land / property values – Many respondents were concerned that the development would negatively impact the value of their property, causing the value of their land and property to fall.
- Biodiversity – Concerns were raised about the land clearing required for the development, and specifically about the impact on the pygmy possum, which is found in the area.
- Odour – Odour was raised as a concern. This seems to be from the misunderstanding of the type of waste to be received at the site.
- Proximity to sensitive uses – Some respondents were concerned that the facility was too close to sensitive land uses, including the riding school to the south of the property and nearby residences.
- Area reputation / loss of business – This is related to the impact on the overall character of the area, but specifically about the potential impact on tourism and other businesses in the area through the area losing its reputation as a non-industrial area.

- Visual impact – Some people expressed concern over the potential negative visual impact of the development. This was mainly through the tick box form. Therefore, it is not possible to know what the specific visual impacts they are concerned about are.
- Health / asbestos – Asbestos was raised as a specific concern, with many strongly worded submissions raising concerns about asbestos dust emissions from the site.
- Heritage – This related to heritage values at the site, and specifically to the potential impact on aboriginal heritage in the area.
- Noise and Vibration – This mainly related to noise generated by increased traffic and large vehicles. However, a number of respondents mentioned noise generated at the site.
- Water quality – A few respondents raised concerns about the potential negative impact on groundwater and surface water run-off.
- Waste management – A few submissions expressed concerns about the Central Coast receiving "outside" waste, i.e. waste from Sydney. They were concerned that the Central Coast was being used as a "dumping ground" for Sydney waste. Others raised the more general issue of how waste is managed in NSW, with a preference for recycling over disposal.
- Health/pollution general – A number of submissions expressed a general concern that the development would generate pollution, which would have a negative impact on the health of people in the area.

While many of the concerns raised were based on a misunderstanding of the project, there were a number of legitimate issues of concern that need to be addressed to provide the local community a greater peace of mind about the development. Kariong Sand and Soil Supplies has considered the submissions received and made substantial improvements to the mitigation measures deployed at the facility. These are discussed in detail in following sections.

3.1.2. Submissions by private organisations

A list of private organisations that provided written submissions during the public exhibition phase is provided in Table 3.1. The organisations are a mix of community organisations and local businesses. It should be noted that the Kariong Progress Association provided two submissions. The Mountain Districts Association submitted the same submission twice, which was counted as two submissions by DPE.

Table 3.1. Private organisations that provided a written submission during the public exhibition phase.

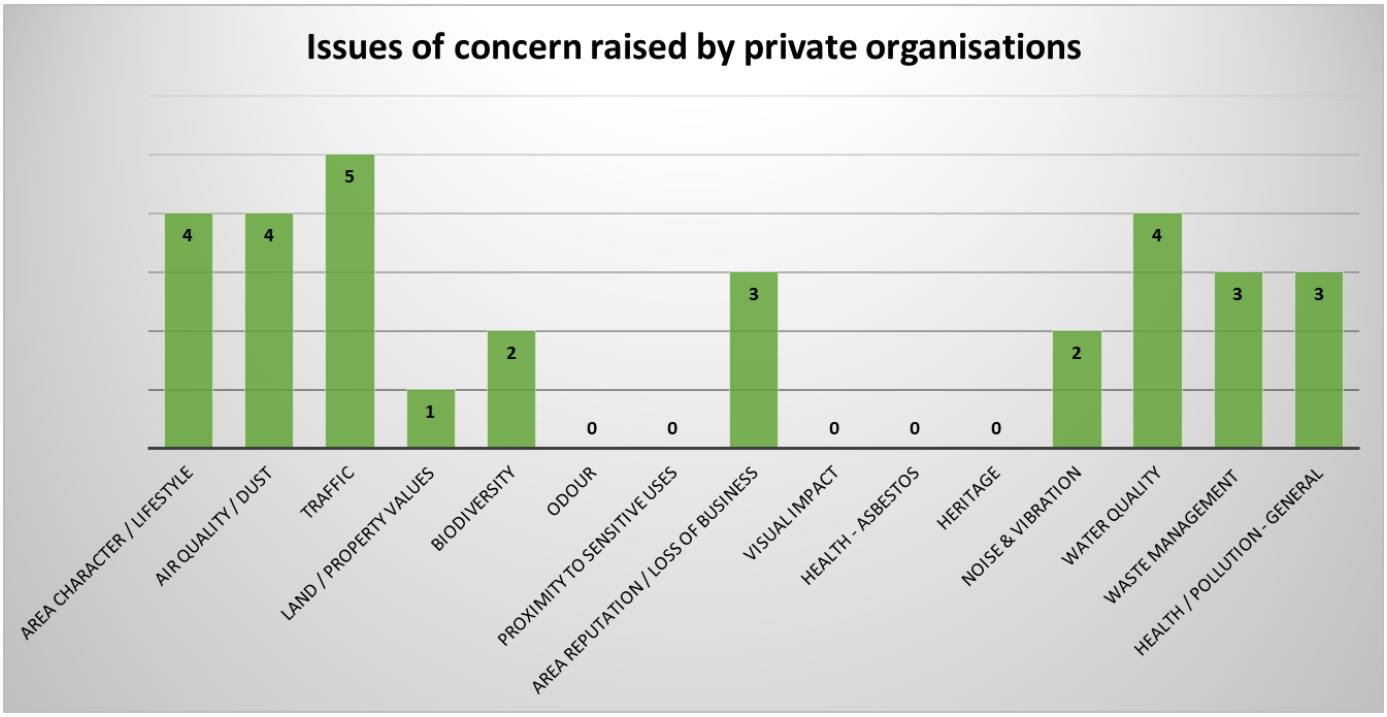
Response No.	Name	Location	State
309226	Kariong Progess Association 1st submission (email)	Kariong	NSW
323934	Kariong Progess Association 2nd submission (letter)	Kariong	NSW
315474	The Party Hire Company	Somersby	NSW
316346	Mangrove Mountain Districts Community Group Inc.	Mangrove Mountain	NSW
316896	Marketlink Distribution Pty Ltd	Somersby	NSW
317366 & 318570 (NB: same submission submitted twice)	Mountain Districts Association	Mangrove Mountain	NSW
321548	Delta Laboratories Pty Ltd	Somersby	NSW
323985	Darkinjung Local Aboriginal Land Council	Watanobbi	NSW
318482	Coastal Design Link	Terrigal	NSW

Response No.	Name	Location	State
314722	Ausgrid	Sydney	NSW

Figure 3.4 provides an overview of the issues raised by the private organisations in their submissions. The issues of concern are mainly traffic, air quality (specifically dust) and impact on local water quality. A number of the submissions questioned whether the development was consistent with Council's published intention for the industrial park, which they understood to be for small, "clean" businesses only. A number raised the bad experiences that they had with other waste facilities.

The Darkinjung Local Aboriginal Land Council's submission consisted of an email confirming that they had reviewed the Aboriginal Heritage Impact Assessment report, and had no issues or comments.

Figure 3.4. Summary of issues raised by private organisations.



3.1.3. Submissions by government agencies

The following government bodies provided comments on the proposed development:

1. Central Coast Council
2. Department of Industry
3. Department of Planning and Environment
4. Environment Protection Authority
5. Fire and Rescue NSW
6. Transport for NSW
7. Water NSW
8. (former) Office of Environment and Heritage (now Biodiversity and Conservation Division, DPIE)
9. Roads and Maritime Services (now part of Transport for NSW)
10. NSW Health

A detailed list of the issues raised, and a summary of the responses, is provided in Appendix 1. Most comments related to water management and water issues at the site. However, traffic, waste management, air quality, noise, biodiversity and heritage issues were also raised.

All comments were considered and addressed in the revision of the development design and the EIS. Section 5 provides details of the changes to the project as a result of the comments received and further input from the additional studies conducted.

4. Action taken during and after public exhibition

Following the strong response during the public exhibition phase, which appeared based on some misinformation, the proponent embarked on a comprehensive community engagement program. In addition, in response to requests and comments from government agencies, further environmental studies were undertaken to ensure the development would have minimal impact on the surrounding properties and environment.

4.1. Engagement activities

4.1.1. Engagement with government agencies

The primary source of feedback on the proposed project was via the written comments received after the EIS exhibition. In addition, clarification on comments by EPA were sought directly with the EPA and the proponent met with DPIE to discuss the proposed changes to the project.

4.1.2. Community engagement

A strategy for engaging and seeking feedback from nearby residents, business operators within the Somersby Industrial Estate and residents in Kariong, Somersby and the broader Central Coast was developed and implemented between August and November 2019.

A number of community engagement tools were prepared and delivered. A range a print, online, media and in person meetings were chosen to maximise participation, increase understanding and maximise engagement during this phase of the project.

Table 4.1 provides a summary of the print, online, media and in-person meetings delivered following the updates to the environmental impact assessment investigations. The dates that these activities were conducted is also given, with the outcome sought from each engagement activity listed.

Table 4.1. Community engagement activities delivered between August and November 2019 to seek feedback on the project and build community understanding.

Community engagement activity	When did this occur?	Stakeholder group reached	Engagement sought?
Kariong Sand and Soil Supplies web site https://www.kariongsandandsoil.com.au/ **See Figure 4.1 for selected screenshots**	Launched on Monday 19th August	+ Business operators in Somersby Industrial Estate + Neighbours + Central Coast and broader community	+ Improve community understanding of project + Feedback via phone or via online form
Fact sheet and covering letter delivered across Somersby and Kariong **See Figure 4.2 (for page 1 of fact sheet) and Attachment 5 (for full fact sheet and letter)**	Wed 4th September – 1,000 letters and fact sheets were hand delivered to business operators in Somersby Industrial Estate, neighbours and residents in northern part of Kariong township.	+ Business operators in Somersby Industrial Estate + Neighbours + Residents in northern part of Kariong township	+ Improve community understanding of project + Feedback requested via phone, email, web or in writing

Community engagement activity	When did this occur?	Stakeholder group reached	Engagement sought?
Letters inviting neighbours to meet and meetings with neighbours **See Attachment 6 of Community Consultation Report**	Letters hand delivered to neighbours 11th September 2019 (Borg letter emailed)	Letters delivered to: + 12 Acacia Rd + 223 Debenham Rd + 16 Acacia Rd + 32 Acacia Rd + 252 Debenham Rd + 242 Debenham Rd + 2 Wella Way (Borg)	+ Face to face meetings held with: + 12 Acacia Rd + 242 Debenham Rd + 252 Debenham Rd + Improve community understanding of project + Feedback
Meeting with members of Mangrove Mountains & Districts Community Group	Face to face meeting on site at 90 Gindurra Rd, with a tour of the site on 26th September 2019	+ Secretary and members of the group	+ Improve community understanding of project + Feedback + Strategy for working with the community
Meeting with MP for Gosford, The Hon. Liesl Tesch	Face to face meeting in Woy Woy Office, 2nd October 2019	+ Member of Parliament	+ Improve community understanding of project + Feedback
Meeting with Executive of Kariong Progress Association	Face to face meeting on site at 90 Gindurra Rd, with a tour of the site	+ Meeting with executive team	+ Improve community understanding of project + Feedback + Strategy for working with the community
Newsletter story advertisement in Mangrove Mountains & Districts Community News **See Figure 4.3, Figure 4.4 and Attachment 7 of Community Consultation Report**	Newsletter printed and distributed on 25th October.	+ Issued to 3,000 business and residents. The Community News is delivered to letter boxes in the Mt White, Somersby, Central Mangrove, Mangrove Mountain, Peats Ridge, Calga, Kulnura,	+ Improve community understanding of project + Feedback + Story sought to provide background on project and

Community engagement activity	When did this occur?	Stakeholder group reached	Engagement sought?
		Bucketty, Yarramalong, Dooralong and Jilliby areas. Bulk quantities are sent to Spencer, Mooney Mooney, Wyong, Kariong, Laguna, Wollombi and Gosford CBD and Council Offices.	advertise a public meeting and field day for residents
Newsletter story and advertisement in Kariong Connections Newsletter **See Figure 4.5 and Attachment 8 of Community Consultation Report**	Newsletter printed and distributed on 26th October.	+ Issued to 2,000 business and supported by KPA Facebook advertising	+ Improve community understanding of project + Feedback + Story sought to provide background on project and advertise a public meeting and field day for residents
Public meeting – Mangrove Mountain Public Hall **See presentation at Attachment 9 of Community Consultation Report**	Wed 30th October (6.30-7.30pm)	Members of Mangrove Mountains & Districts Community Group and general community	+ Improve community understanding of project + Feedback
Meeting with Central Coast Plateau Chamber of Commerce **See presentation at Attachment 10 of Community Consultation Report**	Tues 5th November (7-8pm)	Members of Central Coast Plateau Chamber of Commerce committee	+ Improve community understanding of project + Feedback
Public meeting – Kariong Hall **See presentation at Attachment 11 of Community Consultation Report**	Wed 6th November (6.30 to 7.30pm)	Members of Kariong Progress Association and general community	+ Improve community understanding of project + Feedback
Media release **See Attachment 12 of Community Consultation Report for the media release**	Media release issued on 4th November 2019	+ Central Coast Express Advocate + Central Coast Newspapers	+ Motivate attendance at field days + Improve community

Community engagement activity	When did this occur?	Stakeholder group reached	Engagement sought?
See media story published in Central Coast Express Advocate at Attachment 13 of Community Consultation Report		+ ABC Radio Erina + 2GO radio + NBN TV Central Coast + SEA FM + Star FM + Leisl Tesch MP	understanding of project + Feedback
Field day 1 on site, 90 Gindurra Rd, Somersby	Sat 9th November 11–12pm (followed by sausage sizzle)	Mangrove Mountain and districts residents	+ Improve community understanding of project + Feedback
Field day 2 on site, 90 Gindurra Rd, Somersby	Sat 16th November 11 – 12.00pm (followed by sausage sizzle) – event cancelled – no RSVPs	Kariong and Somersby residents	+ Improve community understanding of project + Feedback

Figure 4.1. Selected screenshots from the web site launched in August 2019, https://www.kariongsandandsoil.com.au/.

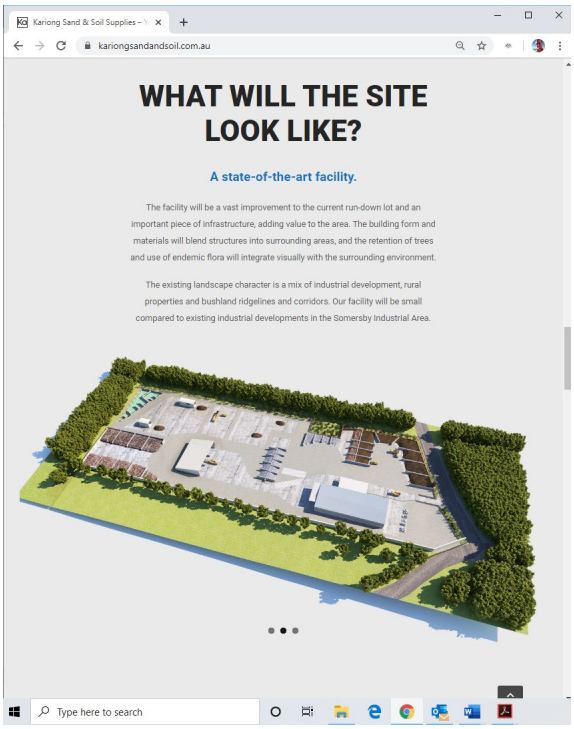


Figure 4.1 (continued). Selected screenshots from the web site launched in August 2019, https://www.kariongsandandsoil.com.au/.

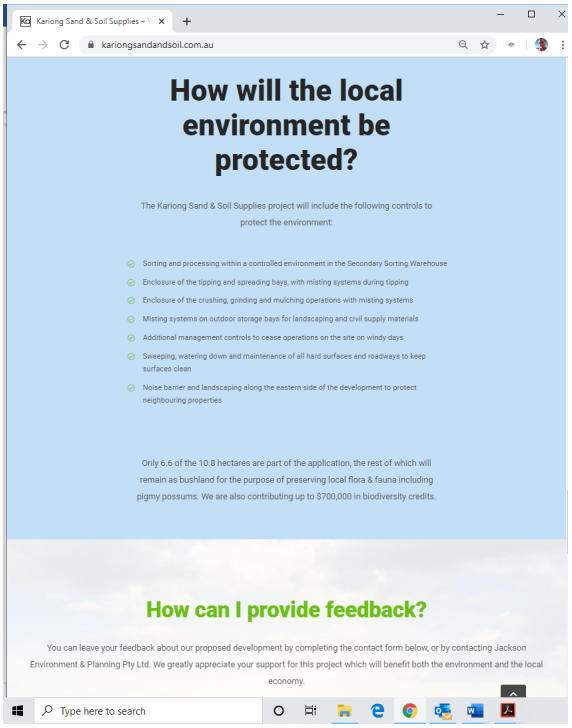


Figure 4.2. Fact sheet distributed to 1,000 properties in Somersby and Kariong in August 2019.

Kariong
SAND & SOIL SUPPLIES

100% Recycled Landscape & Building Supplies

A sustainable future on the Central Coast

Fact Sheet

About the development

Following the purchase of a sand and soil facility located inside the Somersby Industrial Park at 90 Gindurra Rd, family owned company Davis Earthmoving & Quarrying Pty Ltd recently submitted a Development Application to transform the site into a state-of-the-art facility transforming sand, soil and building materails into 100% recycled building and landscaping supplies. The facility aims to produce a number of building and landscape products, providing them for re-use mainly in the Central Coast region.

Current status of the project

The Environmental Impact Statement (EIS) and development application was issued for public comment by the Department of Planning and Environment between February and March 2019. Davis Earthmoving & Quarrying have reviewed these comments in detail and an updated EIS has been prepared to demonstrate how the development will be built and operated to protect the community and the environment, whilst creating jobs and supporting the Central Coast economy.

To address community feedback on the project, Kariong Sand & Soil Supplies are proposing some further site upgrades to ensure that no impacts will occur on the environment or the community. This includes:

- Building covers to enclose the crushing and mulching operations to minimise dust and noise
- A three-sided building around the waste receival area to ensure that water quality is protected and dust is minimised
- Concrete kerbing on the exit to the site to prevent any trucks using Debenham Rd
- Further investigations to ensure that Aboriginal Heritage and biodiversity impacts are avoided or off-set
- A commitment that recycling will increase in stages, only after independent testing is done to prove the facility is performing to the highest environmental standards.

Our development application has been updated to reflect these changes and we are seeking your feedback prior to the final assessment by the Independent Planning Commission. Please see the last page on how to provide comment.

Why is a recycling facility needed on the Central Coast?

The NSW government has set ambitious targets to reduce the amount of construction and demolition waste going to landfill. This facility will help the government achieve this target by 2021.

The Department of Planning and Environment has labelled the project a 'state significant development' as it will greatly help the government reach it's 80% recycling of construction and demolition waste targets by 2021. The project will also provide competitive recycling options for local businesses who currently have limited access to these facilities nearby. This should also lower the rates of illegal dumping in the area.

Figure 4.3. Newsletter story published in the Mangrove Mountain & Districts Community News on 25th October 2019 (circulation 3,000). See also Attachment 7.

Best Practice Recycling Project Proposed for the Central Coast – Kariong Sand and Soil Supplies

Artists impression of the Kariong Sand and Soil Supplies facility from Gindurra Rd.

Good things are happening on the Central Coast with the proposed development of a state-of-the-art facility to turn sand, soil and surplus building materials into 100% recycled landscaping supplies.

The Kariong Sand and Soil Supplies development is proposed for 90 Gindurra Rd, Somersby. The site is located on the eastern side of the Somersby Industrial Estate and was approved in 1992 as a sand and soil recycling facility.

The Davis Family purchased the site in 2017 with a vision to turn the old, run-down recycling facility into an advanced facility for recycling left over materials from civil construction and building projects for the Central Coast. Mr Eric Davis, CEO of Davis Earthmoving & Quarrying said "The facility will accept and recycle sand/ soil, timber, metals, concrete, bricks, tiles, asphalt, stumps and rootballs. No asbestos, smelly or hazardous wastes will be accepted."

"The development will include the clean-up and enhancement of the front 6 hectares of the site, into a professional landscape supplies business supplying local builders, landscapers and trades with quality aggregates, soil and mulches for building projects" Mr Davis said.

The rear 4 hectares of the site will be retained as bushland, to preserve important vegetation and fauna which have been identified as important for the area. "The whole site has been designed with environmental best practice and sustainability in mind" said Mr Davis. "This includes keeping all recycling operations indoors, with strict control of dust and noise. All areas will have a hardstand to protect soils and water quality. Noise barriers are in place to avoid sound impacting neighbours. An advanced water capture and recycling system has been designed to treat and reuse precious water received on the site for operations and dust controls."

"We expect 75% of the materials we recycle to come from the Central Coast and close to 100% of recycled landscaping supplies will be used in the region", said Mr Davis.

"The population of the Central Coast is forecast to grow by up to 20% by 2036, resulting in a 26% increase in residential development, and this facility will help recycle materials from all this building work."

Following feedback earlier this year the facility's design has been amended to take into account community concerns and recycling will increase in stages following independent testing that the facility is performing to the highest environmental standards.

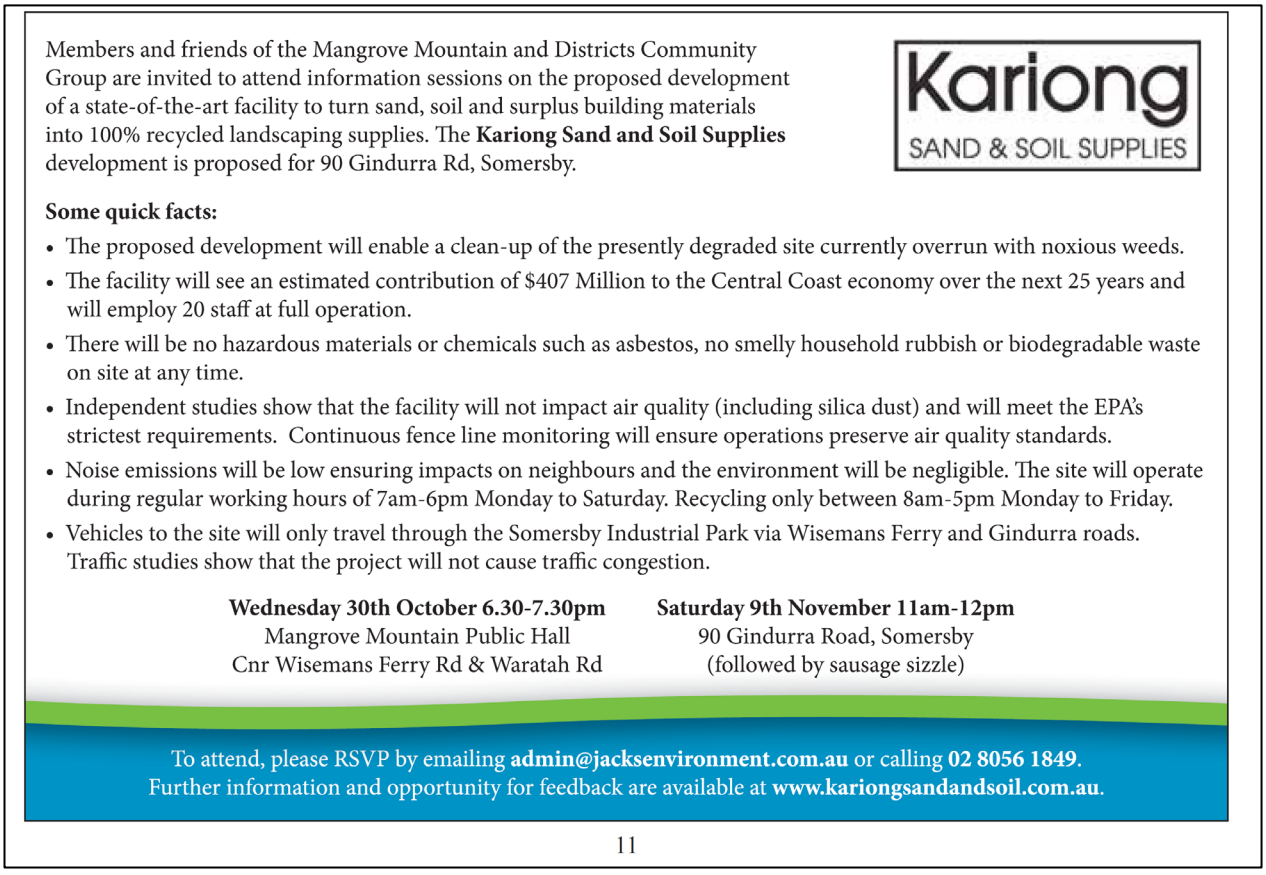
These commitments were discussed in a meeting with executive of the Mangrove Mountain and Districts Community Group on Thursday 26th September. This meeting was attended by Mr Eric Davis, Davis Earthmoving & Quarrying, and Dr Mark Jackson of Jackson Environment and Planning, who has been leading the planning application for the development.

The NSW Government has set ambitious targets to reduce the amount of building waste going to landfill with recycling targets of 80% by 2021. The Somersby facility will also provide competitive options for local companies who currently have limited access to recycling facilities and has potential to reduce illegal roadside dumping in the area.

Some quick facts:

• The proposed development will enable a comprehensive clean-up of

Figure 4.4. Advertisement published in the 25th October 2019 edition of the Mangrove Mountain & Districts Community News to promote a public meeting and field day for the community (circulation 3,000). See also Attachment 7.



Members and friends of the Mangrove Mountain and Districts Community Group are invited to attend information sessions on the proposed development of a state-of-the-art facility to turn sand, soil and surplus building materials into 100% recycled landscaping supplies. The **Kariong Sand and Soil Supplies** development is proposed for 90 Gindurra Rd, Somersby.

Kariong
SAND & SOIL SUPPLIES

Some quick facts:

- The proposed development will enable a clean-up of the presently degraded site currently overrun with noxious weeds.
- The facility will see an estimated contribution of $407 Million to the Central Coast economy over the next 25 years and will employ 20 staff at full operation.
- There will be no hazardous materials or chemicals such as asbestos, no smelly household rubbish or biodegradable waste on site at any time.
- Independent studies show that the facility will not impact air quality (including silica dust) and will meet the EPA's strictest requirements. Continuous fence line monitoring will ensure operations preserve air quality standards.
- Noise emissions will be low ensuring impacts on neighbours and the environment will be negligible. The site will operate during regular working hours of 7am-6pm Monday to Saturday. Recycling only between 8am-5pm Monday to Friday.
- Vehicles to the site will only travel through the Somersby Industrial Park via Wisemans Ferry and Gindurra roads. Traffic studies show that the project will not cause traffic congestion.

Wednesday 30th October 6.30-7.30pm
Mangrove Mountain Public Hall
Cnr Wisemans Ferry Rd & Waratah Rd

Saturday 9th November 11am-12pm
90 Gindurra Road, Somersby
(followed by sausage sizzle)

To attend, please RSVP by emailing **admin@jacksenvironment.com.au** or calling **02 8056 1849**.
Further information and opportunity for feedback are available at **www.kariongsandandsoil.com.au**.

11

Figure 4.5. Newsletter story and advertisement to promote a public meeting and field day in the Kariong Connections News 26th October 2019 (circulation 2,000). See also Attachment 8.

Best Practice Recycling Project Proposed for the Central Coast – Kariong Sand and Soil Supplies

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The Kariong Sand and Soil Supplies development is proposed for 90 Gindurra Rd, Somersby. The site is located on the eastern side of the Somersby Industrial Estate and was approved in 1992 as a sand and soil recycling facility.

The Davis Family purchased the site in 2017 with a vision to turn the old, run-down recycling facility into an advanced facility for recycling left over materials from civil construction and building projects for the Central Coast. Mr Eric Davis, CEO of Davis Earthmoving & Quarrying said "The facility will accept and recycle sand/soil, timber, metals, concrete, bricks, tiles, asphalt, stumps and rootballs. No asbestos, smelly or hazardous wastes will be accepted."

"The development will include the clean-up and enhancement of the front 6 hectares of the site, into a professional landscape supplies business supplying local builders, landscapers and trades with quality aggregates, soil and mulches for building projects" Mr Davis said.

The rear 4 hectares of the site will be retained as bushland, to preserve important vegetation and fauna which have been identified as important for the area. "The whole site has been designed with environmental best practice and sustainability in mind" said Mr Davis . "This includes keeping all recycling operations indoors, with strict control of dust and noise. All areas will have a hardstand to protect soils and water quality. Noise barriers are in place to avoid sound impacting neighbours. An advanced water capture and recycling system has been designed to treat and reuse precious water received on the site for operations and dust controls."

"We expect 75% of the materials we recycle to come from the Central Coast and close to 100% of recycled landscaping supplies will be used in the region", said Mr Davis.

"The population of the Central Coast is forecast to grow by up to 20% by 2036, resulting in a 26% increase in residential development, and this facility will help recycle materials from all this building work."

Following feedback earlier this year the facility's design has been amended to take into account community concerns and recycling will increase in stages following independent testing that the facility is performing to the highest environmental standards.

These commitments were discussed in a meeting with executive of the Kariong Progress Association on Monday 16th September. The meeting was attended by Mr Eric Davis, Davis Earthmoving & Quarrying, and Dr Mark Jackson of Jackson Environment and Planning, who has been leading the planning application for the development.

The NSW Government has set ambitious targets to reduce the amount of building waste going to landfill with recycling targets of 80% by 2021. The Somersby facility will also provide competitive options for local companies who currently have limited access to recycling facilities and has potential to reduce illegal roadside dumping in the area.

"We look forward to discussing the project with residents at the following information sessions and I thank the Kariong Progress Association for this opportunity to reach the local community," said Eric Davis.

Further information and opportunity for feedback are available at **www.kariongsandandsoil.com.au**.

Information sessions:

- Wednesday 6th November 6.30-7.30pm Kariong Hall, Corner of Woy Woy Rd & Dandaloo St, Kariong
- Saturday 16th November 11am-12pm, followed by sausage sizzle, 90 Gindurra Road, Somersby

To attend, please RSVP by emailing **admin@jacksonenvironment.com.au** or calling **02 8056 1849**.

Members and friends of the Kariong Progress Association are invited to attend information sessions on the proposed development of a state-of-the-art facility to turn sand, soil and surplus building materials into 100% recycled landscaping supplies. The Kariong Sand and Soil Supplies development is proposed for 90 Gindurra Rd, Somersby.

Kariong
SAND & SOIL SUPPLIES

Some quick facts:

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- An estimated contribution of $407 Million to the Central Coast economy over the next 25 years and employing 20 staff at full operation.
- There will be no hazardous materials such as asbestos, no smelly household rubbish or biodegradable waste on site at any time.
- Independent studies show that the facility will not impact air quality (including silica dust) and will meet the EPA's strictest requirements.
- Low noise ensuring negligible impacts on neighbours and the environment. Regular working hours of 7am-6pm Monday to Saturday.
- Vehicles to the site will only travel through the Somersby Industrial Park via Wisemans Ferry and Gindurra roads.

Wednesday 6th November 6.30-7.30pm
Kariong Hall, Corner of Woy Woy Rd & Dandaloo St, Kariong

Saturday 16th November 11am-12pm
90 Gindurra Road, Somersby (followed by sausage sizzle)

To attend, please RSVP by emailing **admin@jacksonenvironment.com.au** or calling **02 8056 1849**.
Further information and opportunity for feedback are available at **www.kariongsandandsoil.com.au**.

The feedback received, once the project was fully explained, was generally positive. The following provides a summary of general community understanding of the project:

- Generally, community understanding of the project was considered low.
- Most neighbours and members of the community's understanding was based on media reports and information promoted online and through the template Save Somersby campaign objection form during the public exhibition process.
- A common perception was that the project will be similar to the Mangrove Mountain landfill, with the site being a significant source of odour, with hazardous waste being stored, with the potential for significant environment and health impacts.
- The project will be a significant source of dust which will impact on the health of neighbours and the community.
- A general understanding that the site will be crushing 200,000 tonnes of concrete per annum, which will have a big impact on the area close to rural residential properties.
- The project was connected with the proponent of a facility to process up to 500,000 tonnes per annum of construction and demolition waste, commercial and industrial waste, green waste, soils and timber waste at 83 Gindurra Rd, Somersby.
- Heavy vehicle traffic will have significant impacts on rural properties east of the subject site.
- The facility will be a dumping ground for Sydney's rubbish.
- The facility will destroy the reputation of the Central Coast, and residential home values will fall.
- Community understanding of the recycling process, environmental controls proposed and how this site will be managed to avoid impacts on neighbours and the broader local community was low.
- Members of the community in some cases were concerned about Central Coast Council being "bypassed" in the assessment process and local communities don't have a say on the project.
- Generally perceived that there aren't many good recycling projects on the Central Coast and this project will just be another "bad" project.

Overall, the consultation program highlighted that there was a high level of concern over recycling projects, and that the experience of the Central Coast with the Mangrove Mountain site had heavily influenced community understanding and perceptions of the project.

As a result, a key focus on the community consultation and engagement program delivered was to improve community understanding of the project, its potential role in supporting recycling and sustainable development on the Central Coast, and what best practice recycling looks like. We also focused on discussing how the planning system works, how these types of sites are regulated to ensure they perform well, and how the community can have a say in the ongoing performance of these types of projects.

It was broadly found that this process helped to improve community understanding of the project, aiding in a discussion about further site enhancements and mitigation measures to ensure the community and the environment is protected at all times.

The issues raised by people engaging in the community consultation are listed in Chapter 3, and discussed in detail in Chapter 7 and Appendix 1.

A community consultation report has been prepared and is provided as an appendix to the EIS report.

4.2. Further environmental assessment

In response to the comments received from the community and government agencies, further studies were undertaken and additional technical design work for the development was conducted. These included:

- Groundwater sampling and testing;
- Fire Safety Report;
- Additional biodiversity study to include additional field investigations;
- Additional Aboriginal Heritage studies and consultation with designated Aboriginal groups;
- Additional air quality assessment and modelling;
- Additional noise modelling to reflect the upgraded site layout and design;
- Additional traffic assessment and re-design of the site entrance;
- 3-D image generated of the proposed development to supplement the visual impact assessment;
- Re-design of the stormwater capture system and update of the Water Cycle Impact Assessment and Soil and Water Management Plan report.

A summary of each of the final studies is provided in the sections below. The full copies of the technical reports are attached as appendices to the updated EIS.

4.2.1. Groundwater sampling and testing

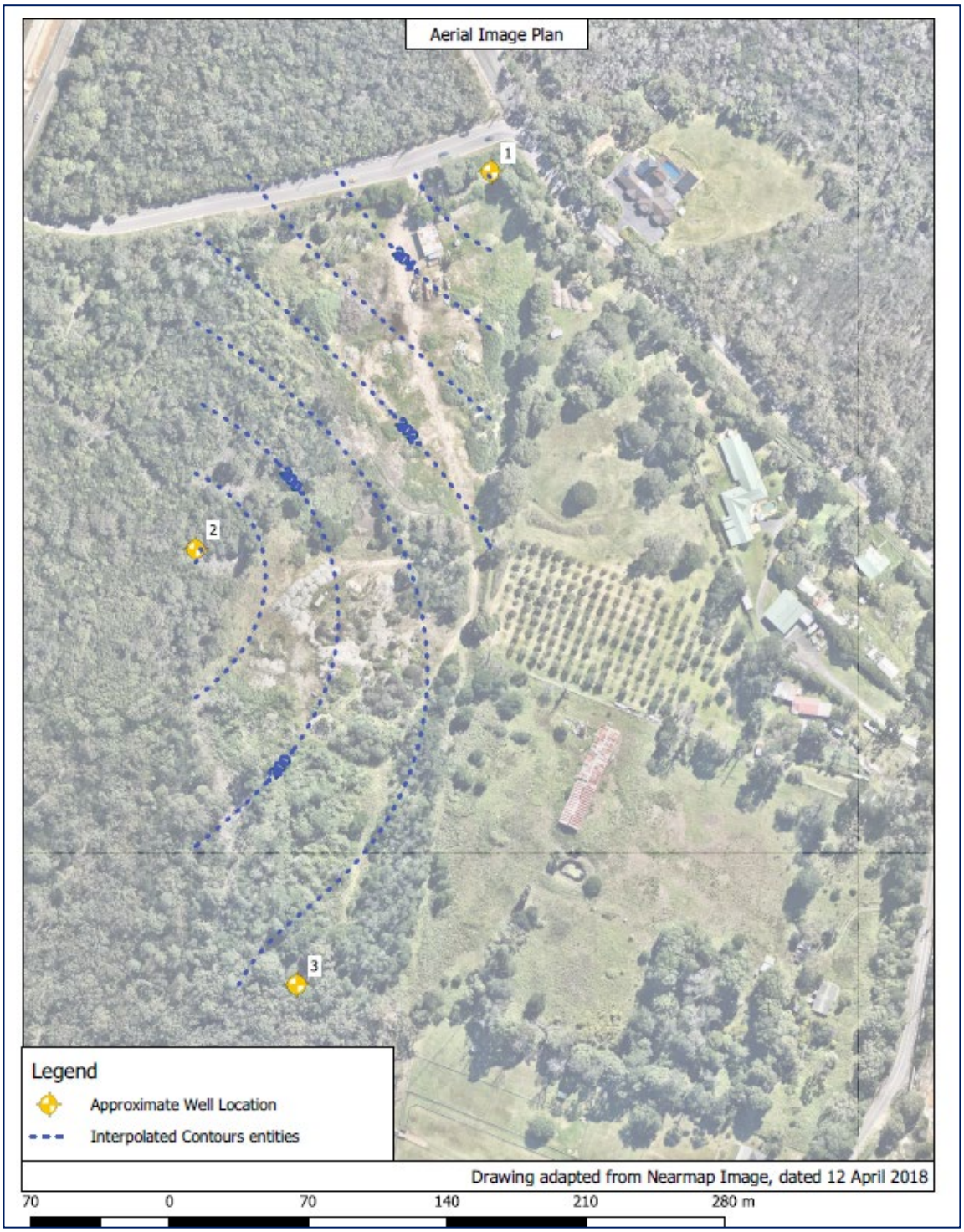
Douglas Partners were engaged to conduct Baseline Groundwater Investigation (BGI) at the site. This consisted of drilling three groundwater bores and conducting groundwater sampling and analysis. The BGI provides an initial assessment of the nature and extent of groundwater flows at the site.

The Baseline Groundwater Investigation made the following conclusions:

- Three groundwater monitoring wells (Wells 1 to 3) were installed to assess baseline groundwater conditions at the site. The wells were positioned with reference to the recommendations of the Department of Industry and were limited to accessible locations within the site boundary;
- Groundwater seepage was encountered within the weathered Hawkesbury Sandstone formation with stabilised depths to groundwater ranging between 1.15m (below ground level) at Well 2 and 7.25m (below ground level) in Well 1 in June 2019. The measured groundwater elevations infer a groundwater gradient and potentially a groundwater flow to the south-west and west;
- Groundwater at the site was assessed to be generally fresh (low salinity levels) and moderately to highly acidic, which is considered to be consistent with local background groundwater conditions;
- No signs of obvious contamination were observed in the groundwater at the borehole locations monitored; and
- Generally low concentrations of potential contaminants were detected within the wells. However, some detectable concentrations of zinc and/or lead were reported that exceeded the comparative freshwater GIL. The zinc concentrations are likely to be consistent with background conditions with the Hawkesbury

Sandstone formation and do not necessarily indicate a potential source of zinc impact on the site. The marginally elevated concentration of lead combined with the increased proportion of Calcium (Ca) and Sulphate (SO_4) in Well 2 may indicate that former site activities had some impact on site groundwater conditions. It should be noted, however, that the lead concentration in Well 2 was significantly less than the comparative drinking water Groundwater Investigation Levels (GIL). Follow-up groundwater monitoring would be required to confirm the repeatability of this initial monitoring result.

Figure 4.1. Location of groundwater bores and estimated groundwater gradients.



The Baseline Groundwater Investigation recommended that a groundwater monitoring and management plan be prepared for the proposed development. The plan should be prepared with respect to the recommendations of the Department of Industry and it is anticipated that the existing monitoring wells will be incorporated into the future groundwater monitoring program.

4.2.2. Fire Safety Report

The Kariong Sand and Soil Supplies (KSSS) development at 90 Gindurra Road, Somersby will store on-site approximately 3,907 tonnes of combustible materials at any one time comprising six discrete locations. The fire load associated with these materials is equivalent to approximately 60,525 gigajoules of energy.

ACOR Consultants (WA) Pty Ltd (ACOR) was engaged by KSSS to undertake a fire study ofthe proposed combustible materials and to determine the potential impacts of thermal radiation, the risk mitigation strategies and the recommendations for fire detection and protection.

ACOR has identified that the open stockpiles of combustible materials stored in the yard (waste storage bays, processing area and landscape storage bays) are unlikely to cause an escalation of the fire event by direct thermal radiation. However, the risk from spread of burning embers could result in escalation. Consequently, methods to detect likely fire conditions and take preventative actions have been identified.

The Secondary Sorting Warehouse (SSW) has several stockpiles of combustible (recovered) materials with proximity to each other. A fire in any of the SSW stockpiles is likely to spread to each of the other stockpiles, meaning that the worst-case heat release rate (49MW) in the SSW is much lower than for the open yard stockpiles (96 – 3,817MW).

Diesel fuel and lube oil, stored in a 20m^2 x 0.3m bunded compound in the southwest corner of the SSW, are unlikely to cause escalation to other combustible materials within the SSW, with fully developed burn time lasting 1.75 hours at 75kW/m^2 thermal radiation. This level of flux will cause damage to the zincalume cladding but should not result in combustion initiation in the actual SSW infrastructure.

LPG cylinders stored at the northern end of the SSW will be impacted by thermal radiation from a fire in the process area at a thermal radiation flux less than 4.7kW/m^2, however, this is unlikely to result in gas venting, assuming that firefighting water can applied within 20 minutes of a fire commencing.

An LPG cylinder jet fire is unlikely to result in injury at distances beyond 10 metres from source.

Flame heights in the SSW will extend beyond the three (3) metre high, concrete, tilt-up panels and cause thermal stress failure of the zincalume cladding. Thermal radiation will then be able spread into the yard space closest to the heat source.

Similarly, the yard stockpiles will extend to one metre below the top of the concrete block walls, allowing flame height to extend above the masonry heat barrier. The only thermal radiation that is likely to escape from the KSSS yard originates in the waste storage bay holding only timber. The distance of this bay from the eastern boundary of the KSSS property (44 metres) and the presence of the five (5) metre high noise barrier allows a thermal shadow to prevent radiation within a minimum of 54 metres from the source, to the east and 95 metres from the source to the west. The furthest extent of thermal radiation from source is 25 metres.

The consequences of a fire event may result in:

- Injurious thermal radiation (30 seconds exposure) originating in the SSW will be blocked (shadowed) to an average distance of 13 metres beyond the site boundary (at ground level) tothe east, by the five (5) metre high noise barriers, effectively negating impacts adjacent to the SSW;

- Injurious thermal radiation (after 30 seconds exposure) originating in the processing area will not extend beyond the boundary of the KSSS premises;
- Injurious thermal radiation (after 30 seconds exposure) originating in the central landscape storages will not extend beyond the boundary of the KSSS premises;
- Injurious thermal radiation (after 30 seconds exposure) originating in the waste storage bays will not extend beyond the boundary of the KSSS premises; and
- An LPG vapour cloud explosion, involving the contents of two 18kg LPG cylinders should not cause injury beyond the western and northern boundaries of the site. On the eastern boundary, injurious overpressure with up to a 10 per cent probability of injury will extend approximately 15 metres into the adjoining property adjacent to the SSW.

An LPG vapour cloud explosion, involving the contents of two 18kg LPG cylinders (one LPG cylinder will cause the two other LPG cylinders to explode generating a maximum overpressure from two LPG cylinders) should not cause injury beyond the western and northern boundaries of the site. On the eastern boundary, injurious overpressure with up to a 10 per cent probability of injury will extend approximately 15 metres into the adjoining property

The fire study indicates that additional fire hydrants and fire hose reels will need to be installed adjacent to the outside storage areas. In total, the site will have six fire hydrants and six hose reels installed on-site. This is in addition to portable fire extinguishers, which will be located in each building.

Firewater generated during a fire event will either be contained within the bunded compound of the SSW or will flow though dish and /or swale drains to the on-site detention (OSD) pond. Contaminated firewater captured in the OSD will be analysed prior to being discharged or removed from site by a licensed 3rd party waste contractor.

The estimated firewater application for a four-hour duration fire in the SSW is approximately 288kL of which 50% is assumed to evaporate (144kL contaminated firewater, equivalent to a depth of 68mm over the SSW floor area). Consequently, a 70mm high bund wall will be installed internally, at each opening to the SSW.

The estimated firewater application for a four-hour fire in one of the processing area's finished mulch bays is approximately 288kL of which 50% is assumed to evaporate (144kL contaminated firewater, equivalent to 2.9 per cent of the OSD pond ullage capacity).

The generation of smoke has been modelled for the conveyor system rubber, the largest fire load within the Secondary Sorting Warehouse. Smoke will fill the ceiling void to a depth of four (4) metres above the floor level within two (2) minutes of the fire reaching steady combustion. A single extraction fan, located on the ridgeline, will be capable of exhausting 410 cubic metres of contaminated air per second at the smoke temperature of 484K.

ACOR has modelled outcomes that are consistent with low consequence and low probability and considers that the development can be managed to provide a risk outcome that is acceptable to persons, property and the environment.

To be consistent with the Fire Safety Guidelines for waste facilities (FRNSW, 2019), an Emergency Plan for the has been prepared. This is provided as an appendix to the updated EIS.

4.2.3. Additional biodiversity study to include additional field investigations

A Biodiversity Assessment Report (BAR) was prepared to accompany the State Significant Development (SSD) Application (8660) relating to the Kariong Sand and Soil Supplies (KSSS) development at 90 Gindurra Road, Somersby NSW 2250 (Lot 4, DP227279).

The proposal requires a State Significant Development Application (8660) to be lodged to allow the KSSS site to be developed to receive, process and store up to 200,000 tonnes per annum of soil, sand and building materials for recycling and manufacturing. Secretary's Environmental Assessment Requirements (SEARs) have been issued by DPE. The SEARs stipulate that the biodiversity impacts for the proposal be assessed in accordance with the Framework for Biodiversity Assessment (FBA) (OEH, 2014).

Narla Environmental conducted site assessments over multiple days in 2018 and 2019. The Ecologists determined that a large portion of the subject site had been historically cleared and modified and contained large old stockpiles of a range of materials including fill, large slabs of concrete, polystyrene, corrugated iron and conglomerate rocks. Large infestations of weeds and exotic pasture grasses had taken over much of the centre of the site, on and surrounding old stockpiles. Native vegetation was restricted mainly to the western and southern boundaries of the subject site, in which vegetation was derived from three vegetation communities classified according to Plant Community Types (PCTs), including:

- *PCT 1642: Scribbly Gum - Red Bloodwood - Old Man Banksia heathy woodland of southern Central Coast*
- *PCT 1643: Red Bloodwood - Smooth-barked Apple - Scribbly Gum - Old Man Banksia heathy woodland on sandstone ranges of the Central Coast*
- *PCT 1579: Smooth-barked Apple - Turpentine - Blackbutt open forest on ranges of the Central Coast*

Four (4) native vegetation zones were identified based on the PCT classification above and an assessment on condition consistent with the requirements of the FBA (OEH, 2014):

- Zone 1: PCT 1642 – Low Condition
- Zone 2: PCT 1642 – Moderate to Good Condition
- Zone 3: PCT 1579 – Moderate to Good Condition
- Zone 4: PCT 1643 – Moderate to Good Condition

A further two (2) zones that constituted non-native vegetation and were not assigned a PCT were classified as 'Cleared' and 'Weeds and Exotics'.

Eight (8) plots and transects were established within the Subject Site to best sample the natural variation of the vegetation across the Subject Site. Plots were randomly stratified to attain best coverage across the Subject Site. The current and future site value scores for the vegetation zones were then assessed and calculated based on the data from the eight plots and transects collected on site and entered into the BCC. The current site value scores range between 25.17 / 100 to 83.51 / 100. For areas of complete clearing the future site value score is 0 / 100.

The BCC and Bionet identified a list of 17 species credit fauna species that were subject to targeted survey within the subject site. Targeted survey was conducted using remote camera trapping, bat acoustic monitors, spotlighting, fauna call playback, and opportunistic sightings.

Eastern Pygmy Possum (*Cercartetus nanus*) was confirmed on the subject site through targeted surveys. The Eastern Pygmy Possum is a Species Credit species. No other Species Credit fauna species were identified within the Subject Site.

A total of 32 threatened 'species credit' flora species were modelled as having potential to occur, or historically recorded within 10km of the subject site. Such species were surveyed utilising the parallel field transverse method as recommended by the *NSW Guide to Surveying Threatened Plants* ((FORMER) OEH 2016b). The survey periods aligned with the flowering period (when the species are most conspicuous) of most flora species, thereby having the greatest chance of displaying key diagnostic features.

During targeted surveys, Narla Ecologists identified the presence of one threatened flora species within the subject site, *Melaleuca biconvexa*, which is listed as Vulnerable under the TSC Act and EPBC Act. This species is a Species Credit species. Fifteen (15) individual specimens were recorded on the subject site. The occurrence of *Melaleuca biconvexa* was restricted to the western boundary of the subject site, confined to a small patch of mature individuals with evidence of regeneration. This small patch of *Melaleuca biconvexa* will be excluded from the development, including a 10m vegetation buffer surrounding the population. No other threatened flora species were identified within the subject site during site inspection.

Specific ameliorative measures have been suggested by Sustainability Workshop Ltd (2019) to prevent any direct or indirect impacts to this population of *Melaleuca biconvexa.* This will involve treated water being used to irrigate land draining to this plant community aiming to supply the same average annual volume of water that would have flowed to this community under predevelopment conditions.

In response to comments by the (former) OEH and Central Coast Council, additional surveys were undertaken of native vegetation. This includes *Hibbertia procumbens*, *Prostanthera junonis* ,*Caladenia tessellata* and *Diuris bracteata*. Additional surveys were conducted at the appropriate time of year and were undertaken in accordance with *NSW Guide to Surveying Threatened Plants* (OEH, 2016).

The proposed development is restricted to the northern sections of 90 Gindurra Road, Somersby NSW (Lot 4 / DP 227279). Total impacts to native vegetation is 3.11 ha, with the remainder of the Subject Site consisting of already cleared land or dominated by exotic vegetation. This includes the clearing of:

- 1.4 ha within Zone 1: PCT 1642 – Low Condition
- 0.78 ha within Zone 2: PCT 1642 – Moderate to Good Condition
- 0.30 ha within Zone 3: PCT 1579 – Moderate to Good Condition
- 0.63 ha within Zone 4: PCT 1643 – Moderate to Good Condition

Impacts to Eastern Pygmy-possum are anticipated within Vegetation Zone 2 and Vegetation Zone 4. A total impact of 1.41 ha to Eastern Pygmy-possum has been calculated.

In total, 103 ecosystem credit and 28 Eastern Pygmy-Possum species credits must be retired in order to offset the impacts of the proposed development.

Although complete clearing of native vegetation has been used to calculate credits within the Subject Site, several avoidance measures have been implemented during project design. Several mitigation measures will also be implemented during development to reduce impacts as much as possible.

4.2.4. Additional Aboriginal Heritage studies and consultation with designated Aboriginal groups

Biosis Pty Ltd was commissioned by Jackson Environment and Planning Pty Ltd to undertake an Aboriginal Cultural Heritage Assessment (ACHA) of a proposed development of an extension of the Kariong Sand and Soils Supplies site and to support a State Significant Development (SSD) at 90 Gindurra Road, Somersby, New South Wales (NSW) (the study area). The study area is located within Lot 4 DP 227279 approximately 9.6 kilometres south of Somersby and approximately 8 kilometres west of the Gosford central business district (CBD). It encompasses 10.8 hectares of private land and the adjacent road reserves.

The SSD will be assessed under Section 4.36 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011 (SSD 8660). The project will be assessed by the Independent Planning Commission (IPC) under delegation from the Minster of Planning.

There are 36 Aboriginal cultural heritage sites registered with the Aboriginal Heritage Information Management System (AHIMS) register in the vicinity of the study area.

The Aboriginal community was consulted regarding the heritage management of the project throughout its lifespan. With regards to comments from the (former) OEH, consultation has been undertaken as per the process outlined in the DECCW document, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010). Details of consultation can be found in ACHA Section 4 and ACHA Appendix 1 to Appendix 4. Additional consultation was undertaken in June-July 2019. A total of 29 interested parties were contacted and provided with information about the propose development. A notice was published in the Central Coast Express on 27 June 2019.

Each of the Aboriginal groups identified were sent a letter inviting them to register their interest in a process of community consultation to provide assistance in determining the significance of Aboriginal object(s) and/or places in the vicinity of the study area. In response to the letters and public notice, a total of six groups registered their interest in the project. Responses to registration from Aboriginal parties are provided in Appendix 3 of the ACHA. A full list of Aboriginal parties who registered for consultation is provided below:

- Darkinjung Local Aboriginal Land Council
- A1 Indigenous Services
- Awabakal & Guringai Pty Ltd
- Corroboree Aboriginal Corporation
- Sharon Hodgetts
- Widescope Indigenous Group.

On 25 July 2019, Biosis provided each RAP with details about the proposed development works (project information pack), and a copy of the project methodology pack outlining the proposed ACHA process and methodology for this project. RAPs were given 28 days to review and prepare feedback on the proposed methodology. A copy of the project methodology pack is provided in Appendix 3 of the ACHA.

Biosis received one response from A1 Indigenous Services on 11 August that supported the methodology.

Awabakal & Guringai Pty Ltd requested on 4 September 2019 that a field investigation be carried out.

No comments were received from Darkinjung LALC, Corroboree Aboriginal Corporation, Sharon Hodgetts, or Widescope Indigenous Group.

An archaeological field investigation of the study area was undertaken by Mathew Smith (Project Archaeologist, Biosis) on 2 February 2018, with two representatives of the Darkinjung Local Aboriginal Land Council, Anthony Freeman and Timothy Oliver. A supplementary field investigation of the study area was conducted on Wednesday 11 September 2019 by Taryn Gooley (Team Leader – Heritage, Biosis), Tracey Howie (Awabakal & Guringai Pty Ltd) and Robert Pankhurst (Guringai Elder). No previously unrecorded Aboriginal cultural heritage sites were identified during the field investigation, and no areas of (archaeological) sensitivity were identified. Due to the high levels of disturbance identified in the northern section and the lack of sandstone exposures and overhangs suitable for rock, engravings, shelters and grinding grooves, there is a low potential for Aboriginal sites to be present within the study area.

4.2.5. Additional air quality assessment and modelling

Northstar Air Quality Pty Ltd was engaged to perform an air quality impact assessment for the proposed development of a designated State Significant Development (SSD8860), namely Kariong Sand and Soil Supplies site (the project) located at 90 Gindurra Road, Somersby NSW (the project site).

A previous version of the air quality impact assessment was submitted to support the Environmental Impact Statement for the project. Following a number of submissions from NSW Environment Protection Authority, NSW Department of Health, and the community, an updated air quality impact assessment has been prepared to respond to those submissions. The revised air quality impact assessment is presented within this document.

In summary, submissions on the previous air quality impact assessment indicated that stakeholders were concerned about the following:

- the cumulative impacts associated with the project and other sources of particulate matter in the area;
- the assessment of potential maximum daily discharges of particulate matter based on maximum achievable production rates;
- the requirement for additional information / clarification to justify the calculated emission rates;
- further analysis of modelled meteorological conditions;
- the employment of best practice particulate control measures to minimise emissions;
- the requirement for air quality monitoring as part of the project;
- potential health impacts of silica dust; and
- potential impacts of odour from stockpiled waste materials.

A full and detailed response to each of the issues above is presented within this report. Importantly, and in summary:

- the potential impacts associated with existing and proposed developments in the immediate area have been addressed;
- an updated dispersion modelling scenario, reflecting maximum potential daily material processing rates and the associated increase in vehicle movements has been subject to assessment;
- additional information / clarification has been provided in the report to allow replication of emission rate calculations;
- an updated meteorological modelling assessment adopting observational data has been performed, and a subsequent updated dispersion modelling approach adopted to assess the impact of emissions on the surrounding environment;

- additional particulate control measures have been adopted by the proponent in response to community concerns regarding dust. These additional control measures include:
    - the construction of buildings around crushing and grinding/mulching operations with water sprays to suppress dust; and,
    - the construction of a building to enclose the tip and spread area on three sides and the inclusion of water misting sprays to reduce dust emissions further.

The additional measures have been included in the updated dispersion modelling assessment.

- an air quality monitoring program incorporating continuous measurement of particulate matter is proposed;
- an assessment of the impacts of respirable crystalline silica indicate that increases due to the project may be up to 10 percent of the relevant criterion as an absolute maximum, based on worst case assumptions; and
- impacts associated with odour will not be an issue as the project will not accept odorous materials.

A range of emissions control measures (including those additional measures adopted and outlined above) would be implemented as part of the project operation and these are discussed in detail in the main body of the report. It is considered that the measures adopted represent best practice dust control, including:

- Sorting and processing operations are conducted within a controlled environment in the Secondary Sorting Warehouse, with accompanying misting systems for dust control;
- Enclosure of the tipping and spreading bays, with misting systems for dust control during tipping;
- Enclosure of the grinding and mulching operations, with accompanying misting systems to avoid dust generation;
- Misting systems on outdoor storage bays for landscaping and civil supply materials to avoid dust being generated;
- Additional management controls to cease operations on the site on windy days;
- Sweeping, watering down and maintenance of all hard surfaces and roadways to keep surfaces clean to avoid dust being generated on dry, hot days.

The control measures which are adopted have been demonstrated to ensure that the environmental objectives are achieved. These measures would be implemented through an Air Quality Management and Monitoring Plan and in line with environmental best practice.

Furthermore, the updated air quality modelling found that adjustment of the annual average PM2.5 modelling results to account for the potential worst-case silica content of processed materials results in a predicted incremental respirable crystalline silica (RCS) concentration at the worst affected receptor of 0.28 $\mu g \cdot m^{-3}$ (0.4 $\mu g \cdot m^{-3}$ x 67%) which represents >10 % of the criterion. Even with the addition of a background concentration of 0.7 $\mu g \cdot m^{-3}$, the maximum RCS concentration is less than one third of the Victorian EPA and the California EPA Office for Environmental Health Hazard Assessment annual average criterion of 3 $\mu g \cdot m^{-3}$. These results clearly indicate that the project will not negatively impact on the health of the community, even at the closest residential receptor.

A risk-based assessment of the potential construction phase air quality impacts indicates that the implementation of a range of mitigation measures would be required to ensure that the risks (both health and amenity) to the surrounding community would be low or not significant.

The updated air quality impact assessment has considered worst case operational parameters, including material processing rates at absolute maximum throughout, and an increase in vehicle traffic bringing materials to site.

The results of the assessment, with the incorporation of a range of particulate matter control measures, indicate that all adopted air quality criteria will be achieved at all surrounding sensitive receptor locations.

It is recommended that air quality monitoring is performed to provide the community and EPA with assurance that the site can be operated with the best practice measures outlined in the report and without giving rise to unacceptable air quality impacts, implemented through an Air Quality Management and Monitoring Plan. As part of this recommendation, an air quality validation assessment can be considered to ensure the facility is complying with conditions of consent prior to increasing production above 100,000 tonnes per annum, and furthermore, once the facility increases production over 150,000 tonnes per annum. This measure will provide the community and regulatory authorities with confidence that the facility is being operated in a manner consistent with the predictions in this study, and the health of the community and the environment is protected at all times.

The results of the air quality impact assessment indicate that the granting of Development Consent for the project should not be rejected on the grounds of air quality.

4.2.6. Additional noise modelling to reflect the upgraded site layout and design

Waves Consulting was engaged to conduct a noise and vibration impact assessment of the proposed development at 90 Gindurra Road, Somersby, NSW. The proposal seeks to upgrade the existing industrial site to increase the materials processing capacity of the facility to recycle up to 200,000 tpa of construction and demolition waste each year. This assessment has investigated the worst-case noise emissions associated with the construction and operation of the facility upgrade.

The noise and vibration impact assessment has been conducted in a manner consistent with the requirements of the SEARs (SSD 8660). A previous version of the noise and vibration impact assessment was submitted to support the Environmental Impact Statement for the project. Following submissions from NSW Environment Protection Authority, NSW Department of Health, DPE and the community, an updated noise and vibration impact assessment has been prepared to respond to those submissions. The revised noise and vibration impact assessment is presented within this document.

In summary, submissions on the previous noise and vibration impact assessment indicated that stakeholders were concerned about the following:

- Clarifying operating hours and ensuring noise modelling reflects these hours.
- Clarifying traffic movements around the facility and ensuring the noise modelling accurately reflected peak traffic noise.
- Classification of nearby sensitive land uses.
- Confirmation of noise mitigation measures.
- Recommending ongoing noise monitoring at the site.

The revised noise and vibration impact assessment demonstrated that the predicted noise emissions from the site to the surrounding environment are low. The proposed development satisfies the Project Noise Trigger Levels (PNTLs) of the NSW Noise Policy for Industry (NPI) during all time periods provided the following noise mitigation measures are included:

- 5m high noise barriers along the eastern site boundary.
- 3 m high noise barriers inside the site adjacent to the processing zone and storage zone as per site layout.
- Processing building facade construction to provide a minimum airborne sound insulation performance of 35 dB Rw. This requirement should be reviewed and confirmed during detailed design.

- Processing building to have all doors and openings completely closed during processing activities.
- Processing building mechanical equipment (AC units etc.) should have a maximum aggregate sound power level of 80 dB LWA. This requirement should be reviewed and confirmed during detailed design.

Additional noise mitigation measures have been considered in the assessment in response to agency and community consultation. This includes:

- Enclosure of the tipping and spreading bays to reduce noise during the unloading process.
- Enclosure of the grinding operation to reduce noise generation during processing.
- Enclosure of the mulching operation to reduce noise generation during processing.

The sleep disturbance impacts from the operational noise events generated by the site where investigated in this assessment. The proposed development satisfies the sleep disturbance trigger levels at all nearby sensitive receivers.

The existing traffic noise levels on the nearby affected roads already likely exceed the RNP criteria. Therefore, all new traffic noise increases must satisfy the RNP 2 dB increase criteria. The revised modelling in the assessment shows that the proposed development generates negligible additional traffic noise. The NSW Road Noise Policy (RNP) criteria are satisfied as a result.

The construction noise impacts have been assessed in accordance with the NSW Interim Construction Noise Guidelines (ICNG). During standard construction hours, exceedances of the NMLs of up to 12 dB are predicted at the closest residential receivers on Acacia Road and Debenhams Road South. No receivers were found to be 'highly noise affected' as per the ICNG. Standard noise mitigation measures have been recommended for the construction phase. In addition, the operational noise walls along the eastern boundary should be constructed as early as practicable to reduce construction noise impacts for the remainder of the construction period.

This assessment also recommends that construction noise monitoring is undertaken for the duration of the construction period with bi-monthly reporting of construction noise levels. This monitoring should be undertaken at the worst-affected receiver during construction, which this assessment identifies as 242 Debenham Road South.

Construction traffic noise levels must satisfy the RNP 2 dB increase criteria. The revised modelling in the assessment shows that the construction traffic generates negligible additional traffic noise. The NSW Road Noise Policy (RNP) criteria are satisfied as a result.

The offset distances (in all directions) between the vibrationally intensive equipment and any sensitive receivers is large (> 300 m). The potential for vibration impacts due to the construction or operation of the development are effectively nil. All vibration criteria with respect to cosmetic damage to buildings and human comfort impacts will be satisfied as a result.

It is concluded that the proposed development is a complying development with respect to noise and vibration impacts and is therefore suitable for construction and operation.

4.2.7. Additional traffic assessment and re-design of the site entrance

The Kariong Sand and Soil supplies site is located at 90 Gindurra Road, Somersby (Lot 4 DP 227279) and is currently used for storing and screening soil and sand, which is sold for landscaping. It is proposed to develop the site over the next 6 years to receive, process and store up to 200,000 tonnes per annum of soil, sand and building materials with all materials then being exported from the site.

This level of operation, by 2025, is estimated to generate up to 164 vehicle trips per day consisting of staff operational vehicles, 12 tonne tippers, 32 tonne truck and dog or semi-trailers and 40 tonne B-Doubles. The peak hour movements were calculated based on the operation of a similar development, with a review of the typical movements across a day for this type of facility showing that peak truck movements for the site do not coincide with the road network peak periods. An allowance for 17 vehicles in the AM peak and 9 vehicles in the PM peak has been made based on the data provided. It is noted that the road network between Wisemans Ferry Road and 90 Gindurra Road is an approved B-Double route by the National Heavy Vehicle Regulator.

The site operator is anticipating that 25% of materials entering the site will come from Sydney while the remainder will be sourced locally on the Central Coast. It is expected that 100% of the products leaving the site will be used in the local area. These will be bulk loads transported in the various heavy vehicle classes. There will be no sales direct to the public.

The existing road network and major intersections are currently operating at a good level of service with spare capacity and the traffic generated by the proposed development will be distributed to the road network across the working day. The additional traffic is expected to have only a minor impact on the LoS of each of these roads and they will still be operating within their existing capacity.

From the route nominated these additional trips will not have any significant impact on the operational performance of the intersections at Central Coast Highway / Kangoo Road. The intersections of the Central Coast Highway / Wisemans Ferry Road and Wisemans Ferry Road / Gindurra Road have been assessed and as each of these intersections is currently operating at acceptable levels of service with sufficient spare capacity to cater for the additional traffic generated by this proposed development, the impact of the future development is acceptable.

The existing access has been reviewed on site and is to be relocated 14 metres west in accordance with Council's recommendation to satisfy the sight distance. A concrete kerb is recommended on the exit to the site to ensure vehicles only exit to the left on Gindurra Road and do not proceed into rural and residential areas to the east. A no right turn sign will also be installed at the exit to the site.

To facilitate the right turn movement into the site modifications have been designed to provide a right turn treatment. The right turn lane shall provide sufficient storage to allow for two B-Double with No Stopping signs also installed.

It is therefore recommended that allowing for the minor works at the access, the proposed development be approved given the acceptable impact on traffic, access and safety.

4.2.8. 3-D image generated of the proposed development to supplement the visual impact assessment

Despite the visual impact assessment finding that there would be minimal change to the visual impact of the site from the outside, concerns were raised by members of the public during the consultation period. To assist concerned residents to better visualise the proposal, 3-D images were generated. Figure 4.2 shows a 3-D visualisation of the front of the proposed development from Gindurra Rd. The image shows that the site will be consistent with a development in an industrial estate. The building is well set back from the road, and the landscaping around the facility will provide an aesthetically pleasing streetscape visible to passing traffic.

Figure 4.2. 3-D Image of the front of the proposed development.

4.2.9. Re-design of the stormwater capture system and update of the Water Cycle Management Plan

The Sustainability Workshop (TSW) was commissioned by Kariong Sand and Soil Supplies (KSSS) to undertake a water cycle impact assessment and soil and water management plan of a proposed sand, soil and building materials recycling facility located at 90 Gindurra Road at Kariong, NSW. The development is on Lot 4, DP 227279 and the developable area is 6.05 hectares (ha).

The Water Cycle Impact Assessment and Soil and Water Management Plan attached to the EIS report supersedes previous work and the treat train proposed is a robust world class water management approach.

The report addresses the SEARs, identifies contaminants of concern, pollutant transport mechanisms and describes mitigation measures and predicted water quality performance in detail. It also directly addresses all comments

received during the public exhibition phase and subsequent feedback provided by various government departments.

The proposal is for a state of the art recycling facility that will make a meaningful contribution to protecting water quality off the site by reducing the demand for virgin materials which can have a very negative impact on the water cycle at the point of extraction.

Incoming waste will be inspected in a covered and bunded tip and spread building. Accepted raw waste is then to be stored in storage bays, moved to a processing area and processed or transformed into a building product which will then be stored in product storage bays and sold.

The proposed development will see a combination of concrete hardstand areas and flexible pavement constructed from recycled crushed concrete to form a stable, non-erosive working environment. In accordance with EPA best practice guidelines, a geomembrane will be placed below all unsealed pavements to protect local groundwater resources.

From a land-use planning perspective, considering the 400m distance to the nearest waterway, the 4 hectare vegetated buffer offered by the site itself together with the flood free elevation of the site it is concluded that the proposed land use is well suited to this parcel of land and has few constraints.

Key sources of stormwater pollution will arise from the diverse range of activities on the site noting that some of them will see pollution generated which will need to be mitigated.

Key pollutants of concern have been identified in the report and modelled in accordance with best practice approaches to establish likely load rates.

The discharge point for the proposed development is located 400m away from a waterway. The largest potential impacts are considered to be the impacts on the health and stability of the bushland downstream of the proposed discharge point rather than off the site.

In this instance it is proposed that a neutral or beneficial effect test (NorBE) should be applied. This is the most stringent test applied by any regulator in NSW and is typically applicable to drinking water catchments – which we note this catchment is not.

Frequency of site discharge is considered an indicator of geomorphic impacts. If the frequency of site discharge can remain close to predevelopment conditions, then it is likely that the discharge will have few geomorphic (erosional) impacts.

Ensuring the discharges from the site, when they do occur, remain below erosive thresholds is also critical as is the need to ensure that the development does not increase flood risk by increasing peak flow rates or flow volumes for a range of storms and exceedance probabilities. Here the 1 in 1 year event and 1 in 100 year event are used as benchmarks.

Harvested stormwater should comply with the NSW stormwater harvesting guidelines and Australian Guidelines for Water Recycling. As this stormwater is not be supplied to any other party, i.e. is to remain on site, these remain the only applicable guidelines.

Proposed Mitigation Measures

The site will comply with the requirements of the Blue Book during construction and this will ensure that construction phase sediment impacts are minimised.

The site has been broken into low, medium and high risk sub-catchments.

The northern part of the site which includes the warehouse is deemed a low risk catchment. This is treated in rainwater tanks and then piped to a gross pollutant trap before being piped to a large 5ML water quality pond which includes floating treatment wetlands. The pond overflows to a level spreader where additional infiltration will occur. Treated water from the pond will be used to irrigate the site to suppress dust to maintain good air quality once the water has been further treated in a membrane filtration system. This treatment system is a state of the art, world class stormwater management system that is on the cutting edge.

Wherever possible, the medium risk areas of the site first drain to a GPT then to a linear bioswale located on the western side of the development. These medium risk areas are the areas which include storage of products and where blending or processing activities occur.

The bioretention system will provide a high degree of tertiary treatment to the runoff.

The high-risk part of the site is that part that contains the waste storage area and the timber processing area. This is the part of the site which affords the best opportunity to intervene to limit unusually high pollutant loads. If a potential water quality problem is going to occur on the site it is most likely to occur in this area as it stores unprocessed materials that may escape the rigorous tip and spread screening and rejection process.

In the high-risk area continuous 24/7 real time water quality and flow monitoring will occur.

In addition to the 5 ML water quality pond, an emergency spill pond of 500 m^3 volume will be provided. This will enable up to 60 mm of runoff to be contained in the spill pond from the high-risk catchment.

Predicted Results

Water Quantity

The DCP requires post development peak flows to be equal to or lower than predevelopment peak flows.

A DRAINS peak flow model using Laurenson hydrology was developed using ARR2016 rainfall to model both predevelopment and post development states. Results are predicted as presented in Table 4.3.

Table 4.2. Results of DRAINS peak flow model.

Storm Probability – 1 in X years	Predevelopment peak flow (100% pervious) m^3/s	Post Development peak flow (100% impervious) m^3/s	Peak velocity over level spreader
1 in 1	0.312	0.218	0.26m/s
1 in 10	0.917	0.911	0.45 m/s
1 in 100	1.88	1.48	0.55 m/s

Peak velocities to occur in a 50m wide channel below the level spreader are predicted to be below erosive thresholds for all storms up to the 10% AEP. Storms rarer than the 10% AEP might result in minor temporary erosion. These storms occur so infrequently that this erosion would have time to self-repair through natural revegetation.

Water Quality

MUSIC water quality model results clearly show the site will exceed its best practice target and exceed any NorBE target and achieve the predicted outputs shown in Table 4.4.

Table 4.3. MUSIC water quality model results.

	Treatment-train Effectiveness (% Reduction of Pollutants)				% Reduction	Target
	(1) Pre-European (forested land use)	(2) Pre-development or existing loads	(3) Post Development without treatment in place	(4) Post-development (with proposed treatment system)	Reduction from column (3) to column (4).	%
Frequency of discharge into bushland	5	80	80	8	90	
Flow (ML/yr)	9.76	31.6	45.2	13.4	70.4	
Total Suspended Solids (kg/yr)	950	3840	7540	567	92.1	80
Total Phosphorus (kg/yr)	1.19	6.57	12.9	1.94	84.2	45
Total Nitrogen (kg/yr)	16.9	55.5	96.3	21.3	77.9	45

MUSIC water quality model results clearly show the site will exceed its best practice target and deliver water quality that is better than what is currently discharged from the site.

Assessing concentration at the 99th percentile it is likely that the proposal will be able to meet typical licence limits for waste management facilities.

In conclusion the development will address both chronic and acute water quality risks through a best practice state of the art water cycle management system. The development will attenuate peak flows for the whole range of events – from 1 year to 100 year.

Based on the best practice system proposed it is highly probable that the development would not cause environmental harm or pollution either in terms of total loads or absolute concentrations or in terms of alterations to flow regimes.

It is recommended the development be approved subject to the proposed mitigation measures being implemented and to conduct on-going monitoring, maintenance and management of the proposed system. A licence is likely to be required for TSS and may, subject to the EPA, be required for TP and TN.

5. Changes to the project

As a result of the community feedback, comments from government agencies and results of the additional studies, substantial changes were made to the project. Many additional mitigation measures were added to the overall development design.

5.1. Minor errors and discrepancies

The main discrepancy in the first version of the EIS was minor differences in the project description and site layout diagrams contained in the many different studies conducted by specialist technical contractors. As the project evolved over time, the project description and site layout changed slightly.

All specialist consultants have been provided with the final project description and the final site layout diagram to include in their reports.

5.2. Changes to physical layout, construction/operation methodology, technology, etc.

There have been substantial improvements to the mitigation measures at the site. Changes to the physical design of the site include:

- Enclosing the mulching shredder in a building;
- A concrete wall will be built around the mulching building to incorporate timber storage and mulched timber product storage;
- Enclosing the crusher in a building;
- Enclosing the receiving tip and spread bays in a 3-sided building;
- Dust mitigation sprinklers at the back of each storage bunker;
- Dust mitigation misting systems in the tip and spread building and the secondary processing warehouse;
- Re-design of the stormwater capture system to reduce the risk of stormwater contamination, reduce the number of overflow events and allow the recycling of water for dust suppression;
- A water treatment plant is to be installed to treat recycled water before being used for dust suppression;
- Ten water tanks are to be located next to the tip and spread building to capture the rainwater from the roof for re-use;
- Addition of a second weighbridge, to allow for separate weighbridges for traffic entering and exiting the facility;
- The site entrance was moved 14m west and re-designed to allow exiting traffic to only turn left;
- The allocation of materials to bunkers in the waste storage area has been changed on recommendation of the Fire Study;
- Three additional fire hydrants are to be located around the site, as well as four additional fire reels;
- Emergency quarantine areas have been allocated in the event of a stockpile catching fire;

- The equipment storage area has been reduced and the processing area extended.

5.3. Changes to plans and figures

The changes to the plans and figures reflect the changes listed in the section above. Appendix 2 provides copies of the original General Arrangement Plan for before the changes and the final General Arrangement Plan for comparison. The full set of civil plans is provided as an appendix to the revised EIS.

5.4. Changes to impacts

The changes to the predicted impacts are minimal, as the impacts were modelled to be very low, originally. The main change is to the reduction in the predicted overflow from the On-site Detention Basin for captured stormwater. Table 5.1 provides a list of the **additional** mitigation measures to be implemented as a result of feedback received during the consultation period. It should be emphasised that these are in addition to the mitigation measures already planned and recorded in the first EIS.

Table 5.1. Summary of additional mitigation measures and changes to impacts.

Impact	Change to mitigation measures after consultation	Original impact	Revised impact
General operations	Slow ramp up of operations in 3 stages; 100 tkpa, 150 ktpa and 200 ktpa. Formal approval will be sought prior to increasing throughput to the next level.	Public concern about scale of project.	Increased confidence in government oversight of project impacts.
General site layout	Addition of second weighbridge (to allow dedicated in and out weighbridges)	N/a	Improved onsite traffic flow.
Noise	Crusher is enclosed in a building. Mulcher is enclosed in a building. Tip and spread area is enclosed in a building. Clarified operational hours.	Modelled 2dB above threshold at nearest sensitive receptor during operational phase.	Models show no exceedances of noise thresholds at neighbouring properties during operational phase.
Air Quality	Crusher is enclosed in a building. Mulcher is enclosed in a building. Tip and spread area is enclosed in a building with misting dust suppression system. Spray dust suppression nozzle to be installed at the back of each storage bunker.	Annual average dust deposition is predicted to meet the criteria at all receptors surrounding the project site. No exceedance of the 24-hour average PM2.5 impact assessment criterion is predicted as a result of the project operations.	Annual average dust deposition is predicted to meet the criteria at all receptors surrounding the project site. No exceedance of the 24-hour average PM2.5 impact assessment criterion is predicted as a result of the project operations.
Traffic	Move entrance 14m to the west along Gindurra Rd. Vehicles exiting the site can only turn left onto Gindurra Rd.	No significant adverse traffic impacts anticipated.	Improved sighting at the corner of Gindurra Rd and Debenham Rd South. Improved traffic safety on Gindurra Rd.
Water Quality	Re-designed the stormwater capture and drainage system. Additional GPTs, including 2 CDS GPTs to treat medium risk stormwater. Inclusion of emergency spill pond. Re-designed the site grading to ensure water flow to the OSD and discharge from OSD basin. Increased the size of the OSD basin. Install water recycling treatment unit to treat stormwater prior to re-use for dust suppression, with waste water stream discharged to sewer.	Estimated average of 35 overflow events from OSD Basin per year. MUSIC model shows no water contamination or water quality problems anticipated.	Estimated average 8 overflow events from OSD Basin per year. Reduced flow to near pre-European levels. Water quality model shows no water contamination or water quality problems anticipated. Reduced health risk through higher level of treatment for re-used water.

Impact	Change to mitigation measures after consultation	Original impact	Revised impact
	Install separator to treat water from the vehicle wash and run-off from the dust suppression inside the warehouse, prior to the water being discharged to sewer.		
Water conservation	Rainwater tanks installed adjacent to the tip and spread building. Recycling of stormwater captured in OSD basin by treatment and re-use for dust suppression.	Rainwater captured on Secondary Processing Warehouse used for domestic use. Stormwater captured in OSD basin re-used for dust suppression.	Rainwater captured on Secondary Sorting Warehouse used for vehicle wash. Stormwater captured in OSD basin re-used for dust suppression.
Fire	Install an additional 3 fire hydrants on-site and nominate locations for 4 fire hose reels outdoors, located around the site. Installation of a smoke exhaust fan in the SSW	No impacts	No impacts – Improved fire prevention and firefighting capacity.
Biodiversity	Conducted extensive surveys of the site to identify vulnerable or endangered species.	116 ecosystem credit and 28 Eastern Pygmy-Possum species credits must be retired in order to offset the impacts of the proposed development.	Commitment to re-home any possums displaced during clearing. 103 ecosystem credit and 28 Eastern Pygmy-Possum species credits must be retired in order to offset the impacts of the proposed development. No impacts on threatened vegetation.
Visual Impact	3-D image was prepared of the proposed to development to show how the development would look from Gindurra Rd.	Minimal visual impact.	Minimal visual impact.
Heritage	Secure fence to be installed along the western boundary to protection a potential site of Aboriginal significance on the neighbouring property.	No impact	No impact

6. Updated project description

The Kariong Sand and Soil Supplies development will involve the construction and operation of a best practice recycling and landscape supplies facility that will enable the receipt of up to 200,000 tonnes of sand, soil and building materials each year. The project will transform the site into a state-of-the-art facility turning sand, soil and building materials into 100% recycled building and landscaping supplies. The facility aims to produce a number of building and landscape products, providing them for re-use mainly in the Central Coast region.

The proposed development will seek to expand the current facility into a best-practice recycling plant that will assist the Central Coast in achieving the NSW Government's target of an 80% recycling rate for construction and demolition waste by 2021.

The project will involve the development of a largely undeveloped industrial site, to enable the facility to be used to receive, process and recycle construction and demolition waste, as well as supply building and landscape supplies for local projects. All waste materials will be received and processed indoors, to minimise impacts on the environment and neighbours.

The front part that will be visible from Gindurra Rd will be the landscaping supply operations, including landscaping along the road frontage and landscape storage bays behind the setback area. A fully enclosed warehouse where sorting and recycling operations will be conducted will be visible from the front of the site. Along the eastern boundary, a noise barrier and a native landscape buffer will be planted to avoid noise impacts on nearly rural dwellings, and to provide an aesthetically pleasing interface between the edge of the Somersby Industrial Estate and nearby rural zone lots and dwellings.

Waste processing and recycling operations for selected materials, including crushing and mulching will be done on the southern section of the site, where processing will also be done in dedicated buildings to avoid any impacts on nearby land uses. These operations are to be conducted at maximum distance from any sensitive receptors. The southern section of the site will be retained as bushland to provide a natural buffer between the development and other residential areas more than a kilometre away from the southern boundary of the site.

Advanced water capture, rainwater harvesting, water treatment and dust suppression systems will be integrated in all buildings and outdoor areas to prevent dust being formed. The site will also include an advanced membrane filtration plant to enable much of the water captured from the site to be fully reused across the site for operational uses. The site will also include a water pond treatment system for treating stormwater runoff, and an emergency spill pond for capture, testing and management of contaminated water for sewer discharge or off-site treatment. The site will also include its own weather monitoring station, high volume air samplers for continuous air quality and dust analysis, continuous noise loggers and continuous water quality analysis to confirm compliance with consent and licence conditions. The site will be fully serviced with fire suppression systems.

Flow charts providing an operational overview of the proposed development is provided in Figure 6.1 (recycling operations) and Figure 6.2 (landscaping and building supplies operation).

Figure 6.1. Process flow chart for recycling operations.

Figure 6.2. Process flow chart for landscaping and building supplies part of the operation.

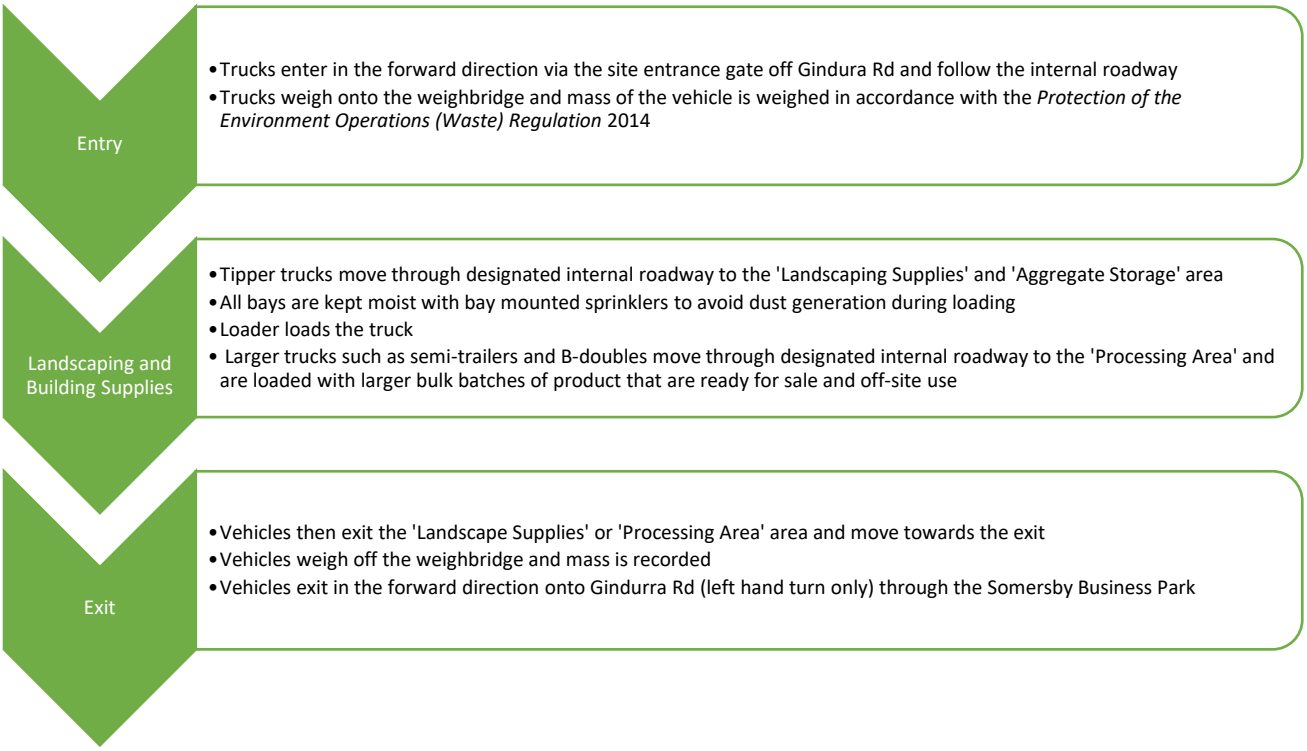


Table 6.1. Summary of construction activities under Stage 1 and 2 on the site.

Stage		Description	Consent status
1	i.	Demolish existing corrugated iron sheds	Approved under DA52541/2017 and modified under DA52541/2017.2
	ii.	Construct office building and warehouse	
	iii	Construct car park next to buildings and new entrance	
	iv.	Install fence at front of site	
2	a.	Clear selected vegetation from the front half of the site as determined by the Fauna and Flora and Vegetation Management Plan	Approval sought under State Significant Development application SSD8660
	b.	Construct sediment control basin to capture run-off during construction	
	c.	Grading of site. Construct retaining walls. Install water, power and recycled water services across the site. Install hardstand across the operational areas of the site	
	d.	Install noise wall along eastern side of the site	
	e.	Construct onsite roads, new entrance and modifications to Gindurra Rd (turning lane).	
	f.	Construct stormwater drainage system, including pond, floating wetland, level rock spreader, bioswales, gross pollutant traps and a packaged recycled water plant, connect to sewer	
	g.	Construct crusher building	
	h.	Construct mulcher building	
	i.	Construct tip and spread waste receival building, rainwater harvesting tanks and misting system. Install truck wash bay, coalescing plate separator and awning (and connect to sewer)	
	j.	Install dust and fire suppression systems across the site, including the Secondary Sorting Warehouse	

Stage		Description	Consent status
	k.	Construct waste storage bays, aggregate and landscape supply concrete bays, including bay mounted sprinkler system	
	l.	Install processing equipment in crusher building, mulcher building and secondary sorting warehouse	
	m.	Install weighbridges, traffic control lights and boom gates on site	
	n.	Install environmental monitoring equipment (weather station, high volume air samplers, dust gauges, sound meters)	
	o.	Complete landscaping works	
	p.	Commissioning and testing of site plant, equipment and environmental control systems, and issue of EPA licence for the site	
	q.	Commence formal operations for receival and recycling of waste materials up to 100,000 tonnes per annum	
	r.	Waste receival to increase to 150,000 tonnes per annum subject to the site demonstrating compliance with consent and EPA licence conditions and satisfactory environmental performance	
	s.	Waste receival to increase to a maximum of 200,000 tonnes per annum subject to the site demonstrating compliance with consent and EPA licence conditions	

6.1. Key elements of the updated project

The following is a summary of key elements of the updated project in response to submissions, to further address matters raised including air quality, dust, silica, noise, vibration, water quality, and health. These additional site and operational features are proposed to further mitigate impacts and to provide confidence to the community that public health and the environment will be protected at all times:

- All waste materials to be received indoors, to minimise impacts on the outdoor environment (e.g. dust, litter, noise and water quality);
- Buildings to enclose the crushing and mulching operations to minimise dust and noise, including misting to maximise dust control;
- A three-sided building around the waste receival area with a misting system to ensure that water quality is protected and dust is minimised;
- Concrete kerbing on the exit to the site to prevent any trucks using Debenham Rd;
- A redesigned stormwater treatment system including four gross pollutant traps, two CDS gross pollutant traps to treat “medium-risk” stormwater, emergency spill pond, stormwater isolation valves, an enlarged detention pond with floating wetland and a membrane filtration plant to supply the site with high quality water for dust control via sprinklers above all storage bays;
- A second weighbridge and office to be built to ensure efficient traffic movements to and from the site, once waste receival increases above 100,000 tonnes per annum;
- Additional three hydrants and an additional four fire hose reels to manage any potential fire incidents;
- Establishment of emergency quarantine areas for extinguishing any waste materials on fire;
- Reduction of the noise wall height along the north east corner of the site, with the introduction of native vine plantings to improve visual aesthetics and soften the interface between the site and neighbouring rural residential properties;

- A commitment that recycling will increase in stages, only after independent testing is done to prove the facility is performing to the highest environmental standards. These stages proposed include:
    - Following development approval, waste receival to increase over time to a threshold of 100,000 tonnes per annum;
    - Consent to increase waste receival to 150,000 tonnes per annum;
    - Consent to increase waste receival to 200,000 tonnes per annum;
- Operational hours clarified as follows:
    - Opening hours (staffed): 7:00am to 6:00pm Monday to Saturday. Closed Sunday.
    - Waste deliveries: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.
    - Waste processing (sorting, crushing, grinding, screening): 8:00am to 5:00pm Monday to Friday.
    - Product sales: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.
- Continuous monitoring of air quality (dust) and noise at the site boundaries, including surface water and groundwater monitoring; and
- A commitment to establish a Community Consultative Committee with an independent chair post approval for providing a forum for the community to provide feedback on the performance of the development.

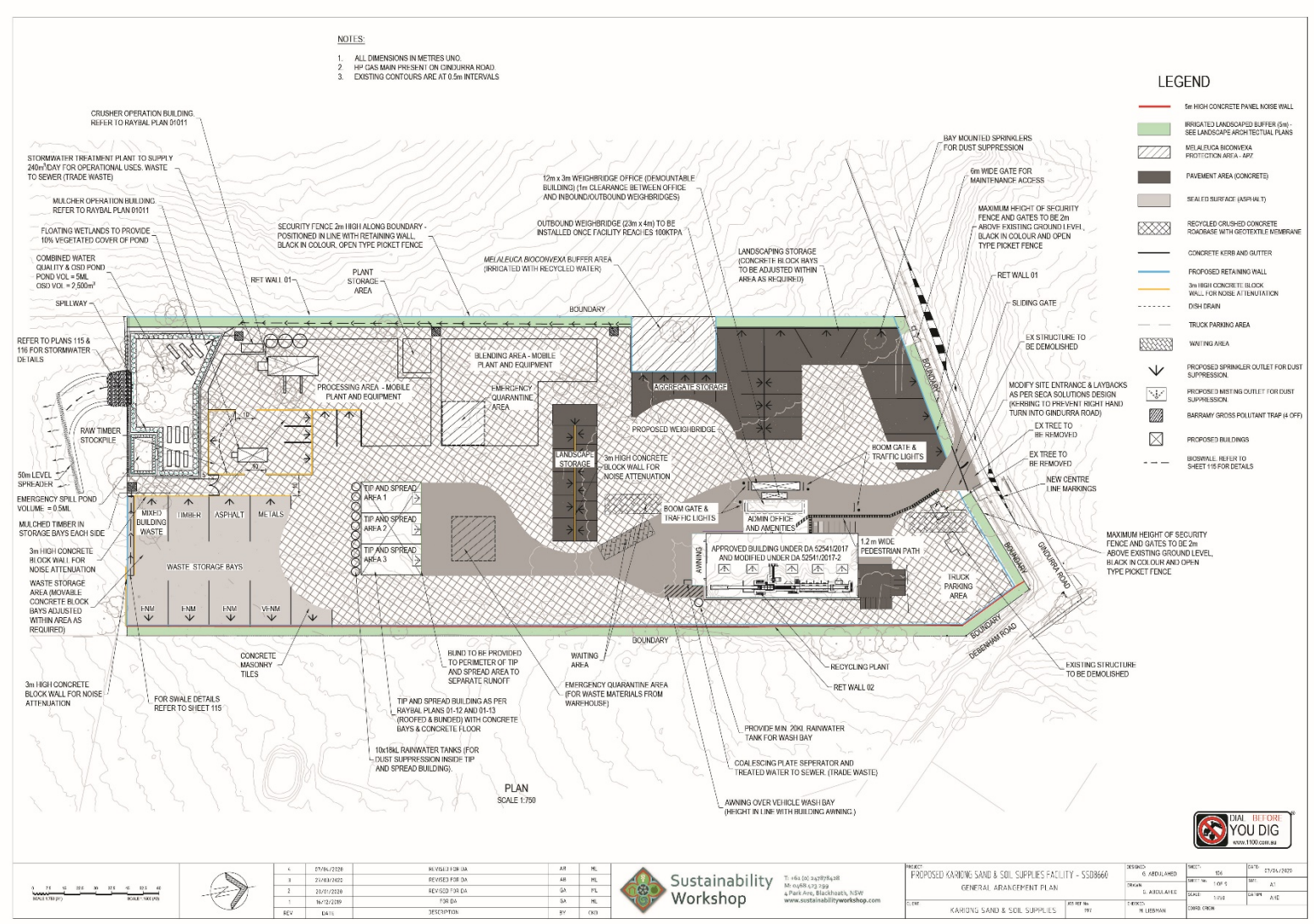
6.1. Updated plans and figures

All civil design plans have been updated, including;

- General Arrangement Plan – showing general site layout and key features
- Civil Works Plan – showing final contours
- Retaining wall sections
- Bulk Earthworks Plan (cut and fill plant)
- Turning Path Plan – showing turning paths for large vehicles on-site
- Detailed Shed Plan – showing details of the Secondary Processing Building
- Stormwater Plan – showing the proposed stormwater capture and drainage system
- Stormwater Sections & Detail – showing the design of the On-site Detention Basin, outlet weir and Bioswales
- Layout and elevation plans for Crusher Building
- Layout and elevation plans for Mulcher Building
- Layout and elevation plans for Tip and Spread Building.
- New hydraulic services plan.

The full set of plans is provided as an appendix to the updated EIS (see Appendix E of the EIS Report).

Figure 6.3. Updated General Arrangement Plan.



7. Response to submissions

A total of 1,329 submissions were received. The response to each main issue received is provided in the tables in Appendix 1.

A summary of the responses to the key issues raised in the various submissions (as listed above in section 3.1.1) is provided below.

7.1. General operations

Hours of operation have been clarified and are consistent throughout the EIS and attached studies. The site will not operate 24/7. The operational hours will be:

- Opening hours (staffed): 7:00am to 6:00pm Monday to Saturday. Closed Sunday.
- Waste deliveries: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.
- Waste processing (sorting, crushing, grinding, screening): 8:00am to 5:00pm Monday to Friday.
- Product sales: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.

Vehicle access on a 24/7 basis to account for late arriving vehicles due to traffic congestion has been removed from the operational hours. This has been done to provide the community with confidence that vehicles will not be accessing the site after hours.

7.2. Area character / lifestyle

A large number of mitigation measures will be put in place to minimise the impact on any nearby properties and the surrounding environment.

It should be noted that the site is zoned IN1 General Industrial and is within the Somersby Industrial Estate.

7.3. Air quality / dust

The site design includes a range of dust control measures, including;

- Enclosing crushing and mulching operations;
- Enclosing tip and spread area;
- Enclosing sorting and screening of mixed waste in the Secondary Processing Warehouse;
- Misting systems in the tip and spread building, crusher building, mulching building and Secondary Processing Warehouse;
- Dust suppression sprays at the back of each of the concrete storage bunkers;

Water truck to sprinkle water on roads and hard surfaces around the site.

AQIA has been updated to include additional modelling of air quality. The air quality sought clarification on the agency's comments and the updated AQIA reflects the outcomes of that clarification.

7.4. Traffic

The main route to and from the site, especially for large vehicles, will be via main roads of Wiseman Ferry Rd and Gindurra Rd. The entrance has been moved 14m west. The entrance has been designed to accommodate 25m B-

Doubles. The entrance has been re-designed so that vehicles can only turn left onto Gindurra Rd, towards Wiseman Ferry Rd, when exiting the facility.

A permit has been obtained from the National Heavy Vehicle Register to use B-doubles to the facility between Wiseman Ferry Rd and Gindurra Rd. (Permit number: 236516V1).

The Traffic Impact Assessment has been updated to consider the expected distribution of vehicle traffic over the day, based on the experience of a similar facility owned by the proponent. The traffic modelling was updated to reflect the minor change in peak traffic numbers.

The Traffic Impact Assessment indicates that the increase in traffic will have a minimal impact on overall traffic in the area, particularly along the main route to the facility.

7.5. Land / property values

The impacts on surrounding properties and area will be minimal. In addition, the development will provide employment, as well as services to the local area. Finally, the development will be surrounded by fencing and landscaping, should improve the visual impact of the site from its current state.

7.6. Biodiversity

Further surveys were undertaken in accordance with the FBA Guidelines and suggestions made by (former) Office of Environment and Heritage.

The PCT has been re-assessed and designated another type. The credits required for the development were recalculated in line with this change.

Details are provided in the Biodiversity Assessment in the appendix of the EIS.

7.7. Odour

No putrescible waste will be received at the site. None of the activities at the site are expected to generate significant offensive odours. However, this will be monitored, and measures taken if necessary.

7.8. Proximity to sensitive uses

The proponent is conscious of the proximity of potential sensitive uses. The proponent has been working with the neighbouring properties to ensure the impact of the development is minimal. The mitigation measures to be implemented should result in most of the listed organisations not being aware of the facility.

It should be noted that the distance from the processing and storage activities at the site are much greater than listed in the Save Somersby flyer. It should also be noted that all properties within 500m of the facility were contacted and provided with details about the development during the initial consultation phase.

7.9. Area reputation / loss of business

The facility will not impact Somersby Falls or the Somersby Reptile Park.

It should be noted that the facility will mainly accept material from its own operations or commercial contractors. The proponent has no intention to widely advertise the facility to the general public.

It is also noted that as part of the community consultation program completed, the Proponent will establish a Community Consultative Committee with an independent chair post approval for providing a forum for the community to provide feedback on the performance of the development.

7.10. Visual impact

The height wall along the eastern boundary, along Debenham Rd, is necessary for noise mitigation. However, in response to comments received from the public, the height of the wall has been reduced to 2m at the front of the site (adjacent to Gindurra Rd). The landscape plan includes native vines to soften this wall from external view and provide a more aesthetically pleasing interface between the industrial estate and surrounding rural properties. The noise impact assessment has been updated, and findings suggest that noise levels at the closest sensitive receptor are low and within EPA noise policy requirements.

7.11. Health / asbestos

Asbestos has been identified as a serious concern for C&D recycling facilities, particularly those processing mixed building waste. The proponent is committed (and required) to adhere to the NSW EPA's *Standards for Managing Construction Waste in NSW,* which includes procedures for inspection of loads for asbestos. The procedures for identifying and managing asbestos contamination at the site is provided in the Waste Management Plan.

7.12. Heritage

A comprehensive archaeological investigation and consultation with local Aboriginal groups has been undertaken. No sites or likely sites have been identified within the property boundaries. Therefore, the development is unlikely to affect any Aboriginal artefacts. Details are provided in the Aboriginal Cultural Heritage Assessment report.

7.13. Noise and Vibration

The crusher and mulcher will be enclosed in buildings, which will reduce the noise emissions from the site's operations.

The noise modelling for the site was revised to account for the revised development design and to consider the likely spread of traffic over the day. The noise modelling found that the noise levels were below the thresholds in the Industrial Noise Policy.

The results of the noise modelling demonstrate that the noise emissions from the site to the surrounding environment (with the recommended noise barriers and processing zone operational covers) are low. The proposed development satisfies the PNTLs at all nearby residential receivers.

The noise modelling also demonstrates that the potential for noise impacts during the night-time which have potential for sleep disturbance events are nil. The sleep disturbance PNTLs are satisfied as result.

The PNTLs at all nearby correctional, active recreational, commercial and industrial receivers are also satisfied.

We note that the Secondary Sorting Building and associated mechanical services are based on assumptions about the construction of the buildings. The facade sound insulation performance and processing / mechanical services noise levels will be reviewed by a suitably qualified acoustic consultant during the detailed design of the buildings.

7.14. Water quality

A Groundwater Baseline Investigation has been undertaken to determine the current state of the groundwater at the site. The investigation found that it was not contaminated.

As part of the mitigation measures for the site, the site will have a waterproof membrane installed beneath areas receiving a crushed concrete pavement. The remainder of the site will be provided with an impervious asphalt or concreted surface. This will protect groundwater from any contamination sources at the site.

Three piezometers have been installed as part of the base-level sampling and testing. A Groundwater Monitoring and Management Plan will be prepared prior to the site becoming operational. It is anticipated that groundwater monitoring will form a condition of the Environment Protection Licence.

A comprehensive stormwater drainage and capture system will be installed at the site. The system has been re-designed from that in the exhibited EIS. The OSD basin is larger, to reduce the number of overflow events. The aim is to capture and re-use as much water as possible for dust suppression. As such, it is intended to install a water recycling treatment plant. The best practice water treatment train is expected to result in very high water quality.

Water samples were taken at the site to assess the current level of contaminants in the stormwater, considering the storage of C&D materials at the site. The testing found that the stormwater did not contain elevated levels of contaminants.

As part of the revision of the Water Cycle Impact Assessment and Soil and Water Management Plan, extensive research was conducted on potential contaminants, and the impacts of the proposed mitigation measures.

Modelling shows that the amount of water leaving the development area will be minimal and contain only low levels of potential contaminants.

Water tanks will be installed to capture rainwater from the roof of the Tip and Spread building and the Secondary Warehouse building. Recycled water will be re-used for dust suppression and to irrigate the area of *Melaleuca biconvexa.*

7.15. Waste management

The purpose of the facility is to recycled construction and demolition waste. Most of the material received at the site will be soil. The site is not a landfill. No material will be buried at the site.

While most of the material will be sourced from Sydney, the facility will also service development projects in the Central Coast area. Further, it will provide high quality recycled products for local projects, including fill and road construction.

The EIS clarifies that only material that meets the definition of ENM under the Excavated Natural Material (ENM) Order 2014 will be sold as ENM.

More detailed description of the potential sources of mixed building waste is provided in the EIS.

The site does not intend to accept hazardous or special waste. The EIS is clear that the facility will follow the protocols for inspecting and rejecting/accepting loads described in the NSW EPA's Standards for Managing Construction Waste in NSW.

The EIS operational description and Waste Management Plan describe that the small amount of residual waste generated at the site will be stored in containers (skip bins or MGBs). The Waste Management Plan has been updated to show where the residual waste containers will be stored on-site.

7.16. Health/pollution general

The inherent design and numerous mitigation measures to be implemented will ensure the impact on surrounding residences and environment will be minimal.

7.17. Fire Safety

In addition to the Bushfire Risk Assessment, a full Fire Safety Study was conducted for the site. The Fire Safety Study assessed the on-site practices, and the nature and amount of flammable material stored on-site.

Due to the nature of the facility, with the majority of material handled on site being inert, the fire risk is relatively low, compared to other types of waste facility.

The Bushfire Risk Assessment identified defendable zones within the site, in the event of a bushfire approaching the site.

As a result of the Fire Safety Study, a total of six fire hydrants and six fire hose reels will be installed on-site. In addition, portable fire extinguishers will be located in each building.

8. Project evaluation

The comments from agencies and the public received during the exhibition period have been considered and addressed in detail.

The development design has been adjusted to incorporate the comments received. Additional mitigation measures will be put in place to ensure the impacts of the facility are minimal.

All the technical studies have been reviewed and updated to reflect the change in site design and parameters. All technical studies conclude that the final design will result in the facility having minimal impact on the environment and surrounding land users.

Overall, the project meets the environmental criteria in the relevant standards and guidelines and now meets the additional requirements listed in the agency comments. The environmental and social impact on the local area will be negligible. The project is consistent with the objectives of the land use zoning and with the Council development strategies for the area. The new facility will provide employment, economic benefit and sustainable recycling services to the local area.

9. References

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NWQMS. (2009). *Australian Guidelines for water recycling: managing health and environmental risks (phase 2) stormwater harvesting and reuse.* Canberra: Australian Government.

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Appendix 1 – Response to comments

Comments from Government Agencies

Appendix 1 - 1 General

Agency	Comment	How addressed
NSW EPA – Waste Compliance (1st submission)	The application proposes several different hours of operation for different activities at the premises. The proponent must clarify the intended hours of operation for the undertaking of scheduled activities for the environment protection licence.	Hours of operation have been clarified and are consistent throughout the EIS and attached studies.
Department of Planning, Industry and Environment	The SEARs set out community consultation requirements for the EIS. The Department notes Section 1.3 of the EIS states a comprehensive Council, agency and community consultation was undertaken during the preparation of the EIS. It is unclear in which form the community consultation was carried out (i.e. letter dropping or face-to-face consultation). If direct consultation was undertaken with residents in close proximity, the details of this consultation needs to be provided. The Department received more than 1,300 public objections during the public exhibition which raises concern about the adequacy of community consultation. The Department requests that during the preparation of the RtS, you consider the community consultation requirements in the SEARs and if warranted, prepare a strategy and carry out additional consultation especially with the surrounding land owners and occupiers to address issues and concerns raised in public submissions. The RtS should also detail how the development has been amended in response to these issues and where amendments have not been made to address an issue, an explanation must be provided.	Extensive community consultation and engagement has been undertaken in response to the community response to the public exhibition of the EIS. Details are provided in the Community Consultation Report provided as Appendix X to the EIS.
Feedback on first EIS		

Agency	Comment	How addressed
NSW EPA – Waste Compliance (1st submission)	The application proposes several different hours of operation for different activities at the premises. The proponent must clarify the intended hours of operation for the undertaking of scheduled activities for the environment protection licence.	Hours of operation have been clarified and are consistent throughout the EIS and attached studies.
Department of Planning, Industry and Environment	The SEARs set out community consultation requirements for the EIS. The Department notes Section 1.3 of the EIS states a comprehensive Council, agency and community consultation was undertaken during the preparation of the EIS. It is unclear in which form the community consultation was carried out (i.e. letter dropping or face-to-face consultation). If direct consultation was undertaken with residents in close proximity, the details of this consultation needs to be provided.	Extensive community consultation and engagement has been undertaken in response to the community response to the public exhibition of the EIS. Details are provided the Community Consultation Report provided as Appendix X to the EIS.
DPIE comments on Response to Submissions report and Revised EIS Adequacy Review Comments (19 February 2020)		
DPIE	Where reference to the Department of Planning, Industry and Environment is made, please update to either the former Department of Planning, Industry and Environment, should the relevant matter referred to occur before 1 July 2019) or the Department of Planning, Industry and Environment (DPIE) if the relevant matter referred to occur after 1 July 2019.	Updated in EIS report and RTS report
	References to the (former) Office of Environment and Heritage, Roads and Maritime Services should be updated to the Biodiversity and Conservation Division, DPIE and Transport for NSW respectively.	Updated in EIS report and RTS report
	Please fix editing issues across documents, including but not limited to unnecessary blank pages (e.g. page 48 of the RtS report) and missing cross references.	Updated EIS report and RTS report
	It is recommended to reword extensive community engagement and education to extensive community engagement.	Updated in EIS report and RTS report
	It is recommended each technical report should not only address SEARs requirements but also include responses to concerns/requirements raised in submissions to justify any changes to the development	Each technical report contains a table on how the SEARs and subsequent comments on the project have been addressed

Appendix 1 - 2 Waste Management

Agency	Requirement / comment	Response / where addressed.
SEARs	Waste Management – including: • A description of the waste streams that would be accepted at the site, including maximum daily, weekly and annual throughputs and the maximum size for stockpiles.	Section 3.2.1 of the Waste Management Plan (WMP), provided as Appendix H of EIS.
	• A description of waste processing operations, including a description of the technology to be installed, resource outputs and the quality control measures that would be implemented	Chapter 2 of the Waste Management Plan
	• Details of how waste would be stored (including the maximum daily waste storage capacity of the site) and handled on the site, and transported to and from the site including details of how the receipt of non-conforming waste would be dealt with	Chapter 3 of the Waste Management Plan
	• Detail the development's waste tracking system for incoming and outgoing waste	Section 2.2 of the Waste Management Plan
	• Details if the waste management strategy for demolition, construction and ongoing operational waste generated	Chapter 3 of the Waste Management Plan
	• The measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.	Chapter 2 and Chapter 3 of the Waste Management Plan
Comments on EIS from Public Exhibition (Feb – Mar 2019)		
NSW EPA – Waste Compliance (1st submission)	Table 2.3 of the EIS outlines that 40% or 79,200 tonnes per annum of the proposed product outputs for the facility as being manufactured soils produced under the provision of the Excavated Natural Material (ENM) Order 2014.	Any ENM received at the site will be immediately transferred to the landscape supplies business area for sale, after inspection. No ENM will be processed at the site. All ENM will meet the specifications and requirements in the ENM Resource Recovery Order and Resource Recovery Exemption.

Agency	Requirement / comment	Response / where addressed.
	Any material that has been processed cannot be considered ENM. The EPA considers that processing ENM significantly increases the risk for contamination and encourages poor practices such as blending contaminated materials with cleaner waste streams. As such, the EPA has specifically excluded processing from the definition of ENM. The ENM Order (section 1.1) and Exemption (section 1.2) clearly states that ENM does not include material: • located in a hotspot; • that has been processed; or • that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores. In light of the above, the proponent must advise what product outputs are proposed for the facility.	The EIS clarifies that only material that meets the definition of ENM under the Excavated Natural Material (ENM) Order 2014 will be sold as ENM.
NSW EPA – Waste Compliance (1st submission)	The proposal details that mixed building waste comprises 5% or 10,000 tonnes per annum of the facilities incoming waste. The proponent must identify the source of the mixed building waste to give a better understanding of the potential contents of this waste.	Most material received at the site will be from demolition projects conducted by the site owner, Davis Quarrying & Earthmoving.
NSW EPA – Waste Compliance (1st submission)	The EIS lists a number of waste types proposed to be accepted at the facility including hazardous and special waste. The EPA does not intend to licence the facility to accept these waste types and the proponent must implement strict procedures to prevent the acceptance of these wastes at the Premises.	The site does not intend to accept hazardous or special waste. The EIS is clear that the facility will follow the protocols for inspecting and rejecting/accepting loads described in the EPA's Standards for Managing Construction Waste in NSW (2018). More detail is provided in section 3.22 of the Waste Management Plan. A non-conforming waste protocol is provided at Attachment 1 of the Waste Management Plan.

Agency	Requirement / comment	Response / where addressed.
Department of Planning, Industry and Environment	The Department notes the NSW Environment Protection Authority's (EPA) *Standards for Managing Construction Waste in NSW* (2018) will commence on 15 May 2019. A detailed assessment of the development against Standards 1 to 5 is required in the RtS.	Standard 1: Section 3.2.2 of the Waste Management Plan Standard 2: Section 3.3.1 of the Waste Management Plan Standard 3: Section 3.3.1 of the Waste Management Plan Standard 4: Section 3.3.2 of the Waste Management Plan Standard 5: Section 3.3 of the Waste Management Plan
Department of Planning, Industry and Environment	The Department notes Figure E1 Process flow chart for recycling operations in the EIS shows that the first step of the primary sorting and processing includes "waste materials are moved into the 'Processing Area' via front end loader, a mobile excavator is used to remove any gross contaminants prior to processing, and residual waste then stored in bays for off-site disposal". The submitted plans do not show locations of residual waste storage bays. An updated site plan showing the residual waste bay is required in the RtS	An updated site plan, showing storage bays labelled by material is provided in Figure 3.5 of Waste Management Plan and Appendix E of the EIS.
Central Coast Council	The development proposes to process 200,000 tonnes per year, and store 50,000 tonnes onsite at any one time, of non-putrescible construction and demolition waste, consisting of sand and metal, VENM soil, Soil (non-putrescible solid waste meeting the CT1 threshold), concrete, tiles, masonry, asphalt, timber, stumps, root balls and mixed building waste (masonry, concrete, brick, tiles, wood, timber and metal). This is listed as a scheduled activity in the Protection of the Environment Operations Act 1997 ('POEO') and as such requires an Environmental Protection Licence ('EPL'). As such the operation of the facility in relation to environmental issues (noise, air, water and land pollution) will be responsibility of the NSW EPA to administrator and enforce POEO. The EPL will also set limits in relation to the type of waste allowed to be received on the sit e, along with how much material can be stored and processed per day/ pre year at the site, along with discharge limits. Conditions have been applied.	Noted. An EPL will be applied for once the development is approved. The application will be consistent with the Waste Management Plan and the EIS.

Agency	Requirement / comment	Response / where addressed.
Individual submissions	Suggested that waste should be recycled / better managed than disposed to landfill.	The purpose of the facility is to recycle construction and demolition waste. Most of the material received at the site will be soil. The site is not a landfill. No material will be buried at the site.
Individual submissions	Concerns that putrescible waste would be received.	No putrescible waste will be accepted at the site.
Individual submissions	Did not want Central Coast to receive waste from Sydney. Central Coast perceived as "dumping ground" for Sydney's waste.	While most of the material will be sourced from the Central Coast, the facility will also service development projects in other areas. Further, it will provide high quality recycled products for local projects, including building and landscaping projects.
Individual submissions	Problems with illegal dumping in the area.	The facility will provide a lower cost alternative to landfill for construction and demolition waste generated in the area. Illegal dumping is of concern across all areas. The proponent will work with Council to manage any illegal dumping problems near the facility. Community Consultative Committee (CCC) will be formed. One of the roles of the CCC will be to monitor any issues, such as illegal dumping.
DPIE comments on Response to Submissions report (19 February 2020)		
DPIE	Table 6.3 outlines the incoming waste materials at the site during the operational phase. It is noted that the EIS has stated that soil loads that meet the requirements of the EPA Excavated Natural Material Resource Recovery Order 2014 will be either sold unprocessed as ENM or blended and processed with other soil materials to produce manufactured soils. Regardless if materials have been pre-classified as ENM, if it has been blended/processed then the material no longer meets the definition of ENM, and subsequently would require to be re-classified against a current EPA RR order, or have a specific RR order approved by the EPA for the purposes of re-use.	Noted. ENM will be received and sold unprocessed in accordance with the ENM Resource Recovery Order 2014. Or depending on customer requirements, KSSS will apply for a specific Resource Recovery Order and Exemption for any blended soils as per Clause 92 of the *Protection of the Environment Operations (Waste) Regulation* 2014. Update the Waste Management Plan with this detail, and add a new column 2 into Table 3.4 "or a Specific Resource Recovery Order to be sought from the EPA." See Waste Management Plan at Appendix H of the EIS.

Appendix 1 - 3 Water Cycle Impact Assessment and Soil and Water Management

Please note: The design of the stormwater system was subject to substantial ongoing discussions with DPIE. Hence, the second comment table, which is necessary to capture as much of the feedback as possible.

Agency	Requirement / comment	Response / where addressed.
NSW EPA – Waste Compliance (1st submission)	Provide the manufacturer, model and specifications for the proposed jellyfish filter in place prior to discharge of waters from the sediment pond to the spreader.	The stormwater capture and treatment system, including the water treatment unit, has been re-designed and the proposed Jellyfish filter is no longer part of the proposal. The reasons for removing the Jellyfish are described in Section 1.5 of the Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
NSW EPA – Waste Compliance (2nd submission)	The EIS states that waste handled will include mixed building waste, asphalt, timber, metals and excavated natural material (ENM). The EIS then states that the primary contaminant expected in stormwater runoff from the site is sediment based, i.e. concrete dust from processing the recycled concrete, and sediment runoff from soils to be stored on site. The EIS fails to assess potential levels of dissolved contaminants in stormwater runoff known to be associated with the types of material proposed to be handled. This assessment also fails to adequately consider potential risks associated with contaminants attached to sediment which require greater controls than clean sediment in stormwater. Based on data from other building and construction waste recycling sites there can be a wide range of potential water pollutants in site runoff at levels requiring mitigation. Assessment methods could include, for example: • data from similar operations • literature reviews of potential contaminants in wastewater	The Water Cycle Impact Assessment and Soil and Water Management Plan Report has been comprehensively updated to address all potential forms of pollutants alongside a detailed description and modelling of how those pollutants are to be treated. A range of methods including literature reviews, other site performance data as well as detailed modelling has been undertaken to understand the potential risk and effectiveness of measures proposed to mitigate the impacts of the development. The Water Cycle Impact Assessment and Soil and Water Management Plan considers both attached and dissolved pollutants and addresses each. The Water Cycle Impact Assessment and Soil and Water Management Plan provides pollutant concentrations at the point of discharge for three key indicator pollutants. Justification of the adopted water quality modelling framework which considers three key indicator pollutants rather than every pollutant and which is adopted across NSW by all State Government and Local Governments was also included in the report via way of detailed explanation and a peer review published paper.

Agency	Requirement / comment	Response / where addressed.
	• provision and assessment of representative leachability test data from material that would be handled and stored on site • a comparison of proposed discharge quality against national water quality guidelines for the full range of potential pollutants in runoff and consideration of all downstream environmental values • considering all practical measures to mitigate the risk identified from the potential for a wide range of pollutants that may be in discharges. As well as the potential impacts of individual contaminant concentrations, the potential additive, cumulative and loading impacts of contaminants should also be considered, including: • antagonistic toxic effects from two or more pollutants • bioaccumulation in downstream waters (e.g. metals or PAHs) • loading of nutrients, metals and other pollutants in downstream waters, groundwater or soils • concentration effects of chemicals due to reuse of wastewater on site. The EPA recommends that: • Additional information be provided on the full range of potential pollutants in site discharges, including potential water discharge concentrations from any proposed treatment system under relevant water quality and flow conditions (i.e. both controlled discharges and managed overflows) • the discharge assessment referenced above compare potential concentrations of pollutants in discharges with the national water quality	It also provides reference to long term values for irrigation water quality to ensure there is no long term accumulation of metals in soils. The Water Cycle Impact Assessment and Soil and Water Management Plan also provides indicative water quality coming from a proposed ultrafiltration membrane filtration treatment plant on the site. Stormwater will be treated to the most stringent standards to ensure that it is safe for both workers and the environment. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I

Agency	Requirement / comment	Response / where addressed.
	guidelines or available international guidelines; and consider all relevant downstream environmental values • additive, cumulative and bioaccumulative impacts of the proposal be assessed.	
NSW EPA – Waste Compliance (2nd submission)	The EIS has not adequately identified all practical measures that could be taken to prevent, control, abate or mitigate water pollution from the operation of the proposed facility. The EPA recommends that: • All practical measures to prevent, control, abate or mitigate water pollution be assessed. These measures could include, but are not be limited to: o Preventing and minimising generation of polluted runoff (roofing, covering, at source controls) o Considering alternatives to discharge such as collection and disposal to sewer or tankering to a facility licenced to receive the wastewater from higher risk parts of the site o Optimising alternatives to discharge such as reuse (e.g. onsite storage tanks for first flush runoff) o Installing appropriate treatment systems.	The stormwater capture and treatment system has been comprehensively re-designed and is described in detail in the Water Cycle Impact Assessment and Soil and Water Management Plan report. The development proposal adopts an approach of containment – that is, it seeks to contain as much stormwater runoff as possible and reuse it to the maximum extent possible on the site. This will limit the export of any pollutants from the site. These pollutants will be treated in a robust stormwater treatment strategy that can be easily maintained through good provision of access and simplicity of design. On the eight occasions each year when stormwater is discharged from the site it will meet all licensing criteria. The average concentration of pollutants in the flow from the site would be lower after development than the current state. As a result, the proposal will achieve a significant beneficial effect on stormwater quality and it will protect the downstream native bushland to the highest degree. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
NSW EPA – Waste Compliance (2nd submission)	The EIS proposes a sediment inlet pond to be used at the entry to the proposed pond storage to capture sediment from site runoff. The pond is proposed to consist of a permanent pool for re-use purposes and an on-site detention component designed to meet Council requirements. As noted	The Water Cycle Impact Assessment and Soil and Water Management Plan have been extensively revised to consider the EPA's comments, and to incorporate other mitigation measures and site design changes. Mainly this sees volumes of storage increased by 10 times

Agency	Requirement / comment	Response / where addressed.
	above, Council water quality targets for urban stormwater are not relevant to wastewater management at a licensed premises. The stated overflow frequency of "about 35" overflows per year on average is not consistent with best practice guidelines for clean sediment containment e.g. 6-8 spills/year (Blue Book Volume 1 site, > 6 months, 80th percentile); or 2-4 spills/year (Blue Book Volume 2, > 6 months, 901h percentile for managing clean sediment at waste landfills and mines and quarries). It is noted that the EIS states that overflows are directed to a Jellyfish sediment-treatment device and Appendix I states that overflows occur over the spillway from the pond. It is not clear what proportion of discharges occur via the proposed Jellyfish filter versus the overflow structure, or the height of the Jellyfish inflow and outflow levels compared to the overflow structure level. Sediment basins are proposed to be cleaned out when 60% full of sediment. The overflow frequency when the ponds are up to 60% filled with sediment are also not adequately assessed. Subject to a characterisation of site discharges, due to the nature of the material onsite and potential for contaminants to be associated with sediments, the 2-4 spill per year or equivalent environmental outcome is likely to be considered minimum best practice for clean sediment (i.e. no attached contaminants). A greater containment may be needed depending on the assessment of dissolved and sediment attached pollutants and the mix of other mitigation measures that may be proposed, e.g. at-source controls. Managing Urban Stormwater- Soils and Construction Volume 2E Mines and quarries (Blue Book Volume 2E) has been used as a basis for assessing similar sites due to the known risks in stormwater runoff and therefore provides an	over the initial proposal. These changes are described in the Water Cycle Impact Assessment report. Overflow has been reduced from 35 down to 8 times per year and nearly attains pre European runoff characteristics/regime. A 5 million litre water quality pond with floating wetland will store water for reuse. This storage volume is much larger than that prescribed in the Blue Book and was determined based on the need to reduce the frequency of overflow frequency down to levels that the bushland can sustain in perpetuity. The Jellyfish has been removed from the design for a number of reasons including inaccessibility for maintenance and the hydraulic configuration being problematic at the pond outlet. We understand the EPA has reviewed the revised Water Cycle Impact Assessment and Soil and Water Management Plan report and is completely satisfied with only one additional requirement being the need to test the soils at the point of discharge for metal and contaminant accumulation. This requirement is welcomed by the Proponent and has been included in the revised Water Cycle Impact Assessment and Soil and Water Management Plan along with a recommendation to also monitor soils in the *M. Bicovexa* irrigation area to ensure metal accumulation remains below (within) long term acceptable values. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I

Agency	Requirement / comment	Response / where addressed.
	initial basis for determining whether overflow frequency requirements are commensurate with risk. The EPA recommends that the applicant: • Revises the water balance assessment and, as a starting point, relate all references to the Blue Book Volume 2E. • Provides an equivalent environmental outcome for sediment, Blue Book Volume 2E, at a minimum, and any additional risks of sediment attached pollutants and dissolved contaminants should be accounted for through either additional capture and treatment or other mitigation measures such as at-source controls.	
NSW EPA – Waste Compliance (2nd submission)	The EIS proposes to install a Stormwater 360 Jellyfish filter (or approved equivalent) on the outlet pipe from the pond to ensure that any discharges from the pond are appropriately filtered prior to discharge to the vegetated area to the south of the premises. The EPA recommends that the applicant: • provide the performance of the proposed "Jellyfish" treatment system, including: o TSS concentrations that can be achieved over the life of the maintenance schedule o the percentage of flows that are treated through the device verses the percentage that may bypass the treatment device o the storage levels at which discharges occur through the Jellyfish filter verses storage levels that may cause overflow.	The stormwater capture and treatment system has been comprehensively re-designed and is described in detail in the Water Cycle Impact Assessment and Soil and Water Management Plan report. The Jellyfish has been removed from the design for several reasons which made it an inappropriate choice for the location proposed. Refer to Section 1.5 of the report for more details. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I

Agency	Requirement / comment	Response / where addressed.
NSW EPA – Waste Compliance (2nd submission)	The discharge is proposed to flow over a vegetated paddock for about 280 metres to the road drainage system. There may be some further filtering and attenuation of pollutants across the paddock, in terms of water pollution, however, this is not an appropriate treatment method for water quality and pollutants may also build up in soils on site. The potential for channelled flow is not considered which could mean there is limited overland flow filtration effect and the site conditions may change over time. Once flows reach the road drainage system, they may be directly transported to downstream waterbodies with little change in pollutant levels. It is also noted that there may be recreational water bodies downstream. The EPA recommends that the applicant ensures the fate of any residual pollutants in discharges are adequately assessed and appropriate monitoring and mitigation measures implemented.	The stormwater capture and treatment system has been re-designed. Details are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. The predicted discharge from the site has been dramatically decreased, both in frequency of overflow and peak flow rate and of course volume of water released. The frequency of overflow events has been reduced to be consistent with pre-developed levels. Further, the level spreader has been increased to 50m wide to ensure that flows remain dispersed and do not cause any erosion of downstream bushland. The discharge from the spreader flows through natural bushland where most of the water will infiltrate into the ground and very little, if any, water will leave the site. In this project we have assumed the point of discharge is equivalent to a natural creek which needs the highest level of protection. This project does not rely on any attenuation after the point of discharge even though it will happen. Discharge water quality has been assessed at the point of discharge from the water quality pond and does not rely on any further on-site attenuation. The discharge has been assessed against a range of relevant criteria and against the most stringent criteria being a neutral or beneficial effect test as is applied to a drinking water catchment. The proposal, because of its significant treatment of stormwater is likely to result in a benefit to regional water quality. The Water Cycle Impact Assessment and Soil and Water Management Plan report states that a recent upgrade to Kangoo Road (this is the road which is south of the proposed development site) by Central Coast Council including the installation of kerb and gutter and drainage will see any surface runoff conveyed via the drainage system. If peak flows, velocities, volumes and frequencies of flow are maintained at levels less than the predevelopment state then it can

Agency	Requirement / comment	Response / where addressed.
		be said that the development will not alter the flow regime and will not impact on Kangoo Road to any greater extent than it does now. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
NSW EPA – Waste Compliance (2nd submission)	Licence analytes, limits or monitoring are not provided in the EIS. The EPA recommends that the applicant undertakes an appropriate characterisation and mitigation assessment of any water proposed to be discharged so that licence limits and licence monitoring (location, frequency methods) can be proposed for all non-trivial pollutants in wastewater.	The Water Cycle Impact Assessment and Soil and Water Management Plan report now provides a detailed list of potential contaminants. It still relies on the use of indicator pollutants to predict reduction levels resulting from the treatment methods. This list is consistent with the contaminants listed for monitoring in the licences of other similar facilities. A comprehensive water quality validation and risk assessment programme will need to be undertaken to ensure the site performs as is expected and if it doesn't then additional mitigation measures will be required. However the development proposal has been modelled very conservatively and it is concluded that it is most likely the site will achieve excellent water quality outcomes. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
NSW EPA – Waste Compliance (2nd submission)	The EIS states that a 25 kilolitre collection and storage tank will be provided for the waste receival and storage area which will also be bunded. Collected runoff is proposed to be disposed of-site. The rainfall conditions under which the bunded area or the tanks may be bypassed, or overflow is not assessed. The EIS states that overflows from the waste receival tank will be piped or flow as surface flow to the pond. The frequency of overflows has not been	The waste receiving area, including the Tip and Spread area has been re-designed. The Tip and Spread area will be covered, to minimise stormwater run-off. There will no longer be an underground tank to capture run-off from this area; any run-off will be collected as part of the re-designed stormwater drainage system. All stormwater will be treated. Roof water will be collected in 10 x 18 kL rainwater harvesting tanks which will be used to supply the misting system in

Agency	Requirement / comment	Response / where addressed.
	assessed and the full range of potential pollutant risks and mitigation measures should be assessed to avoid or manage potential water pollution impacts. A wider suite of potential contaminants than discussed above may be present in wastewater from the receival area including highly toxic chemicals. The EPA recommends that the applicant ensures all risk factors associated with overflows from the tanks or by-pass of the bunded area are adequately assessed and the potential impact on site discharge quality accounted are for.	the building for dust control. These tanks will be provided with a town water top-up supply. Details are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report, and the hydraulic services plan. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I Hydraulic services plan – EIS Appendix E(iii)
NSW EPA – Waste Compliance (2nd submission)	The EIS states that a grassed swale along the western boundary will be used to pre-treat sediment runoff from the working areas of the site. It is not clear if this swale is lined to protect groundwater or, if it is not lined, what is the potential impact on groundwater or nearby surface water, e.g. subsurface lateral flow to a possible drainage line immediately to the west of the site. The EPA recommends that the applicant ensures potential water pollution impacts associated with the grassed swale are fully considered and where necessary assess what impact mitigation measures will be implemented.	The grass swales will be lined with a waterproof membrane sub-surface. In addition, all areas that are not covered in concrete hardstand or asphalt will have a waterproof membrane in the sub-surface. Details are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. The Water Cycle Impact Assessment and Soil and Water Management Plan plan has been revised to ensure that sediment is removed from the flow before it is allowed to flow over the swale. This will protect the bioswale and give it a long life. A continuous review of water quality performance on the site will be undertaken to validate the on-going performance of the treatment plant. This will indicate if any element of the treatment train is not performing and needs rectification or maintenance. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I. Civil plans – EIS Appendix E(i)

Agency	Requirement / comment	Response / where addressed.
NSW EPA – Waste Compliance (2nd submission)	The EPA recommends that the applicant consider the potential human health and occupational health risks related to proposed wastewater reuse at the site.	The Water Cycle Impact Assessment and Soil and Water Management Plan Report includes references to both Commonwealth guidelines for water recycling as well as State Guidelines. The treatment plant proposed will include a range of treatment processes including membrane filtration as well as disinfection measures to ensure workers are kept safe. In addition soils will be monitored to assess the accumulation of metals within the soils to ensure they remain below long term values. If treatment plant effluent is found to contain levels of metals that would exceed long term values then additional treatment (ion exchange) to remove metals will be applied. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I Hydraulic services plan – EIS Appendix E(iii)
NSW EPA – Waste Compliance (2nd submission)	Misting dust suppression is proposed for processing inside the shed, using internal sprinklers, with water applied at a rate of 2.1kl/day. This water use and any other water use within the warehouse could result in leachate requiring management. The EPA recommends that the applicant identifies the fate and potential impacts of any leachate generated inside the warehouse and where applicable outline how the impacts will be appropriately managed.	The amount of water use in dust misting systems, and the capture and treatment of any leachate/run-off is considered in the updated water cycle management plan. As the misting systems are controlled to minimise water use, the generation of leachate is considered unlikely. This is confirmed by the misting system supplier and operators of similar waste facilities that use the proposed misting system. Details are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
NSW Health	To avoid potential impacts on health and the environment, the site should be connected to Council's sewerage system in preference to an onsite sewage management system (septic system). We also suggest that the use of potable water for non-potable uses such as dust suppression should be avoided as much as possible, in order to conserve this resource.	The site will be connected to the sewer. Sewage from the office building and trade waste from the vehicle wash and packaged membrane filtration plant will be discharged to sewer. Details are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report.

Agency	Requirement / comment	Response / where addressed.
		As much non potable water will be reused on the site as possible to conserve water. This also helps to keep any contaminants on the site very significantly reducing any export of pollutants. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
NSW Department of Industry - Water and the Natural Resources Access Regulator	As part of any post approval management plan requirements, the proponent should include a detailed Groundwater Monitoring and Management Plan in an updated version of the Soil and Water Plan and provide it to the Department of Industry – Water for review.	A Groundwater Monitoring and Management Plan will be prepared prior to the site becoming operational. It is anticipated that groundwater monitoring will form a condition of the Environment Protection Licence. Chapter 7 & 18 of the EIS
NSW Department of Industry - Water and the Natural Resources Access Regulator	The proponent must install three piezometers after construction activities and prior to commencement of operational activities to enable the monitoring of the underlying groundwater system(s) for the purposes of identifying impacts from the operation. a. Monitoring points are to be installed that are suitable to obtain representative groundwater level and quality information. b. Monitoring points are to be situated as follows; one up-gradient of the site and two down-gradient (southwest and south) of the site.	Three piezometers have been installed as part of the base-level sampling and testing. Details are provided in the Groundwater Baseline Investigation report. Groundwater Baseline Investigation report – EIS Appendix K.
NSW Department of Industry - Water and the Natural Resources Access Regulator	The proponent should undertake monitoring of groundwater level every month and groundwater quality (field testing and chemical analyses) every three months, or at more frequent intervals if necessary, for the purpose of identifying, managing or rectifying groundwater impacts.	Groundwater monitoring minimum requirements will be set as a condition of the Environment Protection Licence. Chapter 7 & 18 of the EIS

Agency	Requirement / comment	Response / where addressed.
	a. A technical groundwater assessment report of possible impacts is to be prepared after each quarterly monitoring activity, which includes all raw data to the date of the report. b. The technical groundwater assessment reports are to be retained by the proponent for the life of the activity and made available on a project-specific website within a reasonable period after their completion.	
Department of Planning, Industry and Environment	The Water Cycle Management Plan (WCMP) notes overflows occur over the spillway from the pond and are directed via a level spreader to the existing vegetation located in the southern portion of the site. The WCMP addresses pollution reduction for TSS, TP, TN and Gross Pollutants. However, the WCMP does not provide a characterisation of water quality at the point of discharge including contaminants of concerns. Please update the WCMP to include characterisation of water quality at the point of discharge, including heavy metals and chromium among others.	The updated Water Cycle Impact Assessment and Soil and Water Management Plan includes peer reviewed published scientific research on the expected contaminants in stormwater and the reduction expected as a result of the mitigation measures. The details are provided in the Water Cycle Impact Assessment report provided as an appendix to the EIS. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I.
Department of Planning, Industry and Environment	The WCMP states every year approximately 35 overflows from the stormwater detention pond would occur. The Department requests clarification to explain triggers for discharging stormwater.	The stormwater system has been re-designed to overflow approximately 8 times per year which is equal to the predevelopment frequency of discharge and close to the pre European or forested discharge frequency. The expected overflows are now substantially reduced. The details are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report provided as an appendix to the EIS. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I.
Department of Planning, Industry and Environment	(c) Section 8.3 of the WCMP states a 25 kilolitre (kL) collection and storage tank has been provided to the waste receival and storage area. The Site Plan shows the 25 kL storage tank is for waste receival area only. Clarification is requested to address the discrepancy. Should the storage tank	The underground storage tank has been removed from the site design. The Tip and Spread area will be covered with a 3-sided building to prevent stormwater contamination from this area. All

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	receive surface runoff from the waste storage area, clarification is required to show how runoff from the waste storage area would travel to the storage tank considering the ground level difference.	stormwater will be directed to the stormwater capture and treatment system. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
Department of Planning, Industry and Environment	The WCMP does not include details of firefighting water retention system. The WCMP must be updated to include firefighting water retention system including but not limited to type(s) of retention system, discharge/disposal methods and any pollutant control measures.	An emergency spill pond is now included in the proposal and it has 500 m^3 capacity. It can collect any runoff from the high risk area which is the area most likely to have a spill or to have a fire. The emergency spill pond is fully contained so water will not flow out unless it is deliberately pumped out. In addition to the emergency spill pond, the OSD basin will have penstocks (isolation valves) which can be closed if needed to ensure it can capture up to 2,500 m^3 of fire-fighting water. When combined – both systems can capture over 3 ML of fire water which is far in excess of any requirements. A full fire safety study and provisions for capture of firewater in the Secondary Sorting Warehouse and in the OSD pond have been made. Stormwater Management Plan – EIS Appendix E(i). Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I Fire Safety Study – EIS Appendix Q
Department of Planning, Industry and Environment	(e) The Department notes the facility includes a wash bay adjacent to the processing building. Please clarify how will waste water from the wash bay be collected and discharged into the stormwater management system? What are pollutant controls for wash bay waste water discharge?	The wash bay will be connected to sewer. Water will be treated prior to discharge via a coalescing plate separator. The wash bay is part of the Stage 1 approvals. Details are provided in the Hydraulic Services

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		plans and the updated Water Cycle Impact Assessment and Soil and Water Management Plan. Hydraulic Services Plans for Stage 1 – EIS Appendix E(iii) Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
Department of Planning, Industry and Environment	(f) The site was previously operated as a sand and metal recycling facility that has the potential impacts on the groundwater quality. The Department notes the EIS does not include a Baseline Groundwater Quality Assessment (BGQA). The RtS must include a BGQA to determine the baseline groundwater quality across the site, provide background concentrations of contaminants of potential concerns and obtain an understanding of the potential impacts of the development on the groundwater quality.	A Baseline Groundwater Quality Assessment has been conducted. No indication of groundwater contamination was found. Baseline Groundwater Quality Assessment – EIS Appendix K
(former) Office of Environment and Heritage	(FORMER) OEH recommends that the size of the on-site storage is reassessed to ensure that stormwater capture and re-use at the site is maximised.	The size of the On-site Detention (OSD) Basin has been remodelled using ARR2016 rainfall and resized to be 2,500m^3 of storage. A key difference is the assumption this time that the site is to be nearly 100% impervious (apart from some peripheral landscaping) to account for the waterproof liner proposed under the site. The performance of the basin has been assessed under a range of flow conditions – from the 1 year to the 100 year rainfall events. There will be 3 outflow pipes to restrict the flow under different conditions with very frequent flows highly restricted to ensure the level spreader is protected as much as possible from peak flows. The site area is 6 hectares and the volume of storage provided is 2,500 m^3. This is a rate of 416m^3/hectare which is comparable to rates adopted by developing Councils such as Blacktown which mandate a rate of 455 m^3/hectare.

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		Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommend that the size of the on-site storage be reassessed and increased to ensure that overflow from the on-site storage is matched to the capacity of the receiving environment	The sizing of the pond has been comprehensively assessed and is now based on the need to reduce overflow events to the pre-developed conditions. A 5 ML pond is proposed. This is predicted to reduce overflows to 8 times per year (on average). This is just above natural state (forested) runoff conditions which are 5 times per year and effectively limits runoff to the capacity of that environment to receive it. We note the soils on the site are sandy soils and they will absorb much runoff though attenuation beyond the point of discharge is not relied on in the assessment. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that calculations relating to water retention be reviewed to ensure the impervious area used is accurate and relates to the disturbed portion of the site only.	It is acknowledged that previous modelling by Cardno had some unconservative and questionable assumptions. This has been amended to reflect industry best practice. The 6 Ha site will have a drained waterproof membrane covering the majority of the operational area. It has therefore now been modelled as 100% impervious with some allowance for stockpiles of materials to absorb rainfall. Refer to the Water Cycle Impact Assessment and Soil and Water Management Plan report for details of modelling assumptions. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that the post development impervious area used for modelling of on-site detention storage be reviewed. All “Drains”	Details of all modelling are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. The post development assumptions now reflect a site that is to be effectively 100% impervious with some relatively minor allowance for initial

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	model inputs and results should be provided for review once this is completed	losses from areas covered with stockpiles. Please refer to the WCIA report for more details. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that the on-site detention modelling be carried out for the required design events, inclusive of the 2-year ARI event which will assist in determining the impacts of discharges to adjacent bushland areas	Details of all modelling are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. The 1 year ARI event has been adopted as the lower limit for matching pre-development and post development flows and the 100 year ARI as the upper limit. Flows at the 10 year ARI have also been checked as these can frequently govern OSD system design. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that flow velocities from the level spreader are determined to demonstrate that discharges will not result in scour and damage to downstream areas.	Details of all modelling are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. We have adopted stream restoration guidelines to assess the risk of scour downstream of the level spreader. As a result, the spreader has been designed so that no scour occurs up to the 10 year ARI. The revised spreader is to be 50m wide with velocities limited to about 0.5m/s which reflects the sandy non-cohesive nature of the site. An infiltration system is also proposed at the spreader to further help reduce runoff and to return rainfall to the soil profile. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that: • potential impacts to neighbouring properties from discharges of stormwater are confirmed and the EIS amended to reflect this	Council has been contacted to ascertain available flood data as well as drainage system information on Kangoo Road where flows would ultimately end up. Kangoo Road has a new kerb and gutter and drainage system that has been designed to accept runoff from the

Agency	Requirement / comment	Response / where addressed.
	• additional contour information be provided for the lower portion of the development.	KSSS site under predeveloped conditions. It is therefore imperative that the OSD system was designed to ensure predeveloped runoff conditions prevail. A 50m wide level spreader will help to spread flows evenly from where they will follow their predevelopment flow path down to Kangoo Road. The revised report shows Council contour data down to Kangoo Road. In terms of flooding and potential impacts from directing flows onto adjoining sites: The proposal will not direct any flows onto adjoining land that doesn't already flow onto adjoining land. There are not likely to be any flow or velocity related adverse impacts on adjoining land from the development. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that an impact assessment is carried out for the downstream vegetated areas to determine the sensitivity of these areas to changes in frequency, volume and velocity of flow of water.	The impacts have been considered in the Biodiversity Assessment and the Water Cycle Impact Assessment and Soil and Water Management Plan . However, it is expected that the vegetated area will not experience any significant change in run-off due to the 5 ML storage pond and proposed reuse of stormwater. The number of overflow events have been dramatically reduced by increasing the size of the pond. The size of the spreader has also been increased to reduce velocities to sustainable levels. The overflow impacts on bushland are expected to be minimal. The sizing of the pond has also been based on reducing overflow events to the equivalent of pre-developed (forested catchment) conditions. This has been done to simulate the natural wetting and drying of soils downstream of the development, to ensure that the

Agency	Requirement / comment	Response / where addressed.
		integrity of the downstream plant communities are maintained or enhanced. Details of all modelling are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that consideration be given to provision of primary sediment removal points prior to vegetated systems to improve performance and maintainability of the water quality management system	The stormwater and drainage system has been thoroughly reviewed and re-designed to achieve this outcome. This includes sedimentation capture measures upstream of all secondary treatment devices. The use of both Barramy Traps and CDS units is proposed. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that all input parameters used for water quality modelling and justification for parameters be provided to (FORMER) OEH to enable a review of the proposed treatment train	Comprehensive details of all modelling are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I.
(former) Office of Environment and Heritage	(FORMER) OEH recommends that additional details are provided of the suitability of any proposed proprietary membrane filter that is to be used as part of the water quality treatment train for the proposal. This should include any information required under Gosford City Council DCP Chapter 6.7	Details of the proposed water treatment systems are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. The Jellyfish has been removed from the proposal as it was not appropriate in that location and that context. Access for maintenance and inappropriate hydraulic configuration were the key reasons for its removal. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I.

Agency	Requirement / comment	Response / where addressed.
(former) Office of Environment and Heritage	(FORMER) OEH recommends that provision of a cover be considered for the waste sorting area, or the size of the pump-out tank is reviewed to ensure it is adequate in size to prevent overflows	The Tip and Sort area will be covered with a three-sided building. The building will have 10 x 18 kL rainwater tanks to capture rainwater from the roof. The underground sump has been removed from the design. All stormwater will be captured by the site's stormwater and drainage system. Details are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
(former) Office of Environment and Heritage	(FORMER) OEH recommends that staging of clearing and filling operations be considered to minimise exposed areas at any time and reduce risk to the receiving environment	A Stormwater Plan has been prepared and is provided with the Civil Plans in the EIS Appendix. The OSD basin will be installed prior to extensive clearing and filling at the site. This will ensure sediment is captured on site. Civil Plans – EIS Appendix E(i).
(former) Office of Environment and Heritage	(FORMER) OEH recommends that consideration is given to the potential impacts to Kangoo Road from stormwater discharges that originate from the proposed development.	With the increased on-site capture of run-off and the increase in the spreader size, there is minimal risk that run-off will reach Kangoo Rd. This has been confirmed in the Water Cycle Impact Assessment and Soil and Water Management Plan report. Council has been contacted to ascertain the drainage capacity on Kangoo Road and this has confirmed that the road has a drainage system with capacity to accept predevelopment rates of runoff from the KSSS site. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I.
Water NSW	As the subject site is not located in close proximity to WaterNSW land or infrastructure, the potential for the proposal to impact water supply infrastructure has been assessed as low. WaterNSW therefore does not have any particular requirements or comments.	Noted. Groundwater and stormwater run-off will be monitored. Chapter 7 Water Impact Assessment and Chapter 18 Mitigation Measures and Statements of Commitment in EIS Report

Agency	Requirement / comment	Response / where addressed.
Central Coast Council	Flooding Council's records do not indicate that the site is affected by flooding· or flood planning controls.	Noted. A flood advice letter and first principles assessment has been undertaken. Based on Council mapping and a first principles analysis, the risk of flooding is considered extremely low. Section 2.2.4 Riparian areas and waterways in EIS report.
Central Coast Council	Drainage The site generally grades towards the south-west. Kangoo Road is located along the southern boundary, however, the development will not extend to that area. A Water Cycle Management Plan (WCMP) prepared by Cardno (NSW/ACT Pty Ltd) accompanied the EIS as Appendix I - (report reference 80518002 Version 6 dated 11 January 2019). Review of this document indicates that stormwater for the proposed development is to be managed through the following provisions: • Water conservation. Stormwater from the proposed developed area within the site will be directed to storage pond where it can be utilised for dust suppression within the site. • Water retention. A permanent retention volume of 250m^3 is proposed within the on- site detention basin which is far in excess of the minimum volume in this instance required under Council's DCP. Rainwater from the site shed will also be stored in a 10,000 litre tank for dust suppression within the shed. • Water Quality. The following measures are proposed for mitigate the additional nutrients & pollutants that could be generated by the development: - A 25 kl collection and storage tank has been provided to the waste receiving and storage area. This area is bunded and any runoff from	Based on the comments received from the NSW EPA, the On-site Detention Basin and stormwater capture system has been re-designed. The expected overflows are now substantially reduced. The details are provided in the Water Cycle Impact Assessment and Soil and Water Management Plan report provided as an appendix to the EIS. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I

Agency	Requirement / comment	Response / where addressed.
	this area is collected within the storage tank and disposed off-site. In this manner, the potential for contaminants from mixed waste sources to enter the stormwater system for the site is reduced through management and containment; - A 10kL rainwater tank will be used to capture runoff from the shed roof associated with Stage 1. Stored rainwater will be used for dust suppression within the enclosed workshop; - A grassed swale located within the western side of the site will be used to pre- treat runoff from the working areas of the site. - Sediment inlet ponds will be used at the entry to the proposed pond storage to capture sediment from site runoff; - A storage pond will be used to capture runoff from the site. The pond will consist of a permanent pool for re-use purposes, and an on-site detention component to ensure site discharge meets Council's requirements. - A Jellyfish filter from Stormwater 360 (or approved equivalent) will be installed on the outlet pipe from the pond to ensure that any discharges from the pond are appropriately filtered prior to discharge to the vegetated area to the south of the site. The report indicates that the reduction targets required in chapter 6.7 of Council's Gosford DCP2013 have been exceeded as modelled through MUSIC modelling. • On-site Detention (OSD). OSD is proposed in the basin to limit post development flows for all storms up to and including the 1%AEP storm recurrence interval. A runoff routing method (DRAIN S) has been used in the design modelling. The OSD basin is proposed in the south western corner of the proposed developed area of the site and will have a	

Agency	Requirement / comment	Response / where addressed.
	storage volume of 685m^3 at a storage depth of 1.14m. Outflows from the basin will be discharged from a 675mm diameter pipeline with a 10m wide weir, and then directed to a level spreader arrangement to discharge non-concentrated stormwater flows into the undeveloped southern portion of the site that is proposed to be retained in its natural state. A Stormwater 360® Jellyfish™ device (or similar device will also be provided to further treat the discharges from the basin.) This WCMP is satisfactory for the purposes of review of the stormwater management for this development proposal. A concept stormwater management plan prepared by Cardno (NSW/ACT) Pty Ltd was also submitted which details the concepts for the above mentioned stormwater management associated with the associated abovementioned WCMP. These details appear to be satisfactory for the purposes of review of the stormwater management for this development proposal.	
Central Coast Council	Water & Sewer Comments from Council's Water Assessment Unit have indicated that water and sewer are available to the land. A section 307 certificate shall be required. There are no additional water or sewer developer contributions as these have been paid in accordance with the SIE Agreement and Council negotiation.	The site will be connected to the sewer and town water supply. It is anticipated that the water supply will need to be upgraded to accommodate the proposed fire hydrants. A Hydraulic Services diagram is provided with the civil plans attached to the EIS. Hydraulic Services Plan – EIS Appendix E(iii).
Central Coast Council	Groundwater The Environmental Impact Statement prepared by Jackson Environment and Planning dated 15 January 2019 ("the EIS') states the main access driveway and the waste tip and spread inspection area will comprise a fully engineered and bunded hardstand (waste tipping and inspection area), to avoid movement of any pollutants into groundwater. A flexible asphalt pavement will be provided beneath the waste storage bays, the landscaping storage	Noted. The proponent is confident that the combination of waterproof membrane under-layer and hardstands will provide protection to the groundwater from activities on the site. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I

Agency	Requirement / comment	Response / where addressed.
	bays and the aggregate storage bays to further protect groundwater. The other operational areas of the site will be paved in recycled crushed concrete, with an engineered bentonite geotextile layer (impermeable barrier) to prevent any infiltration moving into groundwater. Groundwater impacts will be included in the EPL as the NSW EPA are the ARA Conditions have been applied.	
Central Coast Council	Water A new OSD and stormwater storage basin is proposed to be constructed to capture stormwater and sediment. The site will be contoured to capture stormwater and sediment. Stored water will be used on site for dust suppression. Overflows from the OSD will be treated through a jellyfish membrane filtration system and released via a level spreader into grassed area. Surface water impacts will be included in the EPL as the NSW EPA are the ARA. Conditions have been applied	Noted. The new design of the OSD basin will provide more than adequate storage for stormwater at the site. Stormwater will be treated and re-used on-site. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I
Central Coast Council	Soils The site is relatively flat, however gently slopes to the South-West. A watercourse and number of ponds /dams are located on the site which is a tributary of Piles Creek. The area of soil disturbance is expected to be approximately 40,000m^2 Cut and fill will occur during the construction phase, with approx. 12,000m^3 of the excess material expected to be used as product.	No natural watercourses intersect with the proposed development site. The existing man-made dams will be replaced with the lined pond and OSD basin. It is expected that the development will have no impact on the closest natural waterbodies. It should be noted that the cut and fill plan has been re-designed to account for the revised OSD basin design. To accommodate the proposed drainage plan, it is proposed to import additional fill to the site. This will be managed in accordance with the revised Soil and Water Management Plan. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I

Agency	Requirement / comment	Response / where addressed.
	The Soil and Water Management Plan Report prepared by Cardno dated 11 January 2019 ("the SWMP") has not been prepared in accordance with the minimum requirements of the Blue Book and the Gosford DCP. Council would be the ARA during the construction phase of the development.	
(former) Office of Environment and Heritage	The impact of changes to hydrology resulting from the proposal should be assessed for the *Melaleuca biconvexa* community adjacent to the site and appropriate mitigation measures should be provided where required.	The impact of hydrology on the *Melaleuca biconvexa* community was investigated as part of the Biodiversity Assessment and the Water Cycle Impact Assessment and Soil and Water Management Plan. Additional measures have been proposed to ensure the hydrology of this conservation area is maintained including irrigation of the area to make up for some of the upstream catchment area being developed. The depth of irrigation is to provide an equivalent volume of water lost and equates to a depth of irrigation of about 950mm year. The water used to irrigate the area will first be treated in an ultrafiltration membrane plant. It is recommended that soils in the area of irrigation be tested to assess the levels of metal accumulation to ensure they remain below long-term values. Treated water quality will also be assessed during commissioning and if required, additional treatment to remove metals will be included. This will ensure the long-term health and survival of the Melaleuca. Biodiversity Assessment report – EIS Appendix P. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I.
Fire and Rescue NSW	The waste facility is to have effective and automatic means of containing fire water run-off, with primary containment having a net capacity not less than the total hydraulic discharge of the worst-case fire scenario. The total hydraulic discharge is the discharge from both the fire hydrant system and automatic fire sprinkler system for a duration of four hours. Failure to	Fire water run-off will be captured and contained in the Secondary Sorting Warehouse with 70mm bunding around door openings. An isolation value will be installed in the southern most pit in the Secondary Sorting Warehouse, and on the outlet of the on-site detention basin.

Agency	Requirement / comment	Response / where addressed.
	contain fire water run-off can result in pollution of the environment and require a protracted hazardous materials response.	The size of the water quality basin (5ML of storage plus an additional 2.5 ML for OSD which can be used to store water if penstocks are closed) has been designed to contain all firewater in the event of a large fire at the site. After a fire, the water will be tested, and removed and disposed off-site if necessary. In addition to this an emergency spill pond of 500m^3 volume is proposed to intercept runoff from what is deemed a high-risk area. This is the area most likely to have a fire or spill. This will prevent the need to mix fire water or a spill with water in the water quality pond. In conclusion ample provision for spill and fire water capture has been made. Details are provided in the Fire Safety Study and the Water Cycle Impact Assessment and Soil and Water Management Plan provided in the appendix of the EIS. Fire Safety Study – EIS Appendix Q Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I Civil and layout plans – EIS Appendix E(i)

Water issues continued.

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
General			
It is recommended each technical report should not only address SEARs requirements but also include responses to concerns/requirements raised in submissions to justify any changes to the development.	No response provided	The Department's February 2020 comments remains valid.	Section 1.6 has been added to the report to document responses to concerns raised in submissions. The report also explains the reasons for each part of the proposal as well as Section 1.5 explaining the reasons for the revising the approach from the original Cardno approach.
Water Quality Impact Assessment Report			
It is acknowledged that the water management system has been redesigned for the revised development. However, the Department notes the EPA requested additional information for the originally proposed jellyfish filter, there is a lack of justification for not proceeding with the jellyfish filter but with a new stormwater management system, comparison of the new system with the previously proposed system to prove the suitability and effectiveness of the currently proposed water management system.	No response provided	The Department's February 2020 comments remains valid.	Section 1.5 has been added to the report to explain some of inadequacies of the previous design. Justification for the revised proposed treatment train is provided throughout the whole report.

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
The WQIA report does not consider the PMF events as required by the SEARs in terms of stormwater velocity and quality.	**Executive Summary** The site is close to a ridge line and there are no overland flow paths coming onto the site. Analysis of Council flood mapping indicates the site is not subject to a 1% AEP flood event and further it is estimated with a high probability that the site is not within a floodplain and is therefore not flood prone, i.e. is not subject to PMF flooding.	Noted	Noted with thanks.
The WQIA does not include an impact assessment for the downstream vegetated areas to determine the sensitivity of these areas to changes in frequency, volume and velocity of flow of water as required by the Biodiversity and Conservation Division of the Department (former (FORMER) OEH).	**Executive Summary (p. xviii)** This development is predicted to exceed its best practice water quality targets, to achieve a substantial water quality beneficial effect and to closely match runoff flow frequencies with that of a forested land-use. **Section 6.3.2 Surface water quantity impacts (p. 52)** It can be seen in Table 12 that by harvesting and reusing the stormwater, rather than disposing it to the creek, the mean annual volume of surface runoff and frequency of surface runoff can be reduced closer to the pre European runoff volume and frequency, thereby maintaining soil stability and protecting the bushland from any adverse effects.	Noted The Department will refer the WCIA report to the Biodiversity and Conservation Division during exhibition of the revised EIS and RtS.	Noted with thanks.

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
The WQIA report states the site would discharge approximately 8 times per year after development. Item No 14, Comments from Government Agencies table in the RtS report fails to address the EPA's comments regarding the characterisation and fate of any residual contaminants in discharged stormwater.	No response provided	February 2020 comments remains valid. It is acknowledged that the development would have relatively low occurrence of stormwater discharge. However, the EPA's comments remain valid and should be addressed. If the Applicant considered no response would need to be provided, please provide justification for doing so.	Section 5.1.1 of the report notes that: "In this assessment (and in stormwater management more widely) TSS, TP and TN are used as surrogate pollutant indicators. Liebman et al, 2009, found that if stormwater was treated to best practice, i.e. to achieve 80% removal of TSS and 45% removal of nutrients then it was most likely that metals would also be treated to concentrations below the ANZECC 99th percentile level of protection, i.e. the highest level of protection. Liebman et al observed that if a treatment train approach was adopted and some form of biological treatment, i.e. wetlands, ponds or bioretention occurred then removal of heavy metals to benign levels was most likely to occur." The treatment train proposed includes a very large water quality pond with very substantial reductions in the three indicator pollutants – well below best practice levels – we therefore conclude, based on the research and the proposed treatment train that all other pollutants are also likely to be reduced to benign levels. Where it is possible to estimate the pollutant concentrations for a range of parameters for water treated in the proposed microfiltration plant these are included in Table 18 of the WCIA report. Table 18 identifies the discharge concentrations/values from the treatment plant for a range of critical human health and chemical

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
			parameters. This shows for example that TSS would be less than 1 mg/L which would be indicative of exceedingly high-quality water which would exceed ANZECC guidelines for irrigation. Table 11 in Section 6.3 of the report identifies the concentrations of key indicator pollutants being TSS, TN and TP at the point of discharge. These are the only three pollutants that can be modelled using the MUSIC model at the current time. This was also further explained in the report in Section 6.3.1.2 and via inclusion of a peer reviewed scientific publication included in Appendix 2 of the report. Should the Department require that all pollutants be modelled and predicted (**while the EPA is satisfied that this does not need to occur**) it is requested that the Department provide a reference to suitable EMC and treatment train pollutant decay data and computer or conceptual models with which to undertake this work. For reference purposes, we also request an example of another development where this has been undertaken and the Department and EPA have been satisfied with the work. Based on the modelling to date, discharge water quality is likely to be exceedingly high. However, to prove this during operation, a water quality validation programme has been recommended and approved by the EPA in their comments to

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
			characterize pollutant concentrations albeit at very low concentrations in the discharge water. As part of the water quality validation programme, levels of metals will be tested and compared with ANZECC Irrigation Guidelines – long term values to ensure that any bushland and *Melaleuca Biconvexa* area remains healthy and free from metal pollution. In the unlikely event that metals are found to exceed the long term values then additional treatment in the form of ion exchange will be added to the treatment system to reduce dissolved metal concentrations to acceptable levels. At that point the discharge water quality would be practically fit for human consumption let alone ensuring bushland plant health.
The WQIA does not provide pollutant concentration criteria at the point of discharge of the OSD pond for treated stormwater discharged onto bushland and of Stormwater Treatment Plant (STP) for recycled stormwater used for dust suppression and *Melaleuca Biconvexa* plant irrigation.	**Executive Summary** (p. xiv) Part of the proposed development reduces a small catchment flowing to a *Melaleuca Biconvexa* plant community. Treated water will be used to irrigate land draining to this plant community aiming to supply the same annual volume of water that would have flowed to this community under predevelopment conditions. The WCIA report does not include the requested pollutant concentration criteria.	The Department's February 2020 comments remain valid. Please respond to the request of providing pollutant concentration criteria.	Section 5.1.1 of the report notes that: "In this assessment (and in stormwater management more widely) TSS, TP and TN are used as surrogate pollutant indicators. Liebman et al, 2009, found that if stormwater was treated to best practice, i.e. to achieve 80% removal of TSS and 45% removal of nutrients then it was most likely that metals would also be treated to concentrations below the ANZECC 99th percentile level of protection, i.e. the highest level of protection. Liebman et al observed that if a treatment train approach was adopted and some form of biological treatment, i.e. wetlands, ponds or bioretention occurred then removal of heavy metals to benign levels was most likely to occur."

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			Where it is possible to estimate the pollutant concentrations for a range of parameters for water treated in the proposed microfiltration plant these are included in Table 18 of the WCIA report. Table 18 identifies the discharge concentrations/values from the treatment plant for a range of critical human health and chemical parameters. This shows for example that TSS would be less than 1 mg/L which would be indicative of exceedingly high-quality water which would exceed ANZECC guidelines for irrigation. Table 11 in Section 6.3 of the report identifies the concentrations of key indicator pollutants being TSS, TN and TP at the point of discharge. These are the only three pollutants that can be modelled using the MUSIC model at the current time. This was also further explained in the report in Section 6.3.1.2 and via inclusion of a peer reviewed scientific publication included in Appendix 2 of the report. Should the Department require that all pollutants be modelled and predicted (while the EPA is satisfied that this does not need to occur) it is requested that the Department provide a reference to suitable EMC and treatment train pollutant decay data and computer or conceptual models with which to undertake this work. For

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
			reference purposes, we also request an example of another development where this has been undertaken and the Department and EPA have been satisfied with the work. Based on the modelling to date, discharge water quality is likely to be exceedingly high. However, to prove this during operation, a water quality validation programme has been recommended and approved by the EPA in their comments to characterize pollutant concentrations albeit at very low concentrations in the discharge water. As part of the water quality validation programme, levels of metals will be tested and compared with ANZECC Irrigation Guidelines – long term values to ensure that any bushland and Melaleuca Biconvexa area remains healthy and free from metal pollution. In the unlikely event that metals are found to exceed the long term values then additional treatment in the form of ion exchange will be added to the treatment system to reduce dissolved metal concentrations to acceptable levels. At that point the discharge water quality would be practically fit for human consumption let alone ensuring bushland plant health.

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The EPA requested additional information be provided on the full range of potential pollutants in site discharges, including potential water discharge concentrations from any proposed treatment system under relevant water quality and flow conditions (i.e. both controlled discharges and managed overflows). The WQIA did not provide the requested full range of potential pollutants.	Section 5 describes pollutants of concern but does not provide potential water discharge concentrations from any proposed treatment system.	The Department's February 2020 comments remain valid.	The NSW EPA have reviewed the revised report and had one comment on the revised report which was a requirement to monitor soils at the point of discharge for accumulation of contaminants. The NSW EPA is therefore satisfied that their requirement has been fully met. As the NSW EPA (and not Planning NSW) is the arbiter of water quality technical matters we consider that this matter has been assessed in full and addressed in full. This issue has been addressed above in Issue 5.
Appendix E(i) Civil Plans shows there are two dish drains proposed (western and southern), however please clarify how stormwater will be diverted to the OSD pond for the hardstand internal road, parking and processing areas. It is noted that the Fire Safety Study report states the OSD pond will collect stormwater from the site through dish drains collecting from the north and east and grassed swale along the western boundary. The eastern dish drains are missing from the Civil Plans. Also, Section 5.4.3 of the WQIA report states 'installing a drainage layer under the hardstand areas with subsoil drainage which would discharge into the stormwater collection system'. Please provide further details of the proposed drainage layer.	The civil plans have been updated to show the proposed drains.	Noted	Noted with thanks.

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The submitted civil and hydraulic plans only show town water supply, collected and recycled stormwater will be connected to the waste receival area (i.e. tip and spread building), crushing area and secondary processing warehouse for dust suppression. It is unclear how stormwater runoff from roofs of these covered areas would be collected, treated and discharged, how mist suppression wastewater be separated from the roof collected stormwater, treated and disposed.	Section 7.1 Risk Management Approach states: • waste receival area (tip and spread building) within M3 risk area: rainwater tanks for roof runoff, CDS unit to treat sub-catchment runoff including roof and pond including floating treatment wetland • crushing area within M1 risk area, waste storage area within H1 risk area: house concreate crusher inside building to reduce dust generation, Barramy gross pollutant trap to treat whole catchment, pond including floating treatment wetland, emergency spill pond if required. • secondary processing warehouse: rainwater tanks for roof runoff, CDS unit to treat sub-catchment runoff including roof and pond including floating treatment wetland. Section 7.2 states roof runoff from the timber processing shed and crusher shed will also be piped to the pond after treatment in a GPT.	The WCIA report does not explain how wastewater generated from dust suppression would be collected, treated and discharged.	Section 6.1.2 of the WCIA notes that the misting system will not generate leachate. Section 6.1.3 of the WCIA report explains this further and notes that "Please note further that communication with the dust suppression equipment supplier as well as with a large waste management organisation who use their equipment extensively across many waste management sites has shown that leaching does not occur as the system up time (operating time) is adjusted to reflect site conditions. Water does not accumulate on the floor – once it hits the floor it evaporates off the floor of the building leaving the dust particle on the ground and not in the air. If a building cools too much, then the system is turned off for a while giving the floor time to heat up again and so on. The system needs active management and training of staff in its operation to ensure no leaching."
Please provide details of firefighting water retention system for collecting, treating and discharging contaminated	Section 7.11 describes firefighting water storage: the WCIA report states during a fire emergency the penstocks	Please explain the relationship between the water quality pond and the emergency spill pond:	If there is a fire in sub-catchment H1 which is the high risk area of operations then the firefighting

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
firefighting water within the Secondary Processing Warehouse and outdoor processing areas. It is noted Section 6.3 of the FSS report states the volume of contaminated firefighting water required to be captured within the bunded area is 144 m3 with a bund wall height of 70 mm. It is unclear where the bunded area will be. Section 5.4.3 of the WQIA report states installing penstocks to ensure that firefighting water is captured on site and does not overflow from the facility into the catchment and groundwater. It is unclear where the proposed penstocks will be installed.	to the main water quality pond would be closed manually. This would require a trained operator to walk along a gangway located on the pond wall and to then close the penstocks. A portable battery powered drill can be used to close them rapidly or they can be manually wound and achieve a water-tight seal. The penstocks would be located over each outlet opening in the pond outlet wall and therefore three would be required. Section 7.12 Emergency Spill Pond: the proposed emergency water quality pond volume is to be 500 m3. This would allow 60 mm of either firewater/foam or polluted runoff to be fully contained in the pond without mixing with any other site runoff. This would allow fire-fighting water to be contained and removed from the riskiest part of the site without the need to treat and remove up to 5 ML of pond water contaminated with foam.	• will the water quality pond collect firefighting water? Or the emergency spill pond will solely collect firefighting water during a fire event. • if the water quality pond will collect firefight water, then please clarify that it is only when the water quality pond reaches its capacity, the collected firefighting water would flow into the emergency spill pond from the water quality pond? The report indicates that the purpose of the emergency pond is to contain fire water/foam or polluted run-off without mixing with other site runoffs. It is inferred that in a worst-case scenario, should the emergency pond not have enough capacity, that contained firefighting/pollutant water within the emergency pond will flow into the main pond – essentially mixing with other site runoff contained in the main pond. Please clarify how fire water will be managed in this scenario, as it is no longer contained separately.	water will be collected in the Emergency Spill pond. If the emergency spill pond overflows – it will overflow into the water quality pond. If there is a fire in any other sub-catchment then the fire water will flow to the water quality pond, the penstocks closed and the water will be pumped into a tanker and treated at a lawful facility. First dot point on page XV of the WCIA identifies that "water from the detention basin would be pumped out and treated at a lawful treatment facility". The wording in the report has been simplified to aid comprehension.
The WQIA does not provide detailed assessment of the potential water pollution impacts associated with the grassed swale and what impact mitigation measures will be implemented as requested by the EPA.	Section 7.8 states 1) Pollutant removal processes that occur in bioswales include: 2) Removal of fine TSS Removal of particulate bound nitrogen,	There is lack of an assessment of the potential water pollution impacts associated with the grassed swale. Please provide additional information in this regard. Further details also required on how	The previous assessment by the EPA identified understandable concern that the proposed swale by Cardno would be smothered with sediment. We considered that this was a valid concern. As a result, the proposal was modified significantly to ensure that before any water flows onto the swale

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
Section 7.4 of the WQIA report only states evidence from a Borgs Manufacturing site at Oberon is that these swales perform well to reduce TSS, TP, TN and tannins.	phosphorus, metals and hydrocarbons 3) Uptake of nutrients and trace elements by grass – grass clippings MUST be removed from the swales to prevent leaching of nutrients back into the media. 4) Ion exchange in the media to remove ions including metals and ammonia 5) Absorbing of large volumes of flow to reduce volumes of runoff.	frequently the swales will be monitored and replaced.	it is first treated in a gross pollutant trap to remove the sediment. This has required modification of both the catchment plan and site grading plan, inclusion of dish drains to divert all flows to GPTs first and then inclusion of GPTs. Section 7.6 of the report states "Traps treating runoff from catchment M4 and M2 are required to reduce the loading of sediment and gross pollutants on the bioswale. This will enable the bioswales to be easily maintained into the future." Section 8.1, point 2) of the WCIA report notes that "Gross pollutant traps are then used to remove coarse sediment and gross pollutants from the system. This will keep the bioswale and pond free of a large volume of sediment and gross pollutants" Section 8.1, point 3 also notes "The bioswale is used to treat Catchments M4 and M2. This will reduce fine sediment, metals and nutrients. Removal of sediment and gross pollutants upstream of the swale will help to protect the swale and keep it functioning through the life of the facility. The hydraulic loading rate (volume of water treated/ surface area of device) on the swale is predicted to be 100m/year for the first segment and 30 m/year for the second segment. It is considered that a bioretention systems sized at 150m/year or less will achieve their expected design outcomes.

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
			Figure 16 shows that with a hydraulic load rate of 100m/year the proposed bioswale is likely to perform at the highest level and will be lightly loaded ensuring good outcomes in the long term." Section 9.4 of the report also identifies how to best establish a non erosive cover over the swale as follows "Jute mat will be required to stabilise soils in the bioswales until vegetation has been well established. A mix of native reeds, grasses and sedges will be used in the bioswales. Turf can be used as a vegetative buffer strip between the developed parts of the site and the swales. Swales may also be grassed with a hardy buffalo grass as an alternative to bioretention plants. This can be resolved during detailed design." Section 7.16 of the WCIA identifies that a risk and operation and maintenance plan for the whole system needs to be developed and this would include the bioswale. This plan will comprehensively identify all of the maintenance activities that are needed for the bioswale and every other part of the treatment train. Further identification of specific maintenance requirements at this stage of the development process are not considered appropriate. We also note the likelihood of ongoing licence and reporting conditions which will provide an indication of poor water quality and the need for rectification in the unlikely event that it does occur.

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
The WQIA does not consider the potential human health and occupational health risks related to proposed wastewater reuse at the site as requested by the EPA.	Section 5.4.2 states a sewer will be installed on site with wastewater pumped to the Council's wastewater treatment plant. Section 7.2 states covering the vehicle wash bay and send wastewater to trade waste not stormwater.	It seems wastewater would not be reused on site and would be discharged to sewer under Trade Waste Agreement. Please provide confirmation in the WCIA. Please provide details of where human health target values/criteria in Table 18 have been derived from, i.e. guideline reference. Will other pollutants (section 5.1.1) also be considered in the human health assessment?	Section 5.4.2 of the WCIA states that "A sewer will be installed on site with wastewater pumped to the Council's wastewater treatment plant." Table 18 includes targets that were identified in Table 4 of the report. Table 4 of the report is based on the two key guideline documents described in Section 4.8. For convenience these are "Managing Urban Stormwater: Harvesting and Reuse (2006)" and "Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 2): Stormwater Harvesting and Reuse (NRMCC-EPHC-NHMRC, 2009). The risk assessment process is comprehensive and requires that all risks are assessed including from exposure to any other pollutants.
The WQIA does not identify the fate and potential impacts of any leachate generated inside the warehouse and where applicable outline how the impacts will be appropriately managed as requested by the EPA.	Not addressed in the WCIA	The Department's February 2020 comments remain valid. Please clarify if any leachate would be generated inside the warehouse/enclosed areas. If so, please identify the fate, potential impacts and responding mitigation measures as requested by	This issue has been addressed at Issue 8.

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
		the EPA.	
Please explain why the proposed Stage 1 vehicle wash bay and trade waste treatment facility is located at upstream of the wash bay. It is also unclear how wastewater from the wash bay will be drained to the treatment facility.	Wastewater collected from wash bay will be discharged into sewer under a Trade Waste Agreement.	Please clarify if there is any treatment (or testing) prior to discharge wash bay wastewater to ensure the discharged water would meet the Trade Waste Agreement criteria.	Page XV of the WCIA states that "A covered vehicle wash bay will use a coalescing plate separator to firstly treat dirty water (separating oils and grease) and then to discharge this water to trade waste." Typically, a vehicle wash bay would see the installation of an approved coalescing plate separator and no testing is required as the approved device has already proven its performance. It is unlikely but possible that Council may require testing, and if they do, this will be included as a condition of the trade waste agreement.
Please include a site water balance with average water volume in the WQIA report.	Site water balance is provided in Executive Summary (page xvii), shown in Table 14 in Section 6.3.2 of the WCIA report.	• Table 14 is inconsistent with the executive summary. Frequency of discharge into bushland and ET loss from site in pre- European and Pre-Development scenarios are missing from Table 14. Please update Table 14 to align with the water balance table in the executive summary. Please clarify the meaning of ET loss.	Table 12 identifies the frequency of discharge into bushland and it was therefore not repeated in Table 14. Table 14 is updated to include the ET loss from the site so that it is consistent with the Executive Summary. ET loss is a common abbreviation for evapotranspiration loss.

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
Provide details in the EIS and/or PIRMP regarding controls to be implemented with the capture systems during an emergency, including overflow.	The proposed water management system has been amended to include an emergency spill pond. Section 7.12 details the proposed emergency spill pond.	• Please update the WCIA report to ensure consistent terminology is provided (e.g. emergency spill pond and emergency water quality pond coexist in the report, water quality pond and main pond coexist in the report). • Please explain the relationship between the water quality pond and the emergency spill pond: – will the water quality pond collect firefighting water? Or the emergency spill pond will solely collect firefighting water during a fire event. – if the water quality pond will collect firefight water, then please clarify that it is only when the water quality pond reaches its capacity, the collected firefighting water would flow into the emergency spill pond from the water quality pond? The report indicates that the purpose of the emergency pond is to contain fire water/foam or polluted run-off without mixing with other site runoffs. It is inferred that in a worst-case scenario, should the emergency pond not have enough capacity, that contained firefighting/pollutant water within the	The terminology will be updated to be consistent. The other points have been addressed at Issue 9.

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
		emergency pond will flow into the main pond – essentially mixing with other site runoff contained in the main pond. Please clarify how fire water will be managed in this scenario, as it is no longer contained separately.	
Reference has been made to a literature review "How sustainable are stormwater management practices with respect to heavy metals? A multinational perspective (Liebman & Jonasson, 2009)." The literature review is a generalised study on stormwater treatment, however, is not specific to the potential pollutants present in stormwater runoff typically associated with waste management facilities, which is appropriate to this this development. Clarification needs to be provided regarding whether the suitability of the stormwater management practices adopted from the research referenced in Liebman & Jonasson (2009) are appropriate for the site.	No response provided	The Department's February 2020 comments remain valid. There is an emphasis in the report of stormwater management for the treatment/removal of TP, TN and TSS (as per Section 6.3.1.2) of the report. However, other contaminants highlighted in Section 5.1.1 as potential pollutants identified on waste facilities have not been addressed.	This issue has been addressed comprehensively earlier at Issue 5. We further note that when SEARs are issued that they are generic and in this instance it is understood by the development industry that compliance to this SEAR can be demonstrated through the use of MUSIC modelling as has been done in this case and it is a deemed to comply solution to the specific SEAR. We further note the Department has dismissed the applicability of the research seemingly without understanding the key finding of the research being related to the degree of metal removal achieved by specific treatment trains. The Department simplistically dismisses the research because it was not carried out on a waste management facility that handles exactly the same type of waste and therefore it maintains it could not be applicable to the site. The Department ignores the fact that much of the research was based on highway runoff where heavy metal pollution is a well documented chronic risk. The Department has incorrectly dismissed this evidence and maintains that the data requested must be provided without

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
			providing an acceptable method or guidance on how the data should be provided when it has been identified in the report that it is not possible to provide the data requested at this point in time.
Floating wetlands have been identified as a proposed technology adopted for sediment control and stormwater treatment during the construction and operations of the development. Provide further specification on the types of pollutants that this treatment technology filters / attenuates (including rates/capacity), and frequency of replacement.	Section 7.10 provides details of the proposed floating wetlands.	The WICA report only provides a research of Nichols et al in 2016, the research result is generic in nature and does not respond to the Department's comments regarding development specific assessment, including how effective the proposed floating wetland would filter/attenuate TSS, nitrogen, phosphorus, metals and hydrocarbons, what are the concertation rates of each contaminant before and after the wetland treatment, will the treated water meet the relevant water management policies/guidelines criteria? The research study (Appendix 3) focuses on the use of FTW as a potentially effective technology for low density residential development. It also refers to the treatment of pollutants typically seen in general stormwater catchments e.g. nutrients, with no reference to heavy metals or hydrocarbons. Section 7.10 further states that the FTWs still require further research under a broader range of conditions, and its performance has not been	Section 6.1.2 of the report describes the methodology for the MUSIC model. This section notes that "we have proposed 165m2 of floating wetlands for the pond which makes up 10% of the vegetative coverage of the pond. The pond has not been modelled as a floating wetland but instead conservatively modelled as a pond. There is an assumption in the MUSIC model that a water quality pond must have 10% of its surface area covered with vegetation. The proposed pond has vertical sides and it is not possible to plant vegetation in the pond. Therefore, it is proposed to include a floating wetland to achieve the 10% vegetative coverage assumed in the MUSIC model. The Department questions if the floating wetland can treat fire water? It is unlikely that fire water will be in the pond long enough to be treated. The wetland is unlikely to treat fire water. We don't know how effective the floating wetland will be and we state again that the floating wetland has not been included in our water quality model except to justify the choice of a pond node which requires 10% vegetative coverage. To be very clear – the water quality model includes a

Department's Review Comments (February 2020)	WCIA Report Response (April 2020)	Department's Review Comments (May 2020)	Response from Proponent
		configured such as a nature of the waste facility development, which includes fluctuations in water levels. The Applicant needs to demonstrate why this technology should still be considered for this development, given there is no supporting data that this technology is appropriate for the nature of the development. If the water quality pond/main pond would receive firefighting water, then will the floating wetland treat firefighting water? If so, then what are the potential contaminants, what is the treatment process, how effective the wetland's treatment will be?	water quality pond model node and it doesn't include a floating wetland model node. However we are confident that the floating wetland will significantly improve water quality above and beyond what has been modelled and claimed in the WCIA Report.

Appendix 1 - 4 Groundwater

Agency	Requirement / comment	Response / where addressed.
SEARs	An investigation to identify any soil or ***water contamination*** on the site and proposed management measures.	Baseline Groundwater Investigation (BGI) Chapter 9, 10, 11, 12 & 13 BGI Appendix D
	A description of water and soil resources, topography, ***hydrology***, water courses and riparian lands on or nearby the site.	BGI Chapter 4
DPIE Adequacy Review Comments Feb 2020		
DPIE	The BGI report does not provide details of rainfall and climate, a conceptual site model, consideration of the proposed land use with potential receptors, an assessment of downstream groundwater beneficial uses against the ANZECC guideline considering a number of existing groundwater bores are located in site's vicinity.	BGI Section 4.2 - Rainfall and Climate Section added. BGI Section 4.5 – Nearby groundwater receptors discussed including nearby registered groundwater bores. BGI Section 6 – Preliminary conceptual site model.

Agency	Requirement / comment	Response / where addressed.
DPIE	Please clarify why groundwater investigation was carried out in dry season (i.e. winter) only.	See BGI Section 4.2
DPIE	Please clarify why Borehole 3 was not located at the proposed OSD basin where excavation would be carried out.	Bore 3 was positioned as close as practicable to the proposed OSD given the limited site access and aiming to meet the objectives of the DPIE. The distribution provides a good indication of the groundwater levels and flow direction at the site.
DPIE	Reference has been made to Table D2 regarding groundwater elevation data. This table was not located in the report. Please revise the report to include Table D2.	Typo error was made referencing Table D2. It should have been referred as Table D1. The reference to Table D2 have been changed to Table D1. BGI Table D1 includes groundwater elevation data.
DPIE	Borehole Log 3 form does not show the groundwater level (static and encountering level during drilling). Please update the report to include the standing water level for Well 3 or provide clarification as why this data has not been included. Where standing water level data was not obtained for Well 3, please detail as to how the interpolated groundwater contours were determined to include groundwater elevation data for Well 3.	Borehole logs have been updated to include groundwater observations during drilling and stabilised levels observed at the time of monitoring. Groundwater contours were interpolated based on the stabilised groundwater elevations. (See BGI Appendix C)
DPIE	A detailed summary table of groundwater monitoring wells including but not limited to date drilled, depth groundwater encountered, screen range, gravel pack, total well depth and standing water levels must be provided in the BGI report.	This information is in the Borehole Logs provided in Appendix C of the BGI report. BGI Table 6 (Section 9.2.1) is a summary of the requested details.
DPIE	Please provide a breakdown of detectable CoPC at each borehole.	A summary table was provided as BGI Table D1 in BGI Appendix D. Table D1 identifies CoPC at each borehole that exceed adopted comparative guideline values. Laboratory Certificate of Analysis and Chain of Custody documentation is provided in provided in Appendix E of the BGI report. A discussion of the significant/detectable CoPC results is provided as Section 11 of the BGI report.
DPIE	Please provide justification for analysing one type of pesticide (Organochlorine Pesticides (OCP)) only.	BGI aimed to establish baseline groundwater conditions at the site. Other pesticides were not identified as principal CoPC. Given the expense of analysing for organic compounds, OCP is used as an indicator of whether organic pesticides maybe present.
DPIE	Please provide groundwater well development forms in the BGI report.	Field groundwater sampling form is provided in Appendix C of BGI.
DPIE	Groundwater monitoring wells have been installed to the northern (Well 1), western (Well 2) and southern (Well 3) boundaries of the proposed	The objective of the BGI was to establish the nature and extent of groundwater flows in the locality of the proposed recycling facility, with

Agency	Requirement / comment	Response / where addressed.
	development, however not to the east. This data gap does not potentially adequately characterise the groundwater conditions across the site. Consideration should be given to monitor for potential off-site groundwater risks at the eastern site boundary, particularly given the proximity of the neighbouring residential property.	reference to the Department of Industry (DoI) recommendations (Ref OUT19/1319, dated 26 March 2019) and NSW Planning and Environment request (Ref SSD 8660, dated 29 March 2019). DoI required the installation of three monitoring wells (i.e. one upgradient of the site and two down-gradient (south-west and south) of the site). The eastern boundary of the facility is "up gradient" of the site with respect to groundwater flow. Existing activities adjacent to the eastern site boundary were assessed as posing a relatively low risk of groundwater contamination. Furthermore, given there was no significant groundwater contamination issues identified in the down gradient wells, it is unlikely there would be any contamination sourced from beyond the eastern site boundary. An additional monitoring well can be installed after completion of construction activities and prior to commencement of operational activities if required by DPIE.
DPIE	Please provide details of the Quality Assurance and Quality Control procedures and decisions undertaken during the baseline assessment, ensuring the representativeness and integrity of samples, and the accuracy and reliability of analysis results.	Quality Assurance / Quality Control for Groundwater Sampling is provided in Appendix F of BGI report. Furthermore, the overall investigation data quality objective process has been provided as Section 7 of the BGI.

Appendix 1 - 5 Soil Contamination

Agency	Requirement / comment	Response / where addressed.
SEARs	An investigation to identify any soil or water contamination on the site and proposed management measures.	This report which comprises a Stage 1 Preliminary Site Investigation with limited sampling, has been prepared to assess the risk of soil and water contamination, and addresses the listed requirement. The report concludes that Based on the scope and limitations of the investigation, in consideration of the site observations and sample analytical results, it is considered that the site is unlikely to pose a significant contamination risk with regards to chemical contamination, however Asbestos Containing Material (ACM) was identified on ground surfaces within the north-eastern and central sections of site. Subsequently, it was the opinion of the inspector that the site is considered suitable for the proposed development subject to recommendations of this report including remediation of identified ACM.

Agency	Requirement / comment	Response / where addressed.
Central Coast Council	Need to address relevant parts of the Gosford DCP 2013 including Chapter 6.1 Acid Sulphate Soils	As part of the Stage 1 Preliminary Site Investigation, a review of the Acid Sulfate Soil Risk Map - Edition Two supplied by the Department of Land and Water Conservation indicated that the site lies in an area with no known occurrence of acid sulfate soil materials. This is supported by the comment made by Central Coast Council as detailed in the following sections of this table where the council has stated "The land is mapped as Class 5 no known occurrence of ASS. No issues are expected."
EPA	Provide details of the site history – if earthworks are proposed, this needs to be considered with regard to possible soil contamination.	The site history was reviewed as part of the Stage 1 primary Site Investigation and the risk of soil contamination assessed which included limited sampling and analysis of samples, and addresses the listed requirement. . The report concludes that Based on the scope and limitations of the investigation, in consideration of the site observations and sample analytical results, it is considered that the site is unlikely to pose a significant contamination risk with regards to chemical contamination, however Asbestos Containing Material (ACM) was identified on ground surfaces within the north-eastern and central sections of site. Subsequently, it was the opinion of the inspector that the site is considered suitable for the proposed development subject to recommendations of this report including remediation of identified ACM.
Comments on EIS from Public Exhibition (Feb – Mar 2019)		
Department of Planning, Industry and Environment	The Department notes Figure 3 in Stage 1 Preliminary Site Investigation (PSI) is inconsistent with the current proposal. Please update Figure 3 in accordance with the current proposal.	Figure 3 has been updated to include the current map revision.
Central Coast Council	The land is mapped as Class 5 no known occurrence of ASS. No issues are expected.	Noted. This is in line with the details of the Stage 1 Preliminary Site Investigation

Agency	Requirement / comment	Response / where addressed.
Central Coast Council	Asbestos Containing Material ('ACM') and Site Contamination The land is not listed as a significantly contaminated site to require management under the Contaminated Land Management Act 1997. Council records indicate that the site has historically been used as a Sand and Metal Recycling Facility which is listed as a potentially contaminating activity in the EPAs Managing Land Contamination Planning Guidelines SEPP 55-Remediation of Land. Council records indicate that a Compliance and Health Officer inspected the site on 20 September 2017 and observed that areas of the land were visibly contaminated with waste and possible ACM. The Stage 1 Preliminary Site Investigation for Contamination dated March 2018 prepared by Clear Safe Environmental Solutions has been reviewed and has generally been prepared in accordance with EPAs Guidelines for Contaminated Sites. Non-friable asbestos located on the ground surface, stockpiles of fill (waste) material and potentially hazardous materials, such as lead paint, from aged buildings were identified as contaminants of concern. The Report provided a number of recommendations which have been applied as conditions of consent.	Noted.

Agency	Requirement / comment	Response / where addressed.
Central Coast Council	Soils The site is relatively flat, however gently slopes to the South-West. A watercourse and number of ponds /dams are located on the site which is a tributary of Piles Creek. The area of soil disturbance is expected to be approximately 40,000m2 Cut and fill will occur during the construction phase, with approx. 12,000m3 of the excess material expected to be used as product. The Soil and Water Management Plan Report prepared by Cardno dated 11 January 2019 ("the SWMP") has not been prepared in accordance with the minimum requirements of the Blue Book and the Gosford DCP. Council would be the ARA during the construction phase of the development.	Noted.

Appendix 1 - 6 Air Quality

Agency	Requirement / comment	Response / where addressed
DPE (SEARs)	• A quantitative assessment of the potential air quality, dust and odour impacts of the development in accordance with relevant Environment Protection Authority guidelines	Air Quality Impact Assessment (AQIA) report / AQIA Section 7
	• The details of buildings and air handling systems and strong justification for any material handling, processing or stockpiling external to a building	AQIA Section 2
	• Details of proposed mitigation, management and monitoring measures.	AQIA Section 2 AQIA Section 8

Agency	Requirement / comment	Response / where addressed
NSW EPA	• Identify all sources of air emissions from the development.	AQIA Section 2.4
	• Provide details of the project that are essential for predicting and assessing air impacts including: – The quantities and physio-chemical parameters (eg concentration, moisture content, bulk density, particle sizes etc) of materials to be used, transported, produced or stored – An outline of procedures for handling, transport, production and storage – The management of solid, liquid and gaseous waste streams with potential for significant air impacts.	AQIA Section 5.2.3, AQIA Appendix C AQIA Section 2 AQIA Section 2
Comments on EIS from Public Exhibition (February to March 2019)		
NSW EPA – Waste Compliance	• Review of the Air Quality Impact Assessment (AQIA) revealed inadequacies regarding the meteorological data and the modelling relied upon. The EPA requires the proponent to revise the AQIA to include:	
	– cumulative impact of emissions from facilities and sources nearby to the proposed development site in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (January 2017).	AQIA Section 1.2.1 AQIA Section 4.5
	– a scenario that reflects the maximum daily discharge of particle emissions calculated based on the maximum achievable	AQIA Section 1.2.1 AQIA Section 5.2.3

Agency	Requirement / comment	Response / where addressed
	production rates for receiving, processing and dispatching material. – additional information regarding the assumed average operational characteristics for each source. Where possible, sufficient information should be provided for each source to enable the calculation of an emission rate in grams per second. – additional meteorological data options such as those generated using CALMET run in various modes (no- observation, hybrid).	AQIA Section 1.2.1 AQIA Appendix C AQIA Section 1.2.1 AQIA Section 5.2.1 AQIA Section 5.2.2

Appendix 1 - 7 Traffic

Agency	Requirement / comment	Response / where addressed.
SEARs	Details of all traffic types and volumes likely to be generated during construction and operation, including a description of haul routes	Traffic Impact Assessment is provided at EIS Appendix N. Traffic Impact Assessment (TIA) Chapter 2 & Section 4.1
	An assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including the consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic models	TIA Chapter 2 TIA Section 4
	Plans of any proposed road upgrades, infrastructure works or new roads required for the development	TIA Chapter 2 Sec 4.62 TIA Appendix B Concept Plan
	Plans demonstrating how all vehicles associated with construction and operation awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network	TIA Chapter 2 Sec 3.3.1 Maximum vehicles movements 23 per hour = 12 vehicles inbound and 12 outbound per hour

Agency	Requirement / comment	Response / where addressed.
	Swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site for both heavy and light vehicles.	TIA Appendix A Site Plan including swept paths for internal movements TIA Appendix B Concept Plan for Access
Central Coast Council	Car parking must comply with Chapter 7.1 Carparking of Gosford DCP 2013	TIA Chapter 2 Sec 3.4.2
Roads & Maritime Services	The EIS should refer to the following guidelines with regard to the traffic and transport impacts of the proposed development: - *Road and Related Facilities* within the Department - of Planning *EIS Guidelines*, and, - Section 2 *Traffic Impact Studies* of Roads and Maritime's *Guide to Traffic Generating Developments 2002*. - *Road and Related Facilities* within the Department of Planning *EIS Guidelines*, and, - Section 2 *Traffic Impact Studies* of Roads and Maritime's *Guide to Traffic Generating Developments 2002*.	TIA Chapter 2

	A traffic and transport study shall be prepared in accordance with Austroads Guide to Traffic Management Part 12 the Roads and Maritime's *Guide to Traffic Generating Developments 2002* and is to include (but not be limited to) the following: - Assessment of all relevant vehicular traffic routes and intersections for access to / from the subject properties. - Current traffic counts for all relevant traffic routes and intersections. - The anticipated additional vehicular traffic generated from both the construction and operational stages of the project. - The distribution on the road network of the trips generated by the proposed development. It is requested that the predicted traffic flows are shown diagrammatically to a level of detail sufficient for easy interpretation. - Consideration of the traffic impacts on existing and proposed intersections, in particular, the intersection of Central Coast Highway and Kangoo Road, and the capacity of the local and classified road network to safely and efficiently cater for the additional vehicular traffic generated by the proposed development during both the construction and operational stages. The traffic impact shall also include the cumulative traffic impact of other proposed developments in the area. - Identify the necessary road network infrastructure upgrades that are required to maintain existing levels of service on both the local and classified road network for the development. In this regard, preliminary concept drawings should be submitted with the EIS for any identified road infrastructure upgrades. However, it should be noted that any identified road infrastructure upgrades will need to be to the satisfaction of Roads and Maritime and Council. - Traffic analysis of any major / relevant intersections impacted, using SIDRA or similar traffic model. - Any other impacts on the regional and state road network including consideration of pedestrian, cyclist and public transport facilities and provision for service vehicles.	TIA Chapter 2 Section 4 TIA Appendix B

	- Details of any measures proposed to manage and / or mitigate impacts as a result of the proposal identified in traffic and transport study.	

Agency	Requirement / comment	Response / where addressed.
Comments on EIS from Public Exhibition (Feb to Mar 2019)		
Department of Planning, Industry and Environment	The Department concurs with Central Coast Council and the Transport for NSW submissions dated 20 March 2019 and 21 March 2019 respectively that Gindurra Road (between Wisemans Ferry Road and Debenhams Road South) is not identified as a B-Double Vehicle Route. The TIA and EIS must be amended to exclude B-Doubles from the traffic generation. A revised assessment and analysis vehicle types used by the facility and potential impacts is required in the TIA and EIS.	Updated in TIA Rev 05 and 06
Department of Planning, Industry and Environment	The Department notes the TIA refers to 40 tonne B-Doubles, the EIS states 25 m B-Doubles and the Civil Plans shows swept paths of 26 m B-Doubles. The Department requests the TIA, EIS and Civil Plans be updated to delete all references to B-Doubles.	Updated in TIA Rev 05 and 06
Department of Planning, Industry and Environment	Section 4.1 of the Traffic Impact Assessment (TIA) states averaged over an 8-hour working day the predicted traffic generation equates to 21 trips per hour. However, there will be peak periods/hours for the facility. An updated TIA is required to show the maximum amount of trucks predicted in a peak hour.	Updated in TIA Rev 05 and 06
Department of Planning, Industry and Environment	Section 2.3.7 of the EIS states that there is sufficient space for two vehicles to queue behind the entrance boom gate. However, the EIS does not consider the maximum amount of truck predicted in a peak hour and whether a space for two vehicles behind the entrance boom gate is sufficient to avoid queuing on Gindurra Road in a peak hour. The Department requests an updated TIA consider the peak hour traffic generation and the potential queuing impacts on Gindurra Road.	Updated in TIA Rev 05 and 06
Department of Planning, Industry and Environment	The TIA and the EIS do not consider the maximum number of trucks can be held on site at any given time and truck parking provisions. The TIA and the EIS must be updated to provide this information.	Updated in TIA Rev 05 and 06

Agency	Requirement / comment	Response / where addressed.
Department of Planning, Industry and Environment	The Department notes Figures E2 and 2.14 indicate trucks would weigh onto the 18 m weighbridge. The 18 m weighbridge is inconsistent with Section 2.3.7 of the EIS that states the weighbridge is designed to accommodate extra wide loads (4 m wide x 26 m long). The Applicant is required to update Figures E2 and 2.14 ensure consistency between sections of the EIS.	Updated in TIA Rev 05 and 06
Department of Planning, Industry and Environment	The Department notes the swept path diagrams show trucks will use Gindurra Road and Debenham Road South enter and leave the site. However, Section 4.2.1 of the TIA states haul route includes Central Coast Highway, Wisemans Ferry Road and Gindurra Road. Clarification is requested to address the discrepancy.	Updated in TIA Rev 05 and 06
Transport for NSW	B-double access on Gindurra Road Issue: The proposal states that the proposed heavy vehicles servicing the site will include tippers, truck and dog or semi- trailers and B-doubles. Gindurra Road is not currently identified as a B-double route (neither 19m B-double over 50t, nor 25/26m B-doubles) on the RMS RAV map. Swept path diagrams for a 25m B- double are presented in the traffic report. The use of smaller vehicles with smaller payloads would increase the number of heavy vehicles required for the freight task. Recommendation: Clarification should be provided to address the apparent discrepancy and assess the impact if there would be an increase of heavy vehicle movements. Swept path analysis should also be provided for semi-trailers.	Updated in TIA Rev 05 and 06
Transport for NSW	Road Safety Audit Prior to issue of construction certificate, the applicant shall prepare a Stage 3 (Detailed Design) Road Safety Audit in accordance with Austroads Guide to Road Safety Part 6: Road Safety Audit by an independent TfNSW accredited road safety auditor. Based on the results of the road safety audit, the applicant needs to review the design drawings and implement safety measures as required.	To be undertaken as requested

Agency	Requirement / comment	Response / where addressed.
Roads & Maritime Services	Transport for NSW and Roads and Maritime's primary interests are in the road network, traffic and broader transport issues. In particular, the efficiency and safety of the classified road network, the security of property assets and the integration of land use and transport. Roads and Maritime have reviewed the referred information, including the Traffic Impact Statement (TIS) prepared by SECA Solutions and dated December 2018, noting the minor additional trip generation of the proposal, and raise no objection to or requirements for the proposed development.	No response required
Central Coast Council	Road Works With due regard to the existing road infrastructure, road pavement works in Gindurra Road would not be required.	No response required
Central Coast Council	Access It is noted that Stage 1 of this SSD (SSD 8660) is associated with the development application and works previously approved under DA52541/ 2017. Access arrangements associated with that DA require the location of the vehicular access crossing be located approximately 14m west of the existing vehicle crossing to achieve the minimum sight distance of 69m in accordance with Figure 3.3 of AS 2890.22002. Although the Traffic Impact Assessment prepared by SECA Solution recommends the proposed entrance design in the location of the exiting vehicle crossing to be satisfactory with a reduced sight distance of 55m, Council is of the opinion that the vehicle crossing is to still be located a minimum of 14m west of the existing vehicle crossing, particularly when considering that the level of operation of the development by 2025 is estimated to generate up to 164 vehicle trips per day consisting of staff operational vehicles, 12 tonne tippers, 32 tonne truck and dog or semis and 40 tonne (25m long) B-Doubles. The vehicle access crossing for Stage 2 works would need to be of a heavy duty standard and incorporate appropriate splays to cater for the proposed 25m long B Double vehicles.	Updated in TIA Rev 05 and 06

Agency	Requirement / comment	Response / where addressed.
Central Coast Council	For the use of Gindurra Road between the intersection of Wisemans Ferry Road and the proposed access, that would be associated with B-Double Truck movements to and from Wisemans Ferry Road, the applicant/developer must make a formal application with the National Heavy Vehicle Regulator for consideration and approval for Gindurra Road to become a designated B-Double route. This would be the required route for the use of B-Double vehicles associated with this development.	Updated in TIA Rev 05 and 06

Agency	Requirement / comment	Response / where addressed.
Central Coast Council	It is not recommended that B-Double vehicles enter & exit the site associated with movements to & from Debenham Road South (i.e. the eastern side of the site) for the following reasons: • The intersections of Gindurra Road / Debenham Road South, and Debenham Road South / Acacia Road do not safely accommodate the manoeuvres for B-Double Vehicles. • Debenham Road South, Acacia Road, and the section of Kangoo Road from the site frontage to Acacia Road are rural roads and have not been designed to cater for the traffic loadings and vehicle manoeuvrability for B-Double vehicles. As such it is unlikely that Council would support this route for B-Double vehicles between the site and the intersection of Kangoo Road and Wella Way via Debenham Road South and Acacia Road, and the section of Kangoo Road north of Wella Way. To facilitate the east bound right turn movements from Gindurra Road into the development the existing centre line marking in Gindurra Road is proposed to be relocated a minimum of 3 metres south (towards the site) to provide sufficient width for a right turn lane into the site, with this right turn lane being a minimum 60m long to provide sufficient storage for two B-Doubles vehicles. The site access is to be designed to ensure that the largest vehicle entering or exiting the site is able to do so without encroaching on the opposite lane in Gindurra Road. "No Stopping" signs would need to be installed on both sides of Gindurra Road for the full length of the right turn lane and adjustments to the line marking and painted chevrons. Any alterations to regulatory signage and line marking would require approval by the Council Traffic Committee prior to approval of any plans under Section 138 of the Roads Act, 1993. Council is presently undertaking construction works in Debenham Road South located between the northern side of the Gindurra Road / Debenham Road South intersection towards the M1 Motorway, and which includes works associated with the Gindurra Road/ Debenham Road intersection. As part of these works the priority movements for the intersection are being altered such that traffic in Gindurra Road will in the future need to 'give way' in both directions to traffic movements in Gindurra Road.	Updated in TIA Rev 05 and 06

Agency	Requirement / comment	Response / where addressed.
Central Coast Council	The internal accesses, roads and parking aisles will be need to be designed in accordance with AS2890.	Accepted
Public submission during EIS exhibition period		
Public submission - Save Somersby Form Letter	200+ trucks per day travelling through the local roads past local front doors causing increased traffic congestion, also causing noise & vibration to the local residence.	The TIA and NVIA indicate there will be minimal impact on traffic or noise in the area and
DPIE Adequacy Review Comments Feb 2020		
DPIE	Appendix G of the TIA includes a B-Double Authorisation Permit. The Department notes the Permit is valid for 3 years (will expire on 5 March 2022). Please clarify after the 3-year period, what actions will be taken to ensure continuity of Gindurra Road as an authorised B-Double road.	Permits are renewed each three years to maintain currency and confirm they are still required.
	Section 2.1.5 Transport and Traffic of the Response to submission (RtS) report states over an average 8-hour working day this equates to 21 trips per hour. This is inconsistent with the TIA report which states an upper limit of 23 vehicles expected to access the site in any 1 hour. Please clarify the discrepancy.	23 vehicle movements per hour (12 inbound/12 outbound) Detailed TIA Chapter 2 Sec 3.2.4
	RtS report notes a second weighbridge will be installed as a dedicated outbound weighbridge when the facility reaches 100,000 tonnes per annum capacity (page 100). The TIA does not clearly state the staged installation of weighbridge is included in the revised development. Should the staged approach be proposed, please clarify how the development would manage the potential queuing, internal manoeuvrability impacts caused by single weighbridge operation prior to 100,000 tonnes per annum capacity is reached.	The assessment allows for the total capacity to be managed with a single weighbridge. The installation of a second outbound unit is to provide for further efficiencies.
	Please clarify the design capacity of the designated truck parking area (i.e. whether it can accommodate up to 19 m semi-trailer or 26 m B-Doubles).	It is understood that this truck parking area is an overnight layover area for the site and not an area for general parking.

Appendix 1 - 8 Noise and Vibration

Agency	Agency Comment	Response / Where Addressed
SEARs	A quantitative assessment of potential demolition, construction, operational and transport noise and vibration impacts in accordance with relevant Environment Protection guidelines.	The specifics of the quantitative noise assessment i.e. inputs, computation algorithms, correction factors and predicted noise levels are included in detail in Sections 5 and 6 of the Noise and Vibration Impact Assessment (NVIA). Vibration impacts were found to be effectively nil due to the large offset distances between source and receivers as per Section 2.1.3 of the NVIA.
	Details and justification of the proposed noise mitigation and monitoring measures.	The site was assessed with no mitigation measures and found to exceed the noise criteria. The noise model was used to optimise mitigation measures in the form of noise barriers, so that the noise criteria were satisfied. This is discussed in Section 6.1.
NSW EPA	The application proposes several different hours of operation for different activities at the premises. The proponent must clarify the intended hours of operation for the undertaking of scheduled activities for the environment protection licence.	These have now been ratified. Operational hours are given in Section 2.1 and 2.4 of NVIA.
	Identify all noise sources or potential sources from the development (including both construction and operational phases). Detail all potentially noisy activities including ancillary activities such as transport of goods and raw materials	Operational noise sources are identified as follows: Section 5.3 – fixed noise sources. NVIA Section 5.4 – mobile noise sources NVIA Section 6.2 – operational road traffic noise sources. Construction noise sources are identified as follows: NVIA Section 8.1 Construction noise sources. NVIA Section 8.2 Construction road traffic sources.
	Specify the time of operation for all phases of the development and for all noise producing activities	Operational hours are given in Section 2.1 and 2.4 of NVIA.

Agency	Agency Comment	Response / Where Addressed
	For projects with a significant potential traffic noise impact provide details of road alignment (include gradients, road surface, topography, bridges, culverts, etc.) and land use along the proposed road and measurement locations – diagrams should be a scale sufficient to delineate individual residential blocks.	This project was found to have a marginal noise impact (ie < 2 dB) due to potential traffic changes as discussed in NVIA Section 6.2. No details of road alignment etc. are necessary in this case.
NSW DPIE	The Noise and Vibration Impact Assessment (NVIA) includes an operational traffic generation that is inconsistent with the TIA. Please update the operational traffic generation in the NVIA in accordance with the TIA (as revised).	The report has been updated to be consistent with the Traffic assessment. Operational traffic volumes given in NVIA Section 2.5.
	In Section 2.1 and 2.4 of the assessment reports, with regards to operational hours, it is stated that access to the site will be 24 hrs/ 7 days per week (to allow for occasional early / late delivery or truck movements). These hours are not reflected in the Traffic Impact Assessment and is not consistent with the operational hours proposed in Section 2.3.9.4 of the EIS report. Please update the operational hours accordingly in the Noise & Vibration Assessment.	Site access is not required 24 hrs / 7 days per week. The report has been updated to be consistent with the Traffic assessment. Operational hours are given in NVIA Section 2.1 and 2.4.
NSW Department of Health	We defer to the advice of the Environment Protection Authority (EPA) as the regulatory authority for noise, and request confirmation that the noise assessment, project noise trigger levels, mitigation measures and management plans are appropriate. Since the predicted construction noise levels have potential to impact a number of residences, the proponent should negotiate with the affected community members and commit to a construction schedule that creates the least possible disruption.	Construction Noise Mitigation Measures which should be used in the site Construction Noise and Vibration Management Plan (CNVMP) are discussed in NVIA Section 9.1.

Agency	Agency Comment	Response / Where Addressed
	The Noise and Vibration Impact Assessment (p24) states that 'there would generally be no construction on Sundays and Public Holidays' and that construction works would not occur at night (p25). We suggest that should the project be approved, construction activities should be formally restricted to daytime, Monday to Saturday.	The report has been updated to include the latest construction hours. Construction hours will only be the standard constructions hours of: 0700 to 1800 hrs Monday to Friday. 0800 to 1300 hrs on Saturdays. There will be no construction works on Sundays or public holidays. NVIA Section 7.1 details these changes.
	The premises operated by Riding for the Disabled is located some 100 metres to the south of the project site. This site has been classified as a commercial activity in Table 10 of the Noise and Vibration Impact Assessment and a Project Noise Trigger Level (PNTL) assigned accordingly. We suggest that this activity is more appropriately considered as active recreation and that the PNTL should be set on that basis. Likewise, the Frank Baxter Juvenile Justice Centre is considered temporary accommodation in Table 10. We suggest this facility should be considered as (suburban) residential and the PNTLs reviewed. The noise assessment should be reviewed with these changes, to ensure there are no noise impacts as a result of both the construction and operation phases of the project.	The report has been updated to reflect the recommended changes to the classification of these receviers. The PNTLs for each has been updated accordingly. No adverse noise impacts were found after these changes. Changes to classifications can be found in NVIA Section 4.18 and Section 7.2.
	In assessing traffic noise impacts, the Noise and Vibration Impact Assessment relies on a vehicle count of 4000 to 4700 vehicles per day on Gindurra Road. In assessing the impact of the project's additional traffic movements, it is important that the local roads are accurately characterised. We ask for confirmation that the vehicle count used is accurate and if not, the potential for traffic noise impacts should be reviewed.	The report has been updated to be consistent with the Traffic assessment. Operational traffic volumes given in NVIA Section 2.5.

Agency	Agency Comment	Response / Where Addressed
	The conclusion that the predicted noise emissions from the site to the surrounding environment are low is predicated on various control measures. We seek clarification that the 35dB Rw façade noise reduction claimed for the processing shed is realistic, and that the complete closure of all doors and openings during 'noisy activities' is practical and achievable. If either control measure cannot be implemented effectively, the noise impact assessment should be reviewed to ensure noise emissions meet the relevant criteria. The concept of 'noisy activities' should be clearly defined to ensure noise impacts are avoided.	Further details of the potential facades which satisfy the 35 dB Rw requirement have been included and discussed in NVIA Section 5.3. 'Noisy activities' redefined to clarify this statement. All doors and openings will be closed during 'processing activities'. This control measure is considered to be feasible and reasonable. See NVIA Section 5.3 for details.
	Should the project proceed, comprehensive monitoring of noise emissions and air quality is required to ensure that the project goals are met and that the health and amenity of the community are not negatively affected. We support the need for continuous real time monitoring of air quality and noise impacts, and the implementation of management strategies that are consistent with best practice, clearly quantifiable, measurable, auditable and enforceable. Methods for determining compliance must be to the satisfaction of the appropriate regulator.	Noise monitoring is included as an 'Additional Mitigation Measure' per NVIA Section 9.1.2.
Central Coast Council	The nearest sensitive receptor for noise impacts is approximately 130m to the East of the property boundary. Include with the development application a Noise Assessment in accordance with the NSW Industrial Noise Policy (NSW EPA, 2000). Control measures for noise should be outlined.	The NSW Industrial Noise Policy was updated in 2017 to the NSW Noise Policy for Industry. This report has been prepared in accordance with the NSW Noise Policy for Industry (2017). The necessary operational noise control measures have been identified and recommended for this site in NVIA Section 6.1.

Agency	Agency Comment	Response / Where Addressed
	Five (5) properties zoned RU1 are located to the east of the boundary of the site. Additional properties zoned RU2 are located to the north east of the site. The Noise and Vibration Impact Assessment dated 17 January 2019 prepared by Waves Consulting ('the Assessment') has been reviewed and has been generally prepared in accordance with the NSW EPAs Interim Construction Noise Guideline and NSW Noise Policy for Industry 2017. The assessment details predicted operational noise impacts will exceed the project noise trigger levels ('PNTLs') whenever the crusher and screening plant will be used in the daytime, in addition to delivery and truck movements during the evening and night time period. Limiting the use of the screening and crushing equipment to the designated processing area depicted on the site plans and the construction of a noise barrier was modelled and predicted to satisfy the PNTLs. Site plans depict the proposed 5m high 30kg/m2 concrete panel noise wall to be installed along the eastern and north eastern boundary of the site, in addition to 3m high noise walls within operational areas of the facility. The assessment also details predicted construction noise impacts. During standard construction hours, the following plant formation was modelled: concrete crusher, mobile screening plant, excavator, front end loader, grader, bull dozer, dump truck and roller. Exceedances of the noise management levels of up to 12dB are predicted at the closest sensitive receptors on Acacia and Debenhams Road South, during standard construction hours. Standard mitigation measures were applied, and the construction of the finished 5m noise berm along the eastern boundary was recommended as early as possible in the construction phase. Details regarding construction staging do not appear to reflect this recommendation. Council will be the ARA during the construction phase of the development. Conditions have been applied.	Noted. The construction staging should be changed to reflect the recommendations to install the operational noise walls before construction whenever feasible and reasonable.

Appendix 1 - 9 Biodiversity

Agency	Agency Comment	Response / Where Addressed
SEARS	An assessment of the proposal under the Framework for Biodiversity Assessment	The Framework for Biodiversity Assessment Report (FBA) for 90 Gindurra Road, Somersby., is provided at EIS Appendix P.
	Include an assessment of any potential impacts on aquatic and riparian vegetation and groundwater dependent ecosystems	FBA **Section 2.3.1** No rivers, streams or estuaries were located within the Subject Site. No riparian vegetation was observed within the Subject Site and as such will not be impacted upon by the proposed development.
		FBA **Section 2.8** No Groundwater Dependent Ecosystems occur within the Subject Site. Groundwater resources will be protected as per mitigation measures outlined in Sustainability Workshop Ltd (2019).

		FBA **Section 5.2** Narla have assessed the impacts to hydrology and associated effects on biodiversity, with reference to Sustainability Workshop Ltd (2019): Water Cycle Impact Assessment and Soil and Water Management Plan. Sustainability Workshop Ltd (2019) considers that the proposed development should aim to protect the remaining vegetation within the Subject Property, and treat it as if it is a sensitive receiving water, particularly as this vegetation provides a significant natural vegetated buffer to the nearest watercourse. Specific mitigation measures have been proposed as outlined in **Section 5.2.** It is anticipated that the measures proposed within Sustainability Workshop Ltd (2019) will reduce indirect impacts to biodiversity, including the population of *Melaleuca biconvexa* within the Subject Site.

Agency	Agency Comment	Response / Where Addressed
	An assessment of the proposed development against the North East Regional Forest Agreement and the *Regional Forest Agreement Act 2002*.	FBA **Section 2.6** and FBA **Section 2.7.** The North-East Regional Forest Agreement and *Regional Forest Agreement Act 2002* do not apply to the Subject Site.
Office of Environment and Heritage	(FORMER) OEH recommends that PCT1783 be changed to PCT1643. The credit calculator will need to be rerun to determine modified credit yields.	FBA **Section 3.2** Narla has identified three (3) PCT's within the Subject Site that specifically occur within the Central Coast Region. This includes: ▪ PCT 1642 Scribbly Gum - Red Bloodwood - Old Man Banksia heathy woodland of southern Central Coast ▪ PCT 1579 Smooth-barked Apple - Turpentine - Blackbutt open forest on ranges of the Central Coast ▪ PCT 1643 Red Bloodwood - Smooth-barked Apple - Scribbly Gum - Old Man Banksia heathy woodland on sandstone ranges of the Central Coast
	The Biodiversity Assessment Report should adequately assess and justify that the areas of non-native vegetation do not require further assessment under the Framework for Biodiversity Assessment	FBA **Section 3.2.5** Narla have identified two (2) non- native vegetation zones within the Subject Site: 'Cleared' and 'Weeds and Exotics'. A description of these zones are outlined in FBA **Table 12.** As these zones contained no native vegetation, it was concluded that they did not constitute a PCT and therefore did not require further assessment under the Framework for Biodiversity Assessment.

Agency	Agency Comment	Response / Where Addressed
	Targeted surveys should be undertaken for *Hibbertia procumbens* and *Prostanthera junonis* in accordance with (FORMER) OEH 'NSW Guide to Surveying Threatened Plants' ((FORMER) OEH 2016) and at their appropriate flowering times. If surveys are not undertaken, an expert report must be prepared in accordance with Section 6.6.2 of the FBA guidelines ((FORMER) OEH 2018).	FBA **Section 4.1.2.2** Narla have outlined the targeted survey effort that was undertaken to survey for species credit flora species that had the potential of occurring with the Subject Site. This includes *Hibbertia procumbens* and *Prostanthera junonis*. Additional surveys were conducted for these species at the appropriate time of year and were undertaken as per *NSW Guide to Surveying Threatened Plants* ((FORMER) OEH 2016b).
	Targeted surveys should be undertaken for *Caladenia tessellata* and *Diuris bracteata* in accordance with (FORMER) OEH 'NSW Guide to Surveying Threatened Plants' ((FORMER) OEH 2016) and at their appropriate flowering times. If surveys are not undertaken, an expert report must be prepared in accordance with Section 6.6.2 of the FBA guidelines ((FORMER) OEH 2018).	FBA **Section 4.1.2.2** Narla have outlined the targeted survey effort that was undertaken to survey for species credit flora species that had the potential of occurring with the Subject Site. This includes *Caladenia tessellata* and *Diuris bracteata*. Additional surveys were conducted for these species at the appropriate time of year and were undertaken as per *NSW Guide to Surveying Threatened Plants* ((FORMER) OEH 2016b).
	(FORMER) OEH recommends that all targeted flora surveys are conducted in accordance with (FORMER) OEH 'NSW Guide to Surveying Threatened Plants' ((FORMER) OEH 2016).	FBA **Section 4.1.2.2** Narla have outlined the targeted survey effort that was undertaken to survey for species credit flora species that had the potential of occurring with the Subject Site. Additional surveys were conducted at the appropriate time of year and were undertaken as per NSW Guide to Surveying Threatened Plants ((FORMER) OEH 2016b).
	The impact of changes to hydrology resulting from the proposal should be assessed for the *Melaleuca biconvexa* community adjacent to the site and appropriate mitigation measures should be provided where required.	FBA **Section 5.2** The impacts to hydrology and associated effects on biodiversity have been assessed in relation to the *Melaleuca biconvexa* population within the Subject Site by Sustainability Workshop Ltd 2019. It is anticipated that the measures proposed within Sustainability Workshop Ltd (2019) will reduce indirect impacts to biodiversity, including the population of *Melaleuca biconvexa.*

Agency	Agency Comment	Response / Where Addressed
Central Coast Council	The Plant Community Type (PCT) 1783 that was identified as the most dominant PCT occurring on the site poorly matches the diagnostic species for the community (no matching species for low condition PCT and only two matching diagnostic species for the moderate - good portion of the PCT). The proponent needs to consider other possible PCTs that provide a better match with diagnostic species. This is an important step as precise PCT identification will accurately identify the correct PCT for offsetting.	FBA **Section 3.2** Narla have identified three (3) PCT's within the Subject Site that specifically occur within the Central Coast Region.
	Targeted threatened frog surveys were conducted over two nights. Since no specific dates of targeted surveys were provided it is unclear if surveys were conducted in accordance with (FORMER) OEH threatened species survey guidelines. Additional species credits may be required.	FBA **Section 4.1.2.1** Narla have outlined the targeted survey effort that was undertaken to survey for species credit fauna species that had the potential of occurring with the Subject Site. This includes spotlighting and fauna call playback that was undertaken for threatened frog species over two nights on the 16th January 2018 and 13th February 2018. These were undertaken during the optimal survey period for such species.
	Surveys for the threatened orchid species *Caladenia tessellata* and *Diuris bracteata* were conducted at the wrong time of year and are therefore not compliant with (FORMER) OEH threatened species survey guide lines. The proponent needs to either conduct surveys in accordance with (FORMER) OEH guidelines, provide an expert report that verifies that the species would be absent from the proposal site or assume that the species are present on site and offset as required under the FBA.	FBA **Section 4.1.2.2** Narla have outlined the targeted survey effort that was undertaken to survey for species credit flora species that had the potential of occurring with the Subject Site. This includes *Caladenia tessellata* and *Diuris bracteata*. Additional surveys were conducted at the appropriate time of year and were undertaken as per *NSW Guide to Surveying Threatened Plants* ((FORMER) OEH 2016b).

Appendix 1 - 10 Fire safety

Agency	Requirement / comment	Response / where addressed.
SEARs	Technical information on the environmental protection equipment to be installed on the premises such as air, water and noise controls, spill clean-up equipment and fire (including location of fire hydrants and water flow rates at the hydrant) management and containment measures.	See Fire Safety Study (FSS) at EIS Appendix Q. FSS Section 3 – Description of facility. Tip and Spread Waste Receival Building- Any dust is controlled with ceiling mounted misting system •Any hazardous items or contamination is removed by operational staff and stored in skip bins All bays will be fitted with sprinklers for dust control when required Crusher and Mulcher building fitted with internal water sprays for dust control •Warehouse is fully fitted out with a misting system for dust control Fire hydrant flow of 10 litres per second- FSS Section 1 Reports Assumptions Install environmental monitoring equipment (weather station, high volume air samplers, dust gauges, sound meters)- **Table 1 Summary of construction activities under Stage 1 and 2 on the site. 2(o).** The pond will require a design to ensure dedicate storage of at least 144m^3 for firewater containment as per firewater calculations in FSS Section 6.3.2.
Comments on EIS from Public Exhibition (Feb to Mar 2019)		
Department of Planning, Industry and Environment	The Department notes hydraulic services plans for Stage 1 development are included in the EIS. The Bushfire Risk Assessment (BAR) and the Fire and Incident Management Plan (FIMP) do not include details of existing and proposed fire safety measures. The BAR and FIMP must be updated to detail flow rates and pressure test of the water main and all existing and proposed fire safety measures must be shown on plans.	Upon discussion with client representatives, the hydrant supply line adequate for stage 1 of study. ACOR responsible for area within SITE only as per original proposal, recommendation of fire protection for the SITE is outlined in section 7 of FSS report. Bush Fire Risk Assessment report available separately at EIS Appendix R.

Agency	Requirement / comment	Response / where addressed.
Fire and Rescue NSW	Consent authorities should issue a condition on the development consent requiring Clause E1.10 and E2.3 of the NCC be complied with to the satisfaction of FRNSW, achieved through either providing an acceptable solution or through direct consultation with FRNSW.	Noted.
Fire and Rescue NSW	The waste facility is to provide safe, efficient and effective access for emergency vehicles as detailed in FRNSW guideline Access for emergency vehicles. Aerial appliance access is to be provided if the facility is located within a fire district covered by an aerial appliance.	FSS Section 3.2.1 Emergency Vehicle Access Minimum access path width to be 6.0m as per FSG Access for fire brigade vehicles and firefighters section 7.1.2
Fire and Rescue NSW	The waste facility is to have a fire hydrant system installed appropriate to the risks and hazards for the facility. FRNSW recommends a fire hydrant system designed and installed to Australian Standard AS 2419.1- 2017 and have an enhanced standard of performance appropriate to special hazards.	FSS Section 6.2.1 FSS Section 7 – addressing fire equipment for each type hazard identified
Fire and Rescue NSW	The waste facility is to have an automatic fire sprinkler system installed if the building has a floor area greater than 1000 m^2 or contains 200 m^3 or more of combustible waste material. FRNSW recommends the fire sprinkler system be installed to Australian Standard AS 2118.1-2017.	The sprinkler system needs to be automatic and not manual actuation as the area is more than 1000 m^2 . SSW has a floor area of 2100 m^2.
Fire and Rescue NSW	Buildings containing combustible waste material are to have an automatic smoke hazard management system appropriate to the potential fire load and smoke production rate installed within the building.	Refer to FSS section 5.1 Smoke Management.

Agency	Requirement / comment	Response / where addressed.
Fire and Rescue NSW	The waste facility is to have effective and automatic means of containing fire water run-off, with primary containment having a net capacity not less than the total hydraulic discharge of the worst-case fire scenario. The total hydraulic discharge is the discharge from both the fire hydrant system and automatic fire sprinkler system for a duration of four hours. Failure to contain fire water run-off can result in pollution of the environment and require a protracted hazardous materials response.	Summary of findings section: The estimated firewater application for a four-hour duration fire in the SSW is approximately 288kL of which 50% is assumed to evaporate (144kL contaminated firewater, equivalent to a depth of 68mm over the SSW floor area. Consequently, a 70mm high bund wall will be installed internally, at each opening to the SSW. FSS Section 6.3
Fire and Rescue NSW	The owner is encouraged to engage a fire safety engineer or other suitably qualified consultant to develop a performance design specific to the facility and its operations. The performance-based design should consider all possible fire scenarios.	A detailed hazard analysis was prepared and is provided at FSS Appendix A. ACOR has undertaken modelling of each of the identified combustible materials under plausible event scenarios. Modelled combustion product dispersion contours (refer to FSS Appendix B), thermal radiation contours (refer to FSS Appendix C), and overpressure contours (refer to FSS Appendix D), have been prepared under relevant climate and weather stability conditions (refer to FSS Appendix I).
Fire and Rescue NSW	The occupier/operator is to develop an emergency plan for the waste facility to AS 3745–2010 Planning for emergencies in facilities. An external consultant should be engaged to provide specialist advice and services in relation fire safety planning and developing an emergency plan.	Identification of hazards in FSS section 4. ACOR has outlined Fire Prevention Strategies/Measure as noted in FSS section 6. Emergency Plan provided separately at EIS Appendix V.
Fire and Rescue NSW	Consultation with FRNSW be undertaken by way of the fire engineering brief questionnaire (FEBQ) process prior to the issue of the relevant construction certificate.	Noted. The proponent will consult with FRNSW prior to application for a construction certificate.

Agency	Requirement / comment	Response / where addressed.
Fire and Rescue NSW	While there is currently no requirement for a fire safety study, FRNSW may request one be undertaken at a later stage should information be provided such it is deemed that the development poses unique challenges to the response to and management of an incident.	Refer to PE190247 SSD 8660 Fire Safety Study Report at EIS Appendix Q.
Fire and Rescue NSW	Please see the FRNSW fire safety guideline for Fire Safety in Waste Facilities that includes legislated requirements and development considerations (planning).	All legislative requirements and development have been incorporated into PE190247 SSD 8660 Fire Safety Study Report at EIS Appendix Q.
DPIE	Water and Utilities The intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity, so as not to contribute to the risk of fire to a building. To achieve this, the following conditions shall apply: 2. Water, electricity and gas are to comply with section 4.1.3 of Planning for Bush Fire Protection 2006.	Recommendation of fire protection for the SITE outlined in FSS section 7. Bush Fire Risk Assessment provided separately at EIS Appendix R.
DPIE Adequacy Review Comments Feb 2020		
DPIE	Please update Figure 2 of the FSS report as it is inconsistent with the currently proposed site layout.	Updated. Refer to PE190247 SSD 8660 Fire Safety Study Report 2020709 at EIS Appendix Q.
	Appendix K Fire System Layout of the FSS report has a different site layout to the Hydraulic Services Plan (Appendix E(iii)).	Fire system layout has been updated in FSS to be consistent with final Hydraulic Services Plan.

Appendix 1 - 11 Bushfire hazard assessment

Agency	Requirement / comment.	Response / where addressed.
SEARs	An assessment of bushfire risks and asset protections zones (APZ) in accordance with NSW Rural Fire Service Guidelines	Bushfire Hazard Assessment (BHA) – provided at EIS Appendix R. BHA Section 2-8.
Comments on EIS from Public Exhibition (Feb – Mar 2019).		
NSW Rural Fire Service	The New South Wales Rural Fire Service (NSW RFS) has reviewed the information provided and advises that a bush fire assessment report shall be prepared which identifies the extent to which the proposed development conforms with or deviates from the relevant provision under section 4.3.6(f) of Planning for Bush Fire Protection 2006 (PBP 2006). In particular, the proposed development needs to demonstrate compliance with the aim and objectives of PBP 2006 in relation to access, water and services, emergency planning, landscaping and vegetation management.	BHA Section 2-8. Appendix E.
1. NSW Rural Fire Service	Asset Protection Zones The intent of measures is to provide sufficient space and maintain reduced fuel loads so as to ensure radiant heat levels of buildings are below critical limits and to prevent direct flame contact with a building. To achieve this, the following conditions shall apply: At the commencement of building works and in perpetuity, the entire development area of the subject site, as shown on the 'Concept General Arrangement Plan' prepared by Cardno Pty Ltd dated 27/04/2018 (drawing number 80518002-Cl-106, Revision 13), shall be maintained as an inner protection area (IPA) as outlined within section 4.1.3 and Appendix 5 of Planning for Bush Fire Protection 2006 and the NSW Rural Fire Service's document Standards for asset protection zones.	BHA Section 4.

Agency	Requirement / comment.	Response / where addressed.
2. NSW Rural Fire Service	Water and Utilities The intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity, so as not to contribute to the risk of fire to a building. To achieve this, the following conditions shall apply: Water, electricity and gas are to comply with section 4.1.3 of Planning for Bush Fire Protection 2006.	BHA Section 2. BHA Section 7-8.

Agency	Requirement / comment.	Response / where addressed.
3. NSW Rural Fire Service	Access The intent of measures for property access is to provide safe access to/ from the public road system for firefighters providing property protection during a bush fire and for occupants faced with evacuation. To achieve this, the following conditions shall apply: Property access roads shall comply with the following requirements of section 4.1.3 (2) of Planning for Bush Fire Protection 2006. Bridges, if any, shall clearly indicate load rating and pavements and bridges are capable of carrying a load of 15 tonnes. Roads do not traverse a wetland or other land potentially subject to periodic inundation (other than a flood or storm surge). A minimum carriageway width of 4 metres shall be provided. A minimum vertical clearance of 4 metres to any overhanging obstruction, including tree branches. Internal roads provide a loop road around any dwelling or incorporate a turning circle with a minimum 12 metre outer radius. Curves have a minimum inner radius of 6 metres and are minimal in number to allow for rapid access and egress. The minimum distance between the inner and outer curves is 6 metres. The crossfall is not to exceed 10 degrees. Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.	BHA Section 2. BHA Section 6.
4. NSW Rural Fire Service	To aid in the fire fighting activities, an unobstructed pedestrian access to the rear of the property shall be provided and maintained at all times.	BHA Section 6.

Agency	Requirement / comment.	Response / where addressed.
5. NSW Rural Fire Service	Landscaping Landscaping to the site is to comply with the principles of Appendix 5 of Planning for Bush Fire Protection 2006.	BHA Section 9.
SEARs	Emergency and Evacuation Planning The intent of measures is to provide suitable emergency and evacuation (and relocation) arrangements for occupants. An Emergency /Evacuation Plan is to be prepared consistent with the NSW RFS document Guidelines for the Preparation of Emergency/ Evacuation plan.	BHA Appendix E.
DPIE Adequacy Review Comments on updated EIS (Feb 2020)		
DPIE	Site layout plan adopted in the BHR is inconsistent with the current proposal.	BHA Appendix C.
	Item 101 of the Comments from Government Agencies response refers to Fire Safety Study in regard to water supply for bushfire management. This should be updated to Bushfire Hazard Assessment prepared by Bushfire Planning & Design.	BHA Section 2 BHA Section 7-8

Appendix 1 - 12 Heritage

Agency	Requirement/comment	Response/where addressed
SEARs	A detailed assessment of Aboriginal cultural heritage	The ACHA at EIS Appendix T provides a detailed assessment of Aboriginal cultural heritage within the study area.
	An assessment of environmental heritage, including identification of measures to mitigate and manage impacts on the adjoining heritage conservation area and items of heritage significance.	Outlined in Section 6, and Table 5 of the *Kariong Sand and Soils Supplies (Lot 4 DP 227279), Historical Heritage Assessment* (Biosis Pty Ltd 2018) at EIS Appendix T.

Agency	Requirement/comment	Response/where addressed
Central Coast Council	Include with the development application, an Aboriginal Heritage Due Diligence Assessment in accordance with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW, 2010). Include any potential indirect impacts to the mapped Aboriginal object/site that may occur from the proposed activities on the site (e.g. runoff, dust, vibration, etc.)	The ACHA at EIS Appendix T provides a detailed assessment of Aboriginal cultural heritage within the study area. An assessment of impacts and mitigation measures is outlined in ACHA Section 6. Recommendation 2 and 3 of ACHA outlines mitigation measures to be implemented to ensure the proposed works do not impact on Aboriginal sites located outside of the study area.
(FORMER) OEH	The EIS must identify and describe Aboriginal cultural herniate values that exist across the whole area that will be affected by the Kariong Sand and Soil Supplies Facility Upgrade Project and document these in the EIS. This may include the need for surface survey and test excavation. The identification of cultural heritage values should be guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011) and consultation with (FORMER) OEH regional officers.	The ACHA has been conducted in accordance with the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW, 2011). The field investigation and Aboriginal community consultation completed as part of this assessment determined the study area has low archaeological potential due to the existing disturbance and did not recommend test excavations as a result. Refer to Section 4 of the Archaeological Report (EIS Appendix T).
	Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the Kariong Sand and Soil Supplies Facility Upgrade Project.	Biosis prepared an ACHA for this project in accordance with the *Guide to investigation, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2010)*. Details of consultation can be found in Section 4 and Appendices 1 – 4 of ACHA.
	Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to (FORMER) OEH.	An assessment of impacts and mitigation measures is outlined in ACHA Section 6

Agency	Requirement/comment	Response/where addressed
	The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted subsurface test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of the surface surveys and test excavations undertaken at this stage are to be documented in the EIS.	Biosis completed an archaeological field investigation for the project in 2018 and 2019 and determined that the study area had been heavily disturbed and that there was low potential for Aboriginal sites or objects to remain. Therefore, test excavations were not recommended. Refer to Section 4 of the Archaeological Report (EIS Appendix T).
	The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the Kariong Sand and Soil Supplies Facility Upgrade Project to formulate appropriate measures to manage unforeseen impacts.	See ACHA Recommendation 4.
	The EIS must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts of this material.	See ACHA Recommendation 4.
Comments on EIS from Public Exhibition (Feb – Mar 2019)		
(former) Office of Environment and Heritage	(FORMER) OEH recommends that an Aboriginal cultural heritage assessment report be prepared for the project, in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (DECCW 2011).	Biosis prepared an ACHA for this project in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2011).
	(FORMER) OEH recommends that the Aboriginal archaeological assessment report be revised to clarify the scope and objectives of the assessment and ensure they align with the requirements of the *Code of practice for archaeological investigation of Aboriginal objects in NSW* (DECCW 2010).	Biosis prepared an ACHA for the project and clarified the scope and objectives of the assessment. The ACHA was completed according to the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) and the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2011).

Agency	Requirement/comment	Response/where addressed
	(FORMER) OEH recommends that the Aboriginal archaeological assessment be revised and updated to adequately identify and describe all known Aboriginal cultural heritage sites within or surrounding the proposed development area, including those identified by previous studies of the Somersby Industrial Park.	Biosis completed an ACHA for the project and identified AHIMS sites located within the vicinity of the study area, including SIE 26 a rock engraving site identified by J. C. Lough and Associates (1981) that was determined not to be located within the study area.
	(FORMER) OEH recommends that a new search of the Aboriginal Heritage Information Management System be undertaken for the project, and the results considered and incorporated into the revised and updated Aboriginal archaeological assessment report.	A new AHIMS search was completed on 29 May 2019, and details of the AHIMS search can be found in the Archeological Report, Section 3.2.3.
	(FORMER) OEH recommends that a formal Aboriginal community consultation process should be undertaken for the project in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010). The outcomes of consultation should inform the preparation of an ACHAR for the project.	Aboriginal community consultation was undertaken as part of the ACHA in line with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010). Details of consultation can be found in ACHA Section 4 and ACHA Appendix 1 - Appendix 4.
Public submission – Save Somersby Form Letter	Possible destruction of commonly occurring Aboriginal artefacts in the area.	Biosis completed an archaeological field investigation for the project in 2018 and 2019 and determined that the study area had been heavily disturbed and that there was low potential for Aboriginal sites or objects to remain. See Section 4 of Archaeological Report.

Appendix 1 - 13 Visual Impact

Agency	Requirement/comment	Response/where addressed
SEARs	An assessment of the potential visual impacts of the project on the amenity of the surrounding area.	The Visual Impact Assessment (VIA) has been prepared in accordance with the SEARs. VIA Section 3 Provides an overview of existing landscape character. VIA Section 5 includes an assessment of the potential impacts from key viewpoints surrounding the Site including photomontages of the proposal. VIA Section 6 proviced an assessment of the potential visual impacts VIA Section 7 Provides mitigation methods to assist in reducing any potential visual impacts on the amenity of the surrounding area.
Comments on the EIS from Public Exhibition (Feb - March 2019)		
Public submission – Save Somersby Form Letter	The Height, scale, visual bulk. As it would be a visual eyesore and out of character with the surrounding forest landscape and rural residential blocks	The existing landscape character has been assessed as apart of the VIA. In addition to rural residential the existing visual character includes industrial use, M1 Motorway and Gosford Quarry. The proposal is in keeping with the surrounding visual landscape. VIA Section 3: Existing Landsape Character Section 5: Viewpoint Assessment Photomontages have been developed to provide an indicative view of the proposed develop- ment from adjoining rural residential properties. Refer to VIA Section 5.3: Photomontages. Proposed Mitigation Methods seek to reduce potential visual impacts from surrounding residences. Refer to VIA Section 7.0: Mitigation Methods

Appendix 1 - 14 Chemicals and hazards

Agency	Requirement/comment	Response/where addressed
SEARs	Preliminary risk screening completed in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011), with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development.	Chapter 3 of EIS
	Should preliminary screening indicate that the project is "potentially" hazardous, a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper Np. 6 – Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011)	Chapter 3 of EIS
DPIE comments on Response to Submissions report and Revised EIS Adequacy Review Comments (19 February 2020)		
Central Coast Council	Hazardous and dangerous liquids (SEPP 33). A preliminary hazardous analysis and environmental risk assessment has been completed for the proposal and has been prepared generally in accordance with the Department of Planning Guidelines for applying SEPP 33. Small quantities of diesel (max 5,000L), coolant (max 100L) and oils (max 5,000L) will be stored in bunded areas within the enclosed processing warehouse. Diesel will be contained in a bunded above ground tank. These liquids will be used to refuelling and maintain trucks and mobile plant and equipment. LPG (max 1000kg) for fuelling forklifts will be stored in chained and approved racks under an awning outside the warehouse.	Noted. The Pollution Incident Response Management Plan and Emergency Plan provide more information of procedures in the event of a spill or an emergency. PIRMP – EIS Appendix W. Emergency Plan – EIS Appendix V.

Appendix 1 - 15 Other

Agency	Requirement/comment	Response/where addressed
Comments on EIS from Public Exhibition (February to March 2019)		
NSW Health	Should the project proceed, comprehensive monitoring of noise emissions and air quality is required to ensure that the project goals are met and that the health and amenity of the community are not negatively affected. We support the need for continuous real time monitoring of air quality and noise impacts, and the implementation of management strategies that are consistent with best practice, clearly quantifiable, measurable, auditable and enforceable. Methods for determining compliance must be to the satisfaction of the appropriate regulator. Noting the undertaking to provide PM_{10} monitoring stations at the property boundary, the applicant should identify and utilise sampling sites which can be left in situ for extended periods to enable comprehensive assessment of both noise and air quality impacts.	Monitoring of air quality, noise and water quality are proposed in the EIS. It is anticipated that these will be included in the Environmental Protection Licence conditions. Chapter 18 of the EIS.
NSW Health	The community must have a contact point for complaints if noise or air quality issues occur, and the proponent must guarantee a prompt and genuine response to all complaints. A 'complaints management protocol' should be developed and implemented in consultation with the community so that the community can be confident that any concerns will be effectively addressed.	A complaints line will be established. A Community Consultative Committee will be formed post-approval. Group is to be independently chaired. Meeting will involve neighbours (rural residents and business park representatives), representative(s) from community groups (e.g. Kariong Progress Association and Mangrove Mountains & Districts Community Group) and held on a quarterly basis so data on the performance of the facility can be shared, and feedback can be provided to the site operator. This committee shall provide a forum for involving the community during the construction and operational phases of the project. EIS Chapter 18
Department of Planning, Industry and Environment	Central Coast Council has prepared a *Draft Somersby to Erina Corridor Strategy* (the Strategy). The site is located in the Somersby Industrial Park	An assessment of the development against the strategy has been included in Section 2.6.18 of the EIS.

Agency	Requirement/comment	Response/where addressed
	subject to the Strategy. A detailed assessment of the development against the Strategy must be provided in the RtS.	Section 2.6.18 of EIS report.

Appendix 1 - 16 Response to comments from the public (main issues)

Issue	Source	Comment	How addressed	Where addressed in Studies / EIS
Area character / lifestyle	Save Somersby Form Letter	Having a 200,000 tonne per annum waste management and crushing facility bordering rural properties and within 50m of family homes. Totally out of character for the rural living nature of the local natural environment.	A large number of mitigation measures will be put in place to minimise the impact on any nearby properties and the surrounding environment. It should be noted that the site is zoned IN1 General Industrial and is within the Somersby Industrial Estate.	EIS Chapter 18 Mitigation measures
Air quality / dust	Save Somersby Form Letter	Having reduced air quality due to silica dust, causing future cancer risks. This is against the local council's Future Vision Document* (L1 - "Promote healthy living" and advocating Getting "Out and about in the fresh air")	The site design includes a range of dust control measures, including; • Enclosing crushing and mulching operations; • Enclosing tip and spread area; • Enclosing sorting and screening of mixed waste in the Secondary Processing Warehouse; • Misting systems in the tip and spread building, crusher building, mulching building and Secondary Processing Warehouse; • Dust suppression sprays at the back of each of the concrete storage bunkers; • Water truck to sprinkle water on roads and hard surfaces around the site.	Air Quality Impact Assessment – EIS Appendix M.
	Individual submissions	Concerns about dust and potential for silica dust from the facility. Request for indoor processing. Request for continuous air quality monitoring.	A wide range of dust control measures will be put in place. Air quality modelling shows the impacts off-site will be minimal, and within the acceptable threshold. Control of dust will control silica emissions. This is addressed in the AQIA.	Air Quality Impact Assessment – EIS Appendix M.

Issue	Source	Comment	How addressed	Where addressed in Studies / EIS
Traffic	Save Somersby Form Letter	200+ trucks per day travelling through the local roads past local front doors causing increased traffic congestion, also causing noise & vibration to the local residence.	The main route to and from the site, especially for large vehicles, will be via main roads of Wiseman Ferry Rd and Gindurra Rd. The Traffic Impact Assessment indicates that the increase in traffic will have a minimal impact on overall traffic in the area, particularly along the main route to the facility.	Traffic Impact Assessment – EIS Appendix N
Land / property values	Save Somersby Form Letter	Reduction in land value caused due to this Resource Recovery Waste Facility in the area.	The impacts on surrounding properties and area will be minimal. In addition, the development will provide employment, as well as services to the local area. Finally, the development will be surrounded by fencing and landscaping, should improve the visual impact of the site from its current state.	Landscape Plan – EIS Appendix F 3-D Visualisation – EIS Appendix X.
Biodiversity	Save Somersby Form Letter	Destruction of 1.5 Hectares of the endangered Pygmy-Possum's habitat. This contradicts Local Councils future vision* (13 – Ensure land use planning and development is sustainable and environmentally sound and considers the importance of local habitat, green corridors, energy efficiency and stormwater management).	The Biodiversity Assessment was expanded and updated. Thorough surveys were conducted for a range of endangered and vulnerable species. The area within the development zone suitable for pygmy possums was limited. The proponent has committed to engaging a biodiversity consultant to supervise the vegetation clearing, and to catch and relocate any possums in the clearing zone.	Biodiversity Assessment – EIS Appendix P.
Odour	Save Somersby Form Letter	Offensive smell caused by stockpiling of industrial waste.	No putrescible waste will be received at the site.	Waste Management Plan – EIS Appendix H.
Proximity to sensitive uses	Save Somersby Form Letter	Having this facility within 50 meters from family homes, 100 meters from Riding for the Disabled, 300 meters from the Juvenile Justice Centre, 600-900 metres from Mt Penang Gardens, Event Park and Parklands and Kariong High School and 1200m from Kariong Township, due to the	The proponent is conscious of the proximity of potential sensitive uses. The proponent has been working with the neighbouring property to ensure the impact of the development is minimal. The mitigation measures to be implemented should result in most of the listed organisations not being aware of the facility.	Air Quality Impact Assessment – EIS Appendix L

Issue	Source	Comment	How addressed	Where addressed in Studies / EIS
		possible Air quality risk and increased truck traffic.	It should be noted that the distance from the processing and storage activities at the site are much greater than listed in the Save Somersby flyer. It should also be noted that all properties within 500m of the facility were contacted and provided with details about the development during the initial consultation phase.	Noise and Vibration Impact Assessment – EIS Appendix O
Area reputation / loss of business	Save Somersby Form Letter	Bringing a bad name to Somersby as being a crushing/waste dumping area, when it is seen currently as a tourist attraction for Somersby Falls and the Somersby Reptile Park.	The facility will not impact Somersby Falls or the Somersby Reptile Park. It is on the opposite side of the M1 Pacific Motorway, and a considerable distance from both attractions. It should be noted that the facility will mainly accept material from its own operations or commercial contractors. The proponent has no intention to widely advertise the facility to the general public.	Chapter 2 of EIS Report.
Visual impact	Save Somersby Form Letter	The Height, scale, visual bulk. As it would be a visual eyesore and out of character with the surrounding forest landscape and rural residential blocks.	The height wall along the eastern boundary, along Debenham Rd, is necessary for noise mitigation. The landscape plan includes vegetation to obscure this wall from the external view.	Landscape Plan – EIS Appendix F 3-D Visualisation – EIS Appendix X.
Health – asbestos	Save Somersby Form Letter	The risk of asbestos becoming airborne with earthworks on the property (It has been noted in their own report that asbestos has already been located on site.)	Asbestos has been identified as a serious concern for C&D recycling facilities, particularly those processing mixed building waste. The proponent is committed (and required) to adhere to the NSW EPA's Standards for Managing Construction Waste in NSW, which includes procedures for inspection of loads for asbestos. The procedures for identifying and managing asbestos contamination at the site is provided in the Waste Management Plan.	Waste Management Plan – EIS Appendix H.
Heritage	Save Somersby Form Letter	Possible destruction of commonly occurring Aboriginal artefacts in the area.	A comprehensive archaeological investigation and consultation with local Aboriginal groups has been undertaken. No sites or likely sites have been identified within the property boundaries. Therefore, the development is unlikely to affect any Aboriginal	Aboriginal Cultural Heritage Assessment report – EIS Appendix T

Issue	Source	Comment	How addressed	Where addressed in Studies / EIS
			artefacts. Details are provided in the Aboriginal Cultural Heritage Assessment report.	
Noise & vibration	Save Somersby Form Letter	200+ trucks per day travelling through the local roads past local front doors causing increased traffic congestion, also causing noise & vibration to the local residence	The Noise and Vibration Impact Assessment has modelled the additional noise generated by the additional traffic, as well as the site operations. The modelling indicates that the noise levels at surrounding sensitive uses is below the required threshold.	Noise and Vibration Impact Assessment – EIS Appendix O.
Water quality	Individual submissions	Concerns about impact on groundwater quality	A Groundwater Baseline Investigation has been undertaken to determine the current state of the groundwater at the site. The investigation found that it was not contaminated. As part of the mitigation measures for the site, the site will have impervious concrete or asphalt hardstands, or a layer of waterproof membrane installed beneath the crushed recycled concrete hardstand. This will protect the groundwater from any contamination sources at the site. Three piezometers have been installed as part of the base-level sampling and testing. A Groundwater Monitoring and Management Plan will be prepared prior to the site becoming operational. It is anticipated that groundwater monitoring will form a condition of the Environment Protection Licence. Details are provided in the Groundwater Baseline Investigation report.	Groundwater Baseline Investigation report – EIS Appendix K. Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I Stormwater Management Plan – EIS Appendix E(i).
Water quality	Individual submissions	Concerns about impact on surface water quality	A comprehensive stormwater drainage and capture system will be installed at the site. The aim is to capture and re-use as much water as possible for dust suppression. Impacts on surface water quality are expected to be negligible.	Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I

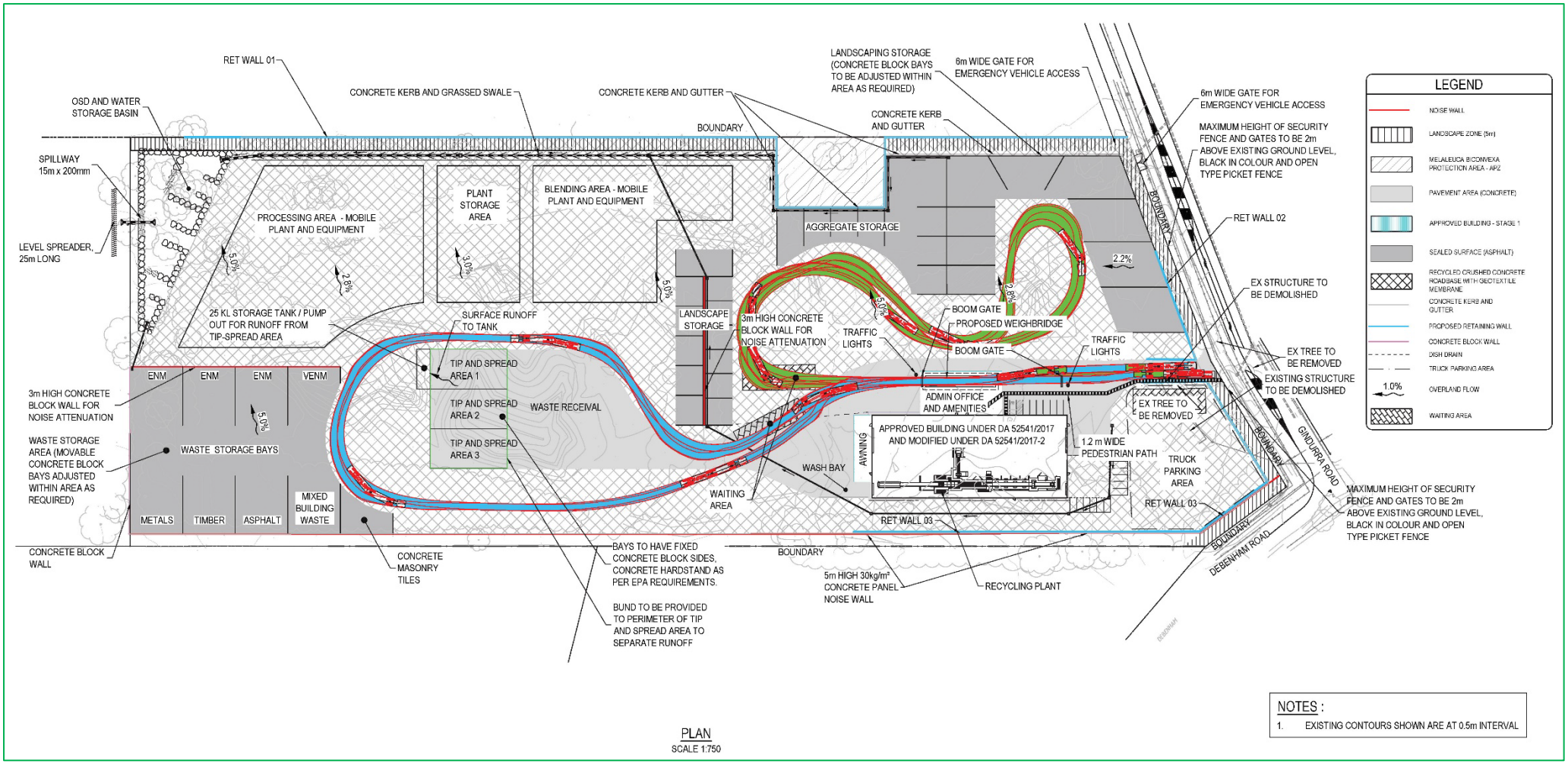
Issue	Source	Comment	How addressed	Where addressed in Studies / EIS
			Modelling shows that the amount of water leaving the development area will be minimal and contain only low levels of potential contaminants.	Stormwater Management Plan – EIS Appendix E(i).
Water quality	Individual submissions	Concerns about water use and water conservation.	A comprehensive stormwater drainage and capture system will be installed at the site. The aim is to capture and re-use as much water as possible for dust suppression. Water tanks will be installed to capture rainwater from the roof of the Tip and Spread building and the Secondary Warehouse building. The water will be re-used for dust suppression and to irrigate the area of *Melaleuca biconvexa.*	Water Cycle Impact Assessment and Soil and Water Management Plan report – EIS Appendix I Stormwater Management Plan – EIS Appendix E(i).
Waste Management	Individual submissions	Suggested that waste should be recycled / better managed than disposed to landfill.	The purpose of the facility is to recycle construction and demolition waste. Most of the material received at the site will be soil. The site is not a landfill. No material will be buried at the site.	Waste Management Plan – EIS Appendix H.
Waste Management	Individual submissions	Concerns that putrescible waste would be received.	No putrescible waste will be accepted at the site.	Waste Management Plan – EIS Appendix H.
Waste Management	Individual submissions	Did not want Central Coast to receive waste from Sydney. Central Coast perceived as "dumping ground" for Sydney's waste.	While most of the material will be sourced from the Central Coast, the facility will also service development projects in other areas. Further, it will provide high quality recycled products for local projects, including building and landscaping projects.	Letters of support – EIS appendix Y
Waste Management	Individual submissions	Problems with illegal dumping in the area.	The facility will provide a lower cost alternative to landfill for construction and demolition waste generated in the area. Illegal dumping is of concern across all areas. The proponent will work	Chapter 18 of EIS report.

Issue	Source	Comment	How addressed	Where addressed in Studies / EIS
			with Council to manage any illegal dumping problems near the facility. Community Consultative Committee (CCC) will be formed. One of the roles of the CCC will be to monitor any issues, such as illegal dumping.	
Health / Pollution - general	Individual submissions	General concern about the potential health impacts on nearby residents.	The inherent design and numerous mitigation measures to be implemented will ensure the impact on surrounding residences and environment will be minimal.	Chapter 18 of EIS report.
Other	Individual submissions	Concerns about the site operating 24/7.	The site will not operate 24/7. The operational hours will be: Opening hours (staffed): 7:00am to 6:00pm Monday to Saturday. Closed Sunday. Waste deliveries: 7:00am to 6:00pm Monday to Saturday. Closed Sunday. Waste processing (sorting, crushing, grinding, screening): 8:00am to 5:00pm Monday to Friday. Product sales: 7:00am to 6:00pm Monday to Saturday. Closed Sunday.	EIS Table E1. Summary of the 'current', 'proposed' and 'net change' in development features of the Kariong Soil and Sand Supplies Facility under SSD application 8660. The impacts of the proposed development have been carefully considered in this Environmental Impact Statement.

Issue	Source	Comment	How addressed	Where addressed in Studies / EIS
Other	Individual submissions	Landscape warming from replacing vegetation with hardstand	As much of the site will be landscaped as possible. The site will be almost constantly dampened as part of the site's dust suppression measures. This should offset the increase in heat due to increased hardstand area.	Landscape design plans – EIS Appendix F
Other	Individual submissions	Bad experience with other similar facility in the area.	The proponent is committed to implementing the mitigation measures listed in the EIS, and any conditions imposed as part of the development consent and Environment Protection Licence. Community Consultative Committee (CCC) will be formed. One of the roles of the CCC will be to monitor any issues and provide feedback to the operator.	Chapter 18 of EIS report.

Appendix 2 – Site Layout Plans (before and after changes)

General Site Layout Plan – as exhibited.



General Site Layout – after changes made in response to comments received during exhibition and community engagement.