MAJOR PROJECT ASSESSMENT: Kimbriki Resource Recovery Project, Terrey Hills, WARRINGAH LGA (MP 10_0065, CP 10_0064)

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

April 2012

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EXECUTIVE SUMMARY

Kimbriki Environmental Enterprises Pty Ltd (KEE, the Proponent) currently operates the Kimbriki Resource Recovery Centre (the KRRC) on Kimbriki Road, Terrey Hills, within the Warringah local government area.

The KRRC currently operates under a development consent issued by Warringah Council, which allows for the receipt of approximately 232,000 tonnes of non-putrescible waste and recyclables per year of which approximately 70% is recycled and the remaining material landfilled on site.

KEE now proposes to construct and operate two purpose-built advanced waste sorting and treatment facilities adjacent to the existing KRRC. The proposal includes both a project application and a concept plan application to allow for the construction and operation of:

- a materials recovery facility (MRF) which would receive and sort up to 60,000 tonnes per annum (tpa) of dry recyclable materials collected as part of the municipal kerbside collection services provided by Mosman, Manly, Warringah and Pittwater Councils; and
- a resource recovery facility (RRF) incorporating an alternative waste technology (AWT) facility and a separate maturation building, which would receive and process up to 100,000 tpa of source separated food and garden organics and mixed municipal wastes.

A concept plan application was included with the project application to overcome short-term prohibition issues under the now replaced Warringah Local Environment Plan (LEP) 2000. It was arguable that the proposed activities may be prohibited under LEP 2000. The gazettal of the LEP 2011 means this is no longer an issue for this proposal.

The Project addresses a need for a regional solution for the disposal of residual putrescible waste from the local government areas of Manly, Mosman, Pittwater and Warringah due to the pending closure of the landfill at the Belrose Waste and Recycling Centre.

The Project would generate approximately 80-100 construction jobs and 59 operational jobs, and would have a capital investment value (CIV) of $70 million. The Project constitutes a transitional 'Major Project' under Part 3A of the *Environmental Planning & Assessment Act, 1979*, as it involves a development for the purpose of a resource recovery facility that would handle more than 75,000 tpa of waste, and consequently requires the Minister's (or delegates) approval. As the Environment Assessment for the Project was lodged prior to the repeal of Part 3A on 1 October 2011, the Project is a transitional Part 3A project.

During the assessment of the Project, the Department received 19 submissions including; five (5) from public authorities and fourteen (14) from members of the community.

All agencies generally supported the Project in principle and provided recommended conditions for inclusion in the project approval. All but one of the submissions from the general public opposed the Project. The key issues raised in submissions related to odour and air quality, traffic and road safety, noise, biodiversity and surface water management.

During the assessment of the Project, it became evident that an improved biodiversity outcome would be achieved through the adjustment of the project footprint away from a downstream drainage line and a groundwater dependent Endangered Ecological Community (EEC). KEE agreed with the recommendations and amended its project through a Preferred Project Report.

The Project is consistent with the strategic direction for waste management in NSW; as it meets a need for alternative waste technologies to increase resource recovery from municipal waste and divert valuable materials from landfill. Further, the Project would enable the Shore Regional Organisation of Councils (SHOROC) (including Manly, Pittwater, Warringah and Mosman Councils) to better manage their long-term waste management costs and reduce greenhouse gas emissions associated with landfilling.

It is considered that the proposed facility would not have unacceptable environmental impacts and would not pose unreasonable impacts on existing or future developments in the locality. Furthermore, the Project has the potential to contribute positively to the local, regional, state and national economies. Consequently, the Department recommends that the Project be approved subject to the imposition of strict conditions.

1. BACKGROUND

1.1 Project Background

The Shore Regional Organisation of Councils (SHOROC) is a partnership between the four councils that extend from Bradleys Head to Barrenjoey - Manly, Mosman, Warringah and Pittwater councils.

Mixed household waste collected from within the SHOROC region is currently taken to the Belrose landfill for disposal, whilst the Kimbriki Resource Recovery Centre (KRRC) at Terrey Hills receives and processes kerbside collected garden organics and hard (bulky) clean up waste (see Figure 1). The KRRC is also the local resource recovery and disposal centre for self-haul customers in the SHOROC and wider northern suburbs region for non-putrescible wastes and recyclables.

SHOROC is working towards achieving a target to divert 66 per cent of residential waste from landfill to recyclable products by 2014, as outlined in the NSW Government's Waste Avoidance and Resource Recovery Strategy 2007.

In order to meet this target, SHOROC has identified a need to implement a new waste management system for their region. The fact that the Belrose landfill is almost at capacity and due to close in 2014 is placing additional pressure on SHOROC to find a new system for waste management. Once the Belrose landfill is closed there will be no licensed facilities for landfilling putrescible waste within the Sydney Metropolitan Area north of Sydney Harbour/Parramatta River.

To solve the regional waste issues, the SHOROC is proposing to build a new recycling and waste processing facility at the KRRC at Terrey Hills.

The KRRC is owned and operated by Kimbriki Environmental Enterprises Pty Ltd (KEE) which has four shareholders – Manly, Mosman, Pittwater and Warringah Councils (ie. the SHOROC councils).

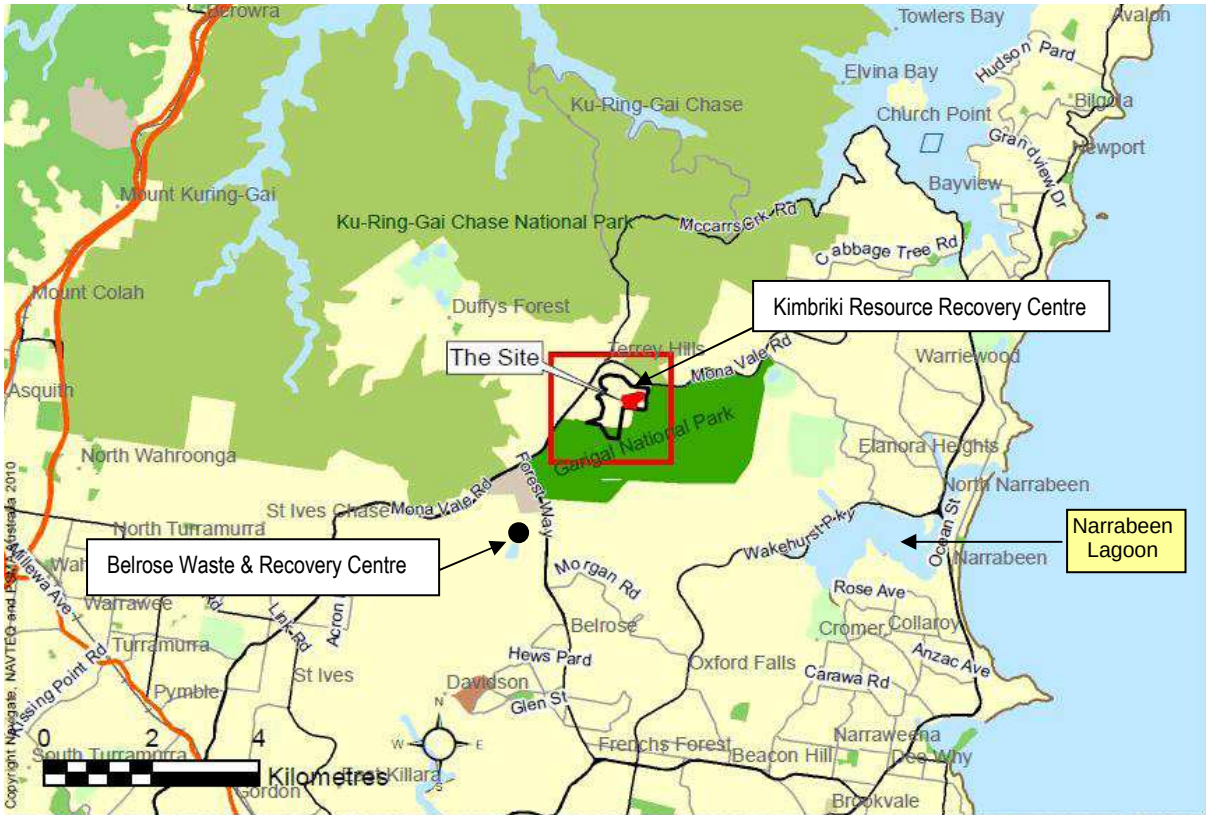

Figure 1: *Site Location (Regional)*

1.2 Existing Operations

The KRRC currently offers a wide range of disposal services for approximately 232,000 tonnes of waste and recyclables per year including non-putrescible wastes such as wood and greenwaste, junk,

furniture, metals and asbestos. Approximately 70% of waste received is recycled and the remaining material is landfilled on site. The centre also provides waste management educational activities.

Figure 2 shows the location of the existing operations at the KRRC site.

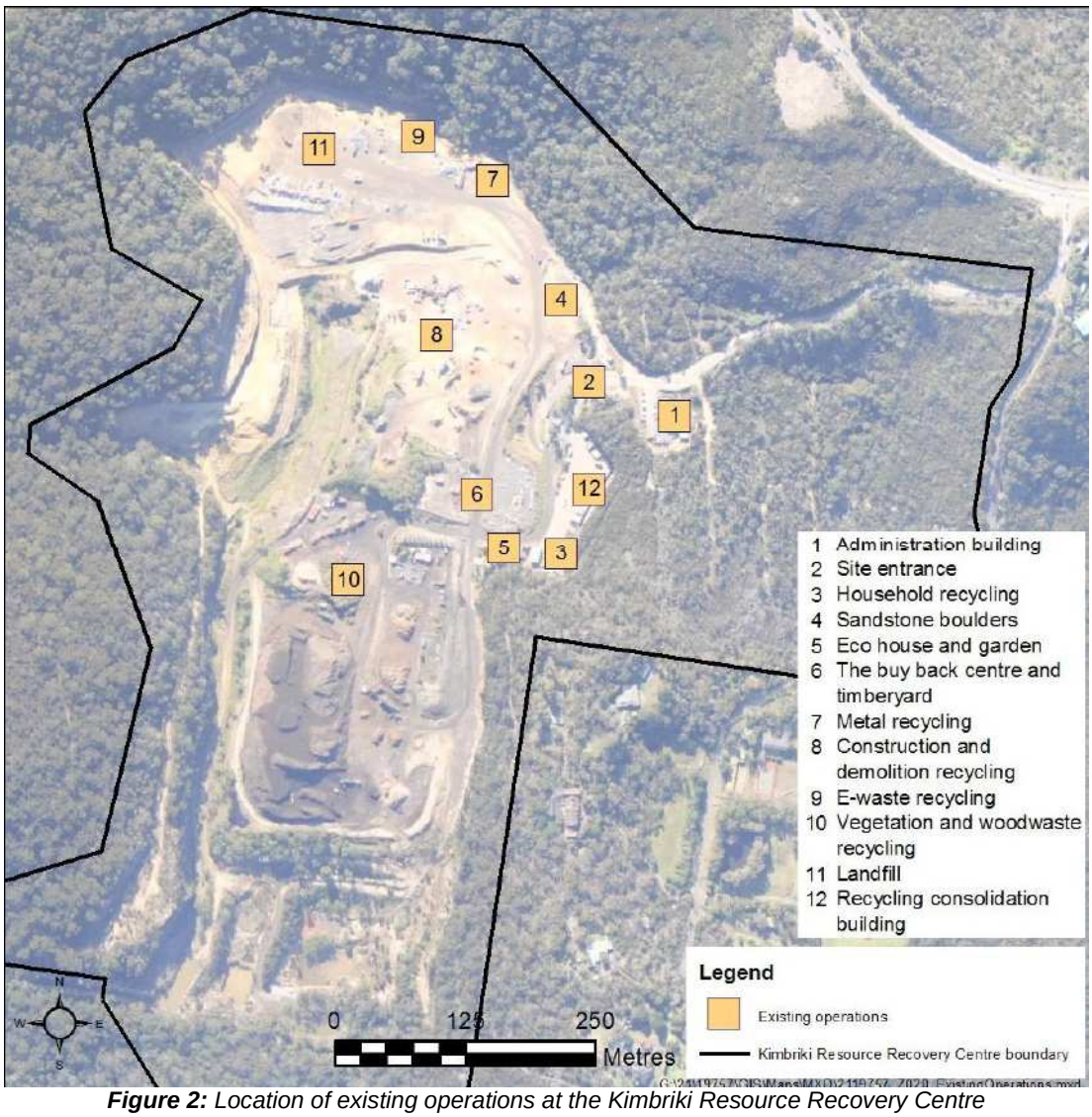

Figure 2: *Location of existing operations at the Kimbriki Resource Recovery Centre*

The KRRC currently operates under a development consent from Council which provides for both landfilling and resource recovery operations. The current operations at the KRRC are restricted to between 7am and 5pm every day except Good Friday and Christmas Day. The KRRC is open to the public from 7am to 5pm, seven days a week including public holidays except Good Friday and Christmas Day. KEE's personnel and contractors are on site between 6am and 6pm.

In addition to the development consent from Council, the KRRC also operates under two environmental protection licences (EPL) issued by the EPA:

- EPL 13090 for composting activities; and
- EPL 13091 for extractive activities, waste storage, waste processing (non-thermal treatment) and waste disposal (application to land).

KEE is seeking to retain these existing EPLs and obtain a third license for the proposed waste processing activities.

1.3 Project Setting

The KRRC is located in the suburb of Terrey Hills within the Warringah local government area on Sydney's Northern Beaches (see Figure 1). It has a total area of approximately 64 hectares and is

comprised of the following parcels of land: Lot 200 DP 1044605; Lot 2 DP 255466; Lot 4 DP 244566; Lot 100 DP 822376; and Lot 3 DP 794191. These lots are owned by Warringah Council and leased on a long-term basis to KEE.

Land to be occupied by the Project is referred to as 'the site' for the purposes of this assessment. The site is located on Lot 4 DP 255466 and covers an area of approximately 8.6 hectares. It is wholly contained within the eastern portion of the KRRC (see Figure 3).

Beyond the boundaries of the KRRC the key land uses include public open space to the north and west, the Garigal National Park to the east and south and the residential suburb of Terrey Hills to the north-west. There are also two areas of rural residential housing located in close proximity to the site, one located along Kimbriki Road and the second located along Kamber Road to the south-west of the site (see Figure 4).

The KRRC comprises areas of cleared land as well as areas of moderately disturbed bushland. It is located within the upper reaches of Deep Creek, which is a tributary of Narrabeen Lagoon (see Figure 1).

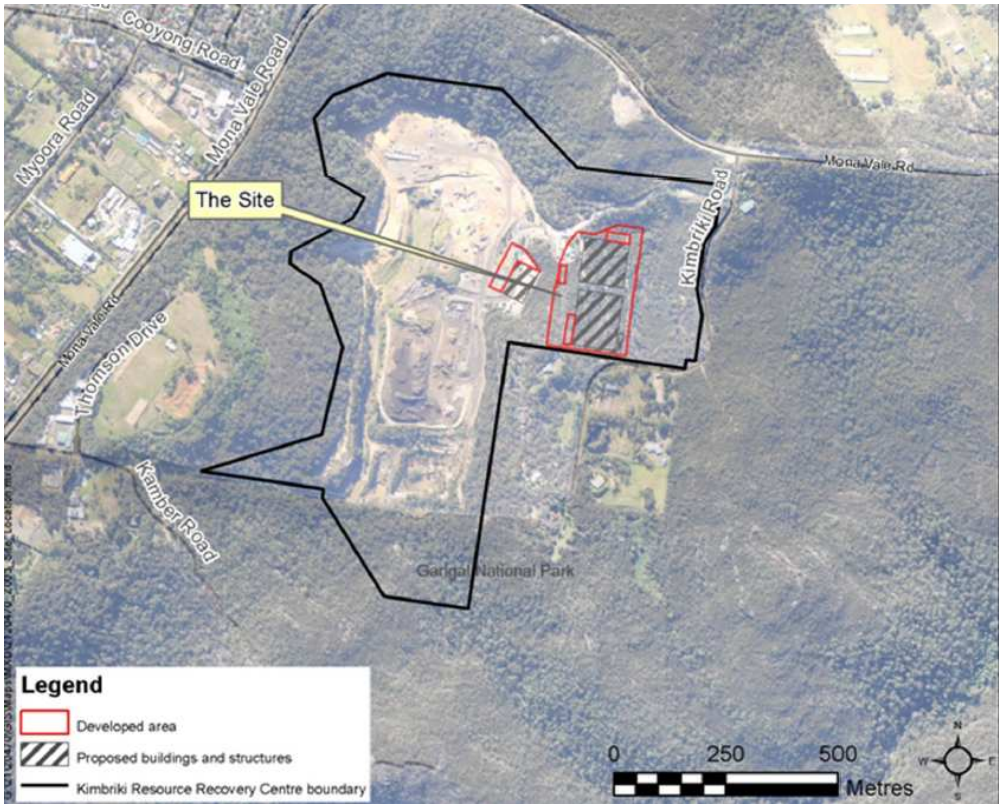

Figure 3: *Site Location (Local)*

Figure 4 below depicts the land ownership and sensitive receptors surrounding the KRRC. Nine residential houses are located along Kimbriki Road. Of these houses, four properties (shown as M, N, O and P on Figure 4) are 'Project properties' which are owned by Warringah Council, in conjunction with the other three SHOROC councils. These have been leased to KEE until 2048 and as such, these properties have not been considered as sensitive receptors in the assessment of this Project.

The remaining five (5) properties on Kimbriki Road are privately owned (A, B, C, D and E on Figure 4). Residences A and B are both located on the same block of land (1 Kimbriki Road) near the entrance to the KRRC. Resident C, at 4 Kimbriki Road, is the nearest privately owned sensitive receptor to the site and is situated approximately 30 metres (m) from the southern boundary of the KRRC.

The second area of rural residential housing is located on Kamber Road, approximately one kilometre to the south-west of the site. This area contains two privately owned residences which are situated on the southern side of Kamber Road (see G and H on Figure 4).

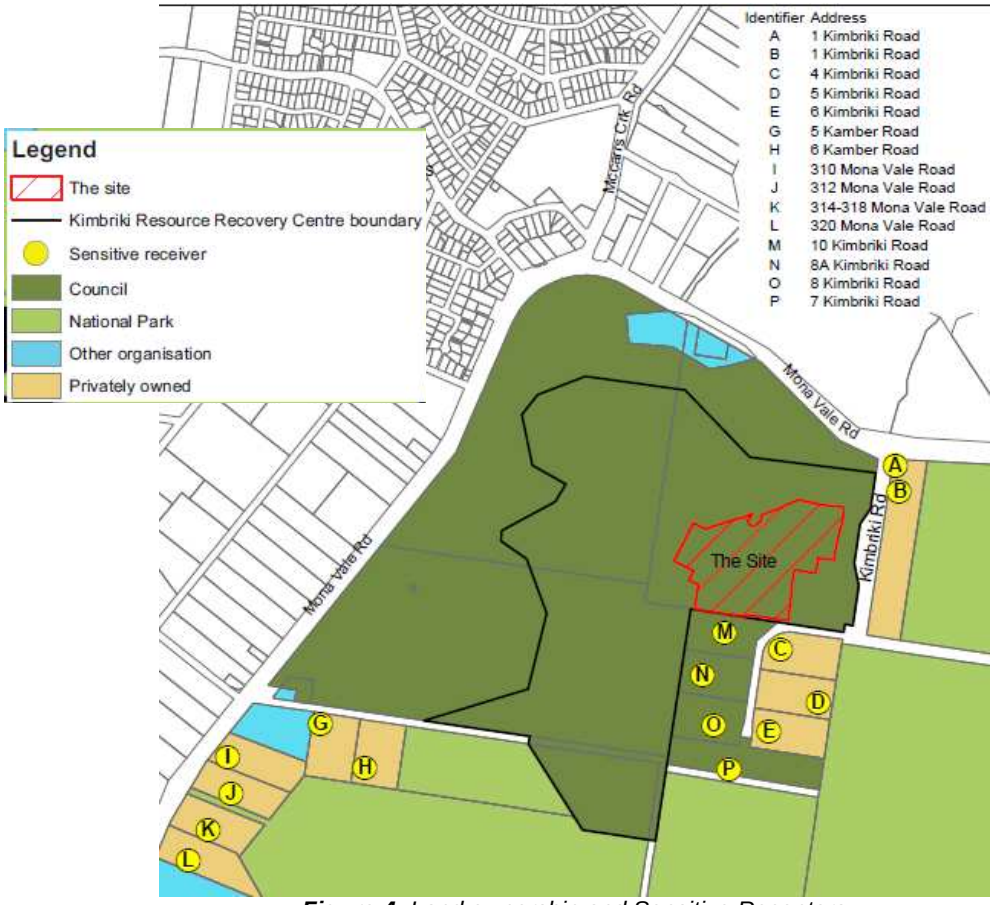

Figure 4: *Land ownership and Sensitive Receptors*

1.4 Land Use Zoning

The Warringah Local Environmental Plan 2011 (LEP 2011) came into effect on 9 December 2011 while the Project was under assessment, and is now the applicable instrument for assessing permissibility.

LEP 2011 incorporates amended land use provisions for the site. The site is currently zoned as 'SP2 Infrastructure' and the purpose shown on the land zoning map is for 'Waste or Resource Recovery Project'. The Project is therefore permissible with consent under the current zoning of the site.

At the time of lodging the project application, however, the *Warringah Local Environmental Plan 2000* (LEP 2000) applied to the site. The site is located on land which was referred to by LEP 2000 as 'Locality B9 Mona Vale Road East'.

The LEP 2000 indentified the permissible and non-permissible land uses in the B9 Mona Vale Road East locality. It was arguable that the intended activities associated with the Project were prohibited under the land use categories of the LEP 2000, as 'potentially hazardous industries' and 'potentially offensive industries' were prohibited within the Mona Vale Road East locality. The Project *could* be a 'potentially offensive industry' within the meaning of the Warringah LEP as it would require a license under the *Protection of the Environment Operations Act 1997* (POEO Act).

As such, a concept application for the Project was lodged with the project application. The intention of the concept plan application was to overcome the short term problems associated with the prohibition of the project under LEP 2000. The concept plan does not cover any further stages or applications.

Despite the gazettal of LEP 2011, Kimbriki have indicated they would like to proceed with both the concept plan and project applications.

2. PROJECT DESCRIPTION

2.1 Project Description

KEE proposes to construct and operate two alternative waste treatment facilities on the eastern portion of the existing KRRC site at Terrey Hills. The proposal includes:

- a materials recovery facility (MRF) - which would incorporate mechanical equipment and some manual labour to receive and process up to 60,000 tonnes per annum (tpa) of dry recyclable materials;
- a resource recovery facility (RRF) - which would be comprised of two buildings, an alternate waste technology (AWT) building and a maturation/final processing building connected via an enclosed waste handling conveyor, to process 100,000 tpa of source separated food and garden organics and mixed municipal wastes;
- ancillary infrastructure including, internal roadways, weighbridge and parking facilities; and
- intersection upgrade works at Mona Vale Road and Kimbriki Road.

The MRF would receive and sort up to 60,000 tpa of dry recyclable materials collected as part of the municipal kerbside collection services provided by the SHOROC councils (ie yellow bin). It would be able to recover dry recyclables such as steel, aluminum, paper, cardboard and various plastics like PET and HDEP containers. Recyclable materials separated in the MRF would be compacted into bales or loaded loose onto trucks and exported from the site to markets for final processing/recycling. The proposed MRF would be located in an area which is already cleared and deeply excavated.

The RRF would be located in an area on the eastern part of the site which is naturally vegetated. The RRF would receive and process up to 100,000 tpa of kerbside collected food and garden waste (ie. green bin) and mixed residual wastes (ie. red bin). The two waste streams would be kept separate but would both follow a similar process in the AWT and maturation buildings involving:

- separation of the waste both by hand and machinery to remove valuable recyclables from the waste streams such as metals, plastics and paper;
- once separated, the inorganic faction would be treated to ensure inert status prior to being landfilled;
- the organic rich faction would be transferred to a composting tunnel where it would be stored in enclosed conditions (with regulated pressure, temperature etc) for a period of 4 weeks before being transferred via enclosed conveyor to the maturation building;
- in the maturation building the organics would be further refined by shredding/trommel screening to produce high and low grade compost; and
- this would then be sold for such purposes as mine site rehabilitation, forestry and soil conditioning.

KEE expect that inflows of waste would initially be 45,000 tpa and 75,000 tpa for the MRF and RRF respectively. However, over time the total inflow of material would be increased to approximately 160,000 tpa (in total). Approximately 70% of this material would leave the site as recycled product.

2.2.1 Preferred Project

The initial layout as presented in the EA was designed to accommodate the site constraints and agency concerns identified early on in the assessment process. The project layout as publically exhibited sought to increase the amount of operational space on the site while preserving an 'island' of vulnerable flora species (*Tetratheace glandulosea* – shown as retained vegetation between the Maturation Building and the AWT Building) (see Figure 5).

Following public exhibition and during the later stages of the Project assessment, a nominated Endangered Ecological Community (EEC) was identified within the site boundary. The EEC, known as Coastal Upland Swamp, is a groundwater dependent community which could have been impacted by changes to hydrological flows resulting from the Project, particularly from construction works.

As a result, and following detailed consultation with relevant agencies, it was concluded that there would be an improved environmental outcome if the footprint and site layout of the facility was revised to reduce potential impacts on the nominated EEC.

Key aspects of this revision are shown in Figure 6 and include:

- a revised site layout and platform, including relocating the Maturation/Final Processing Building;

- a revised offset strategy; and
- a revised operational stormwater scheme.

Other minor changes included: a shortened enclosed conveyor between the Maturation Building and the AWT building, incorporation of amenities into the AWT building; and relocation of the AWT carpark to two smaller parking areas.

The Preferred Project layout has resulted in the relocation of the Maturation Building to the site of the proposed island of retained *Tetratheace glandulosea.* While this would result in the loss of the loss of ten (10) *Tetratheace* plants, it would ensure that the groundwater dependent EEC and hydrological flows would be maintained. In addition, changes have been made to the site access intersection. These Project changes and associated impacts are discussed in greater detail in Section 5 of this report.

The Project layout as exhibited is depicted in Figure 5. The major components of the preferred Project are summarised in Table 1, and depicted in Figures 6, 7 and 8. The Project is described in full in KEE's Environmental Assessment (EA), and supporting documentation which is attached as Appendix D and F.

Figure 5: *Original Project Layout – as exhibited*

Figure 6: *Preferred Project Layout*

Figure 7: *Composting tunnels at the SAWT facility (SITA), Kemps Creek*

Figure 8: *Tunnel composting facility (WSN) at the Macarthur Resource Recovery Park, Narellan*

Table 1*: Major Components of the Kimbriki Resource Recovery Project*

Aspect	***Description***
Project Summary	Key Project components include: ▪ a Materials Recovery Facility (MRF) – a single building which would receive and process up to 60,000 tpa of dry recyclable materials; ▪ a Resource Recovery Facility (RRF) – comprising two buildings; an alternate waste technology (AWT) building and a maturation/final processing building which would receive and process up to 100,000 tpa of both mixed residential waste and source separated food and garden organics; ▪ ancillary infrastructure including; internal roads, weighbridge, and parking facilities; and ▪ intersection upgrade works at Mona Vale and Kimbriki Road.
CIV	▪ $70 million
Processing limitation	▪ MRF – up to 60,000 tpa of dry recyclable materials; and ▪ RRF – up to 100,000 tpa of kerbside collected food and garden waste and mixed residual wastes.
Hours of Operation	▪ 6am - 6pm Monday to Friday, 8am - 5pm Saturday, 6am - 6pm Public holidays; and ▪ No operation on Sunday.
Hours of Construction	▪ 7am to 6pm Monday to Friday, 7am to 1pm Saturday; and ▪ No works Sunday or public holidays.
Construction duration	▪ 15 months – including 8-10 weeks of excavation.
Employment	▪ 80-100 construction jobs and 59 operational jobs.
Vehicle movements	▪ Construction: 90 trucks per weekday and 45 trucks per Saturday. 100 additional light vehicle per day. ▪ Operation: Approximately 72 trucks and 70 light vehicles per day. No vehicles on Sunday
Vegetation Clearing	▪ Approximately 4.56 ha of native vegetation and fauna habitat would be removed; ▪ One vulnerable flora species (*Tetratheace glandulosea*) and potential habitat for two endangered fauna species (bandicoot and quoll) would be impacted by the Project; and ▪ 12 individual *Tetratheace glandulosea* plants would be removed.
Vegetation Offset	▪ Offset areas totalling 14.54 ha located within the Project site and the wider KRRC have been identified and would be reserved in perpetuity, physically protected and managed in the long-term via a Public Positive Covenant with Council pursuant to Section 88E of the *Conveyancing Act 1919*.
Internal Access and Roads	▪ Access would be via a new dedicated sealed road with an automated weighbridge; and ▪ An emergency egress road would connect the upper pad directly to the existing site access road.
Intersection Upgrade Works	The following intersection upgrade works would be undertaken with the approval of the RMS: ▪ extension of the length of the westbound acceleration lane to 250m in length; ▪ extension of the right turn bay on Mona Vale Road by approximately 30m to total 100m; and ▪ localised road widening of Kimbriki Road to provide a dedicated left turn lane 80m in length and a separate right turn lane.
Car Parking	▪ Construction - a minimum of 80 parking spaces would be provided during construction; and ▪ Operation - a minimum of 65 parking spaces to accommodate 60 operational staff plus visitors.
Odour	RRF buildings would include: ▪ composting tunnels, control equipment and receiving area housed within a fully enclosed building, maintained under negative air pressure; ▪ building air vents and electrically driven internal air extraction fans that would run continuously; ▪ buildings fitted with automatic roller doors; ▪ deodorising technology (eg. Biofilters or odour scrubbers); and ▪ biofilters would be enclosed and vented through stacks 1m above roof line. MRF Building - no odour mitigation proposed.

Aspect	Description
Wastewater	▪ RRF building - process water would be collected and re-used, with some moisture lost as steam; and ▪ Domestic wastewater would be treated by the onsite aerated wastewater treatment system to a level sufficient to meet legislative requirements for on-site irrigation and / or dust suppression.
Rainwater Harvesting	▪ Rainwater that falls onto the buildings would be collected in tanks alongside or beneath the buildings. ▪ After treatment, the water would be utilised to keep fire fighting tanks full, and also for equipment washing, dust suppression and part of staff amenities.
Stormwater Management	Construction; ▪ Cut off drains, silt fences and other erosion controls would be used to prevent sediments from moving. Site sediment and erosion control plan would be prepared. ▪ Stormwater would be collected in appropriately sized discharge basins, and discharged into the existing Council stormwater management system. Operation; ▪ Up-gradient run off would be diverted past the new site and continue natural flow; ▪ Roof water would be collected into rainwater tanks so that it can be re-used on site; ▪ Overflow from roof rainwater tanks would be redirected to stormwater detention tanks, with overflows from these directed to the existing KRRC stormwater system to the west, or to the retained vegetation area to the east, thus enabling post-development water flows to closely mimic pre-development flows; ▪ Rain that falls on roads and operational areas would be collected into a first flush detention tanks; and ▪ Post approval assessment would determine whether the capacity of the existing sedimentation pond would be upgraded to cope with increased runoff from the Project.
Utilities	▪ Upgrading of the current electricity supply would be required; and ▪ Existing communication facilities would be extended to service the new buildings.

2.2 Project Justification

Due to the imminent closure of the Belrose Landfill, the Project would ensure that putrescible waste from the SHOROC region continues to be processed within the region. The residuals (after extraction of resources and stabilisation) would be disposed of at the existing landfill within the KRRC.

As the Project would involve the construction of materials processing and resource recovery facilities, it would increase the region's diversion of putrescible waste from landfill, assisting the SHOROC councils delivery on the NSW Government's target of 66% resource recovery from the municipal sector during the Project's lifespan (as set out in the *NSW Waste Avoidance and Resource Recovery Strategy 2007*).

In addition to the above, the Project:

- would reduce financial costs associated with waste levies and haulage costs;
- incorporates alternative waste treatment technologies; and
- makes use of an existing waste management centre, complementing and further developing the waste management facilities that already exist at the KRRC.

3. STATUTORY & STRATEGIC CONTEXT

3.1 Major Project

The proposal is classified as a transitional major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), because it involves a development for the purpose of a resource recovery facility that would handle more than 75,000 tpa of waste, and therefore triggers the criteria in Clause 27(3) of Schedule 1 of *State Environmental Planning Policy (Major Development) 2005*.

Part 3A of the EP&A Act, as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A to the Act, continues to apply to transitional Part 3A projects. Director-General's environmental assessment requirements (DGRs) have been issued in respect of this project and the environmental assessment report was lodged prior to the repeal of Part 3A on 1 October 2011. The Project is therefore a transitional Part 3A project.

Consequently, this report has been prepared in accordance with the requirements of Part 3A and associated regulations, and the Minister (or his delegate) may approve or disapprove of the carrying out of the project under section 75J of the Act.

The Minister has delegated his functions to determine Part 3A development applications to the Department where:

- the council has not made an objection;
- there are less than 25 public submissions objecting to the proposal; and
- a political disclosure statement has not been made in relation to the application.

There have been 14 submissions received from the public and Warringah Council has not made an objection to the proposal. There has also been no political disclosure statement made for this application or for any previous related applications, and no disclosures made by any persons who have lodged an objection to this application.

Accordingly, the application is able to be determined by the Deputy Director-General under delegation.

3.2 Other Approvals

The Proponent is seeking to retain the existing EPLs for the wider facility and obtain a third licence for the proposed activities. This third licence would allow domestic waste to be received by the RRF and MRF without the waste and environment levy being applied as this waste would cross the same weighbridge which the waste heading directly to the landfill for disposal crosses.

Approval from the Roads and Maritime Services (RMS), under the *Roads Act 1993,* would also be required for the intersection upgrade discussed in Section 5.

3.3 Permissibility

Under the provisions of the the *Warringah Local Environmental Plan 2011* (LEP 2011), the Project site is wholly located within the 'Zone SP2 Infrastructure'. The Project is permissible with development consent in this zone.

3.4 Exhibition and Notification

Under Section 75(3) of the EP&A Act, the Director-General is required to make the Environmental Assessment (EA) of a Project publicly available for at least 30 days.

After accepting the EA for the Project, the Department:
- made it publicly available from 23/02/2011 until 30/03/2011:
  - on the Department's website,
  - at the Department's Information Centre,
  - at the Nature Conservation Council's Sydney office, and
  - Warringah Council's administrative office;
- notified landowners in the vicinity of the site about the exhibition period by letter;
- notified relevant State government authorities, Warringah City Council and Pittwater City Council by letter; and
- advertised the exhibition in the Manly Daily.

This satisfies the requirements in Section 75H(3) of the EP&A Act.

During the assessment process the Department also made a number of documents available for download on the Department's website. These documents included the:
- Project Application;
- Director-General's environmental assessment requirements;
- KEE's EA;
- submissions received during and after the exhibition period;
- KEE's Submissions Report;
- GHD's letter dated 26 July 2011 addressing additional issues raised by NOW, Council and the RMS in response to the Submissions Report; and
- GHD's Preferred Project Report (PPR) dated November 2011 which revises the project layout and discusses associated impacts on biodiversity and stormwater. The PPR also includes a revised access intersection design.

3.5 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director-General's report is required to include a copy of, or reference to, the relevant environmental planning instruments (EPIs) that substantially govern the carrying out of the Project.

In relation to this particular Project, the key EPIs are:

- *State Environmental Planning Policy (Major Development) 2005*;
- *State Environmental Planning Policy No. 33 - Hazardous and Offensive Development*;
- *State Environmental Planning Policy No. 44 - Koala Habitat Protection; and*
- *State Environmental Planning Policy No. 55 - Remediation of Land.*

A copy of the EPIs is at Appendix C. The Department has assessed the proposal against the relevant provisions of the key environmental planning instruments and is satisfied that the Project is consistent with the relevant provisions of each EPI.

3.6 Objects of the *Environmental Planning and Assessment Act 1979*

The Minister's consideration and determination of the application must be consistent with the relevant provisions of the EP&A Act, including the objects set out in the Act's section 5. The objects of most relevance to the Minister's decision on whether or not to approve the Project are found in section 5(a)(i), (ii), (vi) and (vii). They are:

'The objects of this Act are:

(a) to encourage:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development".

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the application. The assessment integrates all significant economic and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences. KEE has undertaken an environmental assessment of the Project, and considered the Project in the light of the principles of ESD.

3.7 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements with respect to the Project.

The Department is satisfied that the environmental assessment requirements have been complied with.

3.8 Strategic Context

National Waste Policy: Less Waste More Resources

The *National Waste Policy: Less Waste More Resources* (Environmental Protection and Heritage Council 2009) was developed by the Commonwealth Government to build on the 1992 National Strategy for Ecologically Sustainable Development. The policy sets the direction for Australia over the next 10 years, aiming to reduce the environmental impact of waste disposal by reducing and managing waste as a resource to deliver economic, environmental and social benefits.

The Project is consistent with the aims and objectives of the National Waste Policy.

NSW Waste Avoidance and Resource Recovery Strategy (WARRS), 2007

The NSW strategic framework for waste management incorporates policies to drive waste reduction and resource recovery. The *NSW Waste Avoidance and Resource Recovery Strategy (WARRS) 2007* provides the framework for maximising the conservation of natural resources and minimising the environmental harm caused by waste management activities and the disposal of solid waste. The Strategy includes four broad targets:

- preventing and avoiding waste;

- increasing recovery and use of secondary resources;
- reducing toxic substances in products and materials; and
- reducing litter and illegal dumping.

The Project is consistent with the WARRS 2007 as it is primarily built around diverting food waste (from kerbside collections) from landfill to recycled products. It involves the construction of materials processing and resource recovery facilities which would increase regional diversion of waste from land fill, assisting the SHOROC councils to help deliver on the NSW Government's target of 66% resource recovery during the Project's lifespan.

Metropolitan Plan for Sydney 2036

The Metropolitan Plan presents a plan for sustainable growth in the Sydney region until 2036. The strategy sets out key aims for employment, housing, infrastructure and service provision and supports high growth and high value industries through clustering.

Objective 9 of the Plan is to Minimise and Recycle Waste through the identification of appropriate locations for new waste management technologies and an increase in the uptake of materials recovery facilities, composting facilities, Alternative Waste Technology (AWT) facilities and ensuring adequate investment in resource recovery infrastructure.

The Project is consistent with the aims of the Plan as it is located within an existing landfill site, involves the construction of materials processing and resource recovery facilities, and it would increase regional diversion of waste from landfill, assisting the SHOROC councils to help deliver on the NSW Government's target of resource recovery.

4. ISSUES RAISED IN SUBMISSIONS

During the exhibition period, the Department received a total of 19 submissions on the Project:

- five (5) from public authorities – including Warringah Council (Council), the Roads and Maritime Services (RMS), the NSW Office of Water (NOW), the NSW Rural Fire Service (RFS) and the Environment Protection Authority (EPA); and
- fourteen (14) community submissions – including 13 individual submissions and 1 submission from the Terrey Hills Progress Association - a special interest group.

A summary of the issues raised in submissions is provided below. A full copy of the submissions is attached in Appendix E.

4.1 Public Authorities

Warringah Council (Council) endorsed the development of the project at the KRRC but raised concerns throughout the assessment process regarding the potential impacts of the Project on hydrology, biodiversity and the surrounding road network. Council requested that further hydrological assessments be undertaken to determine the impact of the Project on hydrological flows and groundwater dependent ecosystems. In response to issues raised by Council, KEE undertook additional assessment and further refined the Project footprint. Issues raised by Council are discussed in more detail in Section 5.

The **Roads and Maritime Services (RMS, formerly the Roads and Traffic Authority)** raised no objection to the Project and provided recommended conditions of approval. The conditions included a requirement to undertake intersection upgrade works at the junction of Mona Vale Road and Kimbriki Road to the satisfaction of the RMS.

The **NSW Office of Water** (**NOW)** supports the project but raised issues regarding waterways and riparian land, hydrological flows and groundwater dependent ecosystems. The site layout has been amended to address NOW's concerns. Notwithstanding, NOW maintains that a detailed drainage plan should be prepared prior to the project being determined. The Department is satisfied that through the recommended conditions of approval and design requirements, NOW's concerns can be adequately addressed. NOW's concerns are discussed in more detail in Section 5.

The **NSW Rural Fire Service** raised no objection to the Project and advised that the development shall comply with the recommendations contained within the Bushfires Constraints Analysis prepared for the Project.

The **Environment Protection Authority (EPA**, **formerly the Office of Environment and Heritage)** raised no objection to the Project but did raise concerns regarding biodiversity, air quality and odour impacts. In response to EPA's concerns the project footprint was revised, the Offset Strategy was enhanced, and additional measures were incorporated into the design of the Project.

4.2 Community

All but one of the submissions from the general public and special interest group opposed the Project. The key concerns raised in community submissions related to air quality and odour impacts, traffic and access impacts, and noise. In addition to these issues, the Terrey Hills Progress Association raised concerns regarding surface water storage and runoff.

4.3 Response to Submissions and Preferred Project Report

KEE provided a response to the issues raised in submissions (see Appendix F) in May 2011. This response has been made publicly available on the Department's website.

In addition, a letter addressing additional agency issues and a revised Statement of Commitments was submitted to the Department in July 2011. This was also made available on the Department's website.

A final Preferred Project Report revising the Project footprint in response to agency concerns was submitted to the Department in November 2011. This and the final Statement of Commitments were published on the Department's website.

The Department has considered the issues raised in all submissions, and KEE's responses to these issues, in its assessment of the Project.

5. ASSESSMENT

In assessing the merits of the Project, the Department has considered:

- the environmental assessment, submissions, response to submissions and Preferred Project Report on the Project (see Appendices D, E and F);
- the relevant environmental planning instruments, guidelines and policies (see Appendix C);
- the objects of the EP&A Act, including the object to encourage ecologically sustainable development; and
- the relevant statutory requirements of the EP&A Act & Regulation.

The following provides the Department's assessment of the key issues associated with the Project. An assessment of other issues is provided in Table 5.

5.1 Traffic & Transport

Issue

- The Project would increase traffic volumes on Mona Vale Road (a State Road under the care and control of the RMS), and at the intersection of Mona Vale Road and Kimbriki Road.

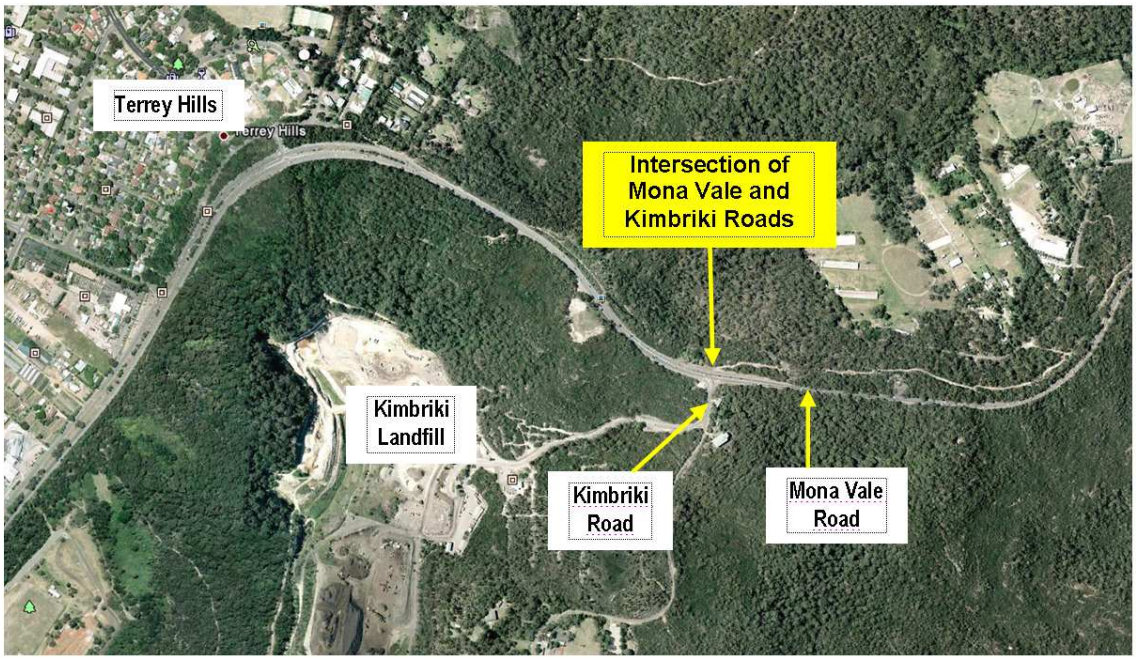

Figure 9: *Intersection of Kimbriki and Mona Vale Roads*

Consideration

Current road performance

Mona Vale Road is classified as a State road between Gordon and Mona Vale and is under the care and control of the RMS. It carries approximately 36,000 vehicles per day. Kimbriki Road is classified as a local road and is under the care and control of Warringah Council. Kimbriki Road primarily serves as an access road to the KRRC and carries approximately 2,000 vehicles per day.

The intersection of Mona Vale Road and Kimbriki Road (see Figure 10) currently operates satisfactorily, with a level of service between A and C for most movements. The exception to this is the weekday AM peak period, where the right-turn movement into Kimbriki Road and right-turn movement out of Kimbriki Road both operate at an F level of service (ie. extreme delay, major treatment required). However, whilst delays are encountered, relatively short queues are currently experienced (approximately four vehicles).

The *Mona Vale Road to Macquarie Park Corridor Strategy* (RTA, 2009) has identified that demographic and land use changes in the surrounding areas are expected to result in an additional 20,000 vehicles per day on Mona Vale Road by 2026. While in the vicinity of Kimbriki Road, daily traffic volumes are expected to increase from 36,000 to 56,000 vehicles per day. This represents an increase of 55%, or around 2.5% per annum.

Construction impacts

The Project's peak construction period is expected to be during the excavation stage, which is around 10 weeks. The peak number of daily trucks movements during the construction period is estimated to be approximately 180 (ie 90 in and 90 out) on a weekday; and around 90 (ie 45 in and 45 out) on a Saturday.

In addition to the truck movements, there would also be an increase in light vehicle movements associated with construction workers. Typically the construction workforce of between 50 (under normal conditions) to 100 persons (during busy periods such as concrete pours) would arrive at the site by car each day. As such, under worse case scenario there could be up to 200 additional light vehicles movements per day (see Table 2). Intersection performance modelling has shown that the Mona Vale Road / Kimbriki Road intersection would operate satisfactorily (a level of service of A, B or C) during all peaks with the exception of the weekday morning peak where right turn movements in and out of Kimbriki Road would operate at an F level of service (consistent with the current situation and level of service).

A minimum of 80 car spaces would be provided for construction worker vehicles. This would be sufficient for the expected construction workforce of 50 (under normal conditions). The Proponent states that during busy periods (such as concrete pours), car-pooling or other measures would be implemented.

KEE has proposed to implement a Construction Traffic Management Plan which would be prepared in consultation with Council and the RMS, prior to construction. This plan would include details on access arrangements, parking/car pooling, delivery scheduling, and traffic controls during the construction phase of the Project with the aim of minimising impacts on the operation of Mona Vale Road.

Operation

Operation of the Project is expected to generate approximately 286 vehicle movements per day, including around 145 trucks (ie. ~ 72 in and 72 out) and 141 light vehicles (ie. ~ 71 in and 71 out). Based on the existing daily volume of approximately 36,000 vehicles per day, this represents a total daily increase in traffic volumes of around 0.8% (two-way) along Mona Vale Road and 14% accessing Kimbriki Road. The increase in traffic is expected to occur mainly on weekdays with a small proportion, mostly light vehicles, on Saturdays and Sundays.

Intersection operational performance modelling has shown that the Mona Vale Road / Kimbriki Road intersection would operate satisfactorily (ie. have a level of service of A, B or C) during all peaks with the exception of the weekday morning peak in which the right turn into Kimbriki Road and the right turn out of Kimbriki Road are predicted to operate unsatisfactorily (ie. an F level of service).

It should be noted that it is unlikely that kerbside waste and recyclable collection trucks would be seeking to enter the site until well after the morning peak due to the nature of their work schedules. Based on this work schedule, it is also expected these trucks would be on site, and would have discharged their loads and exited the site well before the afternoon peak at 4 pm. This has been taken into account in the traffic modelling.

Furthermore, staff commencing work at 6 am would also arrive before the morning peak and would finish their afternoon shift prior to 4 pm. A small number of staff would arrive at 9 am and leave around 5 pm, but this would be no more than 20% of the total workforce. Therefore, it is unlikely that the arrival workers would have negative impacts on the morning peak traffic.

Approximately 59 staff would be required for the operation of the Project and these staff would be accommodated in the 60 parking spaces that would be incorporated into the design of the Project. The Department considers that adequate parking is being provided on site.

Table 2: *Maximum daily Project traffic movements (two way)*

	Light vehicle movements	**Truck movements**	**Total vehicle movements**
Construction	200	180	380
Operation	141	145	286

In response to the exhibition of the Project, the RMS indicated that the Proponent would be required to undertake a number of road works along Mona Vale Road and at the intersection of Kimbriki Road to improve the performance and safety of the intersection. The works requested by the RMS included:

1A extend the length of the right turn bay on Mona Vale Road by approximately 30m to total 100m;

1B extension of the existing westbound acceleration lane on Mona Vale Road;

1C extend the eastbound acceleration lane on Mona Vale Road forming part of the seagull (existing) intersection to minimise potential for rear-end crashes. This may require some localised road widening to facilitate the extension; and

1D widening of Kimbriki Road to provide a dedicated left turn lane of 80 metres in length and a separate right turn lane.

Whilst the Project would not exacerbate the current road and intersection situation, the Department considers there is an opportunity to improve the safety and performance of the intersection through the Project by undertaking physical works, and introducing specific operational procedures for the morning peak, when right-turn movements are difficult. KEE agreed to undertake these intersection upgrade works as part of the Project.

Figure 10 below illustrates the RMS's requested intersection works. However, further discussions between the RMS and KEE have resulted in the removal of requirement 1C, as the existing situation complies with Australian standards. KEE has agreed to undertake the proposed works (1A, 1B and 1D) The PPR contains correspondence from the RMS regarding the in-principal approval of the proposed intersection works.

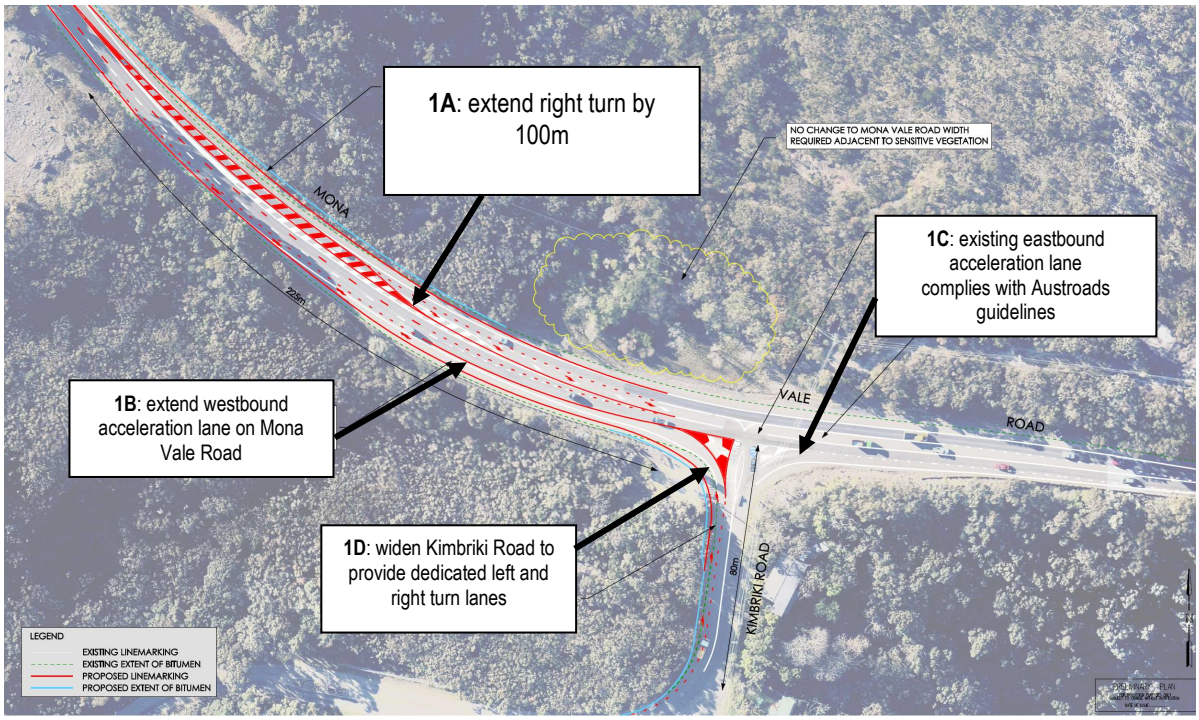

Figure 10: *Final intersection upgrade works (as agreed to by the RMS and KEE)*

Several submissions from the public raised concerns regarding the additional trucks on Mona Vale Road and the capacity of the road to accommodate additional vehicle movements.

Although the Project would increase heavy and light vehicle traffic to the site, the Department considers there would be minimal impact on Mona Vale Road as the majority of movements would be outside of the peak periods. Further, most of the trucks that would access the new facilities are already using Mona Vale Road to travel to Belrose landfill.

It should be noted that decisions related to improving the capacity of Mona Vale Road resides with the RMS, including the timing of the implementation of the *Mona Vale to Macquarie Park Corridor Strategy (RTA, 2009)*. This strategy confirms the existence of traffic congestions problems along the corridor and outlines long term priorities including road widening to two lanes in each direction. The Department considers that the proposed intersection upgrades would improve the safety and the operation of the intersection thereby addressing the traffic and access impacts of the Project.

Conclusion

KEE's modelling has indicated that the Mona Vale Road / Kimbriki Road intersection would operate satisfactorily during construction with the exception of the weekday morning peak where right turn movements in and out of Kimbriki Road would operate at an F level of service (consistent with the current situation and level of service).

KEE proposes to implement a Construction Traffic Management Plan to mitigate traffic impacts during the construction stage of the Project.

Both the Department and the RMS consider that any potential construction traffic impacts would be adequately mitigated and managed through the implementation of a Construction Traffic Management Plan. In preparing this Plan, the recommended conditions require the Proponent to consult Council and the RMS during its preparation, and to detail vehicle routes, the number of trucks, hours of operation, access arrangements, traffic control and advanced warning signs.

In regard to operational traffic, the Department considers that while the Project would increase heavy and light vehicle traffic on Mona Vale Road and to the site, this increase is not significant against the current and projected traffic growth for the area. In addition, the Department also considers that as the majority of truck movements associated with the Project would also be outside the weekday AM peak, the proposal is also unlikely to intensify traffic congestion during this period.

Notwithstanding, the Department and RMS consider that the proposed intersection upgrades would improve the performance and safety of the Mona Vale Road / Kimbriki Road intersection.

Under the recommended conditions, the Proponent is required to undertake the upgrade works to the intersection of Kimbriki and Mona Vale Roads prior to the commencement of operations and to the satisfaction of the RMS. The Department and RMS also consider that these road works would also improve the level of service at this intersection, particularly during the morning peak periods where the intersection currently experiences an F level of service.

Notwithstanding the above, the Department has included a number of other conditions to ensure any potential construction and operational traffic impacts would be adequately mitigated and managed. These conditions require KEE to:

- continue liaise with the RMS regarding the upgrading of the Mona Vale Road / Kimbriki Road intersection;
- ensure that all internal roads and parking associated with the Project are in accordance with the latest versions of the Australian Standards and AUSTROADS for heavy vehicles;
- ensure all parking generated by the Project is accommodated on site and the Project does not result in any vehicles queuing on the public road network; and
- implement a Traffic Management Plan for both construction and operation including management measures for the morning peak, if construction works or operational requirements of the Project are found to be impacting on right-turn movements into and out of the site.

The Department is satisfied that these conditions and the intersection upgrade works would ensure that the traffic impacts from the Project are adequately mitigated.

5.2 Air Quality / Odour

Issue

- Operation of the RRF, which would process food/garden and mixed residual waste, could result in potential odour impacts to nearby residential receptors.

Consideration

The Project would be located wholly within the boundary of the established KRRC. Rural residential properties are located to the south of the site, the closest being approximately 30 metres from the site boundary, and to the north-west in the residential suburb of Terrey Hills. Mona Vale Road runs between the KRRC and the residential properties of Terrey Hills.

The site is located within a valley and is bordered by national park and reserves to the north, east and south.

The EA states that due to local weather patterns, the residential area at Terrey Hills would be upwind of the Project for most of the year. As such, the closest receptors to the south of the site (see properties C, D and E in Figure 11) would be downwind of the RRF (the main odour source) for most of the year.

Figure 11: *Project area and closest residences*

The EA indicates that the proposed RRF would be the main source of odour for the Project and would comprise the following components:

- an AWT building (for sorting and composting waste); and
- a maturation building (for stockpiling waste where it will mature and decompose).

Due to the proximity of the closest residents to the site and the potential for cumulative impacts with the existing landfill, the most stringent odour criterion of 2 odour units (OU) has been applied to the Project.

To manage odour emissions, KEE propose to implement a number of building design and operational measures for the RRF facility. These include:

- the AWT and maturation buildings being fully enclosed and a negative pressure maintained;
- all waste deliveries, storage and processing undertaken within the confines of the buildings;
- installation of high speed roller doors to minimise the time required for vehicle entry and exit and an air curtain to provide additional protection;
- continuous running fans would be increased or decreased in velocity as required to maintain the negative pressure;
- air vents fitted in the sides of the buildings to allow fresh air to be continuously drawn into the buildings to replace the volume of air being extracted by electrically driven fans;
- the enclosed buildings would be fitted with biofilters to treat emissions prior to their release to the atmosphere;
- composting of waste would occur within aerobic enclosed tunnels (ie. see Figures 6 & 7) to minimise the production of methane gas;
- waste product would be stabilised (through composting) prior to landfilling; and
- leachate collected within the processing buildings would be re-used in the tunnel composting process.

No odour mitigation has been proposed for the MRF facility as only dry recyclable materials such as steel, aluminum, paper, cardboard and various plastics would be processed and this is not considered to be a source of odours

PAEHolmes undertook an odour assessment for the Project, which included a cumulative assessment of both the Project's key odour sources and odour from the existing landfill site. The odour assessment predicted that with the Proponent's building design and operational management mitigation measures in place (as described above), the Project would achieve compliance with the 2 OU odour criterion at all sensitive receptors (see Figure 12).

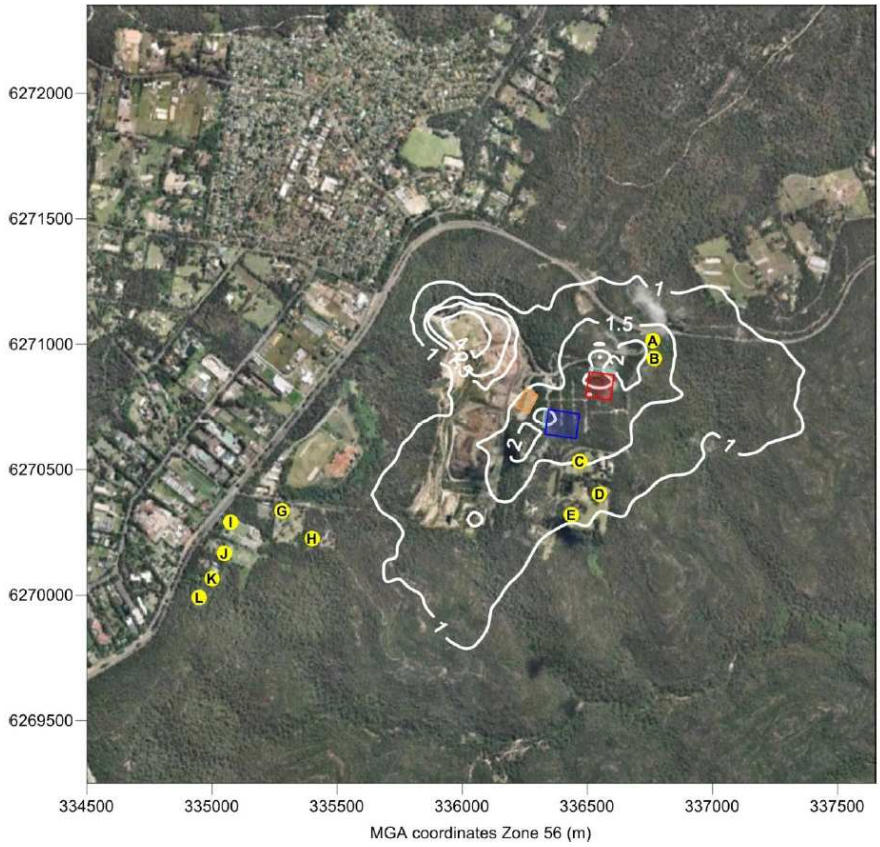

Figure 12: *Cumulative odour contours*

Consideration

The EPA raised concerns about potential odour impacts, particularly the open-air transfer of semi stable waste products between the two buildings comprising the RRF, and the lack of discussion on how this waste process flow and any potential odour issues would be managed. The EPA also recommended specific design features, and operation and handling measures to minimise odour.

A number of submissions raised concerns with odours associated with the existing waste management and landfill operations at the KRRC.

KEE indicated that the existing operations, specifically vegetation stockpiles which are managed by a contractor at the site, have resulted in odourous emissions at nearby residents. In response to these concerns, KEE have estimated that the Project would improve current odour levels at the KRRC as the amount of material stockpiled on site would be reduced by 45% from current levels. This would be achieved by delivering food and garden waste from Council kerbsite collections directly into an enclosed building rather than to an outdoor stockpile.

Further, KEE has advised that the existing outdoor operations would be re-tendered before the Project commences, and the new contract would include a higher level of odour management.

In response to the EPA's concerns, KEE has committed to implementing further odour controls and design measures at the RRF, most significantly connecting the two RRF buildings via a fully enclosed conveyor system. This would allow for the transfer of processed materials from the AWT building to the maturation building while maintaining the negative pressure environment and containment of odours.

The EPA considers that other minor odour sources from the Project, such as the MRF building (which is not equipped with a biofilter) and residual treated waste from the AWT, could be managed through an odour management plan for the operation of the facility. This would detail contingency measures to address possible future odour impacts that could arise from lower than expected performance of the proposed odour control technology.

The EPA has also detailed EPL emission limits for the biofilters in accordance with odour emission rates as predicted in the EA. The EPA has stressed that if the biofilter efficiency is lower than predicted, odour levels may be higher than expected. As a result it has recommended that a

meteorological station be installed on site to enable the correlation of odour related complaints with potential sources and activities occurring on-site.

Further odour assessment provided in the PPR considered the design changes requested by the EPA and also potential odour impacts resulting from changes to the sites layout. The assessment concluded that despite these changes, the odour modeling predicts that there would be no significant changes in odour impacts and that odour emissions would still comply with the 2OU criteria at all sensitive receivers.

Conclusion

KEE's modelling has indicated that with the proposed odour management measures in place the Project would achieve compliance with the most stringent odour criterion (2 OU) at all sensitive receptors. Further, KEE has committed to implementing additional design measures recommended by the EPA such as fully enclosing the conveyor system at the resource recovery facility.

The Department and EPA are satisfied that through the adoption of the measures outlined in the EA and the additional design and operational measures prescribed by the EPA, the risk of offensive odour from the Project is low and it can be managed.

Notwithstanding, the Department has also recommended a number of stringent conditions to ensure odour is adequately managed on the KEE site. In particular, the recommended conditions require the Proponent:

- not generate offensive odours as defined under Section 129 of the POEO Act;
- install a meteorological station on site;
- ensure emissions from the biofilter stacks comply with the Project's EPL;
- incorporate the measures outlined by KEE and the EPA into the design of the facility;
- prepare and implement an Air Quality and Odour Management Plan in consultation with EPA to ensure appropriate management and monitoring measures are undertaken on site; and
- commission and pay the full cost of an Independent Odour Audit and Validation of the Project within 6 months of the commencement of operations to demonstrate compliance with the EA, EPL and conditions of approval.

Importantly, should the independent audit show any non-compliance, KEE would be required to implement additional odour mitigation measures to the satisfaction of the EPA and the Department.

The Department and EPA are both satisfied that the Proponent's building and design measures and the recommended conditions would ensure that odour from the Project would be suitably managed.

5.3 Biodiversity

Issue

- The Project would result in the removal of around **4.56 hectares (ha)** of vegetation, including the proposed Endangered Ecological Community 'Coastal Upland Forest'.

Consideration

KEE engaged Ecotone Ecological Consultants (Ecotone) to undertake a flora and fauna assessment for the Project. The assessment area included the land around the perimeter of the existing landfill footprint and the land directly affected by the Project. The assessment found bushland that is moderately disturbed as well as in relatively good condition. Rock outcrops and a drainage line with small areas of swampy habitat were also found.

The EA originally identified **four** vegetation communities within the Project footprint. One of these communities -Yellow-top Ash Mallee - was described as a groundwater dependant community 'rare in Australia' which could be indirectly impacted by hydrological changes.

Three rare or threatened flora species were identified within the survey area, one of which (*Tetratheca glandulosa)* is listed as vulnerable under relevant legislation (*Threatened Species Conservation Act 1995* and *Environmental Protection and Biodiversity Conservation Act 1999*). Twenty (20) *Tetratheca glandulosa* plants were recorded as being distributed over the survey area with 2 located within the original Project footprint (as exhibited). No threatened ecological communities were identified in the original flora and fauna assessment.

Thirty-four (34) fauna species were recorded on site as part of the EA, with two threatened species recorded in the assessment area – the Heath Monitor and the Powerful Owl. A further two species which are listed under the EPBC Act (endangered southern brown bandicoot and the spotted-tail quoll) are known to occur in the area.

KEE made a referral to the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) due to the potential impact of the proposal on two Commonwealth listed species (*Tetratheca glandulosa* and the southern brown bandicoot). It was later determined that the Project did not constitute a controlled action and no further assessment or approval under the EPBC Act was required.

To compensate for the loss of habitat for threatened and significant species and the removal of native vegetation generally, KEE proposed an Offset Strategy and management measures for the site. The original 14.75 ha Offset Strategy proposed to reserve selected on-site areas in perpetuity and manage these in accordance with a Vegetation Management Plan (to be developed as a condition of approval should the Project be approved). This Offset Strategy included an island of *Tetratheca glandulosa* (see Figure 6) which protected 18 individual plants in the centre of the site, but would result in the removal of areas of vegetation in the location of the proposed maturation/final processing building and changes to the natural hydrological flows which sustain the groundwater dependent ecosystems.

Following the exhibition of the EA and considering feedback from various government agencies, the vegetation maps have now been revised and the following species and communities are described as on and around the Project site:

- Weedy areas (not naturally occurring);
- Scribbly gum/Red Bloodwood Woodland;
- *Leptospernum* / Scrub She-oak / Banksia Scrub/Heath;
- Yellow-top Ash Mallee;
- Gahnia Swamp;
- Sedgeland wet heath;
- Black Wattle / Christmas Bush Riparian and Gully Forest;
- *Eucalyptus luehmanniana* habitat; and
- The Endangered Ecological Community Coastal Upland Swamp (EEC CUS).

Ecotone has revised their representation of the vegetation communities on the Project site. Figure 13 depicts the **eight** vegetation communities which are now considered to exist in the KRCC. Figure 14 depicts the area of the EEC CUS containing 3 distinct vegetation types.

Although generally supportive of the Project, the Department, NOW, EPA and Council raised some concerns with the potential impact of the Project on biodiversity and the proposed Offset Area. These included:

- the potential impact of the Project on natural water flows entering the groundwater dependent communities especially the EEC CUS and downstream drainage lines;
- insufficient detail provided in the concept stormwater plans and details on mitigation measures proposed to manage any potential impacts to the groundwater dependent and riparian communities;
- that the majority of the offset area did not contain vegetation which is similar to the vegetation which is being cleared; and
- areas that had been included in the initial offset area unintentionally included potential landfill areas as included as part of Council's development approval.

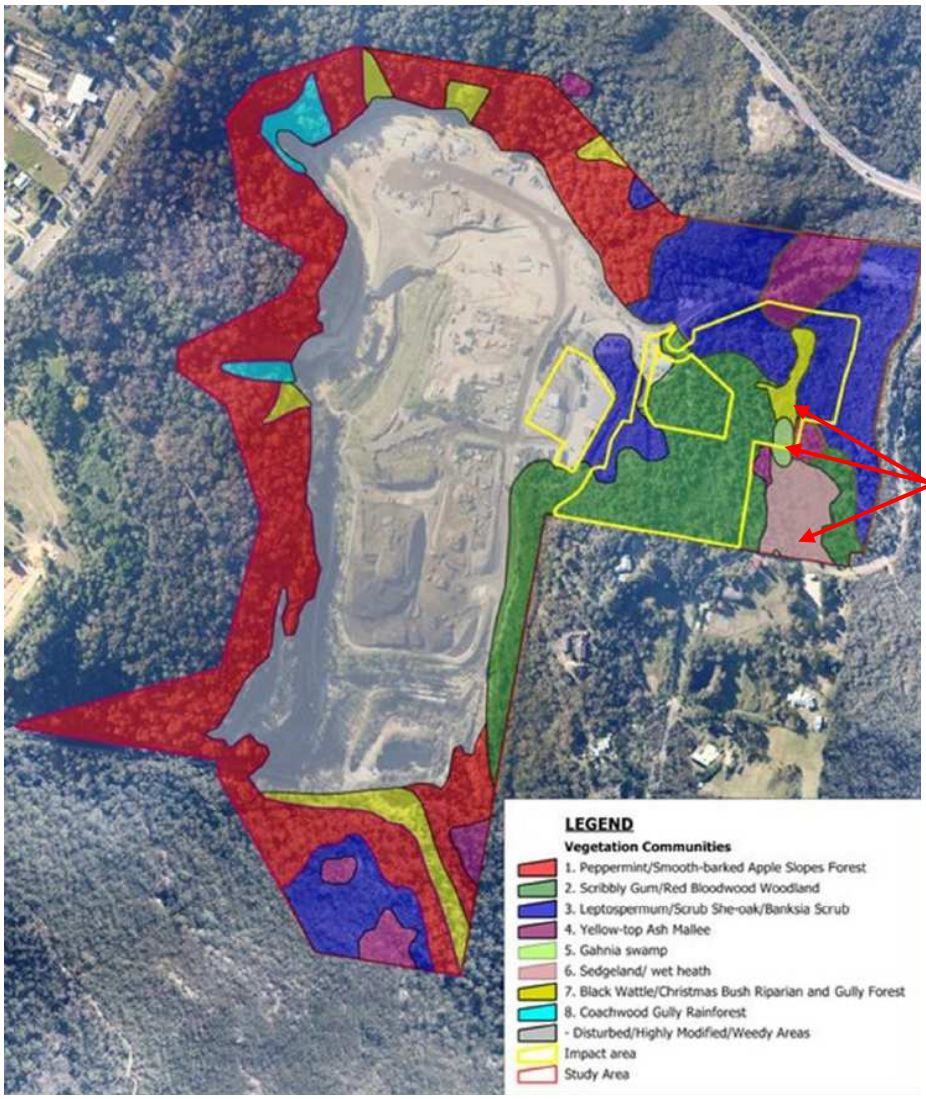

Figure 13: *Vegetation Communities Identified in the Survey Area*

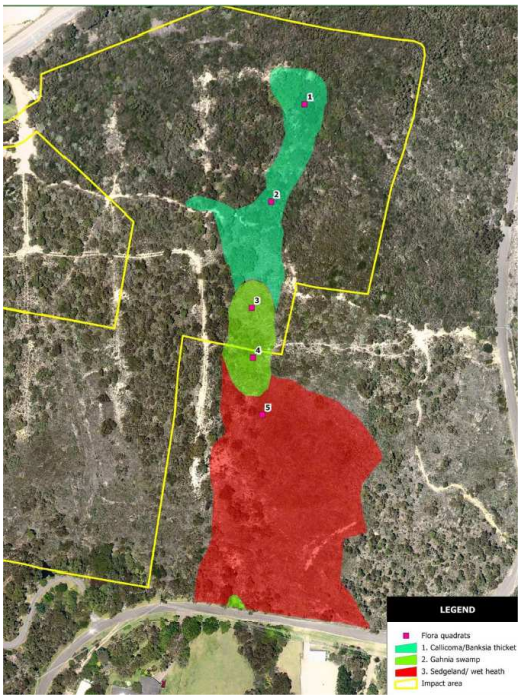

Figure 14: *Areas coloured lime, green and red are now considered to be part of the EEC Coastal Upland Swamp*

In response to these concerns and to reduce potential impacts on the nearby groundwater dependent EES's, KEE revised the site layout and reduced the overall footprint of the Project. The revised layout included relocating the maturation building and associated infrastructure approximately 120m to the west, and reconfiguring the car parking areas (see Figures 5 and 6).

While the amendments to the site layout would mean that the original island area containing 10 *Tetratheca glandulosa* plants would be removed, all agencies considered that this would still be a better biodiversity outcome as *Tetratheca glandulosa* is well represented in the surrounding area and an additional 0.13ha of the groundwater dependent EEC CUS would be retained.

KEE also revised its Offset Strategy to accommodate the revised site layout and reduced footprint. The Offset Strategy now incorporates the entire groundwater dependent EEC CUS and a total offset area of 14.54ha, including 5.36ha of vegetation identified as 'restricted activity areas' around the perimeter of the KRRC site (see Figures 15 and 16). 'Restricted Activity Area' is defined as an area where existing vegetation will be retained, but necessary works such as construction of stormwater diversion drains and stormwater treatment facilities would be undertaken in future. The biodiversity offset area would also be maintained in perpetuity through the creation of a Public Positive Covenant with Council.

Table 3 summarises the key points of the biodiversity assessment and mitigation measures.

Table 3: *Key Biodiversity Issues*

Biodiversity Issue	**Area (Hectares)**
Area to be cleared	4.56
Total offset area	14.54
Offset ratio (total offset area/area to be cleared)	3.2:1
Revegetation of landfill areas (indicative)	6.62
Restricted Activity Areas	5.36

The EPA supports the amendments to the site layout and offset strategy. Despite the loss of an additional ten (10) *Tetratheca glandulosa* plants, the EPA considers that in this case better biodiversity outcomes can be achieved by maintaining hydrological flows to the EEC CUS and the removal of less vegetation (4.56 compared to 5.75 ha).

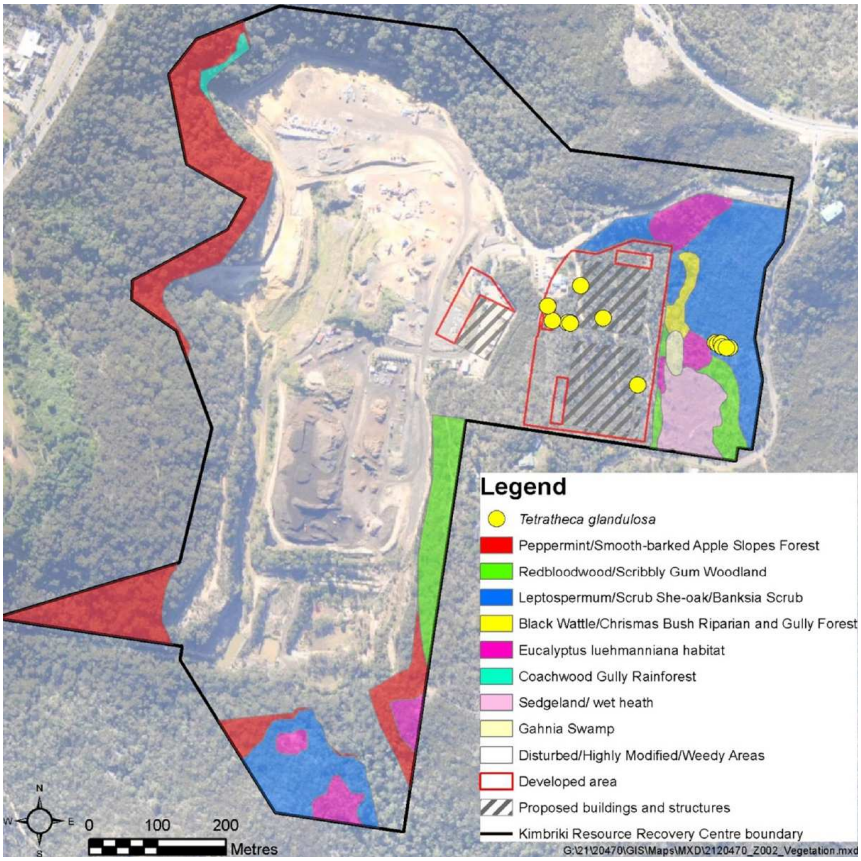

Figure 15: *Revised Offset Strategy Areas*

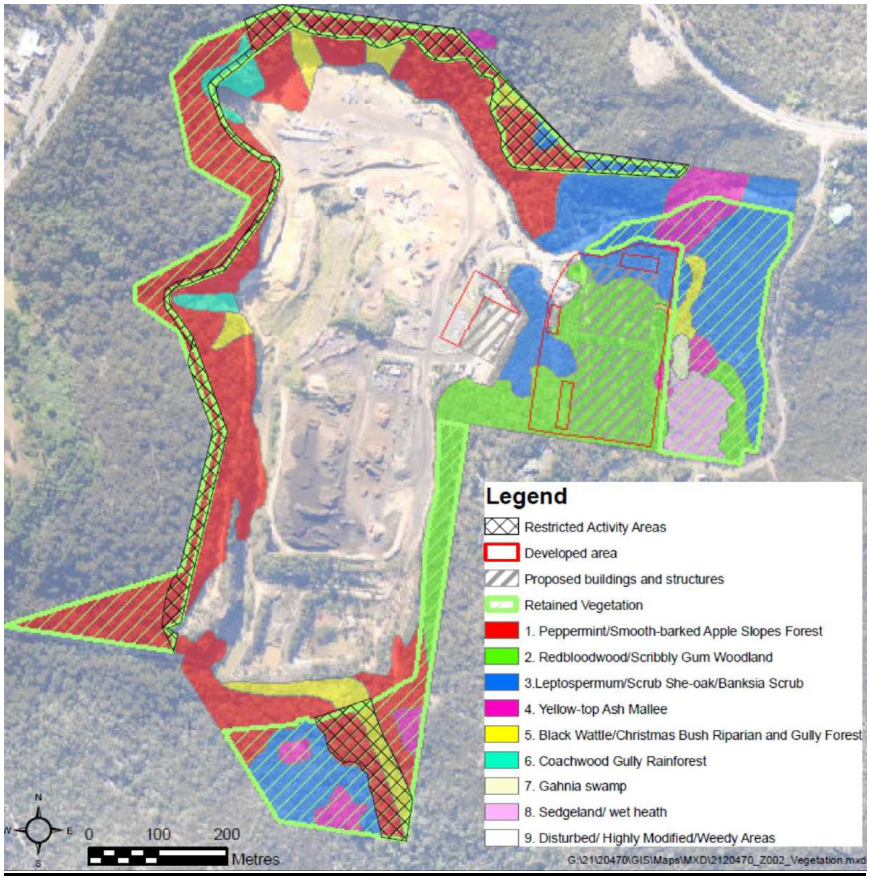

Figure 16: *Restricted Activity Area and (long term) Rehabilitation Area.*

Conclusion

The Department and EPA consider that the mitigation measures described above (ie. the revised footprint, Offset Strategy, revegetation works, landscaping and the restricted activity areas) provide adequate compensation for the potential impacts of the Project on biodiversity.

The Department acknowledges that KEE has amended the proposal by relocating the maturation building and associated infrastructure to the west thereby avoiding potential impacts on a nearby groundwater dependent EEC CUS. Importantly, this would also result in a reduction in the area of vegetation to be cleared, from around 5.75ha to 4.56ha. The Department, EPA, NOW and Council all agree that this amendment provides a better biodiversity outcome.

In addition to the proposed Offset Strategy, KEE also proposed to undertake landscaping around the Project site with native species of local provenance and revegetate the landfill areas within the KRRC once they have been filled and capped (a long-term measure equivalent to approximately 6.62 ha).

The Department is also satisfied that the proposed Offset Strategy which would ensure the ongoing management and protection of an offset area of around 14.54 ha, would adequately compensate for the vegetation to be cleared as a result of the Project. Further, the proposed measures would also mitigate and prevent significant environmental impacts on native vegetation, including threatened and significant flora, fauna and ecological communities.

Notwithstanding, the Department has also recommended a number of conditions to ensure the biodiversity outcomes of the Project are achieved. These include:

- investigating opportunities during the detailed design stage to further reduce the building footprint and include additional areas to the Offset Strategy;
- undertaking a detailed assessment of the hydrological impacts of the Project, including baseline surface water and groundwater conditions and the development of a stormwater management system, that would replicate the pre-development flows;
- the preparation of a Soil and Water Management Plan for construction and operation of the Project, with a focus on monitoring impacts on the groundwater dependent EEC CUS;
- the preparation of a Biodiversity Management Plan in accordance with Warringah Council's *'Guideline for Preparing a Biodiversity Management Plan'* to ensure the long-term survival of threatened and significant flora, fauna and ecological communities; and
- planting all areas available for landscaping around the RRF site and any areas of landfill as they are completed and capped with species of local provenance.

5.4 Stormwater and Groundwater Management

Issue

- The Project could result in potential soil and water impacts, particularly hydrological impacts on flora through increases or reductions in runoff and groundwater.

Consideration

The KRRC is located in the upper reaches of Deep Creek, a tributary of the Narrabeen Lagoon Catchment. Drains along the eastern and western sides of the KRRC currently intercept and capture upstream surface water, prior to it reaching the operational areas (including capped and revegetated areas), and divert it to sedimentation dams at the southern boundary of the KRRC.

Water from the Project site currently drains in a south-east direction towards the rural / residential land.

Warringah Council's design guidelines for on-site detention require that post development runoff volumes from a site (permissible site discharge) do not exceed the predevelopment runoff for storm durations up to a 1 in 100 year event. Given these guidelines, post development modelling has estimated requirements for on-site detention storage volumes.

Key features of the proposed operational stormwater management system for the site include:

- Up-gradient water diversion - Existing up-gradient flows that currently enter the site would be diverted around the operational area using bunds and drains to continue the natural flow path and maintain existing flows. These flows would help to maintain the ecology to the south of the site.
- Roof water diversion - Rainwater landing on the roofs of the proposed buildings would be collected in rainwater tanks. A portion of water from the roof rainwater tanks would be directed

to the groundwater dependent vegetation to the south-east of the site (to maintain existing pre-development flows) and also to the existing eastern drain. Any water directed into vegetation would be discharged via a system designed to mimic natural conditions and would prevent a concentration of flow at any one point.

- Roads / paved areas water diversion - Water collected from roads and paved areas would be collected in drains and directed to on-site detention tanks. Overflows would be directed into the existing KRRC stormwater system via the eastern drain.

Hydrological modelling undertaken by GHD (as presented in the PPR) has indicated that as a result of the Project, the water flows into an area south-east of the site would rise slightly from current levels from 15.1 ML/yr to 15.9 ML/yr. This is illustrated on Figure 17 and includes the 9.9 ML/year catchment runoff and 6 ML/yr water released from the detention tank adjacent to the maturation building. Overflows from the lower detention tank at the SE corner of the site (approx 6 ML/year) would be directed to the existing KRRC eastern drain.

The Department has maintained the position throughout the assessment of the Project that the post-development flows are to be maintained and are to replicate the characteristics of the natural system (velocity, frequency and quality) as far as possible. This is to ensure there are minimal impacts on the surrounding ecology, hydrology and importantly, the EEC CUS. This position was supported by a number of other agencies including the NOW and Council.

NOW and Council also requested the following:

- a review of the storage capacity of KEEs existing stormwater management system at the KRRC to ensure it meets Council's requirements for on-site storage;
- a detailed Drainage and Stormwater Management Plan which includes measures to minimise disruptions to natural water flows and control the quality of water runoff into the natural drainage flow path; and
- a detailed Groundwater and Surface Water Monitoring Plan which must demonstrate that the geomorphic stability and the hydrology of the upland swamp are maintained, and sedimentation or erosion of the swamp area and watercourses downstream do not occur during construction and operation.

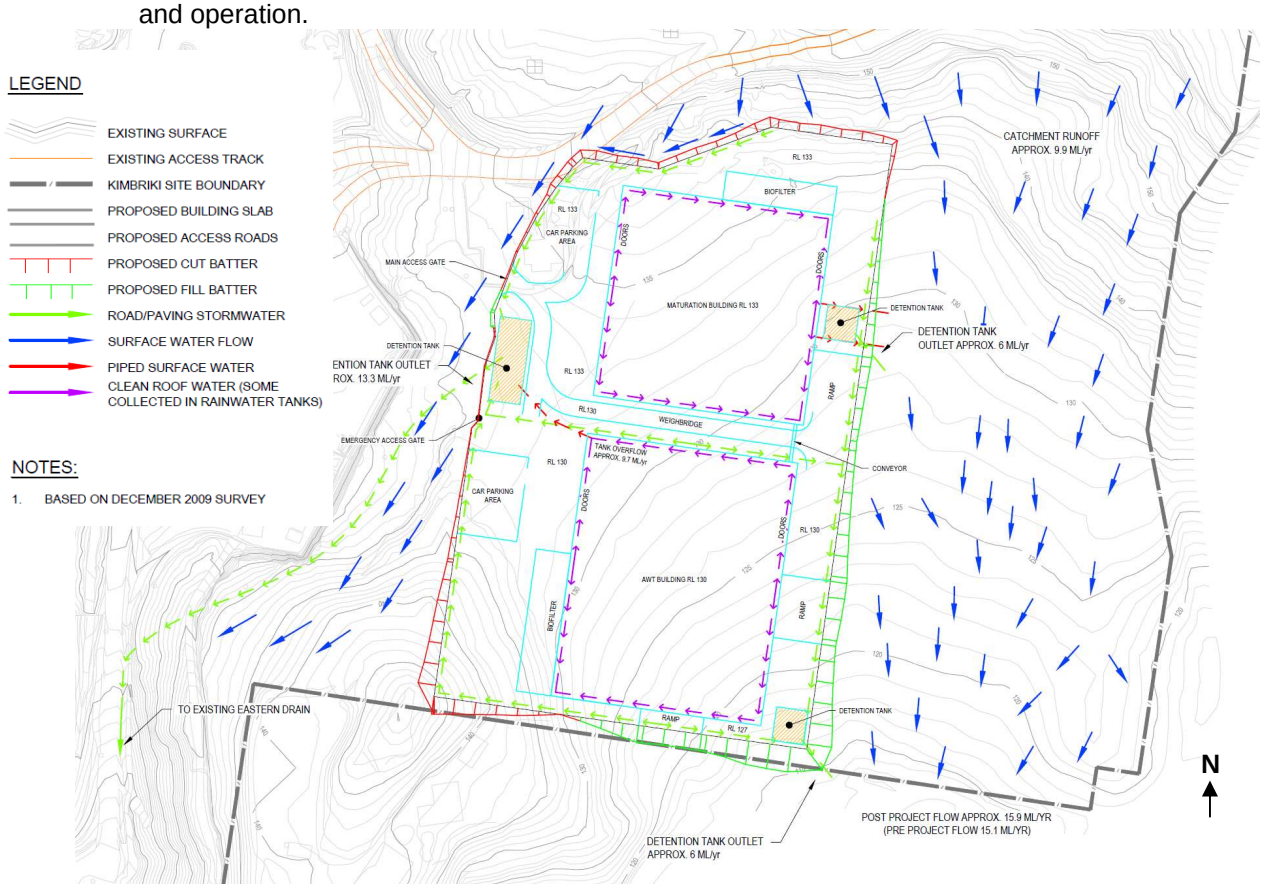

Figure 17: *Concept operational stormwater management scheme*

Conclusion

Due to the sensitivity of the vegetation to the south-east of the site, both the NOW and Council consider that the timing of a detailed drainage plan is imperative to the Project. The Department considers that the detailed drainage plan should be required as part of the Soil and Water Management Plan which would be submitted by KEE prior to construction. The Plan would include:

- the detailed design plans for the proposed stormwater and groundwater management systems, including the capacity of the existing system and any proposed upgrades; and
- details of stormwater treatment devices that would be installed to ensure that the volume, velocity, frequency of flow, and water quality entering the EEC CUP and downstream drainage lines mimics pre-development characteristics as closely as possible.

The plans would be prepared in consultation with Council and the NOW, and would need to demonstrate that the velocity, volume, frequency and quality of the natural water flows have been maintained; and the impacts to the riparian land (EEC CUP) are minimised to the greatest extent possible.

The Department is satisfied that KEE's proposed water management system is generally adequate to manage the Project's water requirements and would ensure that the velocity, volume, frequency and quality of the natural water flows have been maintained.

5.5 Noise

Issue

- The Project has the potential to generate noise impacts (during construction and operation) at nearby residents.

Consideration

Noisy activities during construction would include noise from trucks, excavators, cranes and forklifts. Operational noise would primarily be emitted by the biofilter and tunnel ventilation fans which would operate 24 hours a day and also vehicle and forklift noise. A noise impact assessment (NIA) was prepared by GHD for the construction and operation of the Project.

Construction

The EA stated that construction of the Project would take up to 18 months. The original NIA found that residents on Mona Vale Road and north-east of the site (ie. at Terrey Hills) would not be affected by construction noise.

The NIA also found that the construction noise criteria of 43 dB(A) [Background + 10 dB(A)] would be exceeded by up to 15 dB(A) [ie 63 dB(A)] for the majority of the construction phase at residence 'C' (see Figure 18), which is the closest privately owned sensitive receiver.

As a result of the predicted high level construction noise impacts and changes to the layout of the Project, the Department requested further assessment and additional noise modelling. KEE reported that changes to the Project platform would reduce sandstone excavation from approximately 150,000 m^3, to about 35,000 m^3, a reduction of more than 80%. As sandstone excavation works was identified as one of the key construction noise sources from the Project, this would reduce the overall duration and noise from the construction of the Project.

KEE estimate that the duration of sandstone excavation would be reduced from 22 weeks to 8-10 weeks. This would also shorten the overall construction period from 18 months to approximately 15 months.

The construction noise exceedences at the closest privately owned residence (Resident C) is now predicted to be 10-12 dB(A) with the revised layout, compared to 15-18 dB(A) previously.

While the predicted noise levels are expected to exceed the relevant criteria (ie. background level + 10 dB(A), the Department considers that this level of exceedence would not be experienced throughout the entire construction period since the sandstone excavation is one of the key construction noise impacts. While the construction of the facility is expected to take around 15 months, the latter part of this construction period would primarily relate to external panelling of the structure and internal building fit which would generate less noise than the other earthwork activities.

To address construction noise issues, the Department and EPA have recommended that KEE prepare and implement a Construction Noise and Vibration Management Plan that details all reasonable and feasible work practises to reduce the noise impacts. This includes the notification of residents in close proximity to the site of the work schedule and nature of works, as well as providing contact details to residents for the handling of complaints.

The Department and EPA are satisfied that these measures are acceptable given the nature and duration of the proposed works, the location and number of potentially affected residents and the low site background noise level.

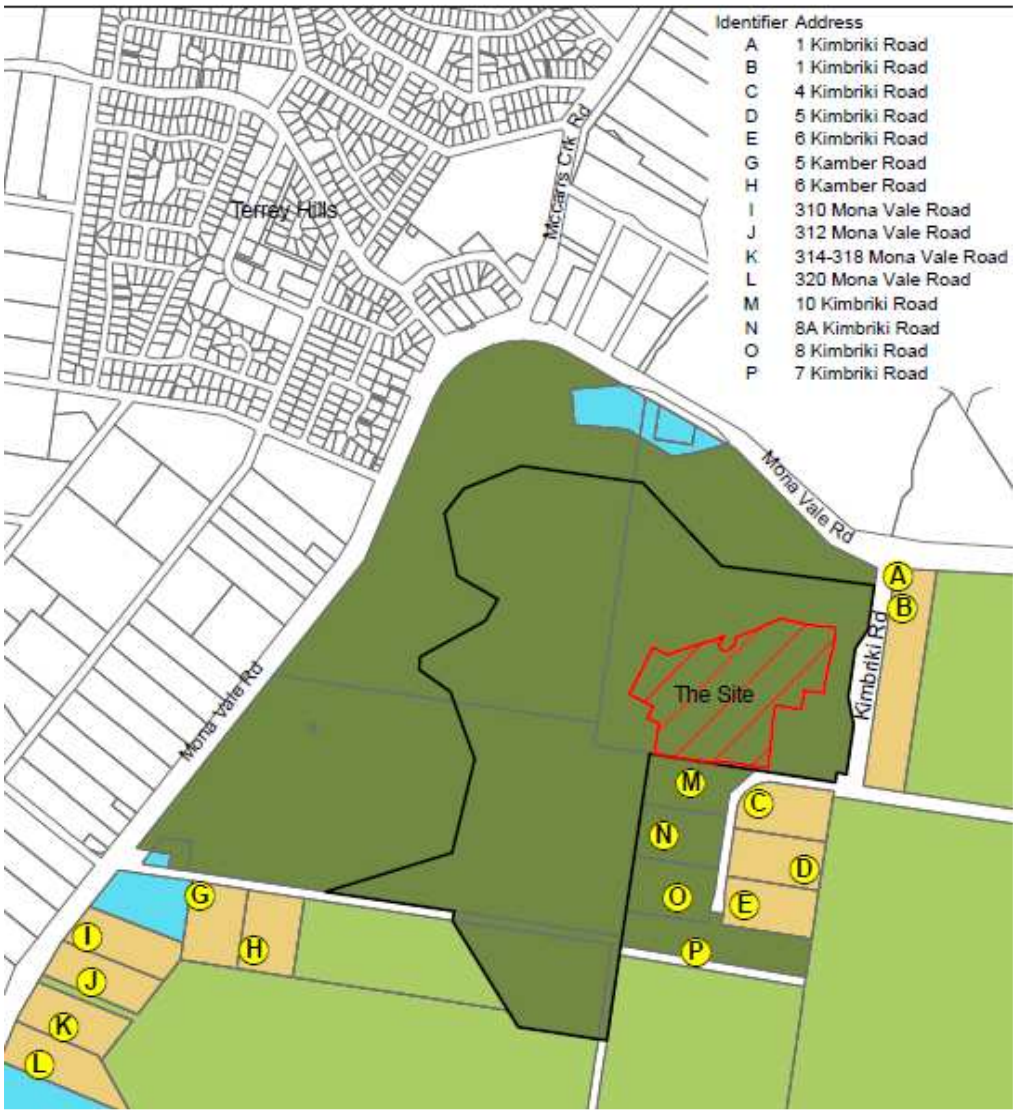

Figure 18: *Nearest residences to the site*

Operation

A number of design features have been included in the Project to reduce the potential for noise impacts, these include:

- building insulation;
- fans placed inside the AWT building and maturation buildings;
- automatic doors ensuring that doors on the AWT and maturation buildings stay closed when not in use, reducing fan noise;
- a fully enclosed conveyor system to transfer material between the AWT and maturation buildings, making the need for a front end loader (FEL) redundant; and
- locating the conveyor belt engines inside the RRF buildings.

The NIA originally proposed noise limits based on those set by the EPL for the adjacent KRRC. However, the EPA did not consider these limits to be appropriate for assessment purposes as they were set prior to the EPA's current Industrial Noise Policy (INP) released in 2001.

GHD's NIA found that the noise levels for the Project would comply with the EPA's recommended noise limits for all time periods, with the implementation of the above design features. It is noted that the EPA's recommended criteria are based on KEE's predicted noise emissions from the Project which are more stringent than the criteria based on a cumulative noise level from both the existing landfill and the Project.

Further noise modelling was undertaken by KEE following the site layout changes to address biodiversity issues. This modelling was based on the following key changes:

- relocation of the building footprints;
- modifications to the site boundary and elevations; and
- relocation of traffic routes and the weighbridge.

The noise level predictions on the revised design and compared to the EPA recommended noise limits are presented in Table 4.

Table 4: Predicted cumulative noise levels (Project + KRCC) against EPA's recommended noise criteria ($L_{Aeq, 15min}$)

Receiver location	Predicted Day	Noise criteria	Predicted Evening / Night	Noise criteria
B - 1 Kimbriki Road	35	40	26	35
C- 4 Kimbriki Road	34	38	28	35
D- 5 Kimbriki Road	35	38	26	35
E- 6 Kimbriki Road	30	37	23	35

The NIA indicates that the Project would comply with recommended noise limits at all privately owned sensitive receivers during operations.

Conclusion

The Department acknowledges that the construction noise from the Project would exceed the relevant construction noise criteria at the five (5) closest private residents for the majority of the proposed construction period. However, the Department notes that amendments to the Project have reduced the construction period by around 3 months. The Department and EPA consider that construction noise could be appropriately managed through the implementation of a detailed construction noise management plan.

In regards to operation noise impacts, the Department and EPA are satisfied that the Project would comply with the EPA's recommended noise criteria for the Project. The Department and EPA are also satisfied that all reasonable and feasible measures have been included in the Project design to address potential noise impacts.

Notwithstanding, the Department has recommended a number of conditions to ensure operational noise impacts are adequately managed and mitigated. These include:

- noise to meet the EPA's recommended criteria as outlined in Table 4;
- no use of front end loaders;
- full enclosure of the conveyor system which transfers material between the maturation and AWT buildings;
- the doors to the RRF building are to remain closed when possible;
- the preparation and implementation of an Operational Noise Management Plan, including an operational noise monitoring program; and
- the requirement for a Noise Validation Report to ensure compliance with the Project specific noise criteria.

5.6 Other issues

Table 5 presents the Department's consideration of other issues.

Table 5: Consideration of Other Issues

Issue	Assessment	Recommendation
Road Traffic Noise	▪ Several submissions raised concerns about additional traffic noise to surrounding residences on Mona Vale Road; ▪ The NIA for the Project predicted that the increase in operational traffic noise on Kimbriki Road and Mona Vale Road from the Project would be 1.8 dB(A) and 0.3 db(A) respectively; ▪ The assessment found that development would not result in an increase in existing noise levels of more than 2 dB, which is consistent with the EPA's criteria; ▪ The Department is satisfied there would not be significant traffic noise impacts at any residence as a result of the Project; ▪ However, a condition has been recommended to manage driver behaviour in order to reduce traffic related noise.	Recommended conditions require KEE to: ▪ implement Transport Code of Conduct, including details for minimising road traffic noise.
Wastewater	▪ Wastewater from the Project essentially falls within two categories: - domestic wastewater from amenities; and - process or waste 'contaminated' wastewater. ▪ Approximately 3.2 kL/day of domestic wastewater would be produced by the site facilities; ▪ This would be treated at the onsite wastewater treatment system to a level sufficient to meet legislative requirements for on-site irrigation; ▪ All process wastewater would be captured and reused in a closed system. Drains within the building floors would collect process water for reuse in the tunnel composting process; ▪ Wash water from vehicle cleaning would also be collected within the buildings and would also be re-used in the enclosed tunnel composting processes; ▪ No process wastewater would be use for irrigation; and ▪ The Department has recommended conditions to ensure that process wastewater is appropriately managed and that treated domestic wastewater will not impact on any watercourse.	Recommended conditions require KEE to: ▪ Prepare and implement a Soils and Water Management Plan which includes; details of the wastewater treatment and irrigation system; and measures to manage wastewater and process water.
Erosion & Sediment Control	▪ Construction works have the potential to impact on nearby watercourses and wetlands (including the water dependent EEC CUS) through erosion and sedimentation; and ▪ KEE propose to implement a number of erosion and sediment control measures, such as use of silt fencing, drains, hay bales and detention basins. ▪ The Department is satisfied that the measures proposed by KEE and the recommended conditions will adequately manage control any impacts.	Recommended conditions require KEE to: ▪ Prepare and implement a Sediment and Erosion Control Plan prior to Construction of the Project.
Visual Amenity	▪ The Project site adjoins an area which is already broadly cleared (the landfill area) but surrounded by a steep forested landscape (see Figures 2 and 3); ▪ Two residents would have partial views to the site; ▪ Some residential receptors in the suburbs of Elanora and Belrose would have limited distant views to the site (more than 2km away); ▪ No submissions raised concerns regarding potential visual impacts from the Project; and ▪ The Department is satisfied that visual impacts would be minimal.	Recommended conditions require KEE to: ▪ Implement a Landscape Management Plan to minimise visual impacts of the Project; ▪ Ensure building materials are considered which would minimise the potential visibility of the Project
Bushfire	▪ The Project site is zoned 'bushfire prone'; ▪ As such, the Project includes Asset Protection Zones (APZ) as a buffer between potential bushfire hazards	Recommended conditions require KEE to: ▪ Revise the APZs in

Issue	Assessment	Recommendation
	and the buildings; ▪ The Project also includes a range of mitigation measures to prevent bush fires from occurring; ▪ The Department has liaised with the NSW Rural Fire Service (RFS) and it is satisfied that the bushfire risk would be adequately managed through the measures described in the EA and the inclusion of APZs; and ▪ Notwithstanding, the APZs contained within the EA do not reflect the revised site layout and as such must be revised in consultation with the RFS and to the satisfaction of the Department.	consultation with the NSW Rural Fire Service and to the Satisfaction of the Department; ▪ Prepare a Bushfire Management Plan; ▪ Manage retained vegetation and vegetation within the offset areas in accordance with Council's Bush Fire Risk Management Plan (WPBFMC, 2010)
Hazards & Risks	▪ The Project would not store hazardous materials, therefore it would not be considered potentially hazardous or potentially offensive; ▪ A qualitative assessment has been undertaken as part of the a hazard analysis, which assessed hazardous scenarios and recommended safeguards; ▪ The Department recommended that these safeguards are implemented and that a Safety Management System is prepared to ensure that all activities on site are undertaken in a safe manner; and ▪ The Department considers that these measures would ensure hazards and risks are managed to acceptable levels.	Recommended conditions require KEE to: ▪ Implement the proposed safeguards listed in Table 4-1 of the Hazard Analysis Report at Appendix M of the EA; and ▪ Prior to commissioning, develop and implement a comprehensive Safety Management System (SMS), covering all on-site operations.
Greenhouse Gas and Energy Efficiency	▪ The Project would result in the diversion of organic waste from landfill, which would otherwise contribute to landfill greenhouse gas generation; ▪ Notwithstanding the above, the Project is estimated to generate 20,240 tonnes CO^2 equivalent Green House Gas (GHG) emissions annually, primarily through electricity consumption (by both the MRF and RRF). This equates to approximately 0.01% of the state's annual GHG emissions; and ▪ The Proponent is committed to further investigating energy efficiency measures during the detailed design stage of the Project.	Recommended conditions require KEE to: ▪ implement all reasonable and feasible measures to minimise energy use and greenhouse gas emissions; ▪ prepare and implement an Energy Savings Action Plan.
Heritage	▪ The assessment undertaken by KEE did not identify any items of aboriginal or non-aboriginal heritage within the site; ▪ There are no sites within the Project area formally listed on EPA's AHIMS; and ▪ Both the Department and the EPA consider it unlikely that heritage items are present within the site boundary.	Recommended conditions require KEE to: ▪ cease all works on site and contact the appropriate authority in the event that Aboriginal cultural object(s) or human remains are uncovered.
Socio-economic	▪ The Project would have positive employment impacts generating short (up to 100 during construction) and long-term positions (approximately 59); ▪ The Project is consistent with the current land use of the site and would not impact on the communities' use of land surrounding the site; and ▪ The Project would complement existing environmental education activities currently undertaken at the site.	

The environmental assessment concludes that many of the potential issues identified would be effectively managed through Project design features. To manage residual issues, and in some cases eliminate them completely, a number of mitigation and management measures (commitments) would be undertaken. The construction and operation of the Project would be undertaken in accordance with all relevant legislative guidelines.

6. RECOMMENDED CONDITIONS

The Department has prepared recommended conditions of approval for the Project (see Appendix B) and summarised these conditions in Appendix A. These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the Project;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the Project.

The Department has provided the draft conditions of approval for the Project to relevant government authorities for comment, and has incorporated these comments into the conditions of approval where appropriate.

KEE has reviewed and accepts the recommended conditions.

7. CONCLUSION

The Project is consistent with surrounding development and would not pose unreasonable impacts on existing or future developments in the locality. Further it would address a need for greater resource recovery particularly for putrescible waste, given that local landfill space is increasingly reduced and populations in the region continue to grow.

The Department has assessed the Project in accordance with the requirements of Clause 8B of the EP&A Regulation, and considers that potential impacts of the Project can be suitably managed to ensure an acceptable level of environmental performance.

The Department has assessed the merits of the Project having regard to the objects of the EP&A Act and the principles of ecologically sustainable development. This assessment has concluded that with the implementation of the recommended conditions of approval, the impacts of the Project can be mitigated and/or managed to ensure an acceptable level of environmental performance.

Consequently, the Department believes that the Project is in the public interest, and should be approved subject to conditions.

8. RECOMMENDATION

It is RECOMMENDED that the Deputy Director-General:

- **consider** the findings and recommendations of this report;
- **approve** the concept plan application, subject to conditions, under section 750 and 75P of the *Environmental Planning and Assessment Act 1979*;
- **approve** the project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*; and
- **sign** the attached Concept Approval (see **Tag A**) and Project Approval (see **Tag B**).

Christine Chapman
Major Projects Assessment

Chris Ritchie 4/4/12.
Manager - Industry

Daniel Keary 5/4/12
Acting Executive Director

Richard Pearson 19/4/12
Deputy Director-General
Development Assessment and Systems Performance

APPENDIX A: SUMMARY OF CONDITIONS OF APPROVAL

Aspect	Condition	Requirement
Schedule 3: General Administrative Conditions		
Limits of Approval	5	Waste operations may only take place for 20 years from the commencement of operations on site
	6	The Proponent must not receive or process more than 60,000 tonnes of non-putrescible dry recyclable materials and 100,000 tonnes of putrescible source separated food and garden organics and mixed residual wastes
Schedule 4: Specific Environmental Conditions		
Waste	1	All outputs produced on-site shall be disposed of to the KRRC or an appropriately licensed facility
	2	Implement suitable procedures to ensure that the site does not accept waste that is prohibited; and screen incoming waste loads
	3	Implement procedures to identify and handle asbestos waste
	4	Implement all measures to recover resources from the waste stream that are outlined in the EA
	5	Prepare and implement a Waste and Recovery Management Plan
Biodiversity	7	The Proponent must, as far as practicable, include additional land to the Offset Strategy area
	8	Prepare and implement a Biodiversity Management Plan
	9	Prepare and implement a Vegetation Clearing Protocol
	10	Enter into a Public Positive Covenant with Council, to be maintained in perpetuity, to ensure the long term conservation security of the Offset Strategy area (14.54 ha)
	11	Landscape all available areas around the RRF and MRF facilities with species of local provenance
	12	Progressively landscape completed landfill areas with local provenance
Meteorological Monitoring	13	Establish a permanent meteorological station on-site
Dust Management	14	Design construct and operate the Project in a manner that minimises dust
	15	Vehicles carrying dust generating loads must be covered at all times
Air Quality & Odour	16	Comply with discharge limits as set out in the EPL for the site
	17	Comply with the stack discharge design requirements in the RRF EPL
	18	Do not cause the emission of any offensive odour from the site
	19	Implement specified odour mitigation measures in the design of the RRF
	20	Implement specified odour mitigation into the operation of the RRF and MRF
	21	Prepare and implement an Air Quality and Odour Management Plan
	22	Prepare and implement an Air Quality and Odour Validation Report
	23	Prepare and implement an Energy Savings Action Plan
Noise	24	Comply with the site's construction and operation operating hours
	25	Comply with the site's operational noise limits
	26	During operations comply with the specified noise mitigation measures
	27	Prepare and implement a Construction Noise & Vibration Management Plan
	28	Prepare and implement an Operational Noise Management & Monitoring Plan
	29	Prepare and implement a Noise Validation Report
Soil and Water	32	Ensure that the volume, velocity, frequency of flow and water quality entering the swamp and downstream drainage lines replicates pre-development characteristics as closely as possible.
	33	Prepare and implement an Erosion and Sediment Control Plan
	35	Prepare and implement a Soil and Water Management Plan, including surface and groundwater monitoring
	37	Operational requirements for the wastewater treatment and irrigation system
Traffic and Access	41	Provide a minimum 80 parking spaces during construction and 65 parking spaces during operation
	42	Ensure that road upgrade works are carried out to the satisfaction of the RMS
	46	Prepare and implement a Construction Traffic Management Plan
	47	Prepare and implement a Transport Code of Conduct
Bushfire	57 & 58	Revise and implement asset protection zones and prepare and implement a Bushfire Management Plan
Schedule 5: Environmental Management, Reporting & Auditing		
Environmental Management	1	Prepare and implement an Environmental Management Strategy for the Project

APPENDIX B: CONCEPT PLAN & PROJECT APPROVAL

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APPENDIX C: ENVIRONMENTAL PLANNING INSTRUMENTS

APPENDIX D: ENVIRONMENTAL ASSESSMENT

APPENDIX E: SUBMISSIONS

APPENDIX F: KEE's RESPONSES TO SUBMISSIONS REPORT, PREFERRED PROJECT REPORT & ADDITIONAL INFORMATION