Proposed Changes to Queanbeyan Resource Recovery and Waste Transfer Facility: Construction of additional building and acceptance of additional waste types and volume

Gilmore Road, Queanbeyan West

SUEZ Environnement (SITA Australia Pty Ltd)

Environmental Impact Statement – Volume 1

September 2015

wildenvironment
environmental planning and management solutions
PO Box 66,
Annandale NSW 2038

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Submission of Environmental Impact Statement EIS

Prepared under the Environmental Planning and Assessment Act 1979 Section 112

EIS prepared by	
Name	Rebecca Smith
Qualifications	B Env Sc
Address	Wild Environment Pty Ltd PO Box 66 Annandale NSW 2038
In respect of	Proposed Resource Recovery and Waste Transfer Facility, Queanbeyan West
Part 4 development	
Proponent name	SUEZ Environnement
Proponent address	41 Alderson Place, Hume ACT 2620
Land on which activity to be carried out: address	Lots 348, 349, 350 DP 8456; Lot 2 DP 1000911; and part of Lot 1 DP 1169293, Unit 3 184 Gilmore Road, Queanbeyan West NSW 2620
Proposed development	Resource Recovery and Waste Transfer Facility
Environmental impact statement	An Environmental Impact Statement (EIS) is attached
Declaration	I declare that I have prepared this Environmental Impact Statement and to the best of my knowledge: ✓ It has been prepared in accordance with clauses 72 and 73 of the Environmental Planning and Assessment Regulation 2000; ✓ It contains all available information that is relevant to the environmental assessment of the activity to which the statement relates; and ✓ The information which it contains is neither false nor misleading
Signature	
Name	Rebecca Smith
Date	4/09/2015

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EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) has been prepared by Wild Environment Pty Ltd to support the development application for SUEZ Environnement (previously trading as SITA Australia Pty Ltd) to expand their current operations at their truck maintenance depot and waste transfer facility in Queanbeyan West, NSW within the Queanbeyan West Industrial Estate. The construction and operation of the facility would comply with the requirements of the *Queanbeyan Local Environmental Plan* (*2012*).

This EIS assesses the impacts of the proposed facility, and describes the consultation process with stakeholders, agencies and the community as part of the designated development approval process.

Proposed Development

SUEZ currently operates a truck maintenance depot and waste transfer station at Queanbeyan West, NSW. The Queanbeyan West Facility was approved in January 2015 (DA#337/2014) for the acceptance, temporary storage and transfer of:

- Up to 3,000 tonnes per year of paper and cardboard, which is bailed on the site;
- Minor amounts of fluorescent tubes and batteries;
- Bin repair and minor truck maintenance;
- Paint bay;
- Wash Bay; and
- Bin storage.

SUEZ propose to expand their operations at the Queanbeyan facility to also include the recovery of reusable materials from a range of waste sources and customers. The following additional waste streams would be targeted by SUEZ:

- General Solid Waste (putrescible and non-putrescible): up to 70,000 tonnes/year;
- Paper, cardboard and plastics recyclables (source separated and co-mingled): up to 12,000 tonnes/year;
- J120 Waste oil/hydrocarbons mixtures/emulsions in water (liquid waste); and
- K110 Grease trap waste.

The storage of fuel is also proposed at the site.

Recovery and reuse of material from these streams diverts waste from landfills, and is considered a critical component of sustainable waste management through resource recovery. Target customers would include:

- Commercial and industrial;
- Construction and demolition; and
- Residential.

The existing facility utilises the existing shed at the site. The proposal would require the construction of an additional building, including a basement carpark, to the rear of the property, fronting Bowen Place.

Putrescible waste would be transferred from the site within 24 hours to an approved processing facility or licensed land fill.

It is anticipated that approximately 95,000 tonnes/year of waste would be accepted and transferred from the facility.

The project cost is estimated at up to $3 million, and will employ some 40 full-time staff at full capacity. A water treatment system would be designed to ensure collection and treatment of any leachate from within the primary building. The stormwater system would be designed to collect and store rainwater for use on site as far as practicable, thus minimising runoff. Water collection would be for up to a 5 year ARI rain event. Any rain above that would be discharged to the stormwater system. Runoff from the hardstand area would pass through oil and litter traps before discharge to the stormwater system.

The remainder of the site would be used for car and truck parking and turning areas. Soft landscaped areas would be designed around the site and would be predominately native species.

Approximately 60 truck movements per day are anticipated, generally at off-peak periods to reduce travel time and avoid congestion. During weekends, up to 15 truck movements per day are expected. Limited amounts of vehicle movements, including trailers may occur during the week to facilitate the retail component of the proposal. Generally, these vehicles would use the facility on weekends and would only consist of dry waste loads. The facility would be designed and operated with best-practice air, water and noise controls in accordance with rigorous environmental standards.

Proposed Site

The proposed site is located on industrial land, at SUEZ's existing truck maintenance depot and waste transfer station. The industrial estate is bounded by the NSW border to the west, Canberra Avenue to the north, John Bull Street to the east and the Queanbeyan West race track to the south.

The site identified as suitable for these activities consists of Lots 348, 349, 350 DP 8456; Lot 2 DP 1000911; and part of Lot 1 DP 1169293, Unit 3 184 Gilmore Road, Queanbeyan West NSW 2620 (refer to **Figure 2**). The site has previously been used for industrial purposes (storage and transport and garden soil supplies) and vacant land. Tenants operating in the estate include Stegbar, Monaro Mix Concrete Plant, Queanbeyan Industrial Supplies, Blackforest Joinery and Stairs, and Old Field Removals and Storage.

Access to the site is via the Kings Highway to Gilmore Road and is well suited for movements of heavy vehicles. Roads within the estate have been designed to accommodate this heavy vehicle traffic.

The nearest residential area is north-east of the site at Lorn Road, approximately 200m from the site (on the other side of the Kings Highway). Two residential dwellings are located within the industrial estate (caretaker cottages) on Kendall Avenue and Bayldon Road.

Statutory Framework

The proposed site is zoned IN1 – General Industrial in accordance with *Queanbeyan City Council Local Environment Plan (LEP) (2012)*. This zoning does not provide for waste resource recovery facilities, nor does it prohibit hazardous and offensive industries and storage establishments. Although, following the implementation of best practice mitigation measures to be built in to the design of the facility, it is predicted the proposal would not be considered hazardous or offensive.

Under Division 23 of the State Environmental Planning Policy (Infrastructure) 2007, waste resource recovery facilities are permitted with development consent within a general industrial zone. As the total amount of waste to be accepted at the facility is under the thresholds outlined within Clause 23 of Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011, the proposal is not anticipated to be considered State Significant Development.

Under Part 4 of the *Environmental Planning and Assessment (EP&A) Act, 1979* the development is considered to be a designated development according to Schedule 3 of the *EP&A Regulation 2000*. Under Schedule 3 of the EP&A Regulation, waste management facilities that sort, consolidate or temporarily store waste at transfer stations or materials recycling facilities for transfer to another site for final disposal, permanent storage, reprocessing, recycling, use or reuse and that have an intended handling capacity of more than 10,000 tonnes/year of putrescible waste would be classified as designated development and would require the completion of an EIS.

The development is considered integrated development according to Section 91 of the *EP&A Amendment Act (1997),* because a concurrent approval for a licence will be required from the NSW Environmental Protection Authority (EPA) (Scheduled Activity).

The development is also anticipated to fully comply with the guidelines and standards of *Queanbeyan City Council Development Control Plan (2012)*.

All waste facilities that are classified as a designated development must be assessed and determined by a Joint Regional Planning Panel (JRPP). Thus, the Southern Region JRPP is the consent authority of this proposal.

Environmental Assessment and Site Analysis

The environmental assessment concludes that the proposed development would have negligible environmental and community impact, and not adversely impact on neighbouring land uses. The proposed development is concluded to be consistent with all planning instrument requirements, and would enable greater recycling within the ACT and South-western NSW Region.

Air Quality

An Air Quality Assessment (Todoroski Air Sciences, 2015) was conducted for the proposed changes which assessed the potential impacts to air quality during the construction and operation of the facility. This assessment addressed potential impacts due to dust, particulate matter and odour.

The assessment found that construction dust emissions will be primarily generated due to excavation, material handling, vehicle movements and windblown dust generated from exposed areas. Particulate emissions would also be generated from the exhaust of construction vehicles and plant. The assessment concluded that the amount of dust generated during construction activities is unlikely to be significant due to the nature of the activities proposed and with the mitigation measures to be implemented.

During operation of the plant, activities associated with the proposed operations such as the waste loading/unloading, rehandling of materials and vehicle transport on-site may cause dust emissions. Estimated total suspended particles were provided (refer to **Section 6.2**). The assessment concluded that the overall total estimated amount of dust generated from the operation was low, even without the implementation of proposed mitigation measures.

The main source of significant odour emissions from the operations would be from the putrescible wastes on the waste floor within a fully enclosed transfer station building. Waste material received at the site would be processed and sorted into separate streams with putrescible waste transferred from the site in enclosed containers within a 24-hour period to an appropriately licensed processing facility for further processing or to a licensed landfill.

Other potential odour sources such as parked garbage trucks and from the storage of the small and large bins were also considered in the assessment. The results from the odour emissions modelling were undertaken conservatively, with the assumption that odours would be emitted continuously for every hour of the year and did not take into account of any odour control measures. Modelling results indicate that odour levels would be below the applicable criteria.

Noise

A Noise Impact Assessment was conducted for the proposed development (Wilkinson Murray, 2015). The assessment found the nearest sensitive receivers were located on John Bull Street, Stuart Street and Lorn Road, located between 210m and 315m from the site. As the proposed operations are to occur 24 hours per day, seven days per week, the assessment considered the site activities against the applicable noise criteria for the day (7.00am – 6.00pm), evening (6.00pm – 10.00pm) and night time (10.00pm – 7.00am) periods. To comply with the NSW *Industrial Noise Policy* (INP), the proposal was assessed against two noise criteria: 'intrusiveness' criterion which assesses the likelihood of noise being intrusive above the ambient noise level; and 'amenity' criterion which ensure the total industrial noise from all sources in the area does not rise above a maximum acceptable level. Sleep disturbance and traffic noise was also considered.

The most noise intensive construction activities are those associated with establishing new pavement and hardstand areas and the construction of the new transfer building. The predicted construction noise levels comply with the established noise management levels at all receivers.

Noise impacts associated with the excavation for the basement car park and water storage tanks is considered to be minor, given the topography of the site and the depth of excavation. It would also be consistent with the recent bulk excavation works that have occurred at the site.

The most significant sources of operational noise from the site would be vehicle movements within the site boundary and material handling activities within the transfer building. Within the transfer building, trucks and other material handling machinery will generate significant amount of noise. Review of the predicted worst case operational $L_{Aeq,\ 15min}$ noise levels found that the operational $L_{Aeq\ 15\ min}$ exceed the night time intrusiveness criterion at one sensitive receiver by 1 dBA. The predicted levels comply with the criterion at the remaining sensitive receivers.

The most significant short duration high intensity noise events associated with the operation of the facility are the application of pneumatic truck parking brakes when they stop at the weighbridge and the entry doors at the transfer station building. Predicted maximum noise levels were found to comply with established sleep disturbance criteria at two of the sensitive receivers, however the criterion was exceeded by up to 7dBA at one sensitive receiver. Due to the proximity and exposure to traffic noise from Canberra Avenue, the existing background noise levels at this sensitive receiver are expected to be higher than the other receptors. Therefore, the predicted 7dBA exceedance of the sleep disturbance criterion is expected to be conservative.

The assessment also concluded that where all truck movements generated by the development occurred during the night time period, the predicted increase in traffic noise levels at the most affected receivers would be less than 0.1dBA. This increase is not perceptible to human hearing.

Traffic, Access and Parking

A key feature of the estate is that it concentrates heavy vehicle movements and delivers them to an appropriate intersection within the regional road network. The intersection of the Kings Highway and Kealman Road provides for most movements to and from the industrial area. Streets within the estate have been designed to cater for the movement of heavy vehicles, and as such consist of wide carriageways with lay-bys and turning areas sufficient for vehicles to enter all sites.

During the construction phase of the proposed development, traffic is likely to be generated mainly by the deliveries of construction materials and construction worker access. It is anticipated that the temporary addition of construction vehicles would only increase the traffic by a minimal amount.

A Traffic Impact Assessment was undertaken by Auswide Traffic Engineers (2014) which assessed the traffic and access implications during the operational stage of the proposed facility. This assessment concluded that the proposed traffic flows on the adjacent road network would have minimal impact during the morning and afternoon peak periods. Outside of the peak times, the flows are anticipated to be lower and therefore, the impacts less.

As parking is provided within the proposed facility, no on-street parking demands would be generated.

Waste, Energy and Resources

The proposed changes are designed with the capacity to process up to 95,000 tonnes of waste per annum. Putrescible and non-putrescible waste is anticipated to be approximately 70,000 tonnes at peak operations.

Waste received at the facility would be both source separated and co-mingled. Waste would be transported to and from the facility via front-lift trucks, packer loads and rear lift trucks.

The proposed changes are critical components of sustainable waste management through resource recovery. It is also consistent with the statutory objectives of EPA in achieving a reduction in waste generation and turning waste into recoverable resources.

Energy use and conservation has been considered during all elements of the design of the proposed facility including building orientation. The location of the proposed site within the existing facility in an existing industrial estate offers central access to the western NSW and ACT area and good connectivity to customers for a range of waste types, minimising transport energy use.

The changes to the facility have been appropriately sized for the function and waste loads anticipated, including the size of the buildings, electrical equipment, pumps and fans. Housekeeping procedures would be implemented to ensure that equipment is switched off when not in use and all appliances used would be energy efficient, including the installation of day/night switches to lighting.

Hazard and Risk Assessment

Benbow Environmental completed a Preliminary Hazard Analysis and Fire Safety Study for the proposed resource recovery facility (refer to **Appendix C**). Due to the nature of the operations and the hazard prevention and protection measures proposed, it is expected that there would be no increase in hazardous risks to the existing or future residents in the area or to the occupants of the industrial area.

In addition, the operation of the proposal would require the implementation of an Environmental Protection Licence (EPL) administered by the NSW EPA and an Environmental Management Plan, Pollution Incident Risk Management Plan and Emergency Response Plan. As such, the operations would not be considered potentially offensive with the implementation of the proposed safeguards and documented management systems.

Heat radiation modelling was undertaken using the modelling software TNO Effects (Version 7.6). Three scenarios were modelled: Fire involving 50 tonnes of paper/cardboard, fire involving 100 tonnes of paper/cardboard and fire involving 200 tonnes of paper/cardboard. The scenarios analysed showed that under normal circumstances there would be no potential off site impacts.

As a worst case scenario for a major fire involving the whole of the quantities of paper/cardboard stored at the site, the heat of radiation levels could expose adjoining premises to conditions that would require evacuation. This would be expected during a fire emergency event.

The scenarios analysed are worst case, and do not allow for any reduction of the heat of radiation levels provided by firefighting water that would be applied and the reduction in the heat of radiation levels provided by the building materials. The firefighting services provided were considered to be sufficient to prevent incidents.

Visual Amenity, Social and Community Assessment

The existing facility and existing industrial estate is characterised by industrial buildings and associated structures ranging from processing and manufacturing plants, wholesale, and transport and service firms. The existing facility consists of paved parking and driveway areas and a large waste sorting hall with associated office and meeting room areas. An additional building is proposed on the levelled area to the rear of the property. Small landscaped areas would be located between the

driveways, car park and the street frontage.

The design of the facility is in keeping with the character of the estate. Architectural elements have been included to ensure that the facility is consistent with the *Queanbeyan Development Control Plan (2012)*.

The site is not visible to residential areas or public recreational facilities and as such, the visual amenity of the area would not be impacted. No adjacent land uses would be able to directly view the proposed operations, as they would be carried out within the building.

Greenhouse Gases and Sustainability

A Greenhouse Gas Emissions Assessment was undertaken by Todoroski Air Sciences (2015), as part of the Air Quality Assessment, which assessed the scope 1 and 2 emissions for the proposed development.

Scope 1 and 2 emission sources identified from the operation of the Project are the on-site combustion of diesel fuel and the on-site consumption of electricity. The estimated annual greenhouse emissions for Australia for the period of October 2012 to September 2013 were 538.4 Mt $CO_{2\text{-}e}$ (Department of Environment, 2014a, as quoted in Todoroski, 2015). In comparison, the estimated annual greenhouse emission for the Project is 0.0002Mt $CO_{2\text{-}e}$ (Scope 1 and 2). Therefore, the annual contribution of greenhouse emissions from the Project in comparison to the Australian greenhouse emissions is conservatively estimated to be approximately 0.00005% (Todorski, 2015).

At a state level, the estimated greenhouse emissions for NSW in the 2011-12 period was 148.9 Mt $CO_{2\text{-}e}$ (Department of Environment, 2014b, as quoted in Todoroski, 2015) . The annual contribution of greenhouse gas emissions from the Project in comparison to the NSW greenhouse emissions for the 2011-12 period is conservatively estimated to be approximately 0.00017% (Toroski, 2015).

Conclusion

The proposal has been assessed in terms of the principles of ecologically sustainable development, as required by legislative and SUEZ's policy requirements. The changes to the facility are concluded to be justified in terms of the principles of ESD and in social, economic and environmental criteria, and would:

- Reduce the volume of waste to landfill, thereby conserving scarce landfill capacity;
- Reduce the volume and environmental risks associated with leachate and emissions from landfill;
- Improve safety and decrease risk for workers handling waste;
- Provide benefits to the community and environment through the encouragement of recycling; and
- Be compatible with current and future land use in the industrial estate.

SUEZ has operated similar facilities in NSW, ACT and across Australia for the past twenty years. SUEZ has ISO-14001 Series accreditation for its environmental management systems and AS-4810 accreditation of its occupational health and safety system. Incident management and emergency response procedures would be implemented in consultation with NSW Fire Brigades for the development.

The proposed development is also concluded to fully comply with all legislative, statutory and policy guidelines of the NSW Government and Queanbeyan City Council.

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1 INTRODUCTION

1.1 BACKGROUND

This Environmental Impact Statement (EIS) has been prepared by Wild Environment Pty Ltd to support the development application for SUEZ Environnement (previously trading as SITA Australia Pty Ltd) to include additional waste streams at SUEZ's existing truck maintenance depot and resource recovery and waste transfer facility on Lot 348, 349, 350 DP 8456; Lot 2 DP 1000911; and Lot 1 DP 1169293, 184 Gilmore Road. The proposal would also include the construction of an additional building at the site to facilitate the additional waste streams and increased waste volume.

The site is located in the industrial estate bounded by the Kings Highway in the north, John Bull Street to the east, the Queanbeyan West race track to the south and Woods Lane (ACT) to the west. This estate is located approximately 2.5km west of Queanbeyan city centre.

Figure 1 and **Figure 2** show the location of the estate and the proposed site.

SUEZ proposes to expand the facility for the recovery of reusable materials to improve their services to their ACT and south-western regional operations. SUEZ views such a facility as a critical component of sustainable waste management through resource recovery.

The focus for this site would be the following additional waste streams:

- General solid waste (non-putrescible);
- General solid waste (putrescible);
- Paper, cardboard and plastics recyclables;
- Grease trap waste; and
- Water/hydrocarbon mixtures in water.

SUEZ has established a long-term lease agreement to operate the site as a resource recovery and waste transfer facility.

Figure 1: Locality Map

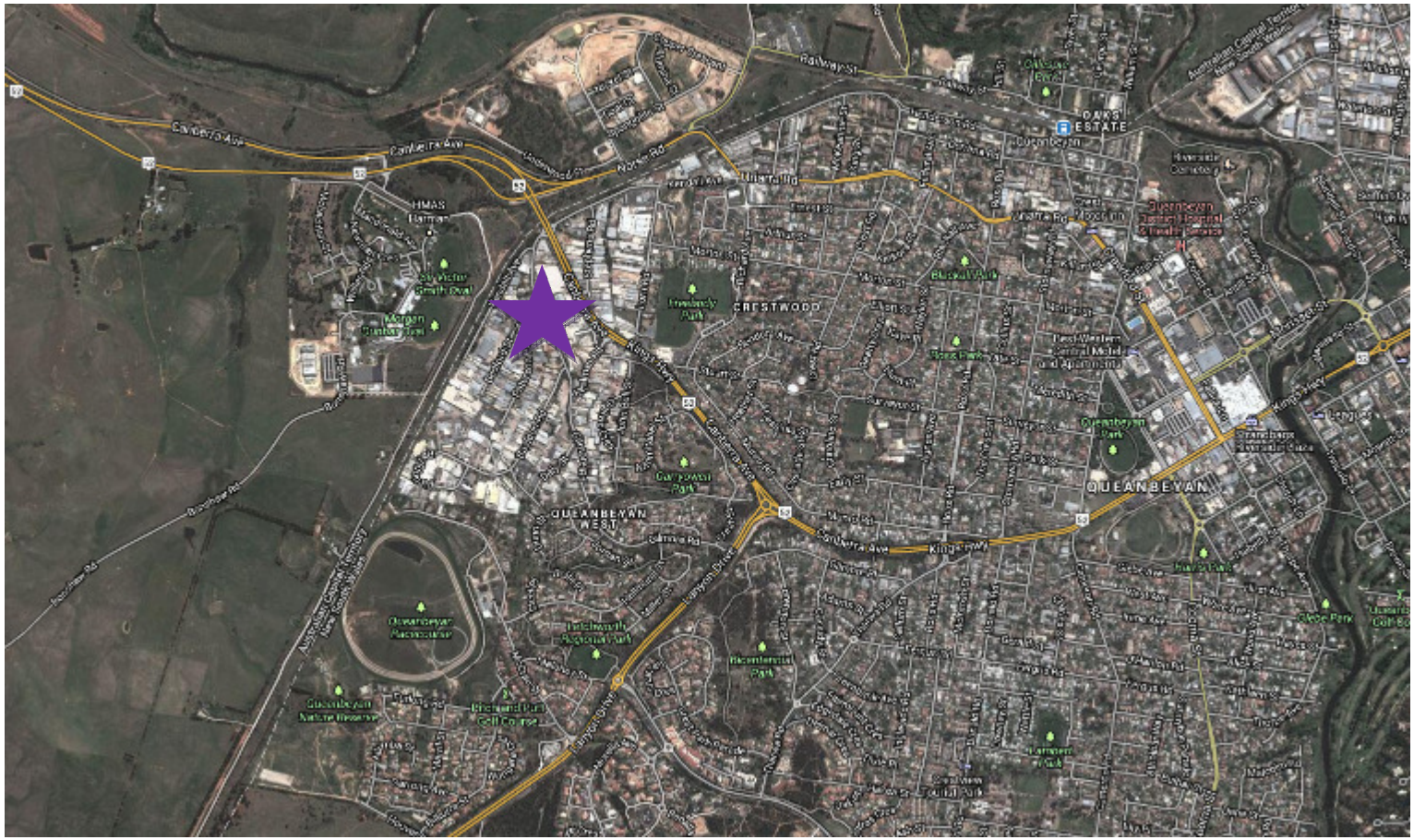


Figure 2: Aerial Photography of Proposed Site

1.2 OUTLINE OF THE PROPOSAL

The facility currently consists of the following structures:

- Large enclosed building for the use of ancillary office space, truck/bin workshop, paper shredding and bailing and enclosed paint bay; and
- Truck washbay.

The proposed changes would primarily consist of the following additional structures:

- Large enclosed building for the tipping, sorting and transfer of waste,
- Liquid Waste Storage, and
- On-site refuelling.

Hardstand areas of the site are currently used for the storage of small and large bins (used for various events), the storage of fluorescent tubes and truck and vehicle parking.

The facility would expand on the existing operations at the site.

The site is proposed to be operated in phases. Initially, grease trap waste, and hydrocarbon/water mixtures storage would occur at the site.

Phase two would consist of the construction of a transfer station for general solid waste (putrescible and non-putrescible) and source separated and co-mingled recycling. It is proposed to store up to 70,000 tonnes/year of general solid waste, including putrescible waste and up to 12,000 tonnes/year of recyclables. Putrescible waste would be transferred from the site within 24 hours to an appropriately licensed processing facility for processing.

As part of this phase, a large enclosed building with a basement car park will be constructed.

At peak capacity, the facility would handle, store and transfer approximately 95,000 tonnes/year of waste.

The project cost is estimated at $3 million, and will employ some 40 full-time staff at full capacity. A water treatment system would be designed to ensure collection and treatment of any leachate from within the primary building. The stormwater system would be designed to collect and store rainwater for use on site where practicable, thus minimising runoff. It is expected to collect rainwater up to a 5 year ARI rain event. Rainwater above this would be discharged to the stormwater system. Runoff from the hardstand area would pass through oil and litter traps before discharge to the stormwater system.

Soft landscaped areas would be designed around the site and would be predominately native species. An indicative site layout drawing and other site plans are included in **Appendix B**.

Initially approximately 60 truck movements per day are anticipated, generally at off-peak periods to reduce travel time and avoid congestion. Limited amounts of vehicle movements, including trailers may occur during the week to facilitate the retail component of the proposal. Generally, these vehicles would use the facility on weekends and would only consist of dry waste loads. The facility will be designed and operated with best-practice air, water and noise controls in accordance with rigorous environmental standards.

The site would be open 24 hours, seven days per week, however hours of operation would vary for different activities as described in **Sections 5** and **6**.

1.2.1 The Proponent (SUEZ ENVIRONNEMENT)

The proponent is SUEZ Environnement (previously trading as SITA Australia Pty Ltd). SITA Australia is currently undergoing a re-branding to SUEZ Environnement.

SUEZ is a joint venture company owned by two international waste, water and energy management companies, SUEZ ENVIRONMENT (60%) and Sembcorp Industries.

Sembcorp Industries is a utilities and marine group providing centralised utilities, energy and water to industrial customers in Singapore, UK, Asia and the Middle East. SUEZ ENVIRONMENT (35% owned by GDF SUEZ) operates in more than 30 countries on five continents, and it is dedicated to environmental serves. It provides millions of people and industries with solutions for drinking water, wastewater and waste management.

SUEZ's head office is based in Sydney, NSW, at Level 3, 3 Rider Boulevard, Rhodes. The company also has major branches in the ACT, Melbourne, Brisbane, and Perth, in addition to a number of smaller regional branches.

For further information on SUEZ's services refer to the web site www.sita.com.au.

1.2.2 Need for Proposed Development

In the ACT/south-western NSW area SUEZ currently operates a resource recovery facility at Alderson Place, Hume and Bathurst. SUEZ have recently entered into a kerb side, general solid waste collection contract within the ACT and these facilities have limited capacity for expansion. They are also not suitable to develop as a large resource recovery facility capable of handling a range of waste types.

To not expand in recycling and reprocessing activities would see SUEZ become increasingly non-competitive and in contradiction of the company's Mission Statement:

> *"Our mission is to satisfy our customer's needs by providing innovative and cost effective waste management solutions. In fulfilling this mission we will protect the environment, provide a rewarding work place and promote a spirit of partnership with the communities and enterprises we serve."*

Greater recycling and diversion of waste from landfill is also consistent with NSW Government and Queanbeyan City Council sustainability objectives and the *Waste Avoidance and Resource Recovery Act 2001.*

The proposed development is described in detail in **Section 5** of this EIS.

1.2.3 Project Schedule

Construction of the proposed resource recovery and waste transfer facility would commence immediately following the receipt of development consent, construction certificate approval, and all necessary permits and licences, and is anticipated to take approximately 12-16 weeks.

1.3 OBJECTIVES OF THE DEVELOPMENT

The key objectives of the proposed development are to expand the broader waste management objectives of the NSW Government and to expand SUEZ's resource recovery capability within the ACT and South-western Regions.

The proposed changes would allow recoverable materials to be accepted into the facility increasing the volume collected from commercial, residential, demolition and industrial waste streams in the area, and so diverting these materials from landfill.

1.4 ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The proposed site is located within an area zoned IN1-General Industrial under the *Queanbeyan Local Environmental Plan* (LEP) (*2012*). The proposed expansion of SUEZ's existing resource recovery and waste transfer facility is consistent with this zone. The site has also been assessed with regard to *Queanbeyan Development Control Plan* (DCP) (*2012*). Consistency with these planning instruments is detailed in **Section 2** of this EIS.

The development is also considered integrated development according to Section 91 of the *EP&A Amendment Act* 1997, because a concurrent approval for an Environmental Protection Licence would be required from the NSW Environmental Protection Authority (EPA).

An EIS has therefore been prepared to support the development application (DA) to Queanbeyan City Council for assessment and the Southern Region Joint Regional Planning Panel (JRPP) as the consent authority.

1.5 STRUCTURE OF THE EIS

This EIS addresses the potential impacts of the proposed changes on the physical, biological and social environment, and presents safeguards to reduce any environmental effects.

In addition to forming a basis for the assessment and approval of the proposed changes, the EIS provides the community and government authorities with information on all aspects of the proposal. The EIS is divided into two volumes with the main document being located in Volume 1. Volume 1 has been divided into the following sections:

- **Section 1** – Introduction – provides an outline of the structure and purpose of the EIS as well as objectives of the proposed development.
- **Section 2** – Assessment & Approval Process – outlines the approvals process and the relevant legislative requirements that apply to the proposed development.
- **Section 3** – Consultation – provides details on the consultation process undertaken for this study.
- **Section 4** – Options Assessment – discusses the need for the proposal and provides a description of alternative sites and options.
- **Section 5** – Description of the Proposal – describes the proposed changes.
- **Section 6** – Existing Environment and Impact Assessment – describes the prevailing environmental characteristics and constraints of the site and locality being investigated and an assessment of the potential environmental impacts associated with the proposed changes. Mitigation measures that would be implemented to reduce any potentially adverse impacts are also identified.
- **Section 7** – Environmental and Operational Management Systems and Plans – outlines

the environmental management plans and other management systems which would be used to operate the facility.

- **Section 8** – Project Justification and Conclusions – the conclusions and recommendations of the EIS are presented.
- **Section 9** – References and Glossary of Terms

Supporting documents and specialist reports are provided as appendices to this EIS which are presented in **Volume 2**.

2 ASSESSMENT & APPROVAL PROCESS

The environmental and planning framework relevant to the proposed development can be categorised into three subject areas, which are:

- ***planning approvals framework*** - governs the planning approval process and generally derived from the *EP&A Act*.
- ***environmental planning instruments and strategy documents*** - establishes the matters for consideration for assessment of the proposal.
- ***environmental protection legislation*** - determines the specific environmental approvals required for the proposal.

These three subject areas are discussed in the following sections.

2.1 PLANNING APPROVALS FRAMEWORK

The *EP&A Act* and the *EP&A Regulation* (2000) provide the fundamental basis for planning control in NSW.

The two distinct means for a particular project are approval with development consent and approval without the need for development consent. Under the *EP&A Act*, projects that require development consent are assessed under Part 4 (for 'development') and those that do not require development consent are assessed under Part 5 (for 'activities').

2.1.1 Part 4 Environmental Planning and Assessment Act 1979

Development consent is required under Part 4 of the *EP&A Act* if an environmental planning instrument states that a project is permissible with development consent (refer to **Section 2.2.1.1** for a description of the permissibility of the proposed development under the *Queanbeyan LEP (*2012)). The proposed development would be assessed under Part 4 of the *EP&A Act*. Due to the nature and scale of the proposed activities, the development is considered a designated development according to Schedule 3 of the *EP&A Regulation, 2000*, as it would constitute a waste management facility or works:

> *"(b) that sort, consolidate or temporarily store waste at transfer stations or materials recycling facilities for transfer to another site for final disposal, permanent storage, reprocessing, recycling, use or reuse and:*
>
> *… (ii) that have an intended handling capacity of more than 10,000 tonnes per year of waste containing food or livestock, agricultural or food processing industries waste or similar substances, or*
>
> *(iii) that have an intended handling capacity of more than 30,000 tonnes per year of waste such as glass, plastic, paper, wood, metal rubber or building demolition material…"*

As a designated development, the proposal would require preparation of an EIS to support the development application. The EIS would need to meet a number of requirements including:

- Director-General's Requirements (DoPI) (refer to **Appendix A**);
- Director-General's Requirements (OEH) (refer to **Appendix A**); and
- Requirements of Queanbeyan City Council (LEP and DCP).

SUEZ are committed to engagement of interested stakeholders and parties potentially affected

by the development, and a consultation strategy has been implemented to provide information and gain feedback.

It is anticipated that the proposal would be determined by the Southern Region Joint Regional Planning Panel (JRPP).

2.1.2 Integrated Development

The development is also considered integrated development, in accordance with Section 91 of the *EP&A Amendment Act*, because a concurrent approval would be required from the EPA. The facility would require an Environment Protection Licence (EPL) for its construction and operation, pursuant to Schedule 1 of the *Protection of the Environment Operations Act (POEO Act), 1997*.

2.1.3 Section 79C of *Environmental Planning and Assessment Act 1997* Assessment

Section 79C of the *EP&A Act 1997* provides for matters which are to be considered within an environmental assessment for a proposal. **Table 1** below outlines the matters which have been considered and where in this document these matters have been addressed.

Table 1: S79C Assessment

No.	Matters for Consideration	Section
1	In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application	
(a)	The provision of: (i) Any environmental planning instrument; and (ii) Any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the DG has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and (iii) Any development control plan; (iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter under section 93F, and (iv) The regulations (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the land to which the development application relates	**Section 2**
(b)	The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	**Section 6**
(c)	The suitability of the site for the development	**Section 5.1**
(d)	Any submissions made in accordance with this Act or the regulations,	The proposal would be placed on display in

No.	Matters for Consideration	Section
		accordance with S79 of the *EP&A Act*
(e)	The public interest.	The proposal would be placed on display in accordance with S79 of the *EP&A Act*

2.2 ENVIRONMENTAL PLANNING INSTRUMENTS

Under the *EP&A Act*, land development is subject to local, regional and state planning instruments, as outlined below.

2.2.1 Local Planning Instruments

2.2.1.1 Queanbeyan Local Environment Plan (2012)

The subject land, Lot 348, 349, 350 DP 8456; Lot 2 DP 1000911; and Lot 1 DP 1169293, is zoned IN1: General Industrial Zone in accordance with the *Queanbeyan LEP (2012)*. Zone IN1 permits industrial developments. The proposed development complies with these definitions.

Although the zoning table does not prohibit offensive or hazardous developments, a State Environmental Planning Policy (SEPP) 33 review has been carried out which demonstrated that it is not potentially hazardous (Benbow Environmental, 2014). The *Air Quality Impact Assessment* (Todoroski Air Sciences, 2014), has also outlined the proposed development would not be offensive, hence SEPP 33 would not apply. The objectives of the zone and how the proposed development complies with the objectives are set out in **Table 2** below.

Table 2: Consistency with Objectives of LEP 2012, Zone IN1 General Industrial

Objective	Consistency with Objective
To provide a wide range of industrial and warehouse land uses.	Complies with the objective as the proposal is an industrial activity.
To encourage employment opportunities	The development is anticipated to require 40 full time employment positions. This includes existing staff who will be transferred from SUEZ's Hume facility (ACT), in addition to new positions created from the expansion of the operations. Additionally, during construction of the facility, a number of temporary positions are expected to be generated.
To minimise any adverse effect of industry on other land uses	Complies with this objective. The proposal consists of an industrial use, within an existing industrial estate. Impacts to other land uses are not anticipated.
To support and protect industrial land for industrial uses.	Complies with this objective. As mentioned above, the proposal consists of an industrial use, within an existing industrial estate.
To enable other land uses that provide facilities or services to meet the day to day	N/A

Objective	Consistency with Objective
needs of workers in the area.	
to employment-generating activities, or	Consistent with development. The proposal would not affect employment within nearby commercial centres.
to the viability of existing commercial centres.	Consistent with development. The proposal would not affect the potential for commercial development of nearby commercial centres.

The assessment concludes that the proposed development is consistent with the objectives of Queanbeyan LEP IN1: General Industry Zone.

2.2.1.2 Queanbeyan Development Control Plan 2012

The *Queanbeyan DCP (2012)* provides detailed guidelines and standards that must be considered for all new development. Particular sections of the DCP relevant to the proposed development include Part 8 Industrial Zones as well as generic controls for all aspects such as parking, access and landscaping. **Table 3** below details the consistency of the proposed development with Part 8 Industrial Zones of the DCP. **Appendix B** contains further plans for the site which are referenced in the table below.

Table 3: Consistency with Objectives of DCP 2012, Industrial Zones

	Objectives	Consistency with Objective
8.1.2 Overall Objectives		
1	Provide development guidelines for the Industrial development	The development would comply with the objectives of the requirements of the DCP (see below)
2	Protect the amenity of existing residences within and close to industrial development.	The development would consist of the construction of an additional building, to the rear of the property, and minor structures on the existing hardstand area (liquid waste and fuel storage tanks). Additional structures would be in keeping with the amenity of the industrial estate. Therefore, the development is consistent with this objective.
3	To protect incompatible land uses being located in proximity to one another.	The proposed development is for industrial uses within an existing industrial estate and is consistent with the surrounding land uses.
4	Encourage best practice in environmental management.	SUEZ prides itself on using best environmental practices, which is evident in similar facilities that are in operation across NSW and the ACT. The proposed development would comply with SUEZ's Environmental Management System and would encourage best practice environmental management.
5	Ensure development has a visually appealing appearance to the street.	The development would consist of the construction of an additional building, to the rear of the property, and minor structures on the existing hardstand area (liquid waste and fuel storage tanks). Additional structures would be in keeping with the amenity of the industrial estate. Therefore, the development is consistent with this objective.

	Objectives	Consistency with Objective
8.2.1 Setbacks		
1	Provide adequate land for landscaping, parking and vehicle circulation.	The proposed development includes minor additional landscaping works. Existing parking and vehicle circulation at the site would be sufficient for the additional waste types and structures.
2	Provide flexibility in building location and design.	The development would consist of the construction of an additional building, to the rear of the property, and minor structures on the existing hardstand area (liquid waste and fuel storage tanks). Additional structures would be in keeping with the amenity of the industrial estate and would comply with required setbacks. Therefore, the development is consistent with this objective.
3	Provide buffers to adjoining land uses to reduce adverse impacts on surrounding land.	The development would consist of the construction of an additional building, to the rear of the property, and minor structures on the existing hardstand area (liquid waste and fuel storage tanks). Additional structures would be in keeping with the amenity of the industrial estate. Beyond the rear of the property is Bowen Place. Immediate neighbours on the north, south and west of the property would not be affected. Therefore, the development is consistent with this objective.
4	To preserve residential amenity.	Whilst residential receivers are in proximity to the proposed site, existing buildings and additional structures would be maintained and visual amenity would not be affected. Traffic movements are anticipated to be less than previous land uses (storage/warehouse and office facility) and would thus preserve residential amenity. Noise impacts are anticipated to be minimal. Odour impacts are anticipated to be minimal.
8.2.2 Car parking and vehicular access		
1	To ensure adequate areas are provided for off-street parking, vehicular access, on-site circulation and loading facilities.	The existing 18 truck and 34 car parking spaces would be maintained. Additional parking (61 spaces) would be provided in the basement car park. These are adequate to ensure on-street parking would not be required. Adequate space for turning circles and vehicle access has also been provided.
2	To ensure car parking, circulation and loading areas are integrated with the form and layout of buildings on site.	The existing 18 truck and 34 car parking spaces would be maintained. Additional parking (61 spaces) would be provided in the basement car park. These are adequate to ensure on-street parking would not be required.

	Objectives	Consistency with Objective
		Adequate space for turning circles and vehicle access has also been provided.
3	To ensure all vehicles can enter and exit a site in a forward direction.	It is proposed that all vehicles would enter and exit in a forward direction.
4	To avoid road conflicts and traffic congestions.	With the proposed 24hr operations, truck movements would occur outside of peak times and would avoid road conflicts and traffic congestion. Limited amounts of vehicle movements, including trailers may occur during the week to facilitate the retail component of the proposal. Generally, these vehicles would use the facility on weekends to avoid peak congestion times.
5	To ensure the safe movement of vehicles and pedestrians.	All truck drivers and staff are required to comply with site safety standards, and the road rules to ensure the safe movement of vehicles. Pedestrians are not encouraged to enter the site. Any visitors to the site are directed by site signage to the main office which would avoid traffic and truck movements. Any smaller vehicles (including those with trailers) entering the site for the retail component of the proposal would be directed to the correct area for disposal through the use of site signage. During the tipping process, they would be under constant supervision, and the use of CCTV would be in place. In addition, a concrete wall is proposed between the retail area and the main recycling operations to maintain the safe use of the site.
6	To ensure parking and access ways do not become unsightly or affect the amenity of the area by way of dust or uncontrolled runoff.	Parking and access ways are proposed to be sealed. All water would flow into the estates existing stormwater system or reused on site where possible.
8.3.3 Building Design		
1	Promote buildings that enhance the quality of the streetscape.	The additional building proposed for the site would be constructed to the rear of the property, fronting Bowen Place. The building would be designed to be consistent with the surrounding streetscape.
2	Encourage innovative, contemporary and sustainable building designs.	The additional building proposed for the site would be constructed to the rear of the property, fronting Bowen Place. The building would be designed to be consistent with the surrounding streetscape.
3	Encourage design that is compatible with type, scale, height, bulk and character, and enhance streetscape characteristics.	The additional building proposed for the site would be constructed to the rear of the property, fronting Bowen Place. The building would be designed to be consistent with the surrounding streetscape.
4	Ensure noise is mitigated.	All waste operations would occur inside the

	Objectives	Consistency with Objective
		building. The Manitou/excavator would only operate when the roller doors are closed. This will minimise noise as much as possible.
5	Protect/enhance visual amenity of entry points to the city.	The additional building proposed for the site would be constructed to the rear of the property, fronting Bowen Place. The building would be designed to be consistent with the surrounding streetscape.
8.2.4 Site Works		
1	Restrict and control excessive earthworks in order to preserve as much as is practicable the existing topography and amenity of the locality.	Earthworks (6,000m^3) are proposed to allow for the basement carpark, water tanks and the installation of footings for the liquid waste and fuel storage tanks. Bulk earthworks occurred for the site in a previous development application (#16-2015) which included the levelling of the site and removal of waste spoil. Whilst additional earthworks are proposed for the basement carpark, the surrounding topography would not change. The construction of the building would be in keeping with the character of the industrial estate and the local amenity is not expected to be impacted.
2	Prevent siltation of materials and erosion of land.	Erosion and sediment controls would be implemented prior to any excavation works.
3	Ensure building design is appropriate for site conditions (stability and privacy).	Structural engineering specialists have ensured that the design of the building has been designed to ensure it complies with BCA standards and is suitable for site conditions.
8.2.5 Materials Storage		
1	Avoid unsightly or visually intrusive development.	It is proposed to construct a building to the rear of the property, fronting Bowen Place, and smaller structures on the hardstand area (liquid waste and fuel storage). Storage of materials would be in dedicated areas within the building or within appropriate storage containers.
2	To minimise the impact of storage materials when viewed from the street.	It is proposed to construct a building to the rear of the property, fronting Bowen Place, and smaller structures on the hardstand area (liquid waste and fuel storage). Storage of materials would be in dedicated areas within the building or within appropriate storage containers.
8.2.6 Fencing		
1	Improve safety and security of the site.	Site fences and gates and CCTV would be used to improve safety and security of the site.
2	Improve visual amenity.	Fencing would be consistent with the surrounding environment.

	Objectives	Consistency with Objective
3	Enhance the streetscape.	Fencing would be consistent with the surrounding environment.
8.2.7 Pollution Control		
1	Ensure that the use of land does not create offensive noise.	It is anticipated that noise impacts would be minimal (refer to **Section 6.3** for more details).
2	To ensure adequate protection against environmental degradation due to pollution discharge.	All process water and site-runoff would pass through the sites Water Management System prior to being sent to the concrete batching plant on Bowen Place for reuse in the concrete batching process. It is anticipated that air quality, including odour, impacts would be minimal (refer to **Section 6.2** for further details).
3	Minimise interference to existing and future amenity.	The proposed changes would be operated to ensure existing and future is maintained. The use of the existing facility with the construction of a building to the rear of the property, minor vehicle movements and the use of hardstand surfaces will minimise interference with amenity.
4	Ensure satisfactory measures are incorporated to alleviate negative environmental impacts associated with industrial land uses.	Due to the use of the mitigation measures proposed in **Section 7.5** negative environmental impacts are not anticipated.
SPECIAL LAND USE CONTROLS		
8.3.1 Waste or Resource Management Facility		
1	To ensure Waste Resource Management facilities are designed and maintained to contribute positively to the streetscape and amenity.	Waste storage and sorting would continue to occur within the existing building, and are proposed to also occur within the new building to be constructed at the rear of the property. Waste sorting would occur with the doors closed. The proposal would be operated in a manner to contribute positively to the streetscape and amenity.

2.2.2 State and Regional Plans

2.2.2.1 State Environmental Planning Policies

Consideration has also been given to various other plans and State Environmental Planning Policies (SEPPs) including:

- SEPP No. 33 – Hazardous and Offensive Development;
- SEPP (Infrastructure) 2007; and
- SEPP (State and Regional Development) 2011

SEPP No. 33 – Hazardous and Offensive Development

SEPP 33 provides definitions for 'hazardous industry', 'hazardous storage establishment', 'offensive industry' and 'offensive storage establishment'. The definitions apply to all planning instruments, existing and future. The policy also requires specified matters to be considered for proposals that are 'potentially hazardous' or 'potentially offensive' as defined in the policy.

An assessment of the proposed development was undertaken using the methodology given in '*Applying SEPP 33, Hazardous and Offensive Development Application Guideline'* (refer **Appendix C**). The guidelines include a threshold screening test used to determine whether a development is potentially hazardous. The proposed development was assessed as follows:

- Maximum quantities of dangerous goods do not exceed the screening thresholds for any class of good; and
- The development therefore does not fall within the definition of potentially hazardous industry.

The proposed changes have the potential to emit polluting discharges (primarily odour) that could cause a level of offence in the absence of control measures.

However, an Air Quality Impact Assessment (see **Section 6.2** and **Appendix D**) showed negligible impacts from the proposed development and odour levels are predicted to comply with NSW OEH odour goals. If impacts are controlled, development is concluded not to be offensive and therefore be permissible within the zoning.

Further, public health and safety, and the occupational amenity of neighbouring land uses would not be impacted by the proposed development due to extensive and rigorous controls as described in **Section 6.13**.

This EIS therefore concludes that the proposed development would not exceed the screening test of SEPP 33 as potentially hazardous or offensive, and the proposal is not classified as a hazardous or offensive industry.

SEPP (Infrastructure) 2007

SEPP (Infrastructure) 2007 provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The SEPP was implemented to support a greater flexibility in the location of infrastructure and service facilities along with improved regulatory certainty and efficiency.

Section 120 of *SEPP (Infrastructure) 2007* allows for waste or resource management facilities to occur within land zoned as IN1 General Industrial following receipt of development consent. Thus, the proposed facility is consistent with Section 120 of the policy and is permitted with development consent.

Section 104 of *SEPP (Infrastructure) 2007* governs traffic-generating developments. Where developments specified are of the relevant size/capacity outlined within Schedule 3, they are classified as traffic-generating developments. Schedule 3 outlines that for landfills, recycling facilities and waste transfer stations, of any size or capacity with access to any road, it is classified as a traffic-generating development. Therefore, the proposed development would be described as a traffic-generating development. Consultation, in accordance with this SEPP was carried out with the Roads and Maritime Services (RMS). No major issues were raised and a traffic report was undertaken in accordance with RMS requirements and is contained in **Section 6.8**.

The policy establishes the RMS as the sole traffic management authority to be consulted, and ensures it is given the opportunity to make a representation on a development application

before the local council decides whether to approve a proposal.

SEPP (State and Regional Development) 2011

State Environmental Planning Policy (State and Regional Development) 2011 (SEPP) identifies whether development is State significant development, State significant infrastructure or critical State significant infrastructure, and provides the functions on the Minister for Planning and the joint regional planning panels to determine development applications.

Schedule 1 of the SEPP provides a definition of what can be identified as State significant development. Specifically Clause 23 provides the criteria for a waste and resource management facility to be classified as State significant development and thus be determined by the Minister for Planning.

Under Clause 23(3), development for the purpose of resource recovery or recycling facilities that handle more than 100,000 tonnes/year of waste would be considered State significant development. As the proposed resource recovery facility would handle less than 100,000 tonnes/year of waste, it is not considered State significant development.

2.3 ENVIRONMENTAL LEGISLATION

2.3.1 NSW State Legislation

2.3.1.1 Protection Of The Environment Operations Act 1997

The *Protection of the Environment Operation Act (POEO Act) 1997* aims to protect, restore and enhance environmental quality, decrease risks to human health and prevent the degradation of the environment. The Act provides for the regulation of noise, air and water pollution and waste management.

Waste facilities are defined as a scheduled activity under the Act, and as such require an EPL from the EPA, which set conditions that must be complied with during operation. The proposed development would require EPA approval of an EPL for the facility.

2.3.1.2 Waste Avoidance and Resource Recovery Act 2001

The EPA have a waste management and resource recovery focus and have implemented a framework to encourage waste avoidance and the further recovery of resources. The *Waste Avoidance and Resource Recovery Act 2001* (*WARR Act*) provides a clear and consistent regulatory and policy framework to minimise harm to the environment and deliver greater waste avoidance and resource recovery. Together with the *POEO Act,* the *WARR Act* aims to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote pollution prevention, the elimination of harmful wastes, the reduction in the use of materials and the reuse, recovery and recycling of materials.

Specifically, the objectives of the *WARR Act* are:

1. To encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development;
2. To ensure that resource management options are considered against a hierarchy of the following order:
    a. Avoidance of unnecessary resource consumption;
    b. Resource recovery (including reuse, reprocessing, recycling and energy recovery); and
    c. Disposal.
3. To provide for the continual reduction in waste generation;
4. To minimise the consumption of natural resources and the final disposal or waste by encouraging the avoidance of waste and the reuse and recycling of waste;
5. To ensure that industry shares with the community the responsibility for reducing and dealing with waste;
6. To ensure the efficient funding of waste and resource management planning, programs and service delivery;
7. To achieve integrated waste and resource management planning, programs and service delivery on a state-wide basis; and
8. To assist in the achievement of the objectives of the *POEO Act*.

The purpose of the proposed development is to reduce the volume of waste disposal to landfill through enhanced resource recovery, in accordance with the aims of this Act. In particular, the proposed development satisfies the objectives of the *WARR Act* as it is aimed at increasing

recycling and resource recovery in the commercial and industrial market within the Queanbeyan and ACT area as well as increasing the recovery of waste for beneficial reuse.

2.3.2 Commonwealth Legislation

No Commonwealth legislation is considered to be applicable to this proposal.

2.4 ENVIRONMENTAL IMPACT ASSESSMENT

2.4.1 Role of the Environmental Impact Statement

This document has been prepared to assist in determining the potential impacts on the environment of the proposed changes to SUEZ's existing resource recovery and waste transfer facility, to identify measures to mitigate any potential adverse environmental impacts, and to assist with the consultation process with regard to government and community organisations.

This document identifies and assesses the environmental issues central to the proposed development. These include:

- Waste management issues – the potential impacts associated with processing putrescible and non-putrescible waste, construction and demolition waste, recyclables and other waste which is mixed with incoming waste streams (i.e. waste oil, chemicals, paints, etc).
- Air quality issues – the potential impacts of odour on the existing air quality and on the nearest neighbouring industrial and residential properties.
- Noise issues – the potential impacts of noise on the nearest residential area and on the neighbouring industrial properties.
- Amenity issues – potential impact on the community, particularly in regard to the possible health, traffic, noise, visual and local amenity impacts.

Other relevant but less central issues have also been addressed. SUEZ, as the proponent for this project, would have regard for the principles of ecologically sustainable development in the formation of the project, its justification and evaluation.

2.4.2 Other Agency Requirements

Relevant agencies have been consulted for this proposal. Specifically:

- Queanbeyan City Council was consulted with a pre-DA submission for this proposal.
- DoPI was consulted with regards to obtaining DGRs for this EIS.
- OEH and EPA were consulted for their general requirements.

Section 3 details the consultation that has been undertaken to date with other key stakeholders.

2.5 LICENCES AND APPROVALS

Licenses and approvals that may be required are outlined in **Table 4** below:

Table 4: Licence and approval requirements

Licence/Approval/Permit	Authority	Legislation
For Construction		
Development Consent	Joint Regional Planning Panel	*Environmental Planning & Assessment Act 1979*
Construction Certificate[1]	Queanbeyan City Council	*Local Government Act 1993*
Certificate of Compliance	Queanbeyan City Council	NSW State Code of Practice Plumbing and Drainage
For Operation		
Environment Protection Licence	Environmental Protection Authority	*Protection of the Environment Operations Act 1997*
Notice of Completion	Queanbeyan City Council	*Local Government Act 1993*

1 Demonstrates compliance with Building Code of Australia, relevant standards and Council requirements (if applicable).

2.6 DEVELOPMENT APPLICATION

This EIS provides information in support of the development application (DA) for the proposed development. **Table 5** assesses compliance with lodgement requirements for this application.

Table 5: Compliance with DA lodgement requirements

DA lodgement requirements	Relevant EIS section
Completed DA form, owners authority and correct fee	Not in EIS, submitted separately
Required Plans: ▪ Site plan ▪ Section/s ▪ Floor Plans ▪ Elevations ▪ Structure Detail/Engineer Certified Design	Submitted separately
Environmental Impact Statement	This document
Political donations and gifts disclosure statement	N/A

2.7 CONCLUSION

All relevant statutory instruments have been considered in the concept development and assessment of this proposal. It is considered that all matters have been addressed where applicable, and that the proposal fully complies with the objectives and requirements of all

relevant statutory instruments.

3 CONSULTATION

SUEZ embraces the principles of sustainable development, and actively seeks input and involvement from the wider community. SUEZ are committed to early engagement of all interested stakeholders and parties potentially affected by the development, and a consultation strategy has been implemented to provide information and gain feedback.

3.1 CONSULTATION PROGRAM

Consultation with government departments and the local community plays an important role in ensuring all environmental impacts are evaluated. The consultation process provides the opportunity to identify and prioritise issues. A list of the organisations contacted and issues raised is provided in **Table 6**.

Table 6: Stakeholder Consultation

Organisation Consulted	Date Consulted	Comments	EIS Section
Invizage Joinery 1 Kealman Road	6 August 2015	▪ Custom and Fine Joinery ▪ Key concerns: o Vectors o Housekeeping, site management and complaint mechanisms	**N/A** **Section 6.13** **Section 6.13** **Section 7**
Electaire Pty Ltd 2 Kealman Road	6 August 2015	▪ Electrical and mechanical maintenance and contracting ▪ Lessee since 2001 ▪ Key concerns: o Vectors, o Odours	**N/A** **Section 6.13** **Section 6.2**
Anton Buchi French Polishing 10 Kealman Road	6 August 2015	▪ French polishing and antique restoration ▪ Site owner ▪ Key concerns: o Background site selection o Concerned about parking on Kealman Road, which has a steep slope and may pose traffic safety risks.	**N/A** **Section 4.2** **Sections 5.2.4.1 and 6.8**
Monaro Timber 16-20 Kealman Road	6 August 2015	▪ Timber supply and manufacturing ▪ Key concerns: o Vectors and housekeeping o Will views be lost towards Canberra due to height of new building.	**N/A** **Section 6.13** **Refer to design plans. Shed is to be in keeping with the existing surroundings.** **The soil profile has**

Organisation Consulted	Date Consulted	Comments	EIS Section
			been lowered in a recent excavation approval
Monaro Mix 9 Bowen Place / Kealman Road	6 August 2015	▪ Cement production and supply ▪ Lessor, no concerns ▪ Integrated site water management	**Noted** **Section 5.2.3.2**
Queanbeyan City Council, Maager Planning and Development	7 August 2015	▪ Brief overview of proposed development ▪ Key concerns: o Summary of key studies and findings o Will exhibit and assess o Suggests DA lodgement meeting	**Noted** **Section 5 and appendices** **Section 3** **Noted.**
Environmental Protection Authority, Queanbeyan Office	11 August 2015	▪ Brief overview of proposed development ▪ Key concerns: o Summary of key studies and findings o Detail water management, showing separation of dirty and clean water – Stormwater Management Plan	**Noted** **Section 5 and appendices** **Design plans**

Note: Please contact SUEZ if specific contact details are required.

In accordance with Section 79 of the EP&A Act, 1979, this EIS must be advertised through a process of public notification and the EIS put on public display. During the 30 day public exhibition period, the public is invited to make comments and forward submissions to the Queanbeyan City Council.

3.2 DIRECTOR GENERAL'S REQUIREMENTS

In accordance with Clause 73 of the *EP&A Regulation*, 2000, the Director General's Requirements were obtained for the proposed development. The OEH and EPA were also contacted for their requirements. A copy of these requirements is presented in **Appendix A**. **Appendix A** also outlines the key environmental planning issues which were raised by the DGRs and references where these have been covered in this EIS.

4 OPTIONS ASSESSMENT

4.1 NEED FOR THE PROPOSAL

4.1.1 Introduction

The existing SUEZ Truck Maintenance Depot and Waste Transfer Facility serves an important role in the management of waste in the wider south-western NSW/ACT area. The facility provides a critical service by enabling the recovery and beneficial reuse of paper and cardboard, batteries and fluorescent tubes that may otherwise be directed to landfill or disposed of incorrectly.

The proposed development is consistent with the NSW Government's current waste management framework which focuses on reducing potential hazards to the environment and capturing value from materials that would otherwise be disposed of to landfill.

In particular the NSW Government introduced the *WARR Act* which takes into account the potential resource value and future use of materials in accordance with ecologically sustainable development principles.

The *NSW Waste Avoidance and Resource Recovery Strategy 2003* and *2007* and the *Reducing Waste: Implementation Strategy 2011-2015* identified the need to recover greater volumes of solid waste each year for recycling from the commercial and industrial to achieve waste targets. In addition, the *Implementation Strategy* (2011) states that additional waste infrastructure would be necessary to ensure these waste targets are met. By diversifying the waste types accepted at the Facility, and increasing the waste volume accepted at the site, SUEZ would be able to better address these issues.

4.2 OPTIONS FOR LOCATING THE FACILITY

4.2.1 Selection Criteria

SUEZ has conducted a site selection process. There are a number of restrictions on the type of site suited to a resource recovery and waste transfer facility. For the project to be socially, environmentally and commercially viable, the location of the facility had to meet the following criteria:

- Sufficient site space;
- Security of tenure (to justify investment in the facility);
- Central location with excellent access;
- Access to major arterial road network to minimise transport costs;
- Compatible with the industrial nature of the precinct and neighbouring land uses;
- Appropriate buffer zones; and
- Potential for 24 hour operation to avoid congested traffic periods.

4.2.2 Identification of Sites

Several areas were considered as possible locations for the facility. Industrial areas in Queanbeyan West and the ACT were initially identified. Due to the restriction of space, SUEZ's existing facility at Hume was automatically discounted. From these general locations,

two sites were investigated in more detail:

- ACT, Resource Recovery Estate, Mugga Lane. However, the area was discounted due to the requirement to source waste within the ACT. Final destinations for waste were also required to remain within the ACT; and
- SUEZ's existing Truck Maintenance Depot and Waste Transfer Station, Queanbeyan West. The site was identified that suited the objectives outlined within **Section 4.2.1** above with additional space available to construct additional structures to facilitate an increase in waste types accepted at the facility.

4.2.3 Preferred Option

Based on the selection criteria outlined within **Section 4.2.1** the Queanbeyan West option emerged the preferred option. It was identified based on the following reasons:

- The site is currently used as a resource recovery facility, and is currently leased by SUEZ;
- It is a dedicated, purpose-created estate;
- The central location of the estate with excellent access to waste and recycling market;
- There is sufficient site space and security of tenure;
- The proposal is consistent with the industrial nature of the precinct and neighbouring land uses; and
- The ability to reuse existing infrastructure suited SUEZ's sustainability initiatives and reduced construction costs.

4.3 CONSEQUENCES OF NOT PROCEEDING

The principal alternative to the proposal is a "do nothing" scenario, whereby the facility would not proceed and waste would continue to be diverted to landfill at the current rate. Under this scenario:

- Supply of materials for beneficial reuse would be reduced;
- Community, Government and regulatory expectations for reducing waste as a valuable resource would not be met;
- Further stress would be placed on finite, already limited landfill resources;
- The opportunity for contributing to a reduction in leachate contamination and volumes from landfill would be lost; and
- There would be no reduction in greenhouse gas from putrescible materials in landfill.

To not expand services offered at the existing facility would see SUEZ become increasingly non-competitive and at odds with the company's Mission Statement:

> "*Our mission is to satisfy our customers' needs by providing innovative and cost effective waste management solutions. In fulfilling this mission we will protect the environment, provide a rewarding work place and promote a spirit of partnership with the communities and enterprises we serve*".

5 DESCRIPTION OF THE PROPOSAL

5.1 DEVELOPMENT CONSENT HISTORY

A change of use Development Application (#337/2014) was obtained in November 2014 for a truck maintenance depot, bin storage and waste transfer / resource recovery. The application was also for the following activities:

- Plastic waste bin storage;
- Bin repair;
- Paper destruction (shredding) and cardboard baling of approximately 250 tonnes per month;
- Minor storage of fluorescent tubes and batteries;
- Truck maintenance;
- Paint booth;
- Office fit out;
- Truck and car parking (18 for trucks, 34 for cars);
- Wash bay;
- Two containers for the storage of dangerous goods (for site use only); and
- Bin storage.

A second Development Application (#16-2015) was obtained in June 2015 to complete bulk earthworks on Lots 348, 349, 350 DP 8456 and Lot 2 DP 10000911. The site was excavated to be level with Bowen Place.

5.2 SITE LOCATION, LAND OWNERSHIP AND SURROUNDINGS

The proposed site is located in the existing Truck Maintenance Depot and Waste Transfer Station at 184 Gilmore Road, Queanbeyan West. The industrial estate is bound by the NSW/ACT border to the west, Canberra Avenue to the north, John Bull Street to the east and Queanbeyan West Race Track to the south.

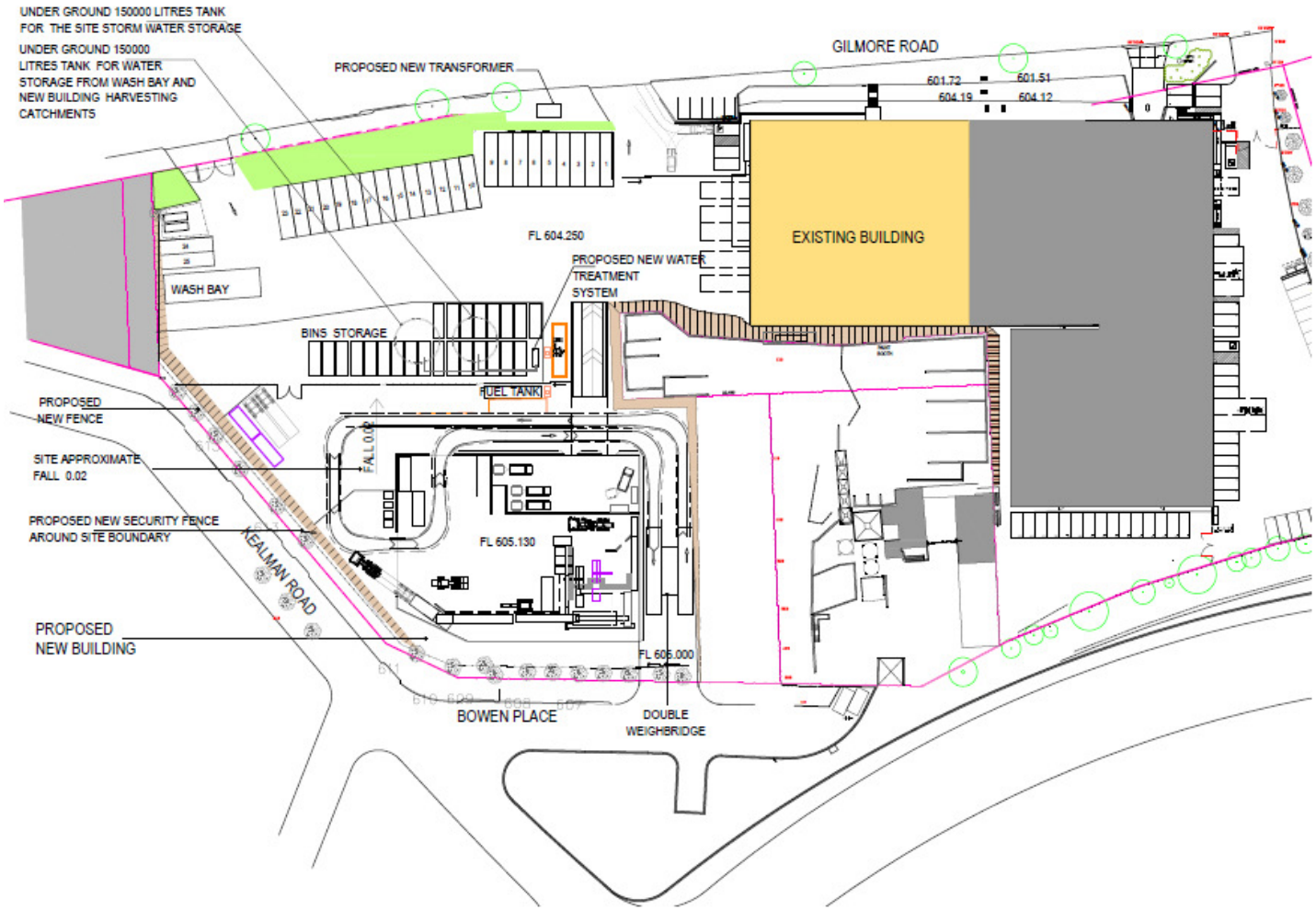
The site identified as suitable for these activities is Lots 348, 349, 350 DP 8456; Lot 2 DP 10000911; and part of Lot 1 DP 1169293. **Figure 1** and **Figure 2** show the location of the facility. This site is approximately 1.4ha in size and was previously used for industrial purposes (storage and transport). Tenants operating in the Estate include Stegbar, Monaro Mix Concrete Plant, Queanbeyan Industrial Supplies, Blackforest Joinery and Stairs, and Old Field Removals and Storage.

SUEZ is currently a part of a long term lease with the owner of the site.

Access to the site is via the Canberra Avenue/Kings Highway and is well suited for movements of heavy vehicles. Roads within the estate have been designed to accommodate this heavy vehicle traffic. The nearest residential areas are Lorn Road (approximately 200m to the north) and John Bull Street (approximately 400m south east).

Figure 3 shows the proposed site layout. Design plans are located in **Appendix B**.

Figure 3: Site Layout (Proposed)



5.2 DESCRIPTION OF PROPOSED FACILITY AND OPERATIONS

5.2.1 Description of Existing Facilities

The existing facility is currently used for a truck maintenance depot, bin storage and waste transfer / resource recovery. The existing structure at the site is used for the following activities:

- Plastic waste bin storage;
- Bin repair;
- Paper destruction (shredding) and cardboard baling of approximately 250 tonnes per month;
- Minor storage of fluorescent tubes and batteries;
- Truck maintenance;
- Paint booth; and
- Office and administration.

The hardstand area is currently used for:

- Truck and car parking (18 for trucks, 34 for cars);
- Wash bay;
- Two containers for the storage of dangerous goods (for site use only); and
- Bin storage.

The facility currently consists of the following structures:

- Enclosed building for ancillary office space, truck workshop, bin storage and paper shredding and bailing;
- Enclosed paint bay; and
- Wash bay.

5.2.2 Overview of Proposed Changes

The proposed changes include the addition of a number of waste types being accepted at the site and the construction of a large shed.

The following waste streams are proposed to be accepted at the facility:

- General solid waste (non-putrescible);
- General solid waste (putrescible);
- Paper, cardboard, and plastics recyclables;
- J120 waste (Oil/Hydrocarbon Mixtures/Emulsions in Water) – Liquid Waste; and
- Grease trap waste.

The waste recovery hall would be designed to screen up to 95,000 tonnes per annum. The project capital cost is estimated at $3 million, with approximately 40 full time staff.

It is proposed to construct a large building, with a basement carpark (61 car spaces) to facilitate solid waste recovery. Excavation works, approximately 6,000m^3, to facilitate the basement car park and underground water storage tanks is required.

5.2.3 Waste Recovery

5.2.3.1 Description of Waste Recovery Hall

The proposed Resource Recovery Hall would be completely enclosed with a footprint area of 50.5m x 30.0m (1,506m^2). The building would be accessed via a number of roller doors. The two main traffic doors have been fitted as motorised doors to allow more efficient opening / closing of doors to traffic.

The waste recovery hall has been designed to enable trucks and cars with trailers, to easily access the building for unloading and loading out / waste transfer. Specifically, trucks loading out will be able to use designated areas to load within the waste floor so waste is kept within its waste classification. This method of loading has been found to maximise efficiency of waste handling and minimise the potential for equipment damage. Cars with trailers will be directed to a separate area for loading out. This will ensure retail customers are protected from the larger truck movements and sorting equipment. See **Appendix B** and **Figure 3** for a proposed site layout.

The floor slab of the building has been designed such as to capture all leachate. Refer to **Section 5.2.3.2** for more details on the proposed water treatment system.

A high wear concrete floor is proposed to maximise the strength and resistance of the floor structure. The building is to be 'skinned' or clad on the inside. This would create a continuous clean wall surface to assist in dust control and waste hall cleaning as well as minimising the potential for odours and pests. The bottom 1.8m of the wall would be a reinforced concrete push wall. This concrete surround ensures the waste hall structure is protected from the movement of plant and trucks within the shed.

Automated dust and odour suppression sprinklers would be installed in the roof (refer to **Section 5.2.3.3**) and suitable fire protection as required by the building code would also be completed.

The initial major equipment items would include:

- Loader / excavator;
- Forklift / Manitou;
- Bulk Residue Bin;
- Bulk Recycled Product Bins;
- Compaction equipment for recyclable low-density product; and
- Other ancillary plant and equipment.

5.2.3.2 Water Treatment System

The internal drainage system would drain to the water treatment system. A two-stage treatment is system would be installed at the facility.

1. The first stage involves a vacuum filter, filter press, or similar, which have been installed to separate solids and liquids. This consists of the dosing of the wastewater with a coagulant/polymer/clay mixture. The coagulant/polymer element of the mixture removes suspended solids whereas the clay attaches and settles out any metals present. The mixture also neutralises the pH of the wastewater.
2. The second stage of the system involves treating the liquids with an oil/water separator to remove any oils present within the wastewater. The final product of the wastewater will then be sent to a concrete batching plant located next door on Bowen Place for reuse in

the concrete batching process.

Appendix E provides a diagram of the proposed water treatment system.

5.2.3.3 Odour Management / Dust Suppression Spray System

An automated cold fog odour / dust suppression spray system is to be installed in the building. Spray lines would be installed on the roof of the building. The lines are located to ensure coverage over the entire waste recovery hall.

The system would utilise a built-in compressor and air-atomising fog nozzles to produce optimum atomisation to disperse a fine, non-wetting fog into the building. Using the fog nozzles to spray odour-neutralising materials as odour abatement, odours can be effectively removed.

The system is able to be set to deliver the desired spray interval and duration. By way of comparison, a similar SUEZ waste transfer station is currently using spray lines set to spray each 30 seconds for 15 seconds. Sprays would be set to run during operating hours.

A deodoriser product would also be run through the line. The rate of application and dilution of the product would be confirmed with the supplier, following approval of the proposal, of the suppression spray system. It is noted that the dilution factors used depend on the exact product used. The concentration of the product can be easily varied to suit site conditions.

The dust and odour suppression sprays can readily be operated more frequently or set to run a higher concentration of odour suppression product.

5.2.3.4 Recovery Methodology

Initially, incoming waste loads would be managed manually. It is proposed that loads would be delivered to the floor of the recovery hall where they would be sorted with an excavator. Recyclables would be transferred to bins positioned around the perimeter of the hall. The exception would be cardboard and paper which would be transferred directly to the baling unit within the existing building at the front of the site. Some plastics would be sorted according to type, although paper would only be separated into two types: paper and cardboard.

General Solid Waste would be delivered to the site as both source separated waste (separated as non-putrescible and putrescible) and mixed waste.

Putrescible waste would be separated from remaining non-putrescible waste and stockpiled on an allocated area of the waste hall floor. Trucks would load out designated putrescible or non-putrescible waste loads using the waste loading area.

It is anticipated that over 85% of putrescible waste would be recycled/composted for beneficial reuse.

General Solid Waste (non-putrescible) would be sorted with an excavator, trommel and magnet to remove all potential recyclable material. However, it is anticipated that up to 80% of non-putrescible waste would go to landfill.

Recyclables would be transferred to specialist recyclers once a load is reached. Baled cardboard would be loaded onto a flatbed trailer once an appropriate (approximately 20 tonnes) load is reached. Organic putrescible waste would be transferred to an appropriately licensed processing facility. This material would be composted for beneficial reuse. The portion of material not able to be recycled or reused would be taken to landfill for disposal.

To manage and minimise potential odours from the putrescible waste it is anticipated that putrescible waste would be loaded out daily to minimise the residence time on the floor. The floor of the waste recovery hall would be cleaned daily and dust and odour suppression sprays would be used.

The facility has been designed to evolve with the increasing waste volume. It is anticipated that the final layout of the facility may include automated sorting equipment such as a trommel and sorting module that would increase waste sorting efficiency and further improve resource recovery levels. Provision has also been made for further compaction and bailing equipment to assist in the handling and transfer of recyclable materials. This assessment has been carried out on the 95,000T capacity.

Appendix B contains a floor layout. The operating concept and further indicative floor layouts would be developed with detailed design of the site.

5.2.3.5 Putrescible Waste Process

Approximately one half of the material entering the site is anticipated to be putrescible general waste. Incoming putrescible waste loads would generally be homogenous loads from sources such as restaurants and supermarkets.

Putrescible waste would be delivered to a dedicated section of the waste recovery hall. Once approximately 20 tonnes of putrescible waste was received on the floor the waste would be transferred into a waiting sealed trailer for delivery to an appropriately licensed processing facility. And putrescible waste that cannot be accepted for processing would be taken to landfill for disposal.

Putrescible waste loads would be kept separate from the non-putrescible waste on the floor of the recovery hall.

It is anticipated that at maximum operating capacity 4-5 putrescible waste loads would be loaded out per day. Management of putrescible waste would ensure that the putrescible material is only stored on site for an average of 12 hours. While a 12 hour turnover for putrescible material is anticipated, the maximum residence time for putrescible waste would be 24 hours. This will prevent adverse odour impacts.

The floor of the waste recovery hall would be cleaned daily and the putrescible waste receiving area would also continue to be cleaned daily. Suppression sprays would be installed over the waste handling area and would also be used to control odour and dust from putrescible waste loads.

Putrescible waste management measures are discussed further in **Section 6.5**, with odour management described in further detail in **Section 6.2**.

5.2.3.6 Liquid Waste

SUEZ's existing facility at Hume, ACT accepts, stores and transfers up to 2,400 tonnes/year of grease trap waste.

It is proposed to accept liquid waste at the facility in Queanbeyan, including the transfer this grease trap waste from SUEZ's Hume Facility. It is also proposed to include up to 2,400 tonnes/year of J120 Water/Hydrocarbon mixtures.

Liquid waste including grease trap and Water/Hydrocarbon mixtures in water will be transported via specialist sealed trucks to the site. Waste will be decanted via a sealed vacuum system into dedicated storage tankers for consolidation and temporary storage prior to transport to SUEZ facilities within Sydney for processing and treatment. Over 99% of grease trap waste and J120 waste would be recycled following processing and treatment in Sydney.

Liquid waste storage tankers will be located within fully bunded areas to mitigate spills.

5.2.4 Site Operations

5.2.4.1 Traffic and Transport

Initially approximately 60 truck movements per day are anticipated, generally at off-peak periods to reduce travel time and avoid congestion. On weekends, up to 15 truck movements per day are expected. Note that a truck entering and leaving the site is described as two movements. Limited amounts of small vehicle movements, including trailers may occur during the week to facilitate the retail component of the proposal. Generally, these vehicles would use the facility on weekends to avoid peak congestion times.

Trucks and vehicles entering for the waste transfer of grease trap waste and hydrocarbon/water mixtures, and for the delivery of solid waste and recyclables would enter the site from Bowen Place.

Provision for parking on-site (occasional and overnight) will be made for trucks and cars to prevent queuing on local roads.

Tip trucks, cars with trailers and skips delivering waste to the waste recovery hall would enter the building in a forward direction through one of the motorised doors. They would then leave the site via the weighbridge on the eastern boundary of the site and onto Bowen Place.

It should be noted that all waste loading / unloading would occur within the waste recovery hall with no storage of solid wastes to occur outside of the building. Liquid wastes are to be stored in their dedicated storage tanks on the hardstand area on the southern boundary of the property.

Arrivals and departures would be scheduled, as far as possible, to prevent site and local intersection congestion. The estate is positioned to allow easy access to Canberra Avenue. Trucks entering / exiting the site may then enter and exit the estate at the intersection at Gilmore Road and Canberra Avenue.

Waste collection activities require that road use is as far removed as possible from peak traffic times.

5.2.4.1 Operating Hours

Site operations would be 24 hours per day, seven days per week. This would allow services to be offered in peak waste collection times and minimise congestion and travel time associated with operations during peak hours. Sufficient storage would be incorporated to enable off peak deliveries to and from the facility. A key consideration for extended operating hours is ensuring noise is appropriately managed and mitigated. Site activities have been considered against noise criteria for day, evening and night time periods and operations adapted to certain times to ensure noise limits are met. See **Sections 6.3** and **6.8** for further detail on noise and traffic.

5.2.5 Costs, Funding and Staging

The capital cost for the proposed resource recovery facility would be approximately $3 million. The facility would employ 40 employees during peak operation.

5.3 AUXILLIARY FACILITIES

Minor construction would be carried out to connect existing utilities electricity, potable water, and wastewater to and from the site.

Water management at the facility meets the requirements of Queanbeyan City Council and EPA requirements. Best practice controls have been implemented for water cycle

management at the site and facilities and include:

- All runoff / leachate that has come into contact with waste to be captured and treated prior to discharge;
- All captured water to be treated and sent to a concrete batching plant for reuse in the concrete batching process;
- Roof runoff will be captured up to a 5 year ARI and reused on site. Any water captured above this would be discharged to stormwater; and
- All waste handling areas to be bunded to capture potential spillages, and prevent runoff out of process areas.

The site would be protected by CCTV cameras installed on the weighbridge as well as the use of security patrols during any period where the facility is closed. Fences would also be provided which are to include 2.5m high security fencing topped with barb wire. A matching security gate would also be installed at the front of the property. Public access to the site would be restricted.

A comprehensive and self-contained fire detection and prevention system would be installed to meet the Building Code of Australia (BCA) and SUEZ policy requirements. This would include hydrants, hose reels, fire extinguishers, sprays and detectors. The facility would be staffed at all times during operation and all staff would be trained in fire detection and fire-fighting.

5.4 CONSTRUCTION OF THE FACILITY

Construction activities associated with the facility would include:

- Excavation for the basement carpark (approximately 6,000m^3), underground water storage tanks and installation of foundations. Waste rock and spoil would be sent for beneficial reuse at Beatty Hill;
- Construction of concrete and supporting structures;
- Erection of new building and plant facilities; and
- Installation of equipment, pipelines and electrical reticulation.

Landscaping would be undertaken upon completion of the construction phase of the proposal.

The types of equipment to be used during the construction works are likely to comprise:

- Excavators;
- Tippers;
- Graders;
- Air compressors and generators;
- Concrete trucks/mixers and pumps;
- Cranes;
- Jack Hammers;
- Augers; and
- Rollers.

The type and quantity of equipment on the site at any one time may vary depending on the construction activity being undertaken.

Ancillary activities associated with the construction of the proposed changes would include:

- Setting up site huts and amenities for construction workforce;
- Erecting a security fence around whole site;
- Connecting to existing services; and
- Installing fixed fire hydrants at appropriate locations around the site.

6 EXISTING ENVIRONMENT AND IMPACT ASSESSMENT

6.1 LAND USE AND ENVIRONMENTAL SETTING

6.1.1 Existing land use

The proposal is located on industrial land previously occupied by Allied Pickfords. It is currently used as a Truck Maintenance and Depot and Resource Recovery Facility by SUEZ. The proposed changes are to be built on Lots 348, 349, 350 DP 8456; Lot 2 DP 1000911; and part of Lot 1 DP 1169293. The 1.4ha site is located in an estate that has been established on industrial land.

The site is surrounded by mixed commercial and industrial properties. The industrial estate is bounded by the NSW/ACT border to the west, Canberra Avenue to the north, John Bull Street to the east and the Queanbeyan West race track to the south. Tenants operating in the estate include Stegbar, Monaro Mix Concrete Plant, Queanbeyan Industrial Supplies, Blackforest Joinery and Stairs, and Old Field Removals and Storage.

The nearest residential area is approximately 200m to the north of the site on Lorn Road, however two caretaker's cottages are located within the industrial estate.

The site is zoned IN1 – General Industrial in accordance with *Queanbeyan City Council LEP 2012*. As set out in **Section 2.2.1.1**, this proposal complies with the objectives and requirements of this zoning and compatibility with existing land uses. The proposal is concluded to have negligible impact on current or future land uses.

6.1.2 Construction impacts

The main potential impacts of construction activities on the environment and neighbouring land uses include:

- Noise;
- Dust; and
- Surface water quality impacts.

The above impacts are anticipated to be negligible, with careful planning, design and implementation of rigorous mitigation measures.

6.1.3 Operational impacts

The main potential for impacts associated with the operation of the proposal on the environment and neighbouring land uses include:

- Air quality impacts (odour);
- Traffic impacts (including noise); and
- Surface water quality impacts.

The assessment concluded that the above impacts are considered likely to be negligible, with the proposed controls, facility design, operational scheduling, and implementation of a rigorous and documented environmental management system.

Operation of the proposed changes would be supervised continuously, audited regularly, and subject to an extensive range of monitoring. Incident management and emergency response

procedures would be implemented and documented in the existing Environmental Management Plan. SUEZ has a proud environmental and 'good neighbour' record, and its Australian operations are accredited to 14001 series Environmental Management Systems.

The following sections provide further detail on the aspects listed above.

6.2 AIR QUALITY (DUST & ODOUR)

6.2.1 Background and Existing air quality

Todoroski Air Sciences (2015) carried out an Air Quality Impact Assessment for the proposed facility (see **Appendix D**).

The main sources of particulate matter in the wider area around the site include emissions from local anthropogenic activities such as motor vehicle exhaust and domestic wood heaters, urban activity and other commercial and industrial activities.

Ambient monitoring data recorded at the PM_{10} monitors at Monash and Civic, and a $PM_{2.5}$ monitor at Monash operated by the ACT Government were reviewed as part of the assessment. The data showed that the maximum PM_{10} levels are generally below criteria except in 2009 when there were significant dust storms across the eastern states. Maximum $PM_{2.5}$ levels were above the criteria in every year, however annual average $PM_{2.5}$ were below criteria.

6.2.2 Modelling Background

Modelling was undertaken using a combination of the CALPUFF Modelling System and TAPM. The CALPUFF Modelling System includes three main components: CALMET, CALPUFF and CALPOST and a large set of pre-processing programs designed to interface the model to standard, routinely available meteorological and geophysical datasets.

TAMP is a prognostic air model used to simulate the upper air data for CALMET input. The meteorological component of TAMP is an incompressible, non-hydrostatic, primitive equation model with a terrain-following vertical coordinate for three-dimensional simulations. The model predicts the flows important to local scale air pollution against a background of larger scale meteorology provided by synoptic analysis.

Due to the urban nature of the closest sensitive receptors, an odour impact assessment criterion of 2 odour units (ou) was applied.

In accordance with DECCW Guidelines (2005) and the National Environmental Protection Measures for Ambient Air Quality (NEPC, 1998), the following criteria was applied for dust deposition, TSP, $PM_{2.5}$ and PM_{10}:

Table 7: Air Quality Impact Assessment Criteria – TSP, PM_{10} and $PM_{2.5}$

Pollutant	Criteria	Averaging Period
TSP	-	Annual average
PM_{10}	50 µg/m^3	24-hr average
	-	Annual average
$PM_{2.5}$	25 µg/m^3	24-hr average
	8 µg/m^3	Annual average
Deposited Dust (DD)	2 g/m^2/month	Annual average

6.2.3 Construction impacts

The potential effects on air quality during construction would be limited to emissions from vehicles and equipment and dust generation associated with earthworks.

Given the short-term nature of construction, and the relatively low number of vehicles and equipment required during construction, emissions from vehicles and equipment is anticipated to have minimal impact on air quality within the area surrounding the site. Vehicle and machinery exhaust systems however, would be maintained so that exhaust emissions comply with relevant standards.

Due to the scale of construction works, in particular the excavation works, the effects of any dust generated on-site would be localised and short term in duration. In order to minimise the potential dust impacts generated during construction activities, exposed areas would be sprayed with water from a water cart during dry and windy conditions. Appropriate best practice safety and environmental management procedures would be implemented during excavation works to ensure that air quality is not adversely impacted.

6.2.4 Operation Impacts

Table 8 presents the particulate dispersion modelling results at each receptor as identified in the Air Quality Impact Assessment (see Figure 2.1 and Table 8.1 in **Appendix D**).

Table 8: Particulate dispersion modelling results at each receptor

Receptor ID	$PM_{2.5}$ ($\mu g/m^3$)		PM_{10} ($\mu g/m^3$)		TSP ($\mu g/m^3$)	DD (g/m^2/month)
	Incremental impact					
	24-hour average	Annual average	24-hour average	Annual average	Annual average	Annual average
	Advisory*		Air quality impact criteria			
	25	8	50	-	-	2
1	0.16	0.03	1.24	0.23	0.45	0.05
2	0.13	0.02	0.99	0.14	0.27	0.02
3	0.12	0.02	0.98	0.13	0.26	0.01

*Advisory reporting standard for PM2.5 concentration

As shown in **Table 8**, particulate matter generated by the operation of the site would have a negligible impact at the nearby assessed sensitive receptors. Predicted levels are well within guideline levels even with the conservative nature of the model and assumptions applied.

The potential for cumulative air quality impacts associated with the proposal is considered to be negligible when considering the predicted incremental impacts. It is unlikely that the proposal would result in any discernible change to existing background levels at the nearest residential receptors.

Table 9 presents the dispersion modelling results for odour levels at the sensitive receptors. The predicted odour concentrations from the operation of the site are shown to be well below the 2OU criteria.

Table 9: 99th percentile nose-response average ground level odour concentrations (OU)

Receptor ID	Odour Units (OU)	Criteria (OU)
1	0.6	2
2	0.6	2
3	0.6	2

6.2.5 Mitigation measures

Mitigation measures to reduce the potential for dust impacts during construction include:

- Activities to be assessed during adverse weather conditions and modified as required (e.g. cease activity where reasonable levels of dust cannot be maintained).
- Engines to be switched off when not in use for any prolonged period.
- Vehicles and plant will be fitted with pollution reduction devices where possible.
- Maintain and service vehicles according to manufacturer's specifications.
- Haul roads/transport routes to be sited away from sensitive receivers where possible.
- Minimise area of exposed surfaces as much as practicable.
- Water suppression on exposed areas and stockpiles.
- Minimise the amount of stockpiled material.
- Locate stockpiles away from sensitive receivers.
- Apply barriers, covering or temporary rehabilitation, where practical.
- Progressive staging of construction activities.
- Keep ancillary vehicles off exposed areas.
- Reduce drop heights from loading and handling equipment.
- Watering of haul roads (fixed or mobile) when required.
- Sealed haul roads to be cleaned regularly.
- Restrict vehicle traffic to designated routes that can be managed by regular watering.
- Impose speed limits.
- Wheel wash, grids or coarse aggregate near exit points to minimise dirt track out.
- Street cleaning to remove dirt tracked onto sealed roads.
- Covering vehicle loads when transporting material off site.

Mitigation measures to reduce the emission of dust and odour during operation of the proposal include:

- Sorting and processing of wastes within an enclosed building.
- Closing doors immediately after a truck or vehicle has entered/exited to maintain building enclosure.
- Use of automated dust and odour sprays.
- Storing a maximum of 100 tonnes of putrescible waste for a period no longer than 24

hours.

- The floor of the waste recovery hall would be cleaned daily.
- Trafficked areas on-site will be paved and cleaned regularly.
- Stored vehicles and bins will be cleaned and maintained regularly.

6.2.6 Conclusion

It is therefore concluded that the proposed development would not have adverse air quality impact on adjoining neighbours or the nearest residences and would comply with EPA requirements.

6.3 NOISE & VIBRATION

6.3.1 Existing Acoustic Environment

Background noise in the area is associated with traffic, including a high portion of heavy vehicle movements, and surrounding industrial operations.

The nearest residential receivers that were assessed as part of the Noise Impact Assessment (Wilkinson Murray, 2015) were:

- R1: 15 John Bull Street, Queanbeyan West, located 230m from the site;
- R2: 31 Stuart Street, Crestwood, located 315m from the site; and
- R3: 54 Lorn Road, Crestwood, located 210m from the site.

To establish existing noise levels in the area surrounding the proposal, unattended noise monitoring was conducted between 27 June and 3 July 2014 (Wilkinson Murray, 2015). From the background noise levels (L_{A90}) the Rating Background Levels (RBLs) were determined. These are presented in the table below.

Table 10: Existing Ambient Noise Levels (Wilkinson Murray, 2015)

Time period	Noise Levels (dBA)	
	L_{Aeq}	RBL
Day (7.00am – 6.00pm)	60	47
Evening (6.00pm – 10.00pm)	54	42
Night (10.00pm – 7.00am)	52	32

6.3.2 Noise Impact Assessment

6.3.2.1 Noise Assessment Criteria

During construction, it is expected that all construction activities would be conducted within standard construction hours. Based on the RBLs presented in **Table 10**, the construction noise management levels for the project are $L_{Aeq,\ 15\ min}$ 57dBA.

To ensure the noise impact assessment complied with the NSW *Industrial Noise Policy* (INP), two noise criteria were used: intrusiveness and amenity. The INP Intrusiveness criteria used for the operation of the project are presented in **Table 11**.

Table 11: Project-specific Intrusiveness Criteria (Wilkinson Murray, 2015)

Receiver	$L_{Aeq, 15min}$ Intrusiveness Criterion (dBA)		
	Day (7am-6pm)	Evening (6pm – 10pm)	Night time (10pm-7am)
R1, R2 & R3	47+5 = 52	42+5 = 47	32+5 = 37

Due to the suburban nature of the identified residential receivers, the following amenity criteria were applied to the proposal:

Table 12: Project-specific Amenity Criteria (Wilkinson Murray, 2015)

Receiver	$L_{Aeq, period}$ Amenity Criterion (dBA)		
	Day (7am-6pm)	Evening (6pm – 10pm)	Night time (10pm-7am)
R1, R2 & R3	55	45	40

The land use surrounding the proposal and nearest receivers does not feature any significant sources of industrial noise. On this basis, no adjustment to the amenity criteria was applied.

The project-specific noise levels are provided in the table below. As the site is proposed to operate on a continual 24/7 basis, the focus of the operational noise assessment was the night time operations. Thus, the night time intrusiveness noise level of 37dBA was the primary noise goal.

Table 13: Project-specific Noise Levels (Wilkinson Murray, 2015)

Receiver	Intrusiveness Criterion ($L_{Aeq, 15min}$ dBA)			Amenity Criterion ($L_{Aeq, period}$ dBA)		
	Day	Evening	Night	Day	Evening	Night
All	**57**	47	**37**	55	**45**	40

Based on the measured night time RBL's, the sleep disturbance criteria is established at L_{Amax} 47 dBA (i.e. RBL = 15 dBA).

6.3.2.2 Noise Impact Assessment

Construction and Operational noise emissions from the site were modelled using the "CadnaA" acoustic noise prediction software as part of the Noise Impact Assessment completed by Wilkinson Murray (2015). The noise predictions are detailed below.

Construction Noise Impact

The proposal would involve the construction of a new transfer building, and associated infrastructure. The most noise intensive construction activities identified are those associated with establishing new pavement and hardstand areas and the construction of the new building. Whilst excavation works form part of the proposal, the majority of the excavation would be screened from nearby receivers due to the depth of excavation required and the topography surrounding the site.

The noise levels generated by the indicative construction activities have been predicted at each of the identified receiver locations, conservatively assuming a worst case scenario whereby all sources would operate continuously and simultaneously for a 15 minute period.

Noise emissions would vary as construction progresses. The upper predicted $L_{Aeq, 15min}$ construction noise levels are provided in the table below with those exceeding the noise

affected management levels shown in bold. As the modelled scenarios would be unlikely to occur often, the noise levels at receivers would typically be lower than identified.

Table 14: Predicted $L_{Aeq, 15min}$ Construction Noise Levels at Nearby Receivers (Wilkinson Murray, 2015)

Receiver	Construction Stage			Noise Affected Management Level ($L_{Aeq, 15min}$)
	Pavement and Hardstand Construction	Construction of Building Slab	Construction of Transfer Station	
R1	49	51	46	57
R2	49	51	46	57
R3	50	52	47	57

As shown in **Table 14** above, the predicted construction noise levels comply with the established noise management levels at all receivers.

Operational Noise Impact

The most significant sources of operational noise from the site are vehicle movements within the site boundary and material handling activities within the transfer station building. Sources of the operational noise were included in the computer noise model to predict noise levels at nearby receivers. The predicted operational noise levels at nearby residential receivers are presented in the table below.

Table 15: Predicted $L_{Aeq, 15min}$ Operational Noise Levels at Nearby Receivers (Wilkinson Murray, 2015)

Receiver	Predicted Level ($L_{Aeq, 15 min}$)	Criterion (Night)	Exceedance
R1	38	37	1 dBA
R2	37	37	0
R3	36	37	0

As shown in the table above, the predicted worst case operational noise levels exceed the night time intrusiveness criterion at R1 by 1dBA. An exceedance of 1dBA is considered negligible and not perceptible to human hearing.

The most significant short duration, high intensity noise events associated with the operation of the facility are the application of pneumatic truck parking brakes. The worst case scenario of trucks applying parking brakes is when they stop at the weighbridge at the northern side of the transfer station building, and when they stop at the entry doors at the southern side of the transfer station building. The predicted maximum operational noise levels at nearby residential receivers are presented in the table below. The NSW Road Noise Policy (RNP) Night Criterion is also provided.

Table 16: Predicted $L_{Aeq, 15min}$ Operational Noise Levels at Nearby Receivers

Receiver	Predicted Level (L_{Amax})	Screening Criterion (night)	Exceedance	RNP Criterion (Night)	Complies (Yes/No)
R1	45	47	0	60-65	Yes
R2	45		0		Yes
R3	54		7dBA		Yes

As shown in **Table 16**, the predicted maximum noise levels generally comply with the established sleep disturbance criterion, except at R3 where an exceedance of 7dBA was observed.

As discussed in Section 5.2 of the Noise Impact Assessment, the sleep disturbance goals based on a screening test of 15dBA above background noise levels are considered conservative, and not ideal. By way of comparison the predicted maximum noise levels at R3 are at least 6dBA below the level of 60-65dBA, which are provided as a guideline in the NSW Road Noise Policy as a level that would be unlikely to cause sleep disturbance.

For this reason the existing noise environment at R3 has been considered in more detail. Due to the proximity and exposure to traffic noise from Canberra Avenue, the existing background noise levels at R3 are expected to be significantly higher than those at R1, where the unattended background noise monitoring was conducted. Therefore, the predicted 7dBA exceedance of the sleep disturbance criterion at R2 is conservative. Also, the maximum noise levels from the proposal at R3 are expected to be less frequent and of a lower level than the existing maximum noise levels.

Traffic Noise Impact

Approximately 60 truck movements are expected a day, generally during off-peak periods to reduce travel time. On weekends, around 15 truck movements are expected each day. In addition to truck movements, approximately 24 car movements are expected daily. Limited amounts of small vehicle movements, including trailers may occur during the week to facilitate the retail component of the proposal. Generally, these vehicles would use the facility on weekends to avoid peak congestion times.

Assuming the worst case scenario when all truck movements generated by the development occurred during the night time period, the predicted increase in traffic noise levels at the most affected receivers (R2 & R3) would be less than 0.1dBA. Such an increase is not perceptible to human hearing and therefore, no mitigation is warranted.

6.3.3 Conclusion

It is therefore concluded that the proposed development would not have a significant noise impact on adjoining neighbours or the nearest residences. The proposed development would also comply with EPA requirements.

6.4 WATER QUALITY, DRAINAGE AND SOILS

6.4.1 Existing Environment

The proposal is to occur within an existing industrial estate, at an existing resource recovery facility and the uses of water would be consistent with industrial uses. This includes vehicle washdown, process water and general landscaping. Water quality within the stormwater treatment system would be consistent with an industrial area.

Local waterways and creeks are not located within the vicinity of the proposed site.

The proposed additions would include a water management system that captures and treats process water. The treated water would then be sent to the concrete batching plant located next door on Bowen Place for reuse during the concrete batching place.

Due to the presence of rock, the site is largely impermeable. Up to a five year ARI rain event, water would be captured from the roof and reused on site where possible. Any water above this would be discharged to stormwater. It would segregated to ensure it does not enter

process or hardstand areas.

At this stage, no radioactive or clinical wastes would be accepted at the site.

Water would generally be used within the office amenities area, vehicle washdown and landscaping. Water would generally not be used to clean hard surfaces.

A phase 1 contamination study was conducted at the site by Robson Environmental (February 2015). This study can be provided upon request. They noted some areas of concern, based on previous land uses. These consisted of asbestos sheets and storage of concrete. Since this study was completed, bulk earthworks have occurred at the site, and these items have been removed. It is not expected that any remnant contamination is located at the site. Remnant soil at the site is likely to consist of excavated natural material.

6.4.2 Construction impacts

Construction of the proposed changes would involve excavation works for the basement carpark, underground water storage tanks, footings and utilities. Excavation of the site would be minimised wherever possible. Material would be tested and classified in accordance with EPA requirements, prior to being reused on site wherever possible. Where reuse on site is not possible, the material would be removed from site and sent for beneficial reuse at Beatty Hill or sent to a licensed waste facility for disposal.

Construction impacts on water quality could arise from the disturbance of soils, erosion whilst the soils are in a disturbed state and transportation of sediments to holding areas. Construction activities would take place on flat land, within a recently levelled site. The erosion potential at the construction site is expected to be minimal.

Appropriate erosion and sediment controls would be put in place to ensure sediments do not enter into the estate stormwater system.

The proposed construction works would not influence or change flooding risks of the site.

6.4.3 Operation impacts

A water management plan would be prepared for the site for both process water and stormwater management. All process water would be treated prior to being sent to the concrete batching plant on Bowen Place for reuse. It would be treated to comply with relevant standards (refer to **Section 5.2.3.2**).

The operation of the proposed changes would occur within a fully enclosed building or, in the case of liquid waste and fuel storage, in an enclosed liquid waste or fuel storage tanker, surrounded by appropriate bunding. This would ensure that stormwater is kept out of process areas. No contaminated water would be able to leave the bunded areas. The potential of contamination of waterways or the stormwater system is anticipated to be negligible.

Putrescible wastes would be accepted, sorted and handled within the enclosed building, built with an impervious base.

Roof runoff would be captured up to a five year ARI rain event and reused on site where possible. Any water above this would be discharged to stormwater.

6.4.4 Mitigation measures

The following mitigation measures are proposed to manage water quality impacts:

- Sediment and erosion control measures are to be installed prior to any construction activities and maintained in an effective condition until earthworks have been completed and the site rehabilitated;

- The areas of soil exposure would be minimised as much as possible;
- Excavation would be minimised wherever possible;
- All operational areas to be bunded to contain any spills;
- Rainwater would be segregated from process water;
- Leakage from the waste, and any water that comes in contact with the waste, to remain separated from stormwater and to be treated prior to being provided to the concrete batching plant on Bowen Place for reuse in the concrete batching process;
- All washdown areas are to drain through the existing water treatment infrastructure; and
- Fully stocked spill kits would be provided within all delivery trucks, where materials are stored, and in the truck/machinery maintenance area. All staff and truck drivers would be adequately trained in the use of spill kits.

6.4.5 Conclusion

It is therefore concluded that with the implementation of the proposed mitigation measures, there would be no adverse impacts on water quality from the proposed changes.

6.5 WASTE, ENERGY & RESOURCES

6.5.1 Energy Use

Energy use and conservation has been considered during all elements of design of the proposed changes. The location of the site within the estate offers central access to the Queanbeyan area and the ACT and good connectivity to customers for a range of waste types, minimising transport energy use.

Table 17: below details anticipated energy use:

Table 17: Energy Use

Energy Consuming Equipment and Processes	Energy Type	Design and Operation Features for Efficient Energy Use
Trucks and cars transporting materials to and from site	Diesel Petrol	▪ Ensure load compacted for maximum volume. ▪ One-way route access in and out of site to minimise turning movements. ▪ Minimise trips during peak hour periods.
Transport around site (forklifts and materials handling devices such as conveyors)	LPG	▪ Location and sequence of processing equipment efficiently positioned so as to minimise materials movement around site.
Crushing and screening	Electricity	▪ Efficient appropriately sized design for function required. ▪ Optimised processing load to minimise start-up / shut down electrical load.

Energy Consuming Equipment and Processes	Energy Type	Design and Operation Features for Efficient Energy Use
Environmental controls (mechanical ventilation and suppression sprays)	Electricity	▪ Pumps, fans, pipes, water rates and volumes correctly sized for specified duties.
Facilities / amenities (air conditions, lighting, office equipment)	Electricity	▪ Housekeeping procedures to ensure that power switched off when not in use. ▪ Utilisation of energy efficient appliances.
Overall energy management	-	▪ Periodic energy audit to identify operations for reduction and alternative technology options. ▪ Preventative maintenance program.

6.5.2 Waste Generation

The proposed additions are designed with the capacity to process up to 95,000 tonnes of waste per annum. The focus of the site would be the following waste streams:

- General solid waste (non-putrescible);
- General solid waste (putrescible);
- Paper, cardboard and plastics recyclables;
- J120 waste (Oil/Hydrocarbon Mixtures/Emulsions in Water) – Liquid Waste; and
- Grease trap waste.

Putrescible and non-putrescible waste is anticipated to be approximately 70,000 tonnes at peak operations.

Waste received at the facility would be both source separated and co-mingled. Waste would be stored in appropriate receptacles, both inside the waste recovery hall and in the hardstand areas within the appropriate receptacles (i.e. grease trap tankers, etc). Waste would be transported to and from the facility via front-lift trucks, packer loads, rear lift trucks and cars with trailers.

SUEZ's proposed changes are a critical component of sustainable waste management through resource recovery. It is also consistent with the statutory objectives of EPA in achieving a reduction in waste generation and turning waste into recoverable resources. The *NSW Waste Avoidance and Resource Recovery Strategy 2003* and *2007* and the *Reducing Waste: Implementation Strategy 2011-2015* provides a framework for reducing waste and making better use of our resources, in line with the principles of ESD. With their dual focus on protection and conservation, reprocessing and resource recovery are targeted as a means of reducing potential hazards to the environment and capturing value from materials that would otherwise be disposed of to landfill.

6.5.3 Construction and Operations Impacts

Waste would be generated as a result of the construction phase from the excavation activities, approximately 6,000m^3. Where possible, excavated spoil would be reused on site. The spoil from excavation works would be tested and classified prior to being reused on site wherever possible. Where this is not possible, spoil would be sent for beneficial reuse at Beatty Hill or

disposed of at an appropriately licensed facility.

Other wastes associated with construction works would be typical construction wastes associated with building and plant assembly.

SUEZ has innovative recycling systems in place for paper, concrete and metal, capable of handling the majority of additional waste generated during construction. Wastes associated with equipment and machinery, including oil wastes from machinery maintenance, would be negligible and disposed of in the appropriate manner.

6.5.4 Mitigation Measures

The following mitigation measures are proposed to manage impacts associated with waste and energy use:

- Waste spoil that cannot be reused on site would be tested and classified prior to being sent for beneficial reuse at Beatty Hill or disposed of at an appropriately licensed facility;
- Waste would be well controlled at the source through education and ongoing communication with waste clients;
- The quality of incoming wastes would be controlled by monitoring every load to ensure that no hazardous loads are disposed. Delivery drivers would be trained in addition to visual checking on the tipping floor;
- Records shall be maintained of each load of waste entering the premises, including the identification of the vehicle, weight, nature and origin of waste received, and how it was contained;
- Waste transporters would continue to undergo an induction process and attend continuing information courses on waste types permitted to be received;
- Any wastes generated on the site would be recycled wherever possible; and
- Wastewater generated on site to be treated and stored in underground storage tanks prior to being sent to the concrete batching plant on Bowen Place for reuse in the concrete batching process.

6.5.5 Conclusion

It is therefore concluded that with the implementation of the proposed mitigation measures, the proposed changes would not have a significant waste or energy impact.

6.6 ECONOMIC & FINANCIAL ASSESSMENT

6.6.1 Existing environment

The proposed changes would be located in an existing industrial estate which is one of Queanbeyan's significant industrial hubs and an important economic and employment centre within the Queanbeyan Local Government Area. One of the main objectives of the establishment of the estate was to provide employment opportunities and to focus industrial activities within a central area. The site is located approximately 2.5km from the Queanbeyan CBD. The area has a wide range of productive industries and supporting services.

A key objective of the *Queanbeyan LEP* (2012) is to encourage and reinforce recycling and waste management principles. The proposed changes meets both these principles by allowing SUEZ to stay economically competitive, meeting the needs of a changing waste market, while providing a service that is central to waste management and recycling policies.

6.6.2 Impact Assessment

6.6.2.1 Financial Assessment

As described in **Section 4** the proposed changes would allow SUEZ to meet changing market needs, better servicing both commercial and residential sectors. The use of SUEZ's existing facility is considered most suitable for these activities because of the following:

- The site is compatible with adjacent industrial land uses and is within a purpose created estate;
- Sufficient space and central location to target markets;
- Central location close to arterial roads which would decrease transport costs;
- Reduction in costs associated with landfill disposal;
- Generation of beneficial products for recycling; and
- Provision of commercial benefits to commercial clients through 'secure' disposal of waste products.

The financial benefits outlined above justify SUEZ's investment to make the proposed development.

6.6.2.2 Economic Assessment

Consistent with the principles of ecologically sustainable development, the economic evaluation compares environmental and social costs and benefits of the project in an economic context. The proposed changes would have the following benefits:

- It would create 40 full-time positions at ultimate capacity; and
- It would provide a recycling benefit to Queanbeyan via commercial and residential clients and production of useful by-products for agricultural or industrial purposes.

The proposed changes would facilitate job creation opportunities directly as a result of the construction and operation of the facility. During the construction phase, there is the potential for short-term increased activity as construction contractors would be required. Indirect contributions to the local economy would also be generated from purchase and transportation of materials, fuel, office supplies and maintenance requirements.

The proposed development is consistent with the objectives of the *Queanbeyan LEP* (2012)

and the *Queanbeyan DCP* (2012) and would complement the existing industries in the estate and the existing use of the site.

Nearby neighbours in the estate have not expressed any concerns that a waste facility in the vicinity of their premises would impact their property values. The perception of land values is not possible to quantify however the stringent environmental controls that would be applied to the facility are considered appropriate to ensure negligible change to the amenity of the area. The proposal is consistent with the objectives of the *Queanbeyan LEP (2012)*.

6.6.3 Conclusion

The proposed changes represent the optimal financial option for SUEZ. By improving their resource recovery capability, the proposed changes would improve SUEZ's competitiveness, with positive economic implications for the local and wider Queanbeyan economy. The economic benefits outlined above indicate that the proposal represents a desirable course of action for the community of Queanbeyan as a whole.

6.7 HAZARD & RISK ASSESSMENT

6.7.1 Introduction

Benbow Environmental completed a Preliminary Hazard Analysis for the proposed resource recovery facility (refer to **Appendix C**). The proposed expansion would not substantially change the quantities of dangerous goods on site that would exceed the threshold screening quantities of dangerous goods. The proposed changes involve the following aspects which may cause the proposal to be potentially hazardous or offensive in combination:

- Up to 70,000 tonnes per year of general solid waste including putrescible and non-putrescible wastes.
- J120 waste liquids, and
- Approximately 10,000L of diesel fuel.

The study included the following key aspects:

- Assessment of the proposal with consideration to the provisions of SEPP 33 and the compliance with WorkCover requirements;
- Evaluation of any potential hazards imposed by the proposed site operations on the surrounding environment and communities; and
- Making recommendations on the relevant prevention/protection strategies to minimise the impact and risk of human fatalities, property damage and environmental pollution.

The study also included the temporary storage of medical waste at the facility, however this does now not form part of the proposal. As such, it has not been discussed further.

6.7.2 Hazard development evaluation

Dangerous goods to be stored onsite were assessed against the screening thresholds limits outlined in the *Applying SEPP 33* guideline. Table 4.1 of Appendix C shows the classes of dangerous goods and if SEPP 33 is triggered.

The only applicable dangerous good to the proposal, is the storage of 500L of Class 3 PGII and PGIII flammable liquids. This quantity does not trigger SEPP 33.

A Multi-Level Risk assessment was also completed for the proposal, in accordance with the Department of Planning and Environment requirements (*Multi-Level Risk Assessment and Hazardous Industry Planning Advisory Paper No 4 (HIPAP No. 6) – Guidelines for Hazard Analysis,* Department of Planning and Infrastructure, 2011). The consequence of an accident involving a particular hazardous substance depends on the type and quantity of hazardous substance, the type of activity using the substance, as well as the exposed population. Risk classification and societal risk estimation of the proposed storage of dangerous goods were conducted as per the *Multi-level Risk Assessment* guideline.

The goods were identified to have the potential for significant off-site impacts. As the dangerous goods to not reach the required thresholds, the proposal is not deemed to be a hazardous development. In addition, the site is located within an industrial area. Due to the nature of the operations and the hazard prevention and protection measures proposed, it is expected that there would be no increase in hazardous risks to the existing or future residents in the area or to the occupants of the industrial area.

6.7.3 Offensive development evaluation

SUEZ have run similar facilities over NSW and the ACT for a number of years, implementing the proposed mitigation measures outlined within this EIS. In addition, the operation of the proposal would require the implementation of an EPL administered by the NSW EPA and an Environmental Management Plan, Pollution Incident Risk Management Plan and Emergency Response Plan. As such, the operations would not be considered potentially offensive with the implementation of the proposed safeguards and documented management systems.

6.7.4 Fire Risk and Management

A Fire Safety Study (FSS) was also completed by Benbow Environmental (refer **to Appendix C**). This Study was prepared in accordance with the guidelines outlined in the *Hazardous Industry Planning and Advisory Paper No. 2 – Fire Safety Study Guidelines* (HIPAP No 2, Department of Infrastructure and Natural Resources). The FSS identified the hazards relating to fire, resulting from the proposed use of the site. It included:

- Examination of the heat loads from a fire involving waste paper;
- Examination of heat flux levels at adjoining premises; and
- Provide the storage requirements for diesel fuel.

Heat radiation modelling was undertaken using the modelling software TNO Effects (Version 7.6). Three scenarios were modelled: Fire involving 50 tonnes of paper/cardboard, fire involving 100 tonnes of paper/cardboard and fire involving 200 tonnes of paper/cardboard. The scenarios analysed showed that under normal circumstances there would be no potential off site impacts.

As a worst case scenario for a major fire involving the whole of the quantities of paper/cardboard stored at the site, the heat of radiation levels could expose adjoining premises to conditions that would require evacuation. This would be expected during a fire emergency event.

The scenarios analysed are worst case, and do not allow for any reduction of the heat of radiation levels provided by firefighting water that would be applied and the reduction in the heat of radiation levels provided by the building materials. The firefighting services provided were considered to be sufficient to prevent incidents.

6.7.5 Risk management safeguards to be mitigated through the EMS

The following mitigation measures are proposed:

- Flammable and combustible liquids must be stored away from ignition sources (e.g. flames, electrical equipment, grinding and cutting operations) and excessively hot locations;
- All containers must be kept closed when not in use (including containers for waste liquids);
- Any action to open or decant from a container of flammable liquid must be carried out in a well ventilated area and sufficiently distant from any potential ignition sources so as to ensure safety having due regard to the quantity being handled;
- Combustible wastes or residues must not be kept or left in areas where flammable or combustible liquids are stored or decanted;
- Materials that might interact dangerously with flammable and combustible liquids must be stored separately from them. In particular oxidising agents must be stored separately;
- All people handling flammable and combustible liquids must be familiar with their hazardous properties and the necessary safety procedures for handling them;
- Any spillage must be cleaned up immediately;
- Flammable and combustible liquids must not be stored or used where they may jeopardise escape from a room or building in the event of a fire;
- Where the quantities of flammable liquids stored is greater than minor quantities, a warning sign must be displayed;
- Dangerous good storage areas are to comply with the following Standards:
    - AS3780-2008 *The Storage and Handling of Corrosive Substances*; and
    - AS1940-20004 *The Storage and Handling of Flammable and Combustible Liquids*;
- Specific on site personnel are to be trained in specific site procedures, emergency and first aid procedures and the use of fire extinguishers and hose reels;
- Fire extinguishers and spill control kits are to be provided near high risk areas such as near the waste water treatment plant and the self-bunded diesel tank,
- Site management are to prepare and maintain operational procedures to minimise the number of hazardous incidents and accidents on site and to mitigate the consequences of incidents regarding the handling of dangerous goods and chemicals;
- A site Emergency Management Plan is to be prepared and would include measures to advise neighbouring premises in the event of an emergency with potential offsite impacts;
- Natural ventilation would be provided on the north wall in accordance with AS1940-2004. Roof ventilation would be provided in accordance with the Building Code of Australia (BCA);
- Smoking would not be permitted on the site;
- The site would be locked and secure to prevent unauthorised access to the site outside normal operating hour;
- Site operators would be trained and would practice simulations of emergency evacuation procedures; and

- Fire protection equipment would be installed at the site as per the requirements of the BCA.

6.7.6 Conclusion

It is therefore concluded that with the implementation of the proposed mitigation measures, hazards and risks associated with the proposed development are anticipated to be negligible.

6.8 TRAFFIC, ACCESS & PARKING

6.8.1 Existing traffic and road network

6.8.1.1 Traffic and Access

One of the features of the estate is that it concentrates heavy vehicle movements and delivers them to an appropriate intersection within the regional road network. The intersection of Canberra Avenue/Kings Highway and Kealman Road provides for most movements to and from the industrial area. The location of the site is well positioned to allow easy access to the Kings Highway.

Streets within the estate have been designed to cater for the movement of heavy vehicles, and as such consist of wide carriageways with lay-bys and turning areas sufficient for vehicles to enter all adjacent sites. Gilmore Road experiences constant traffic flows, over extended operating periods.

A Traffic Impact Study was completed by Auswide Traffic Engineers for the proposal (refer to **Appendix G**). The subject site was previously occupied by Allied Pickfords, a company which provided removal services including packing, transportation, delivery and unpacking. This would be classified as a warehouse/storage with an associated office area. Portions of the rear of the site have remained vacant since the industrial estate was subdivided with other areas previously used as a landscape supply business with associated office.

Currently, the site is being used as a Truck Maintenance Depot and Waste Transfer Station by SUEZ. Existing heavy vehicle movements are 30 movements per day, with smaller amounts generated on a weekend. Smaller amounts of staff vehicle movements are experienced during main office hours.

Due to the previous land use as a warehouse/storage and its current land use of a waste transfer station, the traffic generation levels at the existing site were established using the RMS Guide to Traffic Generating Developments (2002) document.

The assumed traffic conditions for a warehouse/storage and office are outlined in the table below:

Table 18: Existing Land Use Traffic Generation

Land Use	Area (m^2)	RMS Guide Trip Rates		Trips Generated	
		Daily (per 100m^2 GFA)	Peak Hour (per 100m^2 GFA)	Daily	Peak Hour
Office	441	10	2	45	9
Warehouse	1491	4	0.5	60	8
Total	1932			105	17

6.8.1.2 Parking

Parking on the facility would be available for staff and SUEZ trucks and equipment. Provision would be made for trucks to prevent queuing on local roads. Approximately an additional 61 spaces would be made available on the site.

6.8.2 Construction Impacts

Construction works would run over a period of approximately 12-16 weeks, during which time there will be traffic generated mainly by the deliveries of construction materials. As the existing local road system already carries a heavy vehicle load, the temporary addition of construction vehicles will cause a negligible increase in traffic.

6.8.3 Operation Impacts

All trucks and cars would enter the site via Bowen Place and travel to the weighbridge located at the front of the new building. Tip trucks, cars with trailers and skips delivering waste to the waste hall would travel into the building through one of the motorised doors in a forward direction. They would then leave the site via the weighbridge and exit via Bowen Place.

Staff and visitors to the site will use the 'car' entry point and existing driveway located on Gilmore Road and travel up the ramp to the car park in the basement of the new building.

It should be noted that the majority of the waste loading / unloading would occur within the waste recovery hall.

Trucks and other heavy vehicles for the proposal would not use the driveway off Gilmore Road. The driveway off Gilmore Road would be restricted to the staff and visitors to the site and trucks facilitating the existing operations at the facility (wash bay, paint bay, paper and cardboard baling, fluorescent tubes and batteries).

Initially approximately 60 truck movements per day are anticipated, generally at off-peak periods to reduce travel time and avoid congestion. During weekends, up to 15 truck movements per day are expected. Limited amounts of small vehicle movements, including trailers may occur during the week to facilitate the retail component of the proposal. Generally, these vehicles would use the facility on weekends to avoid peak congestion times.

A Traffic Impact Assessment has been undertaken by Auswide Traffic Engineering (2013) which assessed the traffic and access implications of the proposed changes within the estate. See **Appendix G** for a full copy of this report. This assessment has been prepared in accordance with the RMS Guide to Traffic Generating Developments (2002).

Based on the assumed existing land use traffic generation projection, the assessment concluded that the proposed changes would not generate much additional traffic. The highest net traffic generation is anticipated between 5am-8am where the proposed development will generate 11 vehicular trips (currently zero trips generated by assumed existing land use). Further to these heavily vehicles, there will also be some staff trips which will be sporadically distributed across the day. As such, it is acknowledged that the proposed development is deemed to generate less vehicular traffic than previous land uses during the peak periods. Therefore, traffic generation from the proposed development would not impact on the existing traffic conditions in the vicinity of the site.

As parking is provided within the proposal, no on-street parking demands would be generated.

There would be no impact on any residential streets as a result of the proposal.

6.8.4 Mitigation Measures

Mitigation measures proposed to manage possible traffic, access and parking impacts are as follows:

- Where possible site operations to avoid vehicle movements occurring during commuter peak periods (e.g. 3pm to 5pm in the afternoon), through agreements with customers to avoid peak traffic hours.

6.8.5 Conclusion

It is therefore concluded that traffic, parking and access impacts associated with the proposed changes are anticipated to be negligible.

6.9 BIODIVERSITY

6.9.1 Existing flora and fauna

The site has been heavily modified by industrial use. Few trees or shrubs are present and the majority of the site consists of hardstand areas with some small areas of weeds and grasses. There are limited flora and fauna resources on the proposed site and its immediate surroundings, with very little potential habitat.

6.9.2 Construction impacts

The proposed site consists of highly modified industrial habitat which is of limited value to any flora or fauna species. Excavation works are required, however there will be no clearing of vegetation. Furthermore, there would be planting of appropriate native flora species within planned landscaped areas in accordance with the *Queanbeyan DCP* (2012).

6.9.3 Operation impacts

There would be no additional impacts during the operational phase.

The water cycle management system incorporated within the design of the proposed changes would ensure that all surface stormwater runoff is captured and treated before disposal. Water quality in the local waterways would not be adversely affected by the proposal.

6.9.4 Mitigation Measures

The following mitigation measures are proposed to manage any possible biodiversity impacts:

- Appropriate landscaping would be provided on site, which includes native species.

6.9.5 Conclusion

It is therefore concluded that impacts to biodiversity associated with the proposed development are anticipated to be negligible.

6.10 HERITAGE

6.10.1 Existing setting

A search of the relevant registers and visual inspection of the site and immediate surrounds indicates that there are no heritage items of conservation value.

As the site has been highly modified by past use, including removal of the original ground surface as part of original subdivision and the recent excavation DA (#16-2015), it is considered unlikely that any items of Indigenous heritage would be present.

6.10.2 Construction impacts

Due to the heavily modified nature of the site, it is considered unlikely that any items of Indigenous or non-Indigenous heritage would be impacted. Should any items be found during the works, works would cease until the item or site is inspected by an appropriate environmental or heritage representative.

6.10.3 Operation impacts

The operational phase of the resource recovery facility would have no impact on heritage items or places in the vicinity of the site.

6.10.4 Mitigation measures

During the construction of the facility, plant and equipment operators would be informed of the possibility of encountering items or relics of heritage significance. Where an unidentified relic or item is identified, SUEZ would notify the appropriate heritage department (OEH for Indigenous heritage and DP&I Heritage Branch for non-Indigenous heritage).

6.10.5 Conclusion

Due to the highly modified nature of the site, it is considered unlikely that any items of Indigenous or non-Indigenous heritage would be impacted by the proposed development.

6.11 VISUAL AMENITY, SOCIAL AND COMMUNITY ASSESSMENT

6.11.1 Existing scenic condition and local character

The estate is characterised by commercial and industrial buildings and associated structures ranging from processing and manufacturing plants, wholesale, and transport and service firms. The proposed resource recovery and waste transfer facility would consist of paved parking and driveway areas and a large waste sorting hall with associated office and meeting room areas. Landscaped areas would be located at the street frontage.

The design of the facility would be in keeping with the character of the estate. Architectural elements have been included as listed in **Table 3** and shown in the drawings in **Appendix B**.

The site is not visible to residential areas or public recreational facilities; however two residential properties (caretaker cottages) are located within the estate on Bayldon Road and Kendall Avenue. It is currently only visible to the caretaker's cottage on Bayldon Road but is in

keeping with the character of the remainder of the industrial estate. Neighbours in the estate would view the side of the existing waste shed and office building from the Gilmore Road street frontage. This would ultimately be partly screened by landscaping as it matures.

The proposed changes, including the new solid waste recovery building, would be located at the rear of the property, fronting Bowen Place. Neighbours on Bowen Place would be able to view the new building from the street frontage, however as noted above, this would also be partly screened by landscaping as it matures along the front boundary.

The nearest residential areas are located approximately 200m to the north on Lorn Road and 400m south of the site on John Bull Avenue and have no direct view of the site. The proposed site is located within an industrial precinct away from residential and recreational activity areas.

No adjacent land uses would be able to directly view the proposed sorting operations, as they would be carried out within the recovery hall.

Figure 4: Photographs of the Site

Photograph 1: Site from the corner of Bowen Place and Kealman Road

Photograph 2: Site from Bowen Place (prior to excavation)

6.11.2 Visual impact assessment

As the proposal is not visible to residential areas, street frontages or public recreation areas the visual amenity of the area would not be impacted on by the proposed development.

The proposed development is in keeping with the surrounding estate and would have no effect on the visual amenity of the surrounding area.

6.11.3 Construction Impacts

Construction would have negligible impact on the surrounding properties and is compatible with the adjacent industrial land uses. The proposed changes are not anticipated to have any detrimental impact on social amenity.

6.11.4 Operational Impacts

Trucks entering and exiting the site may impact the visual amenity of neighbouring developments. All trucks would be covered and trucks would not queue outside the site as provision has been made in the internal site layout for trucks to queue inside the site. In addition should too many trucks arrive at any given time customers would be reminded of their allocation windows for waste tipping, in order to prevent off site queuing. Limited amounts of small vehicle movements, including trailers may occur during the week to facilitate the retail component of the proposal. Generally, these vehicles would use the facility on weekends to avoid peak congestion times. Where too many retail customers are presented to the site at the one time, they would be turned away to prevent off site queuing.

In the broader context, the proposed development would facilitate increased diversion of waste from landfill whist diminishing the potential for inappropriate disposal and associated risks of river, and land pollution. By offering a safe and effective recycling and/or disposal option for

waste, the project would have a positive social benefit for both the local and broader Queanbeyan communities.

The proposed development is consistent with State and Regional planning instruments and by facilitating an increase in recycling and reduced generation of waste. Potential health and safety issues associated with handling waste are discussed further below.

6.12 GREENHOUSE GASES AND SUSTAINABILITY

6.12.1 Introduction

A Greenhouse Gas Emissions Assessment was completed as part of the Air Quality Impact Assessment (Todoroski Air Sciences, 2015) (refer **Appendix D**). The assessment aimed to estimate the predicted emissions of greenhouse gases (GHG) to the atmosphere due to the proposal and provide a comparison of the direct emissions from the proposal at the State and National level.

The National Greenhouse Accounts (NGA) Factors document published by the Department of Environment defines three scopes (1, 2 and 3) for different emission categories based on whether the emissions generated are from 'direct' or 'indirect' sources. The GHG assessment only considered Scope 1 and 2 GHG. Whilst Scope 3 emissions have the potential to arise from a greater number of sources associated with the operation of the proposal, they are often difficult to quantify due to the diversity of sources and relatively minor individual contributions. Therefore, they were not considered in the assessment.

Scope 1 and 2 GHG emission sources identified from the operation of the proposal are the on-site combustion of diesel fuel and the on-site consumption of electricity. Scope 3 emissions have been identified as resulting from the purchase of diesel, electricity for use onsite, and transport of materials to its final destination.

The estimated quantities of materials that have the potential to emit GHG associated with the proposal are summarised in the table below.

Table 19: Summary of quantities of materials estimated for the proposal (Todoroski, 2015)

Period	Diesel (onsite) (kL)	Electricity (onsite) (MWh)	Diesel (transport of materials) (kL)
Annual	48	140	559

The quantity of diesel fuel required to transport the materials to the final destination has been estimated based on the approximate return travel distance for the material. Approximately 85% of the materials will be transported to the Woodlawn processing facility (122km return) and 15% will be transported to various locations in Sydney (600km return). The calculated annual kilometres travelled are 968,500km per year.

To quantify the amount of carbon dioxide equivalent (CO_2-e) material generated from the proposal, the following emission factors were used.

Table 20: Summary of emission factors (Todoroski, 2015)

Type	Energy content factor	Emission factor			Units	Scope
		CO_2	CH_4	N_2O		
Diesel	38.6	69.2	0.2	0.5	kg CO_2-e/GJ	1
		5.3	-	-		3
Electricity	-	0.86	-	-	kg CO_2-e/kWh	2
		0.19	-	-		3

The following table provides a summary of the estimated annual CO_2-e emissions due to the operation of the proposal.

Table 21: Summary of CO_2-e emissions for the proposal (t CO_2-e) (Todoroski, 2015)

Period	Diesel		Electricity		Transport
	Scope 1	Scope 3	Scope 2	Scope 3	Scope 3
Annual	130	10	120	18	1,508

The following table provides a summary of CO_2-e emissions per scope.

Table 22: Summary of CO_2-e emissions per scope (t CO_2-e) (Todoroski, 2015)

Period	Scope 2	Scope 3	Scope 3	Scope 1+2
Annual	130	120	1,536	250

6.12.2 Operation impacts

The estimated annual greenhouse emissions for Australia for the period October 2012 to September 2013 was 538.4 Mt CO_2-e (Department of the Environment, 2014a as per Todoroski, 2015). In comparison, the estimated annual greenhouse emissions from the proposal is 0.0002Mt CO_2-e (Scope 1 and 2). Therefore, the annual contribution of greenhouse emissions from the proposal in comparison to the Australian greenhouse emissions is conservatively estimated to be approximately 0.00005% (Todoroski, 2015).

At a state level, the estimated greenhouse emissions for NSW in the 2011-2012 period was 148.9 Mt CO_2-e (Department of the Environment, 2014b as per Todoroski, 2015). The annual contribution of greenhouse emissions from the proposal in comparison to the NSW greenhouse emissions is conservatively estimated to be approximately 0.00017%.

6.12.3 Mitigation Measures

The mitigation measures proposed to manage greenhouse gas impacts are:

- Monitor the consumption of fuel and regularly maintain diesel powered equipment to ensure operational efficiency.
- Turning diesel equipment off when not in use for extended periods.
- Minimise double handling of material and use efficient transport routes.
- Monitor the total site electricity consumption and investigate avenues to minimise the requirement.
- Conduct a review of alternative renewable energy sources.

- Provide energy awareness programs for staff and contractors.
- Minimise the production of waste generated on site.

6.12.4 Conclusion

Considering scope 1 and 2 emissions, the facility is expected to generate 250tCO_2-e of greenhouse gas emissions during operation. The total annual NSW emissions for 2011-2012 were 148.9 MtCO_2-e. Hence, the estimated annual scope 1 and 2 emissions from the facility would equate to approximately 0.00017% of the State's total emissions.

Operation of the proposed resource recovery and waste transfer facility would result in the diversion of a significant quantity of waste, including organic waste, from landfill, which would otherwise have contributed to gas generation. The operation of a facility would also result in emissions savings due to the reduction in kilometres travelled by waste transporters and the consolidation of waste into 20t loads prior to being disposed of at landfill at the Woodlawn facility.

Therefore, impacts associated with greenhouse gas emissions are anticipated to be negligible.

6.13 PUBLIC HEALTH & SAFETY

6.13.1 Introduction

The management of waste streams from collection through to beneficial reuse or disposal requires consideration so that appropriate design and safeguards are implemented to prevent public health and occupational health and safety risks.

Occupational Health and Safety Act, 2000 and *Occupational Health and Safety Regulation, 2001*, have been reviewed and considered. The following assessment has been prepared to address the requirements made by NSW WorkCover to ameliorate any health impacts on workers and the community.

6.13.2 Overview of Potential Public Health Risks Associated with the Proposal

In consideration of this proposal and experience with existing similar facilities, the following potential public health risks have been identified with respect to the operation of the proposed changes:

Construction Risks

- Dust – potential for generation from construction; and
- Injury – from moving vehicles or trips, slips or falls during construction.

Operational Risks

- Waste collection and transport to and from site;
- Unloading, handling and storage on site, including the use of the site by retail customers (cars and trailers);
- Airborne emissions from waste handling – odour, dust and airborne pathogens;
- Stormwater management;
- Wastewater management;

- Control of vermin and insect pests; and
- Security.

Experience operating with waste at other facilities; demonstrate that there should be no potential chronic or acute health risks associated with a correctly designed and operating resource recovery and waste transfer facility.

Potential public health implications for the proposed changes are further reduced by the position of the existing facility within an industrial precinct. The material would be delivered in enclosed vehicles.

The adjacent premises are occupied by industrial businesses, at adequate separation distances from the site. There are no recreational areas nearby.

6.13.3 Mitigation Measures

The following table outlines the measures designed to mitigate health risks associated with the proposal:

Table 23: Design and management of exposure risks to human health

Aspect of Operation	Nature of Risk	Potential Exposure Pathway	Proposed Safeguards
Construction			
General Construction Works	Exposure to dust	Inhalation	▪ Works managed to ensure dust generation is minimised, including wetting of materials excavated and, if necessary, cessation of works during high wind.
	Minor Injury	Vehicle accidents, slips, trips or falls	▪ Works managed to ensure safe working environment. ▪ Site to be kept clean and tidy at all times. ▪ Staff to be trained using inductions, etc to ensure they understand requirements working around plant and machinery and potential trip hazards.
Operation			
Waste collection and transport to and from site	Traffic hazards and exposure to wastes	Traffic accidents, inhalation and physical contact with wastes	▪ Wastes transported in enclosed or covered trucks. ▪ Compliance with EPA waste tracking system as required. ▪ Training in appropriate procedures provided to operators and truck drivers, including emergency and spill response. ▪ Training and communication with waste clients to ensure appropriate waste disposal at source.
Unloading, handling and storage on site	Exposure to waste-related pathogens and attraction of insects and vermin	Inhalation and physical contact with wastes. Secondary impacts through pathogen-spreading vectors such as insects and	▪ Products contained or enclosed at all times. ▪ Putrescible waste products transferred as soon as possible (generally 12 hour turn over max 24 hour residence time). ▪ Loading bays and storage areas designed to be well ventilated, contained

Aspect of Operation	Nature of Risk	Potential Exposure Pathway	Proposed Safeguards
	Accident or injury to retail customers	vermin Traffic accidents	within bunds in accordance with EPA and WorkCover requirements, and secure from vermin and insect pests. ▪ Separated tipping area for retail customers. Retail customers are to be directed through the use of site signage and dedicated personnel. ▪ Areas maintained with best practice housekeeping standards. ▪ Training of operators in waste handling and emergency and spill response procedures. ▪ Putrescible and mixed waste to be kept separate from other waste types.
Wastewater management	Exposure to waterborne pathogens	Physical contact	▪ All wastewater to be captured and treated prior to reuse at the concrete batching plant on Bowen Place.
Stormwater management	Contamination	Physical contact	▪ Prevention of stormwater entering process and handling areas through use of roofs and bunds.
General traffic and road safety	Traffic hazards and exposure to wastes	Traffic accidents and physical contact with waste	▪ Training in appropriate procedures provided to operators and truck drivers, including emergency and spill response. ▪ Transport by enclosed, suitable trucks. ▪ Clear signage around site to define what traffic is permitted in what areas on site.
Control of vermin and insect pests	Exposure to vector-related pathogens	Physical contact	▪ Vector control program to be designed ▪ Use of rodent traps at appropriate locations in storage areas. ▪ Design would incorporate proper site drainage to prevent stagnant wet areas that attract mosquitoes and other insect pests.
Security	Public access to site	Accidents and physical contact with wastes	▪ Restricted public access. ▪ Site bounded by appropriate security fences, with security patrols and 24hr camera. ▪ Warning signs displayed at appropriate locations around site.

6.13.4 Conclusion

The results of this assessment indicate that public and occupational health and safety risks associated with the proposed changes would be negligible if the safeguards outlined above are implemented. As well as complying with stringent OHS guidelines, SUEZ would also implement an Occupational Health and Safety Management System, which is certified to AS 4801 (and an Environmental Management System in accordance with ISO-14001). SUEZ's Environment, Quality and Safety Department are responsible for the maintenance and auditing of these systems with the facility operation and maintenance teams.

It is also the policy of SUEZ to ensure that all company operations are conducted in a manner that protects the health and safety of the company's employees, customers, contractors, suppliers and the general public.

6.14 CUMULATIVE IMPACTS

The main potential cumulative impacts would be associated with combined traffic generated as a result of the various developments in the areas, noise impacts resulting from increased traffic and site operations, water quality impacts resulting from stormwater runoff from the developments in the area and air quality impacts.

Impacts to traffic have been assessed and it is considered that an increase in vehicles would be minor. With the implementation of the mitigation measures impacts are anticipated to be minor.

Water quality changes are considered negligible as any water discharged from the site is required to comply with the water quality parameters outlined within the EPL issued for the site and will be treated and provided to the concrete batching plant on Bowen Place for reuse in the concrete batching process.

The Air Quality Impact Assessment also concludes that, with the proposed mitigation measures set out in this EIS, there would be negligible odour impacts on neighbouring land uses.

The Noise Impact Assessment also concludes that, with the proposed mitigation measures set out in this EIS, there would be negligible noise impacts on neighbouring land uses.

It is therefore concluded that cumulative impacts would be negligible.

7 ENVIRONMENTAL AND OPERATIONAL MANAGEMENT SYSTEMS AND PLANS

7.1 MANAGEMENT SYSTEMS

SUEZ's environmental and occupational health and safety management systems keep abreast of legislative changes, governmental regulations and the rules of the SUEZ group. Risk prevention remains a priority, with an internal audit system used to check the reliability of the facilities (Suez, 2002).

SUEZ's environmental management system is in accordance with ISO-14001 and AS-9801 Series requirements. SUEZ also has AS-4801 accreditation for their occupational health and safety system.

This section describes the environmental and operational management systems and plans for the SUEZ resource recovery and waste transfer facility, including outline the environmental management plan (EMP) operation of the proposed development; training, monitoring, auditing and reporting requirements; outline plans for incident management; and a summary of mitigation measures during all phases of the proposed development.

7.2 ENVIRONMENTAL MANAGEMENT PLANS

7.2.1 Construction environmental management plan

The environmental management measures recommended in this EIS would be implemented to ensure that the environment is adequately protected and that any adverse impacts are avoided or otherwise substantially ameliorated. The existing Environmental Management Plan would be amended for the proposed changes which covers both the construction and operational stages of the proposal.

7.2.2 Operational environmental management

SUEZ would operate the proposed changes within the existing EMS, which includes operational safeguards for the resource recovery facility. In particular the operational management would be amended to address health, safety and environmental issues associated with acceptance of general solid waste (putrescibles and non-putrescible), construction and demolition waste, recyclables and other wastes which may be mixed with recyclable waste including oil, batteries and chemicals. All environmental management operational procedures would be in accordance with ISO-14001 and AS4801.

Operational management would outline safety training requirements for employees and detail precautionary measures to be undertaken when working in hazardous conditions.

The EMS would be reviewed annually and would incorporate the result of any monitoring undertaken in the previous year.

7.3 MONITORING AND AUDITING PROGRAM

Due to the minor nature of construction works required no additional environmental monitoring would be required at this stage of the work. Ongoing monitoring would be carried out as required under the EPA licence conditions to be received for the facility. SUEZ would provide operation manuals as appropriate to outline the processes for the acceptance, handling and transfer of the targeted wastes.

7.4 INCIDENT MANAGEMENT PLAN

The facility's existing incident management plan would be amended to outline actions to be taken in the event of an environmental incident that causes, or has the potential to cause environmental harm due to the proposed changes.

Incidents that are addressed in the incident management plan include power shortages and/or failure of equipment, flooring and fires.

The procedures contained within the plan ensure minimal effects in the event of a failure and include, but limited to the following:

- Regular plant checks to ensure ongoing effective operation of plant;
- Identification of responsible staff to be advised immediately upon failure of equipment;
- Location of emergency equipment and procedure to follow to ensure maintenance staff are on site rapidly after a failure has occurred, to carry out repairs or provide portable back-up generators as deemed necessary; and
- Identification of authorities (e.g. OEH, DoP, Council), to be advised immediately after a failure.

The plan also includes procedures for causal analysis following an environmental incident. This would ensure that each incident is analysed and any changes to existing standard operating procedures are amended as relevant to prevent a recurrence.

SUEZ manage all incidents, corrective actions and investigations through their internal on-line Integrum system. Integrum would be established at the facility as the primary management system. All systems would be in accordance with AS 4801 for occupational health and safety.

7.5 SUMMARY OF MITIGATION MEASURES

The proposed mitigation measures outlined below would be incorporated into Environmental Management Plans, which would be implemented in SUEZ's Environmental Management System, in accordance with ISO-14001.

Table 24: Summary of Mitigation Measures

Aspect	Timing	Mitigation Measures
Air Quality	Operational	▪ Activities to be assessed during adverse weather conditions and modified as required (e.g. cease activity where reasonable levels of dust cannot be maintained). ▪ Engines to be switched off when not in use for any prolonged period. ▪ Vehicles and plant will be fitted with pollution reduction devices where possible. ▪ Maintain and service vehicles according to manufacturer's specifications. ▪ Haul roads/transport routes to be sited away from sensitive receivers where possible. ▪ Minimise area of exposed surfaces. ▪ Water suppression on exposed areas and stockpiles. ▪ Minimise the amount of stockpiled material. ▪ Locate stockpiles away from sensitive receivers. ▪ Apply barriers, covering or temporary rehabilitation, where

Aspect	Timing	Mitigation Measures
		possible. ▪ Progressive staging of construction activities. ▪ Keep ancillary vehicles off exposed areas. ▪ Reduce drop heights from loading and handling equipment. ▪ Watering of haul roads (fixed or mobile) when required. ▪ Sealed haul roads to be cleaned regularly. ▪ Restrict vehicle traffic to designated routes that can be managed by regular watering. ▪ Impose speed limits. ▪ Wheel wash, grids or coarse aggregate near exit points to minimise dirt track out. ▪ Street cleaning to remove dirt tracked onto sealed roads. ▪ Covering vehicle loads when transporting material off site.
	Operation	▪ Sorting and processing of wastes within an enclosed building. ▪ Closing doors immediately after a truck or car has entered/exited to maintain building enclosure. ▪ Use of automated dust and odour sprays. ▪ Storing a maximum of 100 tonnes of putrescible waste for a period no longer than 24 hours. ▪ The floor of the waste recovery hall would be cleaned daily. ▪ Trafficked areas on-site will be paved and cleaned regularly. ▪ Stored vehicles and bins will be cleaned and maintained regularly.
Water Quality, Drainage and Soils	Construction	▪ Sediment and erosion measures to be installed prior to any construction activities and maintained in an effective condition until earthworks have been completed and the site rehabilitated. ▪ The areas of soil exposure would be minimised as much as possible. ▪ Excavation would be minimised wherever possible.
	Operational	▪ All operational areas to be bunded to contain any spills. ▪ Leakage from the waste, and any water that comes in contact with the waste, to remain separated from stormwater and to be treated prior to discharge.
Waste, Energy and Resources	Operational	▪ Waste spoil that cannot be reused on site would be tested and classified prior to being sent for beneficial reuse or disposed of at an appropriately licensed facility. ▪ The quality of incoming wastes would be controlled by monitoring every load to ensure that no hazardous loads are disposed. Delivery drivers would be trained in addition to visual checking on the tipping floor ▪ Records shall be maintained of each load of waste entering the premises, including the identification of the vehicle, weight, nature and origin of waste received, and how it was contained. ▪ Waste transporters would continue to undergo an induction process and attend continuing information courses on waste types permitted to be received. ▪ Any wastes generated on the site shall be recycled wherever possible ▪ Wastewater generated on site shall be treated and stored in underground storage tanks prior to being sent to the concrete batching plant on Bowen Place for reuse during the concrete batching process.
Hazards and	Operational	▪ Flammable and combustible liquids must be stored away from

Aspect	Timing	Mitigation Measures
Risks		ignition sources (e.g. flames, electrical equipment, grinding and cutting operations) and excessively hot locations; ▪ All containers must be kept closed when not in use (including containers for waste liquids); ▪ Any action to open or decant from a container of flammable liquid must be carried out in a well ventilated area and sufficiently distant from any potential ignition sources so as to ensure safety having due regard to the quantity being handled; ▪ Combustible wastes or residues must not be kept or left in areas where flammable or combustible liquids are stored or decanted; ▪ Materials that might interact dangerously with flammable and combustible liquids must be stored separately from them. In particular oxidising agents must be stored separately; ▪ All people handling flammable and combustible liquids must be familiar with their hazardous properties and the necessary safety procedures for handling them; ▪ Any spillage must be cleaned up immediately; ▪ Flammable and combustible liquids must not be stored or used where they may jeopardise escape from a room or building in the event of a fire; ▪ Where the quantities of flammable liquids stored is greater than minor quantities, a warning sign must be displayed; ▪ Dangerous good storage areas are to comply with the following Standards: o AS3780-2008 The Storage and Handling of Corrosive Substances; and o AS1940-20004 The Storage and Handling of Flammable and Combustible Liquids; ▪ Specific on site personnel are to be trained in specific site procedures, emergency and first aid procedures and the use of fire extinguishers and hose reels; ▪ Fire extinguishers and spill control kits are to be provided near high risk areas such as near the waste water treatment plant and the self-bunded diesel tank, ▪ Site management are to prepare and maintain operational procedures to minimise the number of hazardous incidents and accidents on site and to mitigate the consequences of incidents regarding the handling of dangerous goods and chemicals; ▪ A site Emergency Management Plan is to be prepared and would include measures to advise neighbouring premises in the event of an emergency with potential offsite impacts; ▪ Natural ventilation would be provided on the north wall in accordance with AS1940-2004. Roof ventilation would be provided in accordance with the Building Code of Australia (BCA); ▪ Smoking would not be permitted on the site; ▪ The site would be locked and secure to prevent unauthorised access to the site outside normal operating hour; ▪ Site operators would be trained and would practice simulations of emergency evacuation procedures; and ▪ Fire protection equipment would be installed at the site as per the requirements of the BCA.
Traffic,	Construction	▪ During construction, safety measures, such as traffic warning signs and speed limits should be adopted

Aspect	Timing	Mitigation Measures
Access and Parking	Operation	▪ Where possible, site operations to avoid vehicle movements occurring during commuter peak periods (e.g. 3pm to 5pm in the afternoon)
Biodiversity	Construction	▪ Environmental management measures would be put in place during construction to minimise soil erosion and prevent contaminated runoff; and ▪ Appropriate landscaping would be provided on site, which includes native species.
Greenhouse Gas Emissions	Construction / Operation	▪ Monitor the consumption of fuel and regularly maintain diesel powered equipment to ensure operational efficiency; ▪ Turning diesel equipment off when not in use for extended periods; ▪ Minimise double handling of material and use efficient transport routes; ▪ Monitor the total site electricity consumption and investigate avenues to minimise the requirement; ▪ Conduct a review of alternative renewable energy sources; ▪ Provide energy awareness programs for staff and contractors; and ▪ Minimise the production of waste generated on site.
Public Health and Safety	Operation	▪ Additional worker training in appropriate procedures for safe handling of waste; ▪ Products contained or enclosed where practicable; ▪ Loading bays, storage and process areas designed to be well ventilated, contained with bunds and secure from vermin and insect pests; ▪ Areas maintained with best practice housekeeping standards; ▪ Training of operators in waste handling and emergency spill response procedures; ▪ Training in appropriate procedures provided to operators and truck drivers, including emergency and spill response; ▪ Clear signage around site to define what traffic is permitted in what areas on site; ▪ Use of rodent traps and baits at appropriate locations in storage areas; and ▪ Separated tipping area to be in place for retail customers. Retail customers are to be directed through the use of site signage and dedicated personnel.

8 JUSTIFICATION AND CONCLUSION

8.1 JUSTIFICATION OF THE PROPOSAL

The proposed changes are aligned with the relevant planning legislation outlined in **Section 2** as well as SUEZ's environmental objectives. SUEZ operates according to SUEZ's group-wide sustainable development management policy, founded on five guiding principles: accountability, prevention, precaution, participation and eco-efficiency (Suez 2002). These principles are addressed in **Table 25**.

Table 25: Sustainable Development Management Policy

Policy Principles	Targets	SUEZ's Action Plan
Responsibility	▪ Ensure environmental compliance with local legislation and with the Group's standards ▪ Protect people, property and the local environment ▪ Reduce the ecological impact of the services provided ▪ Increase customer satisfaction	▪ Audit regularly SUEZ's waste processing plants ▪ Implement remedial plans for any non-compliant aspects ▪ Make financial provisions for the long-term monitoring of landfill sites ▪ A dedicated EQ&S department ensures compliance with local legislation and group standards ▪ Step up on-going safety training given to employees ▪ Promote the certification of sites and main activities ▪ Ensure the traceability of waste and water treatment sludge
Prevention	▪ Help our customers to reduce the amounts of waste they generate at source ▪ Increase our waste recycling capability ▪ Increase the amount of sludge recycled	▪ Orientate research and innovation programs towards the prevention of environmental risks ▪ Enhance the training of employees in environmentally-friendly techniques ▪ Invest in waste recycling facilities (sorting, composting, energy generation and water extraction) ▪ Promote the conservation of natural resources
Precaution	▪ Improve knowledge about waste ▪ Reduce greenhouse gas emissions ▪ Anticipate health risks	▪ Carry out studies into the impact of waste on public health ▪ Reduce water and energy consumption ▪ Promote the best available techniques for effluent processing
Participation	▪ Publish information about our safety and environmental measures and performance ▪ Promote and develop consultation	▪ Publication of an annual environmental report ▪ Implement information committees in conjunction with the people living near facility ▪ Join forces with the authorities and other bodies in order to define standards and share know-how
Eco-Efficiency	▪ Increase the profitability of our services ▪ Reduce the amount of energy consumed by our activities ▪ Foster the use of renewable resources	▪ Reduce the amount of energy used for an equivalent level of waste collection / processing services ▪ Invest in the production of renewable energy ▪ Harness and maximize the energy derived from waste ▪ Collect and recycle new types of waste

Source: Suez (2002)

8.2 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The existing facility has been designed to be consistent with the four principles of Ecologically Sustainable Development (ESD), whilst fulfilling the commitment expressed firmly in SUEZ's Environmental Charter. It complies with *the EP&A Regulation, 2000* and the guidelines and standards of the Queanbeyan City Council.

The four ESD principles (as defined in Part 3, Section 6(2) of the *Protection of the Environment Administration Act, 1991*) are discussed below:

Conservation of biological diversity and ecological integrity

The terrestrial habitat has been heavily modified in the past, with little flora or fauna occurring on the site. Potential water and air emissions from the facility and the proposed changes would comply with OEH requirements, and would not result in adverse impacts on the environment.

Inter-generational equity

The environmental value of the heavy industrial area is low. The health, diversity and productivity of the local environment would not be impacted as a result of the changes, and so would not compromise the amenity of future generations.

By diverting by-products from commercial and industrial sectors from landfill for beneficial re-use and if required safe disposal, the proposed changes are responding to the imperative that future generations should not suffer adversely because of inadequate environmental management by present generations.

Precautionary principle

The implementation of the proposed changes would reduce the quantity of materials disposed to landfill and so reduce the potential for environmental degradation associated with leachate contamination and gas emissions from landfill sites.

The precautionary principle was also applied in the environmental assessment process documented in this EIS.

Valuation and pricing of environmental resources

Operation of the facility is expected to result in increased benefits to the local economy, including flow on to service sectors, and the increased competitiveness of SUEZ's operations, as detailed in **Section 4.** The proposal would result in increased net economic benefits when the qualitative valuation of environmental improvements of diverting materials from landfill is taken into account.

8.3 CONCLUSION

The proposed changes have been assessed as being consistent with the relevant Local and State government planning policies and SUEZ's corporate objectives regarding sustainability. The proposal complies with the requirements of the DoPI, OEH and EPA. The overall benefits of the project are concluded to be positive.

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Abbreviations

a	annum
AADT	average annual daily traffic
ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AHD	Australian height datum
ANZECC	Australian and New Zealand Environment and Conservation Council
AS	Australian Standard
BCA	Building Code of Australia
CBD	Central Business District
d	day
dB(A)	decibels (measured in the A scale)
DoPI	Department of Planning and Infrastructure
EIS	Environmental Impact Statement
EMP	environmental management plan
EMS	environmental management system
EP&A Act	Environmental Planning and Assessment Act (1979)
EP&A Regulation	Environmental Planning and Assessment Regulation (2000)
EPBC Act	Environment Protection and Biodiversity Conservation Act (1999)
EPL	Environmental Protection Licence
ESD	ecologically sustainable development
g	gram
ha	hectare
HIL	Health Investigation Level
hr	hours
INP	Industrial Noise Policy
ISO	International Standard Organisation
kg	kilogram
km	kilometre
L	litre
LEP	local environmental plan
m	metre
ML	megalitre (1,000,000 litres)
mm	millimetre
No.	number
NSW	New South Wales
C°	degrees celcius
OEH	Office of Environment and Heritage
ou	odour units
PAHs	Polyaromatic Hydrocarbons
PFD	process flow diagram
PHA	preliminary hazard analysis
POEO Act	Protection of the Environment Operations Act (1997)
ppm	concentration expressed in parts per million
RMS	Roads and Maritime Services
s	second
SEPP	state environmental planning policy
SMP	Site Management Plan
T	tonne
TMP	traffic management plan

Glossary

Commercial and industrial waste: Inert, solid, industrial or hazardous wastes generated by businesses and industries (including shopping centres, restaurants and offices) and institutions (such as schools, hospitals and government offices), excluding building and demolition waste and municipal waste.

Contamination – Concentration of substances above that naturally present that poses, or is likely to pose, an immediate or long-term risk to human health or the environment.

Cumulative impacts – Impacts which are brought about, or increased in strength, by successive additions at different times and in different ways.

Dispersion Modelling – A widely accepted planning tool for determining the air quality impacts of existing and proposed developments.

Economic Evaluation – An analysis of the economic costs and benefits of a proposed activity from the perspective of society.

Ecosystem – A community of living organisms interacting with one another and with their physical environment, such as a rainforest, pond or estuary. An ecosystem can also be thought of as the sum of many interconnected systems such as the rivers, wetlands and bays.

Effluent – The liquid produce of sewage treatment that is discharged into the environment. The quality of effluent provided by the treatment plant would depend on the treatment processes used.

Environmental Impact Statement (EIS) – A formal description of a project and an assessment of its likely impact on the physical, social and economic environment. It included an evaluation of the alternatives and an economic justification of the project. The EIS is used as a vehicle to facilitate public comment and as the basis for analysing the project with respect to granting approval under relevant legislation.

Environmental Management Plan (EMP) – Plan prepared prior to commencement of work detailing approvals, specific environmental safeguards, responsibility for implementation and the overall management of environmental issues in relation to the project.

Food waste – Waste generated by any one or more of the following activities:
(a) the preparation or manufacturing of food (including beverages),
(b) the processing of meat, poultry or fish,
(c) the manufacturing of edible grocery products,
but does not include grease trap waste.

Hazard – A possible source of danger or risk.

Hydrology – Study of the properties of the earth's water, especially of its movement in relation to land.

Landfill site – A waste facility used for the purpose of disposing of waste to land.

Leachate – Liquid released by, or water that has percolated through, waste, and that contains dissolved and/or suspended liquids and/or solids and/or gases.

Liquid – Any substance that does not meet all of the criteria of *non-liquid*, and that is not a gas.

Mitigation – to become milder, less intense or less severe.

Organic waste – Includes wood, garden, food, animal, vegetative and natural fibrous material wastes and biosolids.

Processing – Subjecting a substance to a physical, chemical or biological treatment or a combination of treatments.

Proponent – The person or body proposing to carry out a development or activity.

Putrescible waste means:
(a) food waste, or
(b) waste consisting of animal matter (including dead animals or animal parts), or
(c) biosolids categorised as Stabilisation Grade C in accordance with the criteria set out in the Biosolids Guidelines.

Recycling – The processing of waste into a similar non-waste product.

Reuse – Waste reused with or without cleaning and/or repairing.

Sludge – Materials that have settled to the bottom of a waste treatment device.

Treatment – The processing of waste into a different type of waste.

Waste: As defined in the *Waste Avoidance and Resource Recovery Act 2001* and the *Protection of the Environment Operations Act 1997*: 'waste includes:
(a) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or
(b) any discarded, rejected, unwanted, surplus or abandoned substance, or
(c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, reprocessing, recovery or purification by a separate operation from that which produced the substance, or
(d) any substance prescribed by the regulations to be waste for the purposes of this Act.
A substance is not precluded from being waste for the purposes of this Act merely because it can be reprocessed, re-used or recycled.'

Waste activity – Defined Schedule 1 of the *Protection of the Environment Operations Act 1997*.

Wastewater – Water that contains waste products, such as sewage, industrial runoff and process water.

Wetland – Habitats where the influence of surface or groundwater has resulted in development of plant or animal communities adapted to aquatic or intermittently wet conditions.