

Environmental Impact Assessment

Proposed Increased Throughput at Existing Resource Recovery Facility- Wood/Plasterboard Recycling

25 Dunheved Circuit, St Marys
SSD 10474

February 25

reDirect Recycling
Authored by: Sam Coles



We declare that:

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

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

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Report Version	Authors	Date	Approved
V1.0	Sam Coles	14/12/2020	M. Daniels
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Executive Summary

General Overview of the Proposed Development

The proposed site is identified as being 25 Dunheved Circuit, St Marys, Lot 143 in DP 1013185. An existing approved Resource Recovery Facility is currently located on site. The subject site is situated 45 kilometres (km) west of the Sydney central business district (CBD). The site is located within the City of Penrith Local Government Area (LGA), within the electoral district of Londonderry and the federal Division of Lindsay. The proposed site is located approximately 6.5 km from Penrith CBD.

The subject site is located within an established industrial precinct that covers an area of approximately 1,000 hectares (ha) and comprises a mix of general, light and storage based industries; including steel and sheet metal fabrication workshops, oil and lubricant storage facilities, transport depots, plant and equipment hire facilities and mechanical repair workshops. The industrial precinct also has several existing waste management and resource recovery facilities and other similar activities licensed under the *Protection of the Environment Operations Act 1997* (POEO Act).

25 Dunheved Circuit was included in a previous SSD application (SSD-8200), along with the adjoining property at 21 Dunheved Circuit, that was approved by Department of Planning, Industry and Environment (DPIE) on 6/11/2018. The approval allowed the site to be used a resource recovery facility with a throughput of 350,000 tonnes per annum of non-putrescible waste. This approval has recently been surrendered.

The proposal is for the increase of throughput/volume of waste to the existing Resource Recovery Facility at 25 Dunheved Circuit. The site currently has approval for the sorting and processing of 18,000 tonnes of waste per annum (DA01/1034 Penrith Council). It is proposed to increase this throughput to 150,000 tonnes per annum, consisting of 110,000 tonnes wood/timber waste and 30,000 tonnes of plasterboard. As a result of processing the timber materials, a minor amount of waste metals (10,000 tonnes) will be collected on site and transferred elsewhere for recycling. Importantly, please note that no works are proposed to the existing site or buildings on the site. The only works proposed are the installation of additional plant and equipment in the existing building. An easement for access and services is proposed to cover the existing OSD tanks on the adjoining lots, and to cover any vehicles using the adjoining driveway at 21 Dunheved Circuit, both sites are in the same ownership.

Processing of timber and wood waste and plasterboard will be conducted in the existing building by way of compaction and shredding/grinding. The majority of the processed wood waste will be transferred to the Borg Manufacturing site in Oberon, NSW to be used in the manufacture of particle board and MDF products or will be used in the production of animal bedding or mulch. The typical types of wood waste include clean pallets, particle board & MDF, LOSP & T2 pine and laminated MDF with coatings, along with other urban and raw wood materials. These waste materials will come from a number of sources including Borg Panels customers, framing and truss builders, freight companies, other resource recovery facilities and other timber companies.

Plasterboard will be minimised and ground, with paper removed during the grinding process. The gypsum generated by processing will be supplied to others for likely use in agricultural soil conditioning or re-used in plasterboard production.

Waste metals recovered during the timber processing will be manually sorted and separated, and then taken off-site to other waste facilities to be processed or disposed of.

The proposed development will provide a broader range of recycling options and make progress towards the NSW Government's recycling targets. It will also deliver on key priorities of the NSW Government to develop new recycling infrastructure to boost the recovery of commercial / industrial and construction waste in Western Sydney. The project will also provide 10 full time jobs and involve an investment of \$2,820,120.00 in site upgrades alone.

Planning Approval Pathway

The Proposal would be considered an SSD under Clause 23 (waste and resource management facilities) of Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011*, which refers to:

(3) Development for the purpose of resource recovery or recycling activities that handle more than 100,000 tonnes per year of waste

The relevant local planning instrument is the *Penrith Local Environmental Plan 2010*. The Proposal site is zoned IN1 General Industrial under *Penrith Local Environment Plan (LEP) 2010*. A “resource recovery facility” is prohibited under the Penrith LEP 2010. However, Clause 121(1) of *State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)* permits the development of a resource recovery facility on land in a prescribed zone with development consent. Zone IN1 General Industrial is identified as a prescribed zone and consequently the proposed development would be permissible with development consent under the provisions of the ISEPP. The provisions of the ISEPP prevail over the Penrith LEP 2010 in this regard. As such, the proposed development is permissible with development consent.

Purpose of the environmental impact statement

The EIS study evaluates the social, environmental, and economic impacts and benefits of the project. The EIS defines the context of the proposed development, and examines those issues considered to be relevant. This EIS considers the potential environmental effects of the proposal during construction and operation, and proposes mitigation measures to prevent, reduce or offset significant adverse impacts on the environment. The aims of this EIS are to:

- Identify all constraints affecting future development on the subject site;
- Consider the economic, social and environmental impacts of the proposed development; and
- Assess the capability of the subject site to support the proposed development.

A range of consultants have been commissioned to undertake the specialist studies required to address the regulatory agency requirement and to develop this EIS.

The EIS has considered a range of social, environment and economic factors of the project, with a focus on Ecologically Sustainable Development principles. The study found that there were no significant environmental impacts that could not be mitigated by appropriate mitigation measures and management strategies.

The environmental assessment process has been used to inform the design of the site and ensure operations will be sustainable and create minimal disruption to neighbours and the local community. Waste receipt, processing and recycling operations have been designed to minimise traffic impact on local roads, effective management of wastes, protection of soils, protection of surface and ground water quality, and minimise noise and dust emissions.

The EIS addresses all requirements as outlined in DPIE’s SEARs requirements issued on 16th July 2020 (SSD 10474).

Consultation

reDirect Recycling has engaged with a range of stakeholders regarding the proposed Resource Recovery and Recycling Facility. The purpose of the engagement was to provide information on the proposal as early as possible in the planning process to allow for the up-front identification, and where possible, resolution, of relevant issues or concerns. Consultation has been undertaken with relevant Government agencies, Council, local businesses through distribution of project information.

Issues raised during the consultation process have been considered in the design of the proposed facility and addressed within the EIS.

Hazard and Risk

A Preliminary Hazard Analysis and Environmental Risk Assessment has been performed to identify key potential impacts of the development, as well as potentially offensive or hazardous issues that need to be considered as part of the EIS process.

The assessment has been performed according to *AS/NZS ISO 31000: 2009 Risk Management - Principles and Guidelines* and the *Preliminary Hazardous Analysis* has been informed by the *Hazardous and Offensive Development Application Guidelines - Applying SEPP 33* (NSW Department of Planning, 2011).

As a result of this analysis, it is suggested that the worst-case scenarios modelled with risk prevention, treatment and detection measures are all moderate or low risks. All risks are low except those that involve fire caused by vehicle collisions, excess dust and some other form of ignition. While there are no dangerous goods stored on site, there will be stockpiles of combustible material.

The proposed development is not considered a potentially hazardous development as per the SEPP 33 Guidelines, therefore, no further Preliminary Hazard Analysis or Multi-Level Risk Assessment has been performed.

Fire Safety

The current reDirect Recycling proposal does not propose any changes to the building, and seeks to continue the use as a resource recovery facility, with throughput increased to 150,000 tonnes per annum, with a mix of materials including wood and timber, plasterboard and metals. As per the previous approvals and certificates issued for the building and the use, the building suitable for the proposed increase in throughput.

The existing building has appropriate fire services to be able to deal with a fire event at the facility, and the proposed increase in throughput is consistent with the guidelines published by NSW Fire and Rescue (2020) '*Fire Safety in Waste Facilities Guidelines*'.

Air Quality

Wilkinson Murray prepared an Air Quality Assessment for the proposal. The assessment also included air quality modelling.

The land use immediately surrounding the site is industrial. The nearest sensitive receptors are residents located in the nearby suburbs of Werrington County, North St Marys, Ropes Crossing and Central Precinct and the Dunheved Golf Course.

Dust emissions during operation of the Proposal have been estimated based on information provided by the client, using emission factors sourced from both locally developed and US EPA developed documentation.

The significant sources of dust/particulate emissions associated with the operation of the Proposal are identified as follows:

- Loading/unloading of material;
- Processing (grinding/crushing and screening) material;
- Truck movements on paved roads; and,
- Diesel exhaust from mobile plant.

No material handling, processing or stockpiling would occur outside the building. Therefore, wind-blown dust emissions would be negligible. A control factor of 70% has been applied to all sources located inside the building.

Air quality impacts associated with the operation of the Proposal are predicted to comply with relevant impact assessment criteria. Notwithstanding, an effort to minimise air quality impacts associated with the

Proposal, the following mitigation measures are proposed should be implemented where reasonable and feasible:

- Engines of vehicles and plant to be switched off when not in use;
- Vehicles and plant to be fitted with pollution reduction devices where practicable;
- Vehicles and plant to be maintained in accordance with manufacturer's specifications;
- Reduce drop heights when handling dusty material;
- Dampen excessively dusty material during handling;
- Trafficable areas to be swept/cleaned regularly;
- Vehicles restricted to designated routes;
- On-site speed limits enforced; and
- Vehicle loads to be covered when travelling off-site.

Noise and Vibration

Wilkinson Murray prepared a Noise and Vibration Impact Assessment for the proposal. The objective of the assessment was to assess potential noise and vibration impacts associated with the operation and transport impacts of the facility.

Noise criteria were established in accordance with procedures in the "Noise Policy for Industry", "Road Noise Policy" and "Assessing Vibration: a technical guideline".

The dominant noise would be generated internally within the processing shed by the processing line as well as mobile plant including operations of frontend loaders, telehandler and tipping operations from trucks. External noise will be dominated by trucks entering and leaving the site.

The operational scenario considered all equipment to be simultaneously and continuously operating throughout the 15-minute assessment period. A review of results indicates compliance for 24-hour operations will be easily achieved and that no mitigation measures are warranted.

Road traffic noise impacts on Forrester Road during daytime is considered negligible due to the existing high traffic volume. The main impact would occur during night-time on residential receivers located along Forrester Road.

The noise impact associated with operational activities is predicted to comply with the noise criteria at all considered residential receivers.

Potential noise impacts from traffic on the surrounding road network, arising from additional truck movements associated with the operation of the recycling facility are predicted to be negligible.

Cultural Heritage

An Aboriginal and Historic Heritage Desktop Due Diligence Assessment was conducted by Archaeological Risk Assessment Services.

The due diligence desktop assessment, based on the existing and proposed legal requirements of the NSW *National Parks and Wildlife Act (1974)*, *NSW Heritage Act 1977* and the type of archaeological evidence found on: LOT 143 DP 1013185, 25 Dunheved Circuit St Marys, found that:

- The assessment area is located within the City of Penrith Council's IN1 General Industrial land;
- The proposed SSD modification activities **will not** cause any sub surface ground disturbance impacts or visual amenity impacts;
- The assessment area is considered to have **no** Aboriginal heritage value potential;
- The assessment area is considered to have **no** Historic heritage value potential; and

- The above conclusion is reached based on background archaeological/historical research, and land-use history.

Waste Management

A Waste Management Plan was prepared by Jackson Environment and Planning Pty Ltd. The major changes to the site operations as a result of the development will be an increase in waste accepted at the site to 150,000tpa and the installation of processing equipment.

The updated facility will accept mainly wood waste ($\approx 110,000$ tpa), with plasterboard ($\approx 30,000$ tpa). The wood waste will be sorted and shredded. The plasterboard will be processed in a turbo-separator, which will separate the paper from gypsum, and pulverise the gypsum.

Some metal will be received at the site ($\approx 10,000$ tpa), either as scrap metal or embedded in the wood. Metal will be separated and sent for recycling.

Small quantities of non-recyclable waste may be received at the site as contamination in loads. The contaminants will be stored in a skip bin and removed periodically for disposal to landfill. It is estimated that contaminants will comprise 2-3 wt% of incoming waste.

Overall, the recovery rate for the facility is expected to be 97-98 wt%.

All waste materials and processed products will be stored in separate concrete bays with three sides or in dedicated hook lift bins. Storage of incoming waste in dedicated areas and sorted materials and products in dedicated bays helps in inventory control, good housekeeping, reduces potential for cross contamination and is critical for quality control.

By accepting and processing the waste, the facility will contribute towards the recycling targets as set out in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*.

Traffic

A Traffic Impact Assessment (TIA) was prepared by The Transport Planning Partnership (TTPP). Due to the irregular traffic climate caused by the COVID-19 pandemic at the time of this assessment, traffic surveys undertaken in 2020 would not be reflective of typical traffic conditions. As such, historic traffic survey data has been utilised from the Traffic Impact Assessment which was prepared as part of the application for SSD-8200 (submitted by Bingo Industries, former owners of the site).

Deliveries to the site are proposed across a 24-hours/ 7-day period. The majority of small to medium deliveries (around 95%) will be undertaken by rigid trucks during the day between 7am-4pm while most larger deliveries (around 80%) will occur at night between 6pm-3am. Most of the processed material (around 80%) will be dispatched from the site after 6pm.

Delivery and collection vehicles will range in size from a 12.5 m heavy rigid vehicle (front lift truck/ hook-lift truck/ skip bin truck) to a 19 m semi-trailer (walking floor trailer).

Using the tonnage data for the facility, a total of 126 daily vehicle trips are anticipated to be generated by the future RRF on a typical day.

In the context of the wider road network, heavy vehicles will use Great Western Highway, M4 Western Motorway and M7 Westlink Motorway when travelling to/from the site. Within the vicinity of the site, heavy vehicles would travel to/from the site via Forrester Road, Links Road and Dunheved Circuit.

The results of the intersection modelling analysis indicate that the intersection would continue to operate at a LoS A in the AM peak period and LoS B in the PM peak period, with no increase in average delay in the opening year of the proposed development. The worst performing movement remains as the right turn movement from Links Road (western approach) to Forrester Road (southern approach), experiencing the same average delay as under the existing conditions.

Modelling results for the future 2030 scenario indicates that background traffic growth which is unrelated to the proposed development would cause the intersection to operate poorly (LoS F) in the AM and PM peak periods. Inclusion of the development generated traffic results in a marginal increase in average delay; that is, plus 2 seconds in the AM peak hour and plus 4 seconds in the PM peak hour. As such, the impact to the intersection operation caused by the proposed development would be negligible.

The provision for 10 car parking spaces will sufficiently accommodate all staff on-site. The proposed car parking layout is satisfactory.

Stormwater Management and Water Quality

A Stormwater Management Plan was prepared by Eclipse Consulting Engineers. DRAINS model was used to review the on-site detention system used to control discharge of stormwater from the site. A Horton/ILSAX hydrological model was used to determine the pre-development discharge rates from the site. The MUSIC model was used to assess water quality of stormwater leaving the site.

A flood analysis was conducted by reviewing the site location to flood prone land identified in the report *Updated South Creek Flood Study* prepared by Worley Parsons on behalf of Penrith City Council in 2015.

Stormwater is collected in four (4) 50kL hydraulically connected on-site detention (OSD) tanks. Stormwater from the roof of the main warehouse building and the paved areas around the site is captured in the OSD tanks, via a Ecosol GPT 4200 gross pollutant trap.

To improve the performance of the existing stormwater treatment train, an Ocean Protect Storm Filter will be installed after the Ecosol GPT. According to the MUSIC modelling, the updated system will meet the requirements of Penrith City Council for pollution reduction in stormwater.

According to the DRAINS modelling, the post-development flows have been reduced to match the pre-development flows at a maximum in all rainfall events less frequent than the 0.5EY event.

The site is located outside the mainstream and overland flooding events for the 100-year ARI events. As such, a quantitative flood impact assessment is not required.

Economic and social impacts

The new facility will represent a major piece of infrastructure that will assist in creating jobs within the Western Sydney region. The project will create up to 10 jobs in installation over a 3-month period, and up to 10 full-time jobs during the operational phase.

The capital cost of the development is estimated to be \$2,820,120.

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- I- Greenhouse Gas Assessment prepared by Wilkinson Murray
- J- Cultural Heritage Statement prepared by Archaeological Risk Assessment Services
- K- Stormwater Management Plan and Water Quality Impact Assessment prepared by Eclipse Consulting Engineers



1 Introduction

1.1 Background

This Environmental Impact Statement (EIS) has been prepared by Borg on behalf of reDirect Recycling Pty Ltd (reDirect Recycling) to accompany an application for State Significant Development (SSD 10474) to the NSW Department of Planning, Industry and Environment. The application seeks Development Approval under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the proposed reDirect Recycling Resource Recovery and Recycling Facility, located approximately 45 kilometres north west of the Sydney CBD, New South Wales (NSW), (refer Figure 1).

reDirect Recycling (the Applicant) is proposing to undertake the development and operation of a Resource Recovery and Recycling Facility (the Proposal) on Lot 143 DP1013185, 25 Dunheved Circuit, NSW (the site) (refer Figure 2).

reDirect Recycling is a Borg company and seeks to establish a 150,000 tonnes per annum (tpa) facility at the subject site to complement their existing operations, and also to assist the NSW Government in achieving an increased diversion of waste from landfill through the provision of strategic infrastructure and processing capacity. Borg is invested in moving towards a circular economy; re-using, recovering, and recycling these valuable timber and gypsum materials keeps them in the productive economy for longer. The same applies to the small amounts of metal. This has the dual benefits of lowering demand for new resources and reducing the need to manage waste. Any waste going to landfill is not only a loss of valuable resources, but it also shortens landfill lifespans.

Borg currently has 1000 active customers in NSW alone, with a large percentage of these customers being cabinetmakers, furniture makers, builders and carpenters. These customers produce large amount of reconstituted timber waste through off-cuts. reDirect Recycling will provide these customers with recovery bins to collect this waste and process it at the St Marys site. This waste will be recycled and used in the production of particle board at the Borg Oberon plant.

The proposed facility will further assist the NSW government to achieve its stated goals to increase the diversion of waste from landfill disposal through the development of strategic infrastructure and processing opportunities.

1.2 Proposal

reDirect Recycling is proposing to increase the throughput/volume of the existing resource recovery and recycling facility at 25 Dunheved Circuit, St Marys, Lot 143 in DP 1013185.

The proposal is for the increase of throughput/volume of waste to the existing Resource Recovery Facility at 25 Dunheved Circuit. The site currently has approval for the sorting and processing of 18,000 tonnes of waste per annum (DA01/1034 Penrith Council). It is proposed to increase this throughput to 150,000 tonnes per annum, consisting of 110,000 tonnes wood/timber waste and 30,000 tonnes of plasterboard. As a result of processing the timber materials, a minor amount of waste metals (approx.10,000 tonnes) will also be collected on site and transferred elsewhere for processing. No alterations are proposed to the existing site or buildings, though additional processing plant and equipment will be added within the buildings. The existing site was purpose built for resource recovery. An easement for access and services is proposed to cover the existing OSD tanks on the adjoining lots, and to cover any vehicles using the adjoining driveway at 21 Dunheved Circuit, both sites are in the same ownership.

Processing of timber and wood and plasterboard waste will occur in the existing building by way of compaction and shredding/grinding. The majority of the processed wood waste will be transferred to the Borg Manufacturing site in Oberon NSW, to be used in the manufacture of particle board and MDF products, or to be used as a non-standard fuel in heat plant. The typical types of wood waste include clean pallets, particle board & MDF, LOSP & T2 pine and laminated MDF with coatings, along with other urban and raw wood

materials deemed suitable. These waste materials will come from a number of sources including Borg Panels customers, framing and truss builders, freight companies, waste facilities and other timber companies.

Plasterboard will be minimised and ground in a turbo separator, with paper removed during the separation process. The gypsum generated by processing will be used for agricultural soil conditioning or re-used in plasterboard production.

Waste metals, including those recovered during the timber processing will be manually sorted and separated, and then taken off-site to other waste facilities to be processed or disposed of.

The proposal varies from other resource recovery facilities as both the recovery facility and end user for the bulk of the processed materials are owned by the same company. Borg have discovered innovative solutions through *reDirect Recycling Wood Recycling* to recover maximum value from engineered timber resources and reducing waste after product has reached the market. The energy and resources required to grow new trees are considerably reduced when recycling; *Borg* and *Polytec* through *reDirect Recycling Wood Recycling* are creating an opportunity for higher value recovery, presenting a compelling commercial and industry alternative.

reDirect Recycling Wood Recycling aim to reclaim materials that would otherwise go to landfill, reducing waste after product has reached end of life in the market. One type of such processes is the manufacturing of particleboard utilising clean recycled wood and offcuts into the production of new particleboard.

1.3 Proposal Objectives

The objectives of the Proposal are to:

- Increase the resource recovery capability of the Proposal site to assist in meeting state government resource recovery targets and to provide recycled materials back into the manufacturing sector along with other industries;
- Improve the efficiency and operational capacity of the RRF through the timely and efficient handling, processing and recovery of waste;
- Reduce environmental impacts to the surrounding area by implementing suitable mitigation and best practice operation;
- Establish traffic access and internal flows that are user intuitive, maximise user safety, maximise operational efficiency, and minimise potential traffic and turning movement conflicts;
- Provide necessary waste management infrastructure to meet Sydney's future waste management requirements.

1.4 Purpose of this Report

The purpose of this EIS is to assess, and propose mitigation measures for, the environmental and social implications of proceeding with the development. This EIS has also been prepared to meet the Secretary's Environmental Assessment Requirements (SEARs) for the proposed facility, issued by the DP&E on 16 July 2020 as well as the recommendations of other consulted agencies and relevant stakeholders. The document has been prepared in accordance with the EP&A Act and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

In addition to describing the Project, the EIS presents a comprehensive and focussed assessment of the associated planning and environmental issues to a level of detail commensurate with the scale of the development, the characteristics and previous use of the site, and the legislative framework under which the development is to be assessed and determined. The matters dealt with in the EIS are presented in a manner that clearly addresses the specific requirements of the SEARs, as well as the requirements of other consulted government agencies and stakeholders.

1.5 Approval Pathway

The development assessment and approval system in NSW is set out in Parts 4 and 5 of the EP&A Act. Division 4.1 of Part 4 provides for the assessment and determination of State Significant Development (SSD). Pursuant to Section 4.36 of the EP&A Act, projects are classified as SSD if they are declared to be as such by the *State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)*. Clause 23 of Schedule 1 of the SRD SEPP identifies the following types of developments to be SSD:

(3) Development for the purpose of resource recovery or recycling facilities that handle more than 100,000 tonnes per year of waste.

Based on the intended handling capacity of the Resource Recovery Facility, the development is classified as SSD.

The Minister for Planning (or their delegate) determines development applications for SSD under Part 4 of the EP&A Act. The Minister may delegate the consent authority function to the NSW Planning Assessment Commission (PAC) in certain circumstances where there is objection from local government, or over 25 submissions are received during the EIS exhibition period.

1.6 Structure of this EIS

The structure of the EIS is as follows:

- **Executive Summary** - Provides a brief overview of the Proposal, key environmental assessment results and an outline of the proposed environmental and social mitigation measures
- **Section 1** - Introduction: Provides an introduction to the Proposal and the EIS, including project objectives, site history, and previous approvals
- **Section 2** - Site description and context: Provides a summary of the existing Proposal site, its location in a regional and local context and existing operations of the Proposal site
- **Section 3** - Proposal justification, need and alternatives: Provides a discussion on the need for the Proposal having regard to strategic justification, relevant legislation, plans and policy and also provides alternatives to the design and location of the Proposal
- **Section 4** - Proposal description: Includes a description of the Proposal including built form, construction methodology and operational procedures
- **Section 5** - Waste Stream Analysis: Provides an analysis of the type of waste processed at the facility along with storage capacity and processing capacity.
- **Section 6** - Statutory planning and approvals: Provides a summary and assessment of the Proposal having regard to relevant statutory legislation and plans at a Commonwealth, State and Local Government level
- **Section 7** - Consultation: Provides a summary of the consultation (public, stakeholder and government agencies) which has been undertaken to date for the Proposal
- **Section 8** - Hazard and Risk: Provides an assessment against relevant legislation to determine the overall risk the facility poses.
- **Sections 9 to 17** - Key environmental issues: Provides a discussion on the existing environment conditions and an assessment of the key environmental issues (identified in the SEARs) for the Proposal namely traffic and transport, noise and vibration, water and hydrology, fire safety, air quality, greenhouse gas, cultural heritage
- **Section 18** - Other issues: Provides a discussion of the existing environment conditions and an assessment of the other environmental issues (identified in the SEARs) for the Proposal namely soil and visual impact.
- **Section 19** - Cumulative Impact: Provides an analysis of the likely cumulative impact when the facility is put into the context of other activities within the vicinity of the proposal

- **Section 20** - Summary of mitigation measures: Includes a summary of the mitigation measures identified in Sections 9 to 17 to minimise any adverse impact of the Proposal on the surrounding environment
- **Section 21** - Conclusion: Provides a justification and conclusion of the Proposal.

The following Appendices are included in the EIS:

Appendix	
A	Issued SEARS
B	Proposal Plans prepared by Crossmuller
C	Capital Investment Value
D	Waste Management Plan prepared by Jackson Environmental
E	Traffic Impact Assessment prepared by The Transport Planning Partnership
F	Air Quality Impact Assessment prepared by Wilkinson Murray
G	Noise and Vibration Impact Assessment prepared by Wilkinson Murray
H	Fire Engineering Report and Hydraulic Plans
I	Greenhouse Gas Assessment prepared by Wilkinson Murray
J	Cultural Heritage Assessment prepared by Archaeological Risk Assessment Services
K	Stormwater Management Plan and Water Quality Assessment prepared by Eclipse Consulting Engineers

2 Site Description and Context

2.1 Site Location and Description

The proposed site is identified as being 25 Dunheved Circuit, St Marys, Lot 143 in DP 1013185. An existing approved Resource Recovery Facility is currently located on 25 Dunheved Circuit (the existing RRF). The subject site is situated 45 kilometres (km) west of the Sydney central business district (CBD). The site is located within the City of Penrith Local Government Area (LGA), within the electoral district of Londonderry and the federal Division of Lindsay. The proposed site is located approximately 6.5 km from the Penrith CBD.

The Proposal site is located within an established industrial precinct that covers an area of approximately 1,000 hectares (ha) and comprises a mix of general, light and storage based industries; including steel and sheet metal fabrication workshops, oil and lubricant storage facilities, transport depots, plant and equipment hire facilities and mechanical repair workshops (Figure 1). The industrial precinct also has several existing waste management and resource recovery facilities and other similar activities licensed under the *Protection of the Environment Operations Act 1997* (POEO Act).

The closest residential uses are located approximately 1.3km to the east and west of the site. These uses are physically separated by a large, vegetated area surrounding Ropes Creek to the east of the site and a golf course bordering South Wianamatta Creek to the west of the site.

25 Dunheved Circuit was included in a previous SSD application (SSD-8200), along with the adjoining property at 21 Dunheved Circuit, that was approved by DPIE on the 6/11/2018. The approval allowed the site to be used a resource recovery facility with a throughput of 350,000 tonnes per annum of non-putrescible waste. This approval has since recently been surrendered.

Figure 1 and Figure 2 show the location context and aerial photo of the site.

2.2 Existing Site Facilities

The site is identified as 25 Dunheved Circuit, St Marys, being Lot 143 in DP 7013185. The site is an irregular shaped battle-axe lot with an area of 6,140m² and is zoned IN1 General Industrial (Figure 2). The land is predominantly flat, with no vegetation on the site, all areas of the site are concrete hardstand. The site is currently operating as a Resource Recovery Facility, with this application only proposing an increase in throughput.

The lot contains:

- A 3,455m² waste processing building - constructed of concrete tilt-up panels and metal cladding with a ridge height of 11.9 m;
- A separate site office and amenities building with a floor space of 152m² and a height of 4.6m;
- Two inground 20m weighbridges;
- External areas sealed with concrete hardstand including 10 car parking spaces; and
- Water tanks and sprinkler pump room.

Figure 3 to Figure 5 show the external and internal of the existing building on-site.

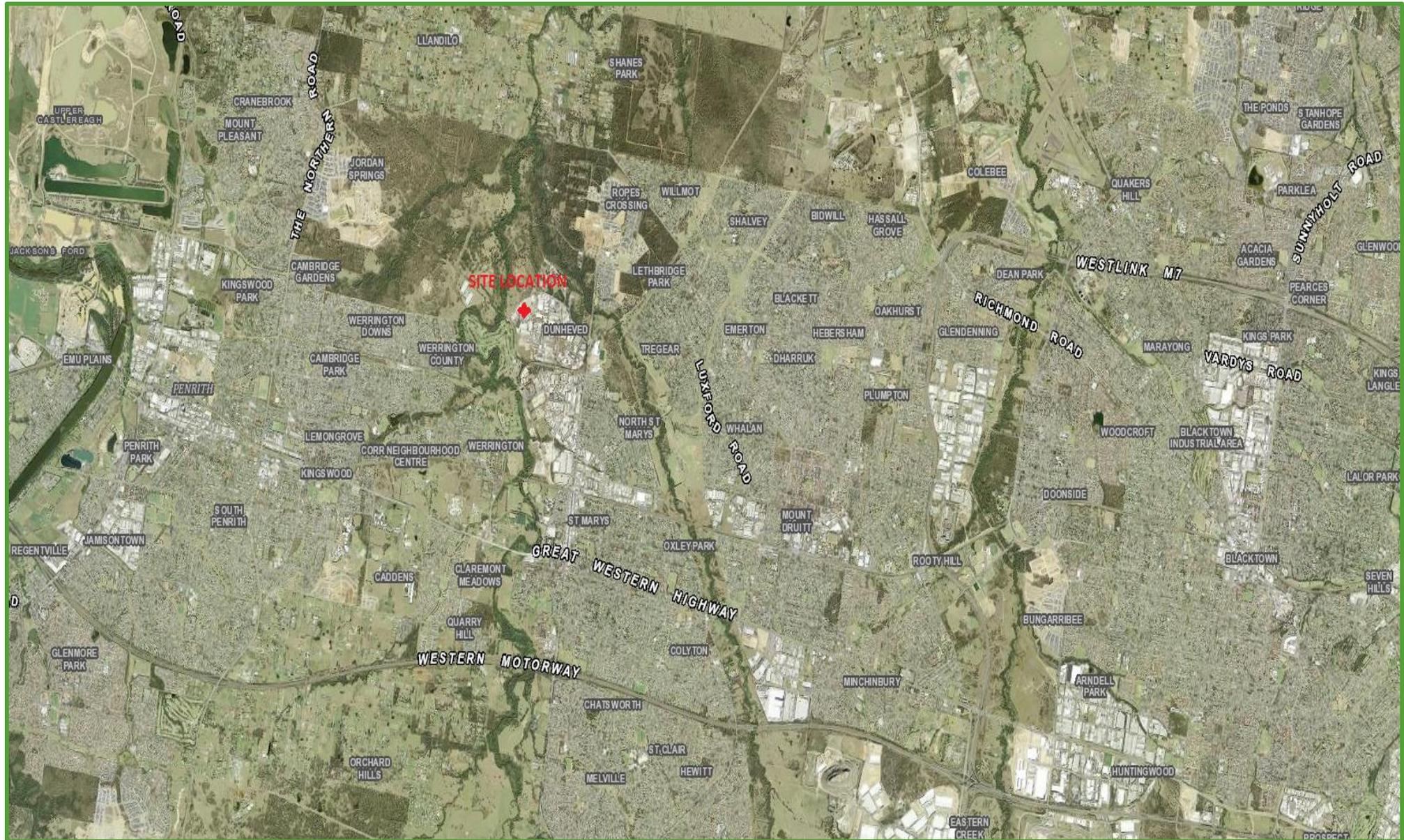


FIGURE 1 SITE LOCATION PLAN. SOURCE: SIXMAPS.



FIGURE 2 AERIAL PHOTOGRAPH OF 25 DUNNEVED CIRCUIT. SOURCE: SIXMAPS.



FIGURE 3 PHOTOGRAPH OF EXISTING WAREHOUSE AND OFFICE BUILDING



FIGURE 4 INTERNAL VIEW OF EXISTING BUILDING AT 25 DUNHEVED CIRCUIT, ST MARYS



FIGURE 5 INTERNAL VIEW OF CURRENT OPERATIONS AT 25 DUNHEVED CIRCUIT, ST MARYS

2.3 Surrounding Development

The site is in the north-western portion of the Dunheved Business Park (DBP), St Marys. South Creek runs to the north-west and south-west of the site and flows in a north to south direction through the Wianamatta Regional Park. Approximately 800 m to the north-west is the residential area of Jordan Springs, which is

currently under construction. Jordan Springs forms part of the St Marys Australian Defence Industries (ADI) site (Central precinct), as defined under Sydney REP 30-St Marys (SREP 30).

The site is located within an established industrial precinct with an area of approximately 1,000 ha and comprises a mix of general, light and storage-based industries, including steel and sheet metal fabrication workshops, oil and lubricant storage facilities, transport depots, plant and equipment hire facilities and mechanical repair workshops. The DBP also hosts several existing licensed waste management and resource recovery facilities.

The nearest residential receivers are located approximately 1.3 km to the east and 1.3 km west of the site in the suburbs of Ropes Crossing and Werrington County, respectively. In the future, residents will also be located 800 m away at Jordan Springs. Current and future nearby residences are physically separated from the site by a large, vegetated area surrounding Ropes Creek to the north-east, the Dunheved Golf Course bordering South/Wianamatta Creeks to the west and designated regional open space to the east.

The road network surrounding the site includes Dunheved Circuit, Links Road, Ropes Crossing Boulevard, Forrester Road and Christie Street. Access to the DBP is via a sole entrance/ exit at a roundabout at the junction of Forrester Road and Ropes Crossing Boulevard at the eastern side of the DBP Connection to Sydney's arterial road network, including the M4 and M7, is via Forrester Road and Glossop Street).

The figure below shows the surrounding land uses (Figure 6).

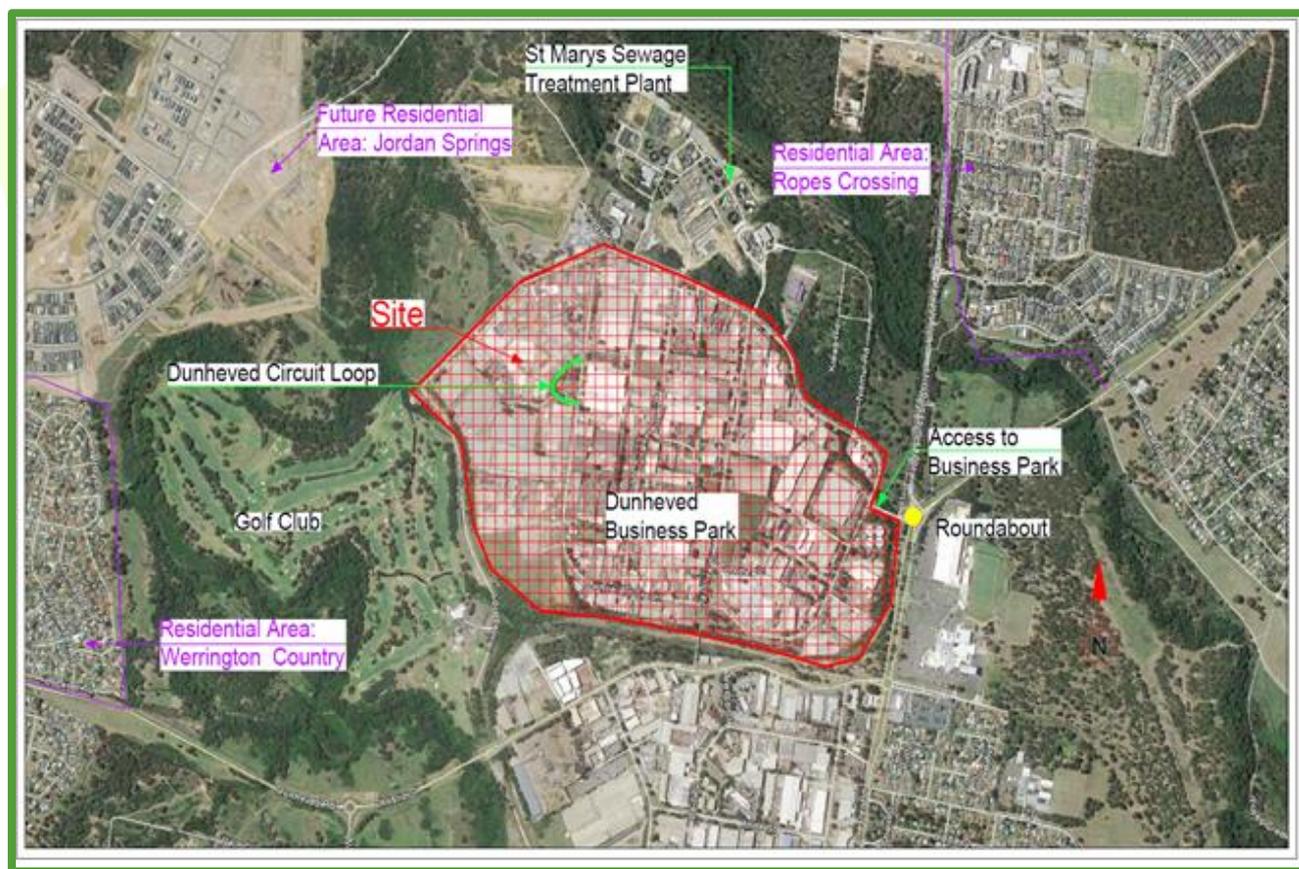


FIGURE 6. SURROUNDING LAND USES

2.4 Previous Site Approvals

25 Dunheved Circuit has operated as a RRF since 2001. Initially the structures consisted of a temporary above-ground weighbridge, small modular cabin and a workshop/storage shed at the rear of the site. The approval allowed for the processing of waste, however, waste materials were not permitted to be stored outside buildings (unless within waste bins).

On 20 June 2016, development consent (DA15/1042) was acquired for the redevelopment of 25 Dunheved Circuit, to construct and operate an enclosed RRF which would substantially improve the resource recovery rate and the environmental performance of the site, an outline and description of the DAs are provided below;

2.4.1 DA01/1034- Waste Management and Recycling Facility - Approved 24th July 2001

This DA enabled the use of the site as a waste management and recycling facility. The proposal consisted receiving inert construction waste and inert domestic waste from various sites in Western Sydney. The site was taking skip bins and sorting, processing waste to separate recyclables from waste going to landfill. The statement of environment effects prepared for the application by Berzins Environmental Planning Pty Ltd stated that the operation can be described as follows.

Inert construction and domestic waste are delivered to site by trucks containing skips and is deposited onto a sorting area. The size of the skips ranges from 2m³- 4m³. The trucks associated with the proposal range in size from 2-8 tonnes. There are approximately one hundred and fifty skips associated with the proposal.

Typically, the inert construction and domestic waste consists of the following:

Type of Waste	% by weight
Green waste	40
Soil, concrete & Bricks	40
Timber	15
Metal and Glass	5
Plastics, packaging, etc.	5

The inert construction and domestic waste are separated both using a front-end loader and manually.

This DA allowed for the receipt and processing of between 15,000 to 18,000 tonnes of waste annually and did not require an EPL at the time.

2.4.2 DA15/1042- Alterations and additions to existing waste management and recycling facility, including demolition works, construction of new buildings, weighbridges, and vegetation removal- Approved 20th June 2016

The current operations on the site operate under this consent. This consent allowed for the construction of the current buildings on-site including the office area and weighbridges. This application did not propose an increase to the throughput of waste and is currently operating under the 18,000 tonne restriction.

The statement of environmental effects prepared by APP dated August 2015 outlines the proposal as:

Development consent is sought for alterations and additions to an existing waste management and recycling facility at St Mary, including:

- . Demolition of an existing shed and amenities / office building;*
- . Construction of a new concrete tilt panel and metal clad shed and a new amenity building;*
- . Installation of two (2) weighbridges at the entry / exit of the shed;*
- . Filling an existing pit within the central portion of the site (pit is approximately 248.14m² in area); and*
- . Removal of seven (7) trees.*

The proposed works will improve the efficiency, safety and environmental impact of the existing facility. No change is proposed to the following aspects of the existing approved waste management and recycling facility operations:

- . Types or quantity of material to be received and processed;
- . Hours of operation;
- . Number of staff;
- . Access to and from the site; and
- . Number of on-site car parking spaces.

As result of this DA an EPL was required from the EPA (EPL 20627) which permitted resource recovery, waste processing and waste storage of non-putrescible waste.

A construction certificate was issued for the development on the 28th October 2016, with a final occupation certificate issued on the 9th June 2017 by Steve Watson Partners.

2.4.3 State Significant Development- SSD 8200- St Marys Resource Recovery Facility (RRF)- Approved 6th November 2018

This SSD sought consent for the extension of the existing RRF, located at 25 Dunheved Circuit, into the neighbouring property, 21 Dunheved Circuit. The proposal would be capable of processing a throughput of 350,000 tonnes per annum (tpa) of general solid waste (non-putrescible).

Waste streams to be processed included dry non-putrescible construction and demolition (C&D), commercial and industrial (C&I) and domestic (council clean-up) waste. The waste processed would include metals, timber, paper, cardboard, green waste, glass, plastics, ceramics, asphalt, soils, bricks, concrete and rubber, which is the same types of waste as currently processed in the existing RRF. The SSD sought to operate the RRF 24 hours per day, Monday to Saturday.

The development also included the demolition of the existing structures at 21 Dunheved Circuit (except electrical substations), extension of the existing waste processing building at 25 Dunheved Circuit into 21 Dunheved Circuit (total area of extended building 7,121 m²), expansion of the existing site office, installation of a new weighbridge and wheel washes, upgrade a portion of Dunheved Circuit, construction of various access ways and parking, and landscaping. All waste processing activities, including tipping of incoming waste, would occur within the processing building.

The SSD was approved by the Department of Planning on the 6th November 2018, however the applicant did not proceed with the approval, the site was on sold with the SSD approval being surrendered by the original applicant in May 2020.

The current proposal is for the processing of a third of what was approved under SSD 8200, within the existing building and with lesser environmental impacts.

2.5 Current Site Operations

The site is currently operating as an RRF in accordance with DA01/1034 and DA2015/1042. An application for an EPA licence has been made for current operations to operate above the 6,000 tonne per annum licensing threshold as per Clause 34(3) of Schedule 1 of the *Protection of the Environment Operations Act 1997*.

Construction materials enter the site in bulk trucks and skip and hook bins, materials delivered are handled within the building. All incoming material is subject to a visual inspection process and any non-complying waste (NCW) is reloaded into the delivery truck or separated into a separate area to be removed to landfill.

Pre-sorting of materials occurs after loads have undergone a visual inspection as they arrive to site. This is to ensure that only those materials which reDirect Recycling intend on recovering are delivered to site (Table 1). Approved loads are then permitted to enter the materials handling building for unloading.

This screening process involves the use of plant and equipment (excavator, front end loader, fraction screen) within the operational area of the building to sort tipped material. The material that can be recovered is stockpiled in bays for transport to appropriately licenced facilities for resource recovery. Material that cannot be recovered is stored in designated bays for transport to landfill for lawful disposal.

3 Project Justification, Need and Alternatives

3.1 Project Justification and Need

3.1.1 Social and Economic

reDirect Recycling believes the proposed recycling and resource recovery facility will provide many benefits to businesses in the greater Sydney region, regional NSW and the surrounding community. The estimated capital cost to set up the operation within the existing facilities at 25 Dunheved Circuit will be approximately \$2.5 million.

When fully operational, reDirect Recycling will have 10 staff on roster, providing jobs for the local area. However, the flow on effects from the re-use of processed waste materials in the manufacture of particle board will lead to improved environmental and economic outcomes. The re-use of waste timbers allows Borgs to move towards a circular economy that will generate jobs, improve the robustness of the economy, increase the accessibility of goods, maximise the value of resources and reduce waste going to landfill.

Re-using, recovering and recycling these valuable timber and gypsum materials keeps them in the productive economy for longer. The same applies to the small amounts of metal. This has the dual benefits of lowering demand for new resources and reducing the need to manage future waste. Any waste going to landfill is not only a loss of valuable resources, but it also shortens landfill lifespans.

The proposed facility will further assist the NSW government to achieve its stated goals to increase the diversion of waste from landfill disposal through the development of strategic infrastructure and processing opportunities.

The recovery of the timber and wood waste for re-use in the manufacturing of particle board also reduces the industries reliance on forestry lands and the harvesting of forestry pines. The reduction or extension of life of pine plantations not only has economic benefits, but also increases the sequestration of carbon, with forestry identified as the simplest and most cost-effective land-based sequestration option to implement, in terms of both feasibility and verifiability in Australia¹. The longer trees stay in plantations, the more carbon is sequestered and then eventually captured and stored once harvested.

Carbon stored in Australia's plantation forests increased from 137 million tonnes of carbon (C) in 2001 to 171 Mt carbon in 2010². This increase in carbon stock was caused by the gradual expansion of Australia's plantation estate, as well as the continued growth of plantations established since 1990. The capture and re-use of waste timbers in manufacturing will further increase this storage.

Further to this, NSW governments approach to circular economies encourages manufacturers to rethink how they design products and use resources, by focusing on the entire life cycle of the product they are producing. They encourage existing businesses to look at new business models that prioritise circular activities, like moving from product sales to the leasing and servicing of products. Retailers, distributors and manufacturers are also be encouraged to take greater responsibility for the return, refurbishment and recycling of end-of life products. The waste and recycling industry is critical in collecting end-of-life products and processing them so that they are available for use in new products. The creation of reDirect Recycling as a business enables Borg to engage in a circular economy model for the manufacture of particle board.

¹ BAEconomics- Anna L. Matysek and Brian S. Fletcher- Carbon sequestration potential of plantation forestry expansion in Australia, 13 June 2018

² ABARES- Tim Clancy and Claire Howell- Sustainable Forest Management: The Australian Context, Research Report, January 2013



3.1.2 Strategic matters

The facility will assist the NSW Government in meeting their waste management targets in relation to the diversion of waste from landfill and increasing the economic use of recycled products. The development is consistent with the following regulations and policies:

- NSW Waste Avoidance and Resource Recovery Strategy 2014-21, which sets out the following targets:
 - > Decrease the amount of waste sent to landfill to 25%;
 - > By 2021-2022 increase the recycling rates of commercial & industrial waste to 70%;
 - > By 2021-2022 increase the recycling rates of construction & Demolition waste to 80%;
 - > By 2021-2022 reduce the amount of waste generation per capita.
- Recycling materials that would traditionally be disposed of to landfill as per the Western Sydney Regional Waste Avoidances and Resource Recovery Strategy 2014-2017;
- NSW Circular Economy Policy
- NSW Net Zero Plan
- NSW 20 Year Waste Strategy
- The Greater Sydney Region Plan: A Metropolis of Three Cities
- Our Greater Sydney 2056 - Western City District Plan
- Future Transport Strategy 2056
- Waste less, recycle more initiative NSW, and
- *Protection of the Environment Operations (Waste) Regulation 2014.*

The following sections expand on the need for the development in relation to current and future waste projections in NSW and the existing policy framework.

3.1.2.1 NSW Waste Avoidance and Resource Recovery Strategy 2014-2021

The NSW Environment Protection Authority's (EPA's) Waste Avoidance and Resource Recovery Strategy (WARR Strategy) 2014-21 provides a clear framework for waste management up to 2021 and sets a number of objectives and targets applicable to the MSW and C&I waste sectors.

Constrained capacity for the recycling of waste has been highlighted in the WARR Strategy as a key issue due to the lack of recycling infrastructure in the Sydney Metropolitan Area. An analysis of the municipal, commercial and industrial, and construction and demolition waste data for 2010-11 indicates that there is significant potential to increase recycling.

To address this capacity shortfall, the WARR Strategy identifies the need for increased recycling and recovery of waste to meet growing demands. Critical to meeting this demand is the availability of waste recycling infrastructure. The proposed reDirect Recycling resource recovery facility will provide additional infrastructure and processing capacity for the Sydney region and beyond, and assist the NSW government to meet its waste targets and initiatives for C&I and C&D waste recycling, along with assisting in a transition to circular economies for the manufacturing industry.

3.1.2.2 Western Sydney Regional Waste Avoidance and Resource Recovery Strategy 2014-2017

The Western Sydney Regional Waste Avoidance and Resource Recovery Strategy 2014-2017 (WSROC, 2014) is helping Western Sydney councils work together to reduce the waste produced and sent to landfill. The strategy has six main targets, which are aligned with the NSW WARR Strategy:

- Avoid and reduce waste generation
- Increase recycling

- Divert more waste from landfill
- Manage problem wastes better
- Reduce litter and illegal dumping
- Improve regional governance.

The Proposal would provide best practice resource recovery equipment and practices to enhance recycling and divert more waste from landfill. It is estimated that wood and timbers make up 13% of all materials going to landfill, with plasterboard contributing 4%. This proposal, along with others will keep these materials in the useful economy for much longer due to re-use. The Proposal would therefore align with the Western Sydney Regional Waste Avoidance and Resource Recovery Strategy 2014-2017.

3.1.2.3 Waste Less Recycle More Initiative

The NSW Government's \$337 million Waste Less, Recycle More program includes \$48 million to support the development of new infrastructure for both municipal, commercial and construction and demolition waste materials. Waste Less, Recycle More provides funding for business recycling, organics collections, market development, managing problem wastes, new waste infrastructure, local councils and programs to tackle illegal dumping and litter. The initiative is funded through the Waste Levy and is the largest waste and recycling funding program in Australia.

The Waste Less, Recycle More programs seek to achieve the following:

- Encourage local communities to think differently about waste avoidance, recycling, littering and illegal dumping;
- Deliver conveniently located, value-for-money waste infrastructure to make it easier for households and business to do the right thing; and
- Drive innovative regulatory approaches to protect the environment and support investment in new waste programs.

The proposal is consistent with the aims of this initiative as it will divert 150,000 tonnes of waste from landfill and promotes a circular approach to waste as a resource. The proposal delivers a low impact value for money recycling/recovery facility that will benefit the local economy, improve environmental impacts of a large manufacturer, and reduce waste going landfill.

3.1.2.4 NSW Circular Economy Policy

In February 2019, the NSW Government launched its Circular Economy Policy Statement - Too Good to Waste. The key focus areas of the policy are to:

Principle 5: Innovate new solutions for resource efficiency

- Capturing value from recycling resources in new ways, including innovative business models and services across different sectors.
- Innovating technologies that increase resource efficiency and preference higher value re-use opportunities, leading to a range of benefits compared to the "take, make and dispose" status quo.

Principle 6: Create new circular economy jobs

- Creating jobs in new manufacturing, service and resource recovery sectors associated with recycling, re-use, remanufacturing and increased service offerings.
- Encouraging repair and refurbishment, re-use and recycling and creating new skills and employment opportunities in these industries.

The development of an industry focused on the recovery and processing of wood, timber and plasterboard into recovered value-added products is strongly aligned with the objectives of the Circular Economy Policy.

3.1.2.5 NSW Net Zero Plan

It is also noted that the recovery and diversion of wood, timber and plasterboard from landfill directly supports the objectives of the NSW Government's Net Zero Plan. In this Plan, the NSW Government's has set a target of net zero emissions by 2050 by creating new jobs, cutting household costs and attracting investment.

The Net Zero Plan prioritises action on 'Net zero emissions from organic waste', given that organic wastes (including wood and timber) decompose into methane, a potent greenhouse gas 25 times more effective than carbon dioxide as a greenhouse gas.

3.1.2.6 NSW Government's 20 Year Waste Strategy

The NSW Government's 20 Year Waste Strategy, which is under development, has also raised the need to ensure that the future of waste management and resource recovery in NSW is strongly aligned with the Circular Economy Policy.

In the Issues Paper published in March 2020, the 20 Year Waste Strategy will consider how additional 'Waste and resource recovery capacity' will be delivered, including 'Innovation and waste-tech' to help deliver to market new technologies that can solve emerging waste issues and respond to end market demand for recovered materials.

3.1.2.7 The Greater Sydney Regional Plan: A Metropolis of Three Cities

The Greater Sydney Region Plan, *A Metropolis of Three Cities* sets out a high-level vision of three cities where most residents live within 30 minutes of their jobs, education and health facilities, services and great places (see Figure 7). The three cities are:

- the Western Parkland City
- the Central River City
- the Eastern Harbour City.

The Plan aims to provide access to housing and employment centres while stimulating economic growth and protecting the environment.

The vision of *A Metropolis of Three Cities* will be implemented by collaborations between all tiers of government, and between governments and key stakeholders including the community, interest groups, businesses, industry groups and nongovernment organisations.

The Western Sydney City Deal, a partnership of the Australian Government, NSW Government and the local governments of the Blue Mountains, Camden, Campbelltown, Fairfield, Hawkesbury, Liverpool, Penrith and Wollondilly will be instrumental in delivering on the aspirations of the Western Parkland City.

The Greater Sydney Region Plan provides an overarching framework for more detailed structure and local plans.

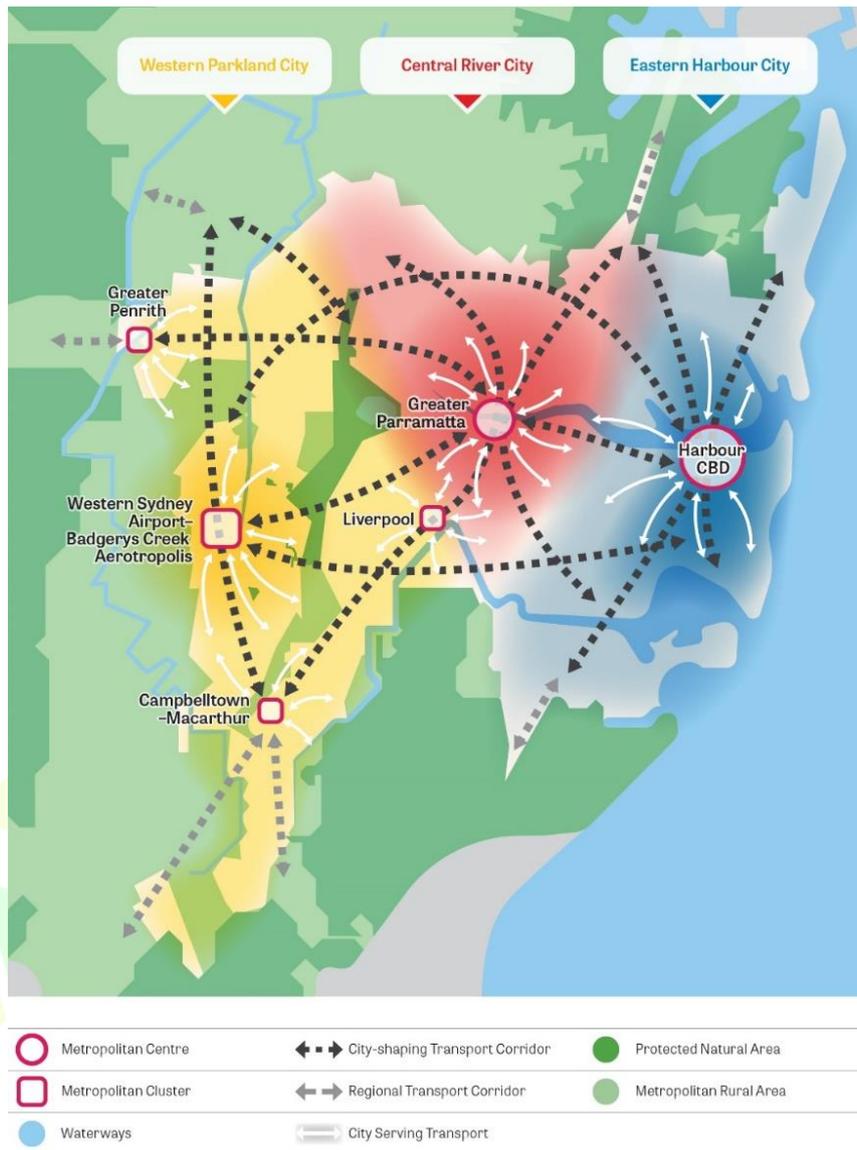


FIGURE 7 OVERVIEW OF THE THREE CITIES IN THE GREATER SYDNEY REGION PLAN

3.1.2.8 Our Greater Sydney 2056- Western City District Plan

The *Our Greater Sydney 2056* strategy is a subsidiary document of The Greater Sydney Region Plan, which divides Sydney into three cities - the Western Parkland City, the Central River City and the Eastern Harbour City. The plan also envisages a “30-minute city”, where transport around Sydney is facilitated by major transport links, including the North South Rail Link. Within that vision, the plan divides the Sydney metropolitan area into various districts, providing a high-level planning strategy for each district.

Penrith local government area falls within the Western City District. The St Marys area is identified as being within the Greater Penrith to Eastern Creek Growth Area, which will see a growth in population at a rate greater than other parts of the Western City District. Under Planning Priority W10, Objective 23, the St Marys industrial estate is identified as industrial land that is to be retained and managed, to assist in meeting one of the key aims of the Plan - local economic activity and employment.

The proposed development is consistent with *Our Greater Sydney 2056 - Western City District Plan*.

3.1.2.9 Future Transport Strategy 2056

The Future Transport Strategy 2056 outlines a strategy for how transport in Sydney can be improved to realise the “30-minute city” vision of Our Greater Sydney 2056, which is that people “can access the jobs, education and services they need within 30 minutes by public or active transport”.

The St Marys industrial area is close to several identified strategic transport corridors. This makes it well-placed to continue to receive freight and be accessed by heavy vehicles. It may also benefit from increased public transport services. Although, the nature of the proposed development, which involves shift work, may need to continue to rely on use of private vehicles for employees into the medium term.

3.2 Project Options and Alternatives

A few alternative scenarios to achieve the Proposal objectives were considered, and included:

- The ‘Do Nothing’ scenario;
- Construction of a new facility at an alternate site; and
- Use other existing Borg facilities.

The alternatives reviewed against the Proposal objectives are discussed below.

3.2.1 Do Nothing Approach

If the proposal does not proceed in any form, it is likely that the current operation as an RRF would continue within the 18,000 tonnes per annum limit. This would mean that reDirect Recycling would need to look elsewhere to try and recover and process a suitable amount of waste timbers and plasterboard to cover the commitment of 1/3 of particle board production manufactured from recycled materials. Without the ability to operate a facility like the proposed, it is unlikely that Borg would be able to achieve this target, and diminishing state forest areas would be further reduced, impacting economic efficiency and environmental outcomes.

The “do nothing approach” would also result in valuable resources potentially going to landfill or being under utilised, which would go against that State Government strategies in reducing waste going landfill, encouraging re-use and recycling and moving manufacturing towards circular economies.

The operation of the proposed facility would support employment for up to 10 full-time staff on roster. Additional indirect employment associated with supplying and servicing the site will also be generated, along with securing the ongoing employment of those employed at Borg manufacturing sites.

In addition to these social and economic benefits, the facility would service the increasing demand for waste recycling and re-use infrastructure in the Sydney region.

Based on the above arguments, the overall balance of environmental, social and economic impacts of the development is considered to be positive, and the ‘do nothing’ option was not considered further.

3.2.2 Construction or use of Alternative new Site

The site was selected for the proposal given its history of a resource recovery facility, and the suitability of the existing infrastructure on-site. The existing building and facilities on-site are of an appropriate size and scale to be able to accommodate the proposed activities on site, including ample space for the stockpiling and processing of materials. Given the minor scale of the proposal, and the limited number of materials to be accepted to the site, it was financially and economically more efficient to use the existing facility. It is also hoped that use of the existing facility, with a previous SSD approved on the site would expedite the approval process somewhat. By not constructing a new building, or extending the existing, no time will be lost in the construction and certification stage, meaning that the facility will be operational quicker, improving overall efficiency for reDirect Recycling.

The Dunheved circuit location is ideally located regarding accessibility for both waste coming in and processed materials leaving the site. The site is situated near key regional transport infrastructure including

the M4 Freeway, the Great Western Highway and the Lighthorse Interchange. This location is easily accessible for incoming waste which is sourced from all over the Sydney region, and also provides close access to the Great Western Highway to enable to movement of the majority of processed material to Borgs manufacturing site in Oberon. The Proposal site was identified as the most suitable site for several reasons; including good road access for heavy vehicles, appropriate industrial zoning, proximity to waste generation sources and lack of current alternatives in the region.

The site was also selected as the preferred location for the development due to its substantial distance from sensitive locations such as residential dwellings, shopping districts, schools, and public services.

3.2.3 Use of existing Borg sites

Borg own several sites in NSW and around the country, including some near the proposal site. The option of using one of these sites to accommodate the proposal was explored, including the use of the Oberon site for all processing of waste timbers, which it currently has approval for. The use of this site was determined to be uneconomical due to distance from waste producers and existing customers and would lead to an increase in trucks traversing the Blue Mountains. The proposed site allows reDirect Recycling to collect, sort, aggregate and process waste materials close to the areas from which they come and closer to other waste facilities that provide timber to reDirect Recycling Processing the materials before being transferred reduces the number of trucks going to Oberon as it enables more material to be taken on each trip.



4 Project Description

4.1 Proposal Overview

The proposal is for the increase of throughput/volume of waste to the existing Resource Recovery Facility at 25 Dunheved Circuit. The site currently has approval for the sorting and processing of 18,000 tonnes of waste per annum (DA01/1034 Penrith Council). It is proposed to increase this throughput to 150,000 tonnes per annum, consisting of 110,000 tonnes wood/timber waste and 30,000 tonnes of plasterboard. As a result of processing the timber materials, waste metals (10,000 tonnes) will also be collected on site and transferred elsewhere for processing. Please note that no physical works are proposed to the existing site or buildings, though additional plant and equipment will operate within the building.

An easement for access and services is proposed to cover the existing OSD tanks on the adjoining lots, and to cover any vehicles using the adjoining driveway at 21 Dunheved Circuit, both sites are in the same ownership.

Processing of timber and wood and plasterboard waste will happen inside the existing building by way of compaction and shredding/grinding. The majority of the processed wood waste will be transferred to the Borg Manufacturing site in Oberon, NSW to be used in the manufacture of particle board, and to be used as a non-standard fuel in heat plant in accordance with EPA licence condition L3 of EPL 3035. The typical types of wood waste include clean pallets, particle board & MDF, LOSP & T2 pine and laminated MDF with coatings, along with other urban and raw wood materials deemed suitable. These waste materials will come from a number of sources including Borg Panels customers, framing and truss builders, freight companies, waste facilities and other timber companies.

Plasterboard will be minimised and grinded, with paper removed during the grinding process. The gypsum generated by processing will be used for agricultural soil conditioning or re-used in plasterboard production.

Waste metals recovered during the timber processing will be manually sorted and separated, and then taken off-site to other waste facilities to be processed or disposed of.

All RRF activities (storage and processing) will be undertaken inside the existing building on 25 Dunheved Circuit.

4.2 Processing Capacity

reDirect Recycling is proposing to increase the throughput of waste from 18,000 tpa to process up to 150,000 tpa of materials within the existing resource recovery facility. Most of the processed material will be re-used in the manufacture of engineered timber products, mainly particle board. Detailed below are the amounts of material proposed to be recovered on the site.

- 110,000 tonnes of Urban and Natural Wood wastes (MDF off-cuts, raw wood offcuts, clean pallets, LOSP pine, engineered wood products, particleboard, some laminated MDF with paint);
- 30,000 tonnes of plasterboard waste, primarily offcuts and de-construction materials from construction sites; and
- Up to 10,000 tonnes of ferrous and non-ferrous metals. This will be made up of steel, and steel components removed from the processing of pallets i.e. nails, strapping etc. waste metals will be sorted and dispatched off-site. Some metal independent of the recovered materials will also be brought to be site.

4.3 Proposed Site Layout

Figure 8 below outlines the proposed layout of machinery and storage areas inside of 25 Dunheved Circuit, along with the positioning of existing infrastructure. No new physical works are proposed on-site. All machinery is mobile and located within the existing building and is expected to have a minimal impact on adjoining premises. The operation has been designed to be the most efficient use of internal space by placing machinery at the rear perimeter of the internal space, with material storage utilised in the centre of the building and on the side walls. This layout allows for the easy and safe manoeuvring of trucks entering

the building and machinery internally. The two processing areas of materials have been separated to eliminate any cross contamination. The proposed facility will comprise the following areas:

- Existing inbound weighbridge on the western side of office building. Existing outbound weighbridge to the east of the office building;
- Plasterboard processing area in the western portion of the existing building consisting of unprocessed storage area, conveyors, turbo separator, paper bin and storage silo;
- Waste wood/timber processing area taking up much of the existing building consisting of two unprocessed storage materials areas either side of truck unloading area, a manual picking line, shredder and processed material storage bunkers;
- Existing site office area with amenities and car parks; and
- Existing water tanks, to be formalised with easement for services and access.

4.4 Processing Activities

4.4.1 Plant and Equipment

The majority of plant and equipment to be utilised in the RRF would be similar to that used on site in the recent past with the operation of the previous RRF at 25 Dunheved Circuit (described in Section 2.2). The equipment to be utilised at this proposed RRF would include the following:

- Loaders and excavators (example pictures below Figure 9 & Figure 10);
- Two existing 20 metre weighbridges;
- Industrial woodchipper/shredder/grinder (Figure 11);
- Manual picking station (Figure 12);
- Turbo Separator (Figure 13); and
- Above ground portable wheel wash.

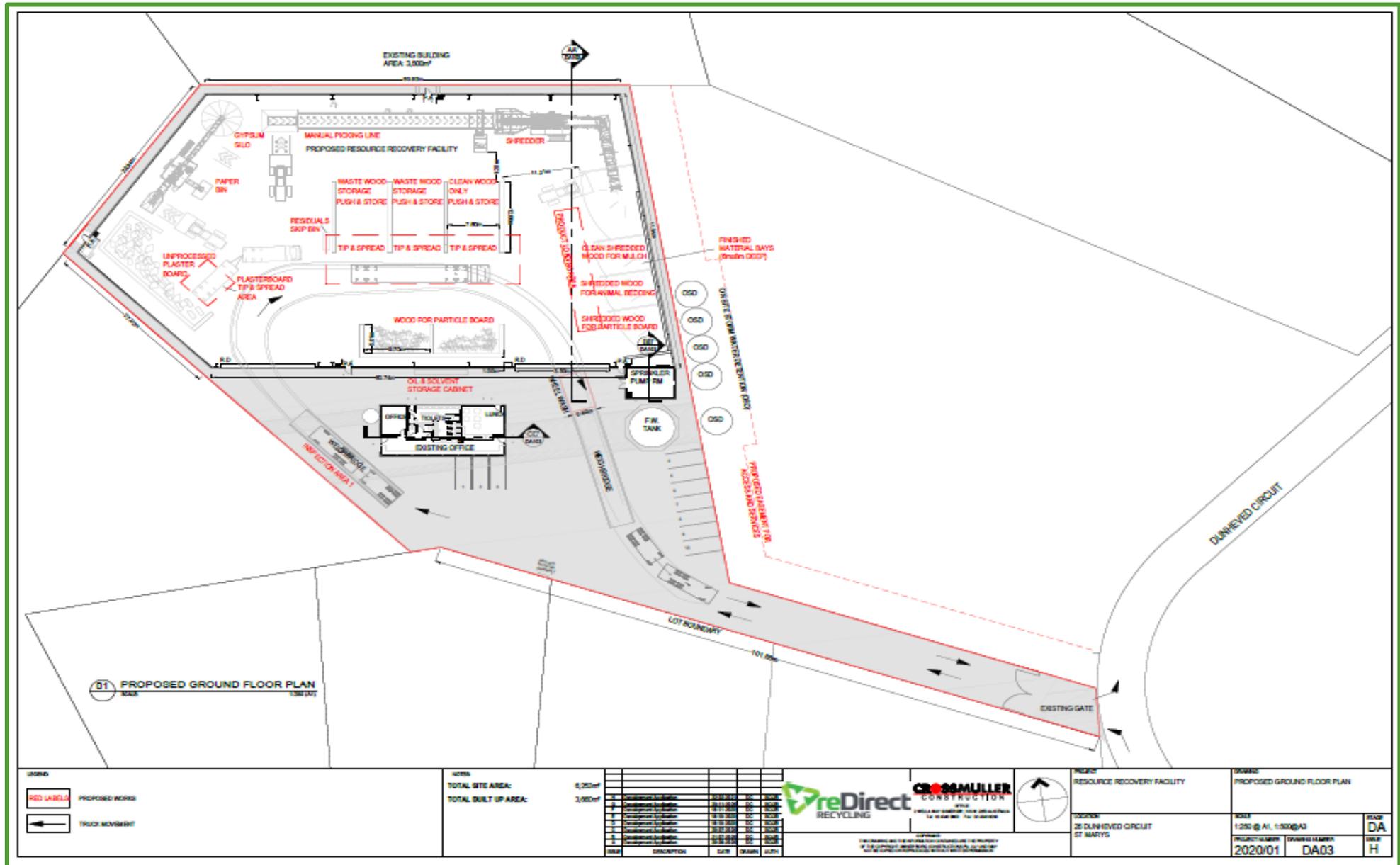


FIGURE 8 PROPOSED SITE LAYOUT 25 DUNHEVED CIRCUIT, ST MARYS



FIGURE 9 TYPICAL FRONT- END LOADER USED TO MOVED MATERIALS



FIGURE 10 TYPICAL EXCAVATOR USED FOR MOVING AND MINIMISING WASTE WOOD AND PLASTERBOARD



FIGURE 11 TYPICAL SLOW SPEED SHREDDER USED TO MINIMISE WOOD/TIMBER WASTE



FIGURE 12 TYPICAL ELEVATED MANUAL PICKING LINE FOR SORTING OF WASTE WOOD/TIMBER



FIGURE 13 TYPICAL TURBO SEPARATOR USED FOR PROCESSING WASTE PLASTERBOARD

4.4.2 Processing of Waste Wood/Timbers

The facility will receive suitable timber waste and used pallets from a variety of sources around Sydney and NSW, further details about waste streams is in Section 5. The waste receiving and inspection procedures will conform to the NSW EPA's *Standards for managing construction waste in NSW*. Loads will be visually inspected at the incoming weighbridge, as the incoming loads are being weighed. Incoming loads will be discharged in a dedicated waste unloading area, which will be on the concrete hardstand floor within the building. Any small quantities of non-conforming material that can easily be removed will be separated and set aside for later disposal. Highly contaminated loads will be re-loaded and removed from the site. Inspected and cleared waste will be transferred to a concrete bunker by an excavator or front-end loader, awaiting processing.

Generally, larger pieces of timber and board will be minimised using the teeth of the excavator, breaking boards and other timbers to a manageable size to enter the manual picking line. Material to be processed will be loaded from the waste storage bunkers into the picking line hopper using an excavator. The waste will then flow along a conveyor where any contaminants are removed, and the waste will be sorted into type and size by way of separate bins below the picking station. This is done to maximise efficiency of the processing, as not all waste wood materials will be shredded on site, with suitably sized and type of woods, once sorted, will be transferred directly to the Borg Oberon site for processing. This will also be utilised when material stores have reached their limit, and room is needed to be made onsite. The Borg Oberon site has ample overflow storage areas to accommodate a large amount of timber. This availability of storage space assures that the site in St Marys is able to always manage the amount of materials on-site and operate efficiently.

Suitable wood waste is then put through the shredder for size reduction. Dust control equipment will operate as part of the shredder. Importantly, all shredding and processing will occur within the building to control noise and air quality impacts on the surrounding areas. The shredder minimises timber to approximately 100-mm in size.

The shredder also contains magnets to capture any metals, mainly nails and bracing from pallets, that are then added to the metal sorting area. The shredded waste is discharged from the shredder onto another conveyor and is transferred to storage and dispatch bunkers.

Shredded wood waste is loaded onto transport vehicles for transfer to Borg's Oberon Panel board production plant for re-use in the manufacturing process of particle board. Borg have approval for one third of production to utilise waste timbers in manufacturing particle board. This resource recovery facility will help Borg achieve this outcome, and if successful will potentially lead to an increase in the use of waste wood as an ongoing resource for the production of particle board.

Figure 14 below outlines the flow chart for processing of waste wood/timber.

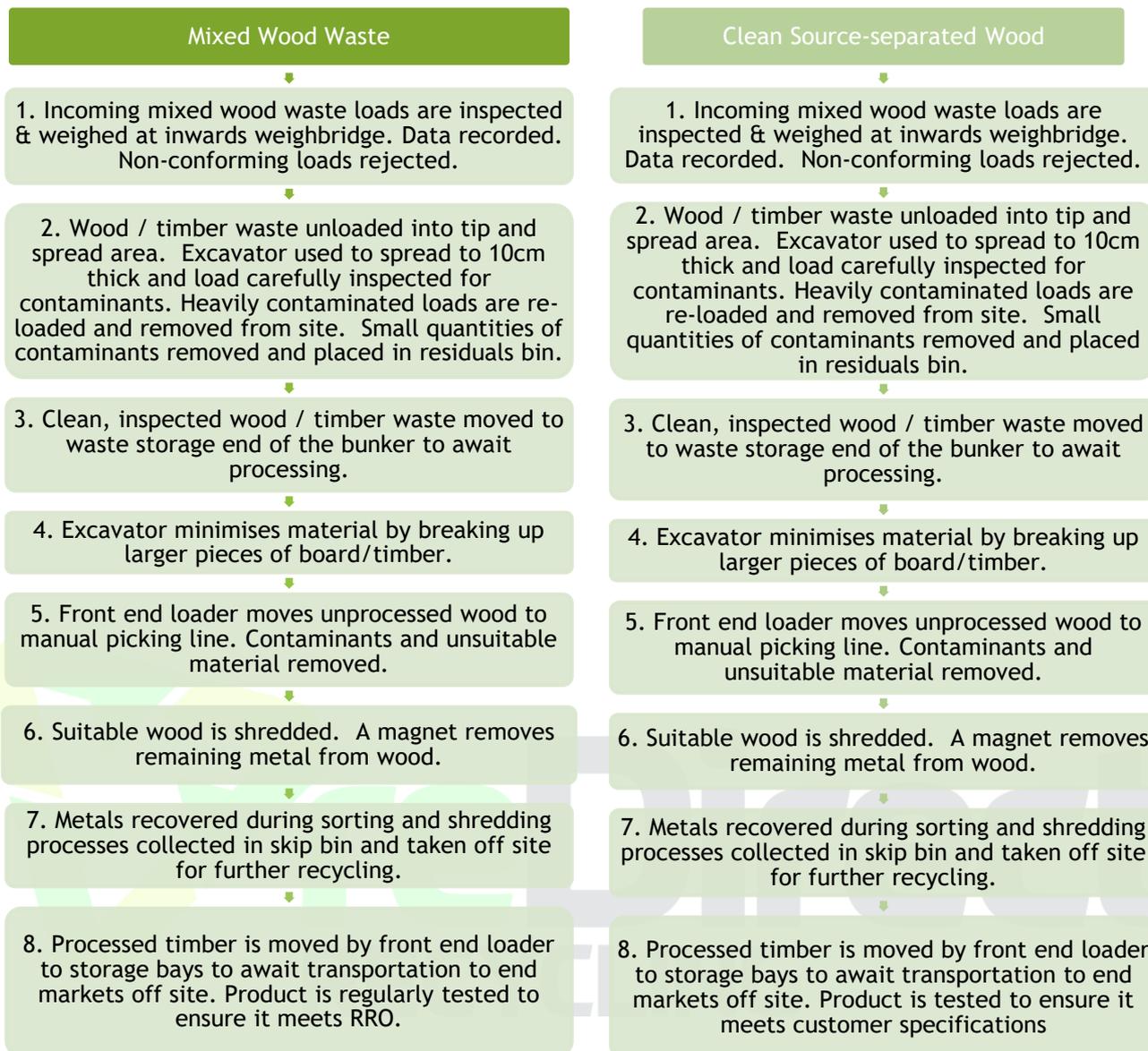


FIGURE 14 WOOD/TIMBER PROCESSING FLOW CHART

4.4.3 Processing of Plasterboard

The facility will receive suitable plasterboard waste primarily consisting of offcuts and deconstruction materials from construction sites, the facility will not accept co-mingled demolition waste. The waste receiving and inspection procedures will conform to the NSW EPA's *Standards for managing construction waste* in NSW. Loads will be inspected at the incoming weighbridge, as the incoming loads are being weighed. Incoming loads will be discharged in a dedicated waste unloading area, which will be on the concrete hardstand floor within the building. Any small quantities of non-conforming material that can easily be removed will be separated and set aside for later disposal. Highly contaminated loads will be re-loaded and removed from the site. Inspected and cleared waste will be transferred to a concrete bunker until ready for processing.

Plasterboard will be minimised in the same way that timber waste will be, using the teeth of the excavator, it will then be placed in a specialty turbo separator that removes the paper from the plasterboard and reduces the plaster into gypsum. The paper will be removed off-site for further recycling. The gypsum material is transferred into a storage silo awaiting dispatch.

THE GYPSUM IS LOADED INTO BULK TANKER TRUCK BY WAY OF VACUUM PUMP, TO ELIMINATE ANY POTENTIAL FUGITIVE DUST. THE GYPSUM WILL BE PROVIDED TO PLASTERBOARD MANUFACTURERS MAINLY CSR AT WETHERILL PARK FOR RE-USE IN NEW PLASTERBOARD PRODUCT OR USED IN AGRICULTURAL APPLICATIONS FOR SOIL CONDITIONING.

Figure 15 below outline the process flow chart for plasterboard.

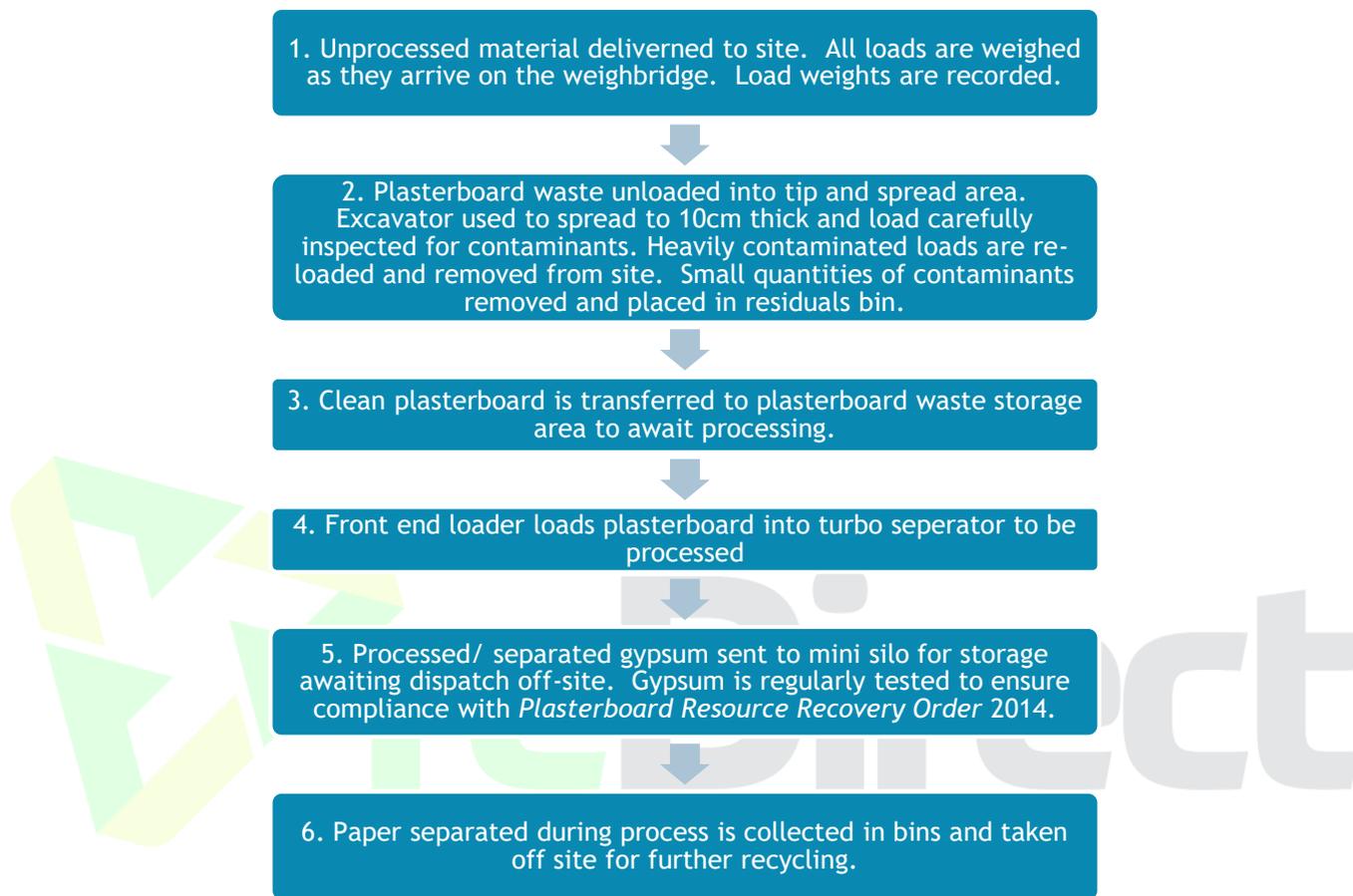


FIGURE 15 PLASTERBOARD PROCESSING FLOW CHART

4.4.4 Metals Collection

A large portion of the metals will be extracted during the timber processing, and includes nails, steel strapping, brackets which are removed during the minimisation process. Some small amounts of general waste steel and metal will be received onsite.

Metals including those removed during the timber processing will be placed into a metal collection bin and taken to a scrap metal recycling businesses/facilities. Metal will be stored in a separate storage area in appropriately sized bins to be taken off site.

4.5 Hours of Operation and Staffing

It is proposed to operate the facility 24 hours a day, 7 days a week including processing, waste delivery and collection. This is consistent with the previous approval on-site under SSD-8200.

A modern waste recycling facility needs to be able to receive, process and despatch 24 hours per day, although for the majority of times, it can be expected that most operations would be carried out in daytime hours.

There will be up to 10 staff employed onsite in processing, stockpiling, receiving, dispatch and office related work. There will be 3 shifts, with 5-6 staff per shift depending on operations running. Shifts will be 6:30am-2:30pm, 2:30pm-10:30pm, 10:30pm-6:30am. There will be some instances where there will be 10 staff on site during the day if there is an abundance of material to process.

4.6 Traffic Generation

The development involves transport movements associated with staff vehicles, service vehicles, waste trucks, and delivery trucks entering and leaving the site. The proposed facility is projected to generate up to 45 truck movements per day to and from the site during peak operations. Access to the site will be via Dunheved Circuit.

The primary operational activities that would generate traffic to and from the development site would be:

- Delivery of waste wood/timbers and plasterboard from Borg customers in front lift/hook bin and skip bin trucks;
- Delivery of waste wood/timbers and plasterboard from other resource recovery facilities in larger 19m trucks;
- Delivery of metals in smaller fleet skip bin/hook bin trucks;
- Dispatch of processed wood/timber to Oberon;
- Dispatch of gypsum to Wetherill Park and Forbes/Parkes;
- Dispatch of metals to metal recycling facility;
- Staff cars; and
- Service vehicles

The deliveries to site will be split over the 24 hours of operation, trying to reduce the impact on traffic. It is expected that the smaller trucks will be more frequent (95%) during the day between 7am and 4pm, with larger deliveries in the bigger trucks spread (80%) from 6pm to 3am. 80% of trucks leaving the site with processed material will be after 6pm. We intend to operate 7 days a week, however, it is likely that only materials from waste centres will be delivered on Saturday/Sundays at a reduced rate.

4.7 Wheel Wash

It is proposed to install an above ground portable wheel wash to assure that no foreign materials are tracked from the site onto the public roads. The wheel wash will be in front of the outbound weigh bridge, with trucks to use it on leaving the building. The model of wheel wash will incorporate automatic sludge removal (which will be removed from site by a waste contractor), an oil water separator and will recycle water.

4.8 Services

All required services are existing on the site. The current building on the site was constructed in 2016-2017 with an occupation certificate issued on the 9th June 2017. The Occupation Certificate certifies that the existing stormwater and fire services on the site are appropriate for the approved use of the site and comply with the applicable standards. No changes are proposed to any services on the site, the adequacy of the stormwater and fire services have been assessed. There is existing appropriate site fencing and external lighting for security purposes.

An easement for access and services is proposed to cover the existing OSD tanks on the adjoining lots, and to cover any vehicles using the adjoining driveway at 21 Dunheved Circuit, both sites are in the same ownership.

4.9 Capital Investment Value

As there are no proposed physical works to the site or the existing building, the capital investment value is based on the installation of plant and machinery for the operation of the resource recovery facility. The CIV for the proposal is \$2,820,120.

5 Waste Stream Analysis

This section details the types and amounts of different waste streams that will be accepted to site, their origins, how they will be stored, annual/weekly/daily throughputs, transportation of waste, the waste tracking system to be implemented and the proposed facilities compliance with relative strategies and standards.

5.1 Waste Streams

The increase of throughput at the existing resource recovery facility will facilitate the recovery and processing of;

- 110,000 tonnes per annum of Urban and Natural Wood wastes (MDF off-cuts, raw wood offcuts, clean pallets, LOSP pine, engineered wood products, particleboard, some laminated MDF with paint);
- 30,000 tonnes per annum of plasterboard waste, primarily offcuts and de-construction materials from construction sites.
- Up to 10,000 tonnes per annum of ferrous and non-ferrous metals. This will be made up of steel, and steel components removed from the processing of pallets i.e. nails, strapping etc. waste metals will be sorted and dispatched off-site. Some metal independent of the recovered materials will also be brought to be site.

The waste timber/wood stream can be distinctly broken into two main streams, being:

- Commercial and Industrial (C&I) generators - this includes Borg customers mainly cabinet makers, furniture makers, joiners, carpenters along with frame and truss manufacturers, businesses with waste pallets, pallet makers and other smaller manufacturers. These generators will equate for 40% (45,000 tonnes) of all waste wood/timbers coming to site. Borg customers and others with larger amount of waste materials will be provided with specialty reDirect Recycling skip bins and hook bins to place appropriate waste into. These bins will be emptied or collected by front lift bin and hook bin trucks and taken to the facility. Each of the bins are inspected before emptying to assure that only acceptable waste is included. These generators are bound by a contract to assure that only suitable waste is deposited, with non-conformance leading to termination of contracts. This waste is classified as construction and industrial waste.
- Waste Facility generators - reDirect Recycling has established commercial agreements with waste facilities to take suitable, pre-sorted wood/timber from waste facilities including Central Waste, Suez, Cleanaway, and Bingo facilities. These facilities will pre-sort and separate the desired materials from their incoming waste streams, removing all contaminants and undesirable materials. reDirect Recycling will generally then collect the suitable material in larger 19m trucks and walking floors. The waste facilities will account for 60% (65,000 tonnes) of incoming waste to site. This waste can be classified as general non-putrescible construction and demolition and commercial and industrial waste.
- Plasterboard will also come from the mentioned waste facilities and will be pre-sorted and separated by the operators prior to being picked up. 100% of this stream will come from these facilities.
- A large portion of metals will be extracted from processing of waste wood/timbers & plasterboard, with other metal to be collected from end user generators including strapping, bracing and other similar materials.

5.2 Types of Waste

The facility will focus on the processing of timber/wood wastes, primarily those materials outlined below:

- Offcuts of particleboard and MDF (raw and melamine coated);

- Clean wood pallets and crates;
- Softwood offcuts (untreated, treated blue pine, T2 Pine & LOSP) from businesses such as frame and truss manufacturers;
- LVL and glulam offcuts from businesses such as frame and truss manufacturers;
- Large EPC company demolition jobs; and
- Pre-sorted suitable waste from Waste Facilities.

Figure 16 and Figure 17 show acceptable wood inputs. The timber and wood waste are classified as General Solid Waste (non-putrescible) under the EPA’s Waste Classification Guidelines, as are plasterboard and metals

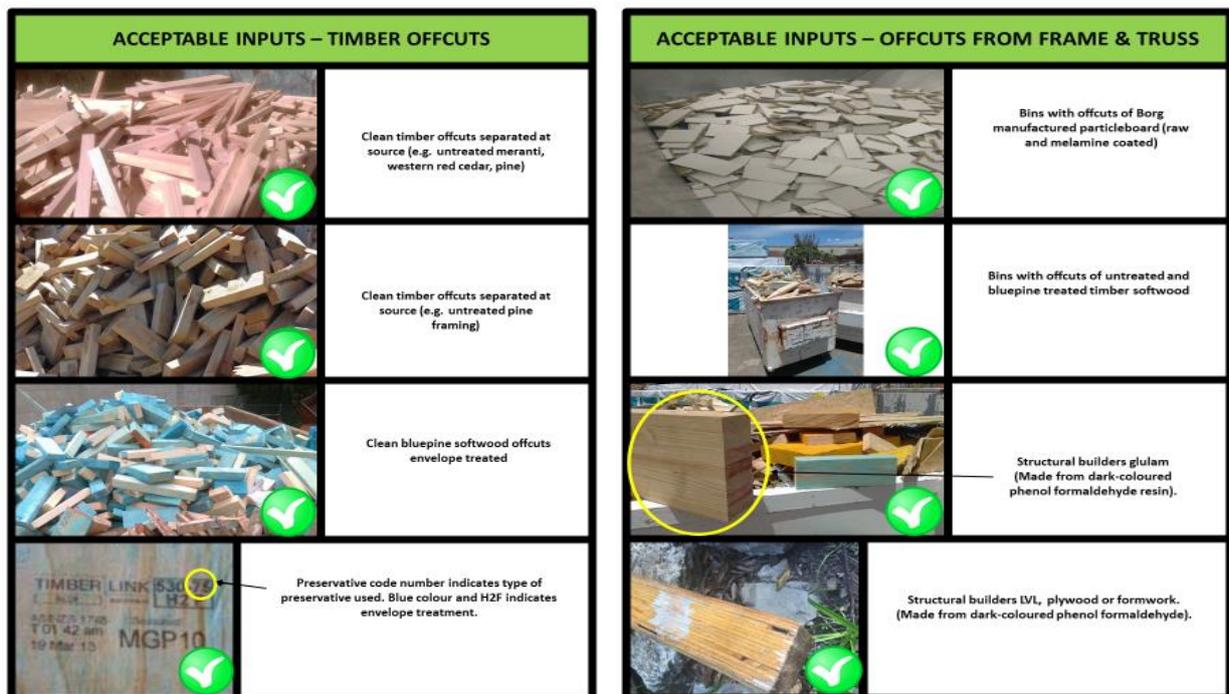


FIGURE 16 ACCEPTABLE INPUTS TIMBER OFFCUTS & FRAME/TRUSS

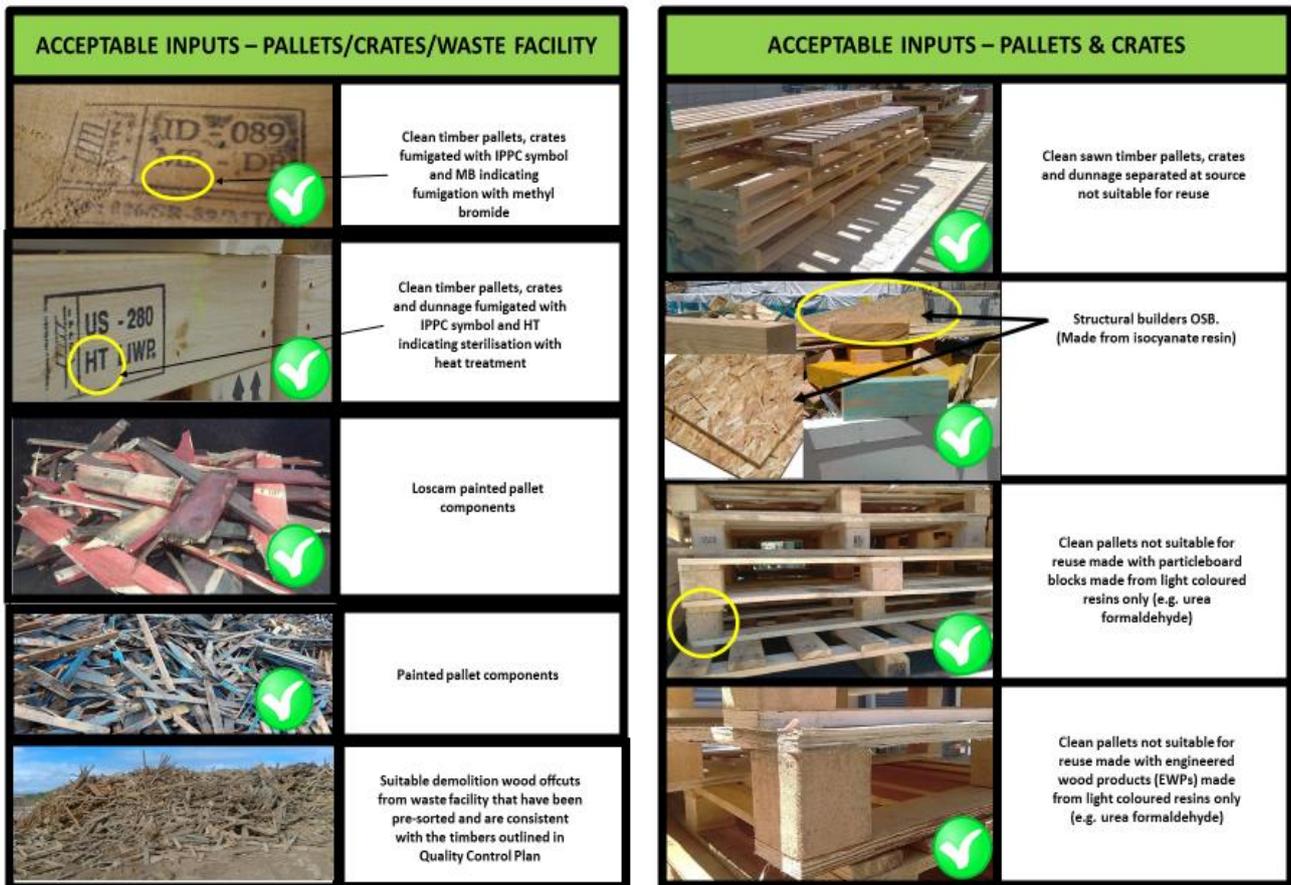


FIGURE 17 ACCEPTABLE INPUTS PALLETS/CRATES & WASTE FACILITIES

5.3 Throughput Analysis

Table 1 and Table 2 below provide an analysis of process and storage capacity for both Timber and Plasterboard on-site. As has been demonstrated, the facility has ample storage available to handle both incoming waste and processed material. It also demonstrates that the daily intake of waste can be processed within appropriate timeframe, with down time available for the servicing and cleaning of machinery.

A major point of difference between other resource recovery facilities is that the proposed St Mary's facility and the end user facility being Borg Oberon are owned and operated by the same entity. This enables the sites will interact in a way that is not possible in other facilities. For instance, if the St Mary's was overwhelmed with incoming material, or there was a pro-longed break down of machinery, waste materials can be taken to directly to Oberon for storage and processing. The Oberon site has the capacity to store waste materials 5-fold what is available at St Mary's.

TABLE 1 THROUGHPUT ANALYSIS- WOOD/TIMBER WASTE

Throughput Analysis- Wood/Timber Waste			
Annual	Daily	Weekly	Monthly
110,000 tonnes (Goal)	$110,000/355= 309$ tonnes a day	$309 \times 7= 2,163$ tonnes	$309 \times 30= 9270$ tonnes
Daily Inbound Trucks (Small fleet average 11t, Large fleet average 20t)			
Small Fleet (11t)	11 = 121 tonnes	77 = 847 tonnes	330 = 3,630 tonnes
Large Fleet (20t)	9 = 180-190 tonnes	63 = 1,260	270 = 5,400 tonnes
Processing capacity			
Slow speed shredder maximum capacity- 25 tonnes per hour x 24 hours			Max capacity= 600 tonnes a day
Slow speed shredder actual - 309 tonnes/25t per hour			13 hours to process daily intake
Recovery rate of waste timber/wood = 95%			Actual processed = 293 tonnes
Storage Capacity			
Unprocessed		Processed	
<p>3 x storage bays of 9m long x 7.6m wide x 4m high and 2 x storage bay 9.7m long x 5m wide x 4m high = 1208.8m³</p> <p>The density assumed for unprocessed material is 0.25t per cubic metre. $1208.8\text{m}^3 \times 0.25\text{t} = 302.2$ tonne of unprocessed storage</p> <p>This indicates that there is ample storage on-site to accommodate the processing rate required. This storage needs to be turned over less than 1.5 times a day to accommodate daily processing rate. There is ample time to turnover unprocessed material, as only 12 hours is required to process daily amounts.</p>		<p>Processed storage bay 3x 8m long x 6m wide x 4m high = 576m³</p> <p>The density assumed for processed material is 0.35t per cubic metre. $576\text{m}^3 \times 0.35\text{t} = 201.6$ tonne of processed storage.</p> <p>This indicates that there is ample storage on-site to accommodate the processed material awaiting distribution to Oberon. The processed material will need to be turned over at least once a day to meet daily process rates.</p>	

TABLE 2 THROUGHPUT ANALYSIS- PLASTERBOARD

Throughput Analysis- Plasterboard			
Annual	Daily	Weekly	Monthly
30,000 tonnes (Goal)	$30,000/355= 85$ tonnes a day	$85 \times 7= 595$ tonnes	$85 \times 30= 2550$ tonnes
Daily Inbound Trucks (Small fleet average 11t, Large fleet average 20t)			
Small Fleet (11t)	0	0	0
Large Fleet (20t)	$5 = 100$ tonnes	$35 = 700$ tonnes	$150 = 3,000$ tonnes
Processing capacity			
Turbo Separator maximum capacity- 15 tonnes per hour x 24 hours			Max capacity= 360 tonnes a day
Turbo Separator actual - 85 tonnes/15t per hour			5.5 hours to process daily intake
Recovery rate of gypsum = 85%			Actual finished product = 72.2 tonnes
Storage Capacity			
Unprocessed		Processed	
<p>1 x storage bay with an area of volume of approx. 456m^3</p> <p>The density assumed for unprocessed material is 0.25t per cubic metre. $456\text{m}^3 \times 0.25\text{t} = 114$ tonnes of unprocessed storage</p> <p>This indicates that there is ample storage on-site to accommodate the processing rate required. The storage area is able to accommodate the daily incoming plasterboard. There is ample time to turnover unprocessed material, as only 12 hours is required to process daily amounts.</p>		<p>Processed storage silo bay of 6m diameter x 8m high = 205m^3</p> <p>The density assumed for processed material is 0.4t per cubic metre. $205\text{m}^3 \times 0.4\text{t} = 82$ tonnes of processed storage.</p> <p>This indicates that there is ample storage on-site to accommodate the processed material awaiting distribution. There is ample time and storage to accommodate the process of proposed 30,000 tonnes of plasterboard per annum.</p>	

5.4 Quality Control

reDirect Recycling will only accept timber and wood waste from for the two sources identified above, with commercial contracts/agreements entered with suppliers to assure accountability and quality of inbound material. As a part of these agreement, each generator or supplier must implement the developed Quality Control Plan to ensure that only suitable materials are sent to reDirect Recycling.

The majority of the providers of wood waste to this facility are required to conform to the requirements of a Quality Control Plan, if the provider has not completed the QCP the load will be checked at the weighbridge prior to allowing entry to the facility, "Inspection Point 1". Methods of inspection will include cameras, physically using access equipment to look inside bins, opening doors and or removing tarps. Once a visual inspection has occurred prior to unloading, and the waste meets the quality requirements, the loads will be tipped and spread in the receiving area within the building, and further checked for compliance and any contaminants and non-conforming waste will be removed.

Any non-complying waste (NCW) is treated in accordance with the waste management plan and the procedures that will be developed including those for accepting/rejecting material and managing unexpected finds. These procedures also include onsite management and off-site disposal of contaminants and NCW.

All vehicles transporting material to the site will be required to enter and leave the site via one of the two site weighbridges. The weighbridges have a deck dimension of 20m long, 2.5m wide and have calibrated load carrying capacity of 60 tonnes. The weighbridge docket will contain the information required as per NSW EPA (2019) *Waste Levy Benchmark Requirements Output reporting for each transaction at levy paying facilities*.

Only deliveries of Waste timber/wood from approved suppliers will be permitted to be received and discharged into the UWR storage and handling system at the Site.

On arrival of a load of waste wood/timber at the site, the transport certificate/delivery docket will be checked by site personnel or via an automatic check system prior to being discharged into the UWR storage and handling system. Records of daily inspections will be maintained by the site.

In the case that materials cannot be accepted at the Site the vehicle will be directed to a dedicated quarantine area for non-acceptable UWR and not discharged. For those loads not accepted, the waste wood/timber Generator will be notified in writing and the load will be directed to return to the origin site. The return of such loads will be the responsibility of the Generator.

The point of discharge of waste timber/wood from delivery vehicle into the Site's UWR storage and handling system will be monitored by video camera and the image will be displayed in the central control room at the site. Figure 18 below outlines the quality control and inspection flowchart for the processing of waste from receipt on-site in St Marys through to its use in the production of particle board at the Borg Oberon operations.

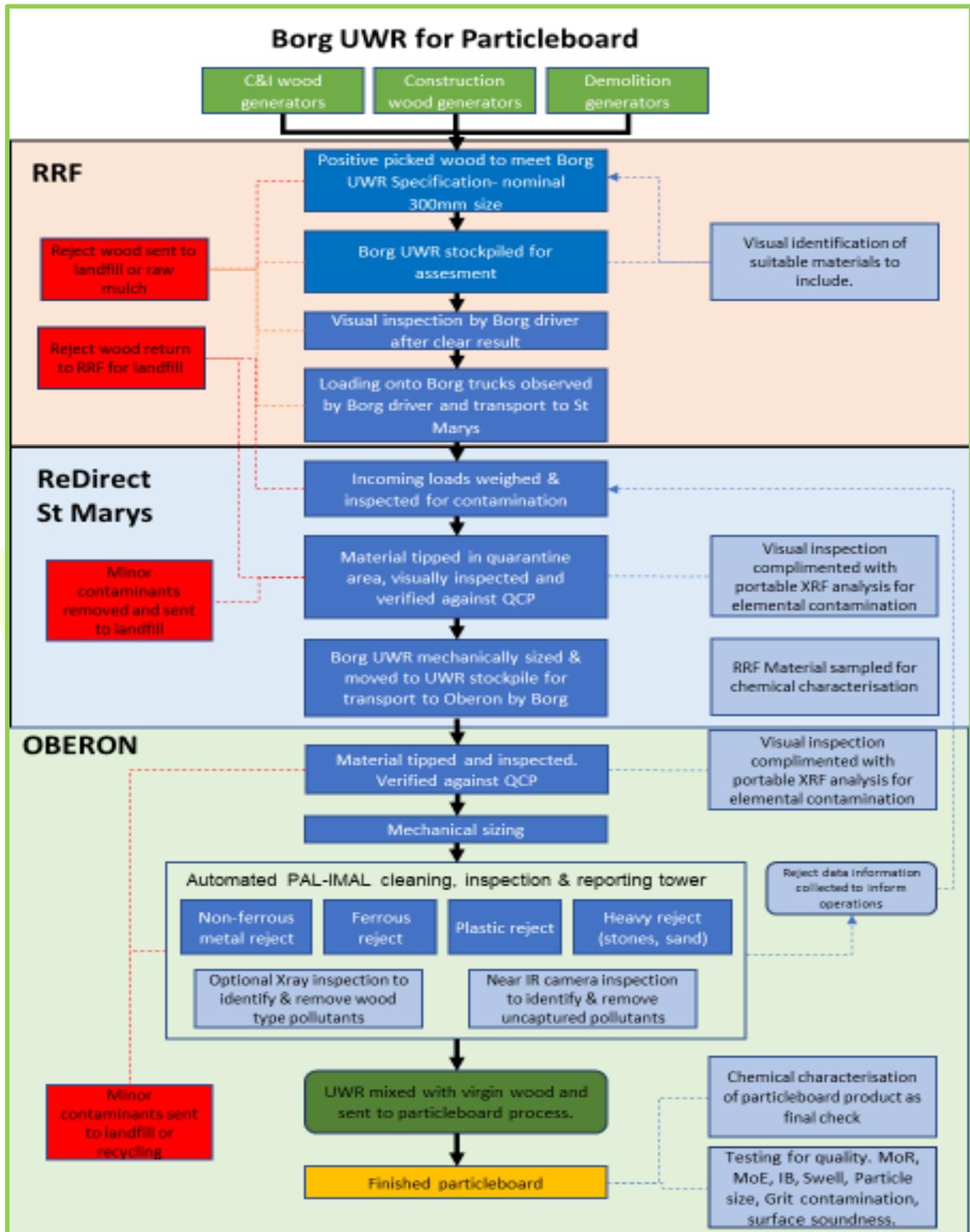


FIGURE 18 QUALITY CONTROL AND INSPECTION FLOWCHART- WASTE WOOD/TIMBER TO PARTICLE BOARD

6 Planning and Statutory Framework

This chapter outlines the statutory framework that applies to the proposal. It describes the relevant Commonwealth and NSW legislation, and the regulatory framework under which the proposal would be assessed.

6.1 Commonwealth Legislation

6.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of the Environment (DoE) and provides a legal framework to protect and manage places defined as Matters of National Environmental Significance (MNES). The EPBC Act lists the following places as MNES:

- World Heritage properties;
- Wetlands of International Significance (including Ramsar wetlands);
- Listed threatened species and communities;
- Listed Migratory Species protected under international agreements (CAMBA and JAMBA);
- Protection of the Environmental from Nuclear Actions; and
- Marine Environment.

Under Part 9 of the EPBC Act, actions that may have a significant impact on a MNES are deemed 'controlled actions' and require approval from the Commonwealth Minister for the Environment.

The proposal would not have an impact on MNES, and accordingly, approval from the Commonwealth Minister for the Environment is not required.

6.2 NSW Legislation

6.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) forms the statutory framework for environmental assessment and planning approval in NSW. The Project is considered 'State Significant Development' (SSD) in accordance with Division 4.1 of Part 4 of the EP&A Act. Specifically, section 89C of the EP&A Act states the following:

Section 4.36 Development that is State significant development

- (1) *For the purposes of this Act, State significant development is development that is declared under this section to be State significant development.*
- (2) *A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.*

In accordance with s4.36(2), the development is declared to be SSD as it is a type listed in Schedule 1 of the *State Environmental Planning Policy (SEPP) - State and Regional Development*. Namely;

23 Waste and resource management facilities

- (3) *Development for the purpose of resource recovery or recycling facilities that handle more than 100,000 tonnes per year of waste.*

Based on the intended handling capacity of the Resource Recovery Facility being 150,000 tonnes per annum, the development is classified as SSD.

Section 4.15 of the EP&A Act identifies the matters for consideration that must be considered by a consent authority when determining a development application. The proposed increase in throughput at the existing resource recovery facility has considered the matters for consideration, which will be further assessed further.

The relevant local planning instrument is the Penrith Local Environmental Plan 2010. The Proposal site is zoned IN1 General Industrial under *Penrith Local Environment Plan (LEP) 2010* as shown in Figure 19. A “resource recovery facility” is prohibited under the Penrith LEP 2010. However, Division 23 of *State Environmental Planning Policy (Infrastructure) 2007* permits the establishment and operation of a waste or resource management facility on land zoned IN1 General Industrial with development consent. The provisions of the SEPP prevail over the Penrith LEP 2010 in this regard. As such, the proposed development is permissible with development consent.

The EPIs that are applicable to the Proposal include:

- *State Environmental Planning Policy (State and Regional Development) 2011*
- *State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)*
- *State Environmental Planning Policy No. 33 - Hazardous and offensive development (SEPP 33)*
- *State Environmental Planning Policy No. 55 - Remediation of land (SEPP 55)*
- *State Environmental Planning Policy No. 64 - Advertising and signage (SEPP 64)*
- *Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River (SREP 20)*
- *Sydney Regional Environmental Plan No 30 - St Marys (SREP 30)*
- *Penrith Local Environmental Plan 2010 (PLEP 2010).*

6.2.2 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) establishes the State’s environmental regulatory framework and includes licensing requirements for certain activities. As the Development would receive more than 6,000 tonnes of waste per year from offsite, it would be a premises-based activity under Clause 42(3), Schedule 1 of the POEO Act and would be required to operate under an EPL administered by the Environment Protection Authority (EPA) under Section 43(b) of the Act.

Consultation has been undertaken with the EPA on several occasions throughout the preparation of this EIS. reDirect Recycling will seek an EPL following approval of the Development.

6.2.3 Waste Avoidance and Resource Recovery Act 2001

The objectives of the NSW *Waste Avoidance and Resource Recovery Act 2001* (WARRA) are to encourage efficient use of resources and reduce environmental harm. This is aimed to be achieved with the principles of ecologically sustainable development and considering resource management options against the hierarchy of avoid, reuse and dispose.

The proposed facility is consistent with these objectives by promoting a reduction of waste and facilitating waste re-use. Further detail on the NSW Governments Waste Avoidance and Resource Recovery Strategy and a Strategic Justification are discussed above in **Section 3.0**.

6.2.4 Water Management Act

The object of the *Water Management Act 2000* (WMA) is to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations. The WMA Act provides for the preparation of water sharing plans that set extraction limits and rules for water access, available water determinations, account management and trading in order to protect water sources

and their dependent ecosystems, whilst recognising the social and economic benefits of the sustainable and efficient use of water (Aquifer interference policy).

The Proposal does not include any construction or excavation and will not require an aquifer interference approval under Section 91 the WM Act.

6.2.5 National Parks and Wildlife Act 1974

The NSW National Parks and Wildlife Act 1974 (NPW Act) provides for the conservation of places, objects and features of significance to Aboriginal people and protection of native flora and fauna. A person must not harm or desecrate an Aboriginal object or place without an Aboriginal heritage impact permit under Section 90 of the NPW Act. However, a Section 90 permit is not required for SSD approvals by provisions of Section 89J of the EP&A Act. Potential impacts on Aboriginal heritage objects or places are unlikely due to the current developed nature of the existing site and no construction or excavation works. An assessment of Aboriginal heritage is discussed further in **Section 13**.

6.2.6 Heritage Act 1977

A search of the Local and State heritage registers found that there are no recorded heritage items within the Project site. It is considered there will be no impact to historic heritage in the locality of the development.

6.2.7 Contaminated Land Management 1997

The general intention of the *Contaminated Land Management Act 1997* (CLM Act) is to establish a process for investigating and (where appropriate) remediating the land that the EPA considers to be contaminated significantly enough to require regulation.

Section 5 of the CLM Act defines the contamination of land as:

The presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment (CLM Act, s5).

The proposal does not include any ground disturbance or construction, with the site fully hardstand. The proposal will not impact any areas of contaminated land.

6.2.8 Roads Act 1993

Both the Roads and Maritime Services (RMS) and Penrith City Council have been consulted about the potential local road impacts resulting from the development of the facility. These potential impacts included increased truck movements through the Dunheved industrial precinct, the provision of adequate staff car parking, site access, and the Level of Service (LoS) at intersections on heavy vehicle routes. A Traffic Impact Assessment has been prepared for the Project and is discussed in more detail in Section 15.

6.3 Environmental Planning Instruments & Policies

6.3.1 State Environmental Planning Policy (State and Regional Development) 2011

State Environmental Planning Policy (State and Regional Development) 2011 identifies classes of development and determines whether a development is classified as State Significant Development under Section 4 of the EP&A Act. This SEPP identifies the thresholds for waste and resource management facilities, along with other development types, to be classified as State Significant Development.

The aims of the SEPP (State and Regional Development) are:

- To identify development that is State Significant Development.
- To identify development that is State Significant Infrastructure and critical State Significant Infrastructure.
- To confer functions on joint regional planning panels to determine development applications.

Under Clause 23, Schedule 1 of SEPP (State and Regional Development) the Proposal is considered to be:

development for the purpose of resource recovery or recycling facilities that handle more than 100,000 tonnes per year of waste.

The development is therefore classified as State Significant and is assessable under Division 4.1 of the EP&A Act.

Under Clause 11 of the SEPP (State and Regional Development), development control plans (DCPs), developed under LEPs, are not applicable to SSD.

6.3.2 State Environmental Planning Policy (Infrastructure) 2007

The applicable aims of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP) are:

to facilitate the effective delivery of infrastructure across the State by:

(f) providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing. (ISEPP, Cl 2)

Clause 121 of the ISEPP makes provision for waste or resource management facilities to be undertaken, with development consent within a 'prescribed zone' being IN1 General Industrial. The subject site is zoned IN1 General Industrial under the PLEP 2010. Therefore, the proposed development would be permissible with development consent.

Under Clause 104 of ISEPP, waste and resource management facilities are identified as traffic generating developments and must be referred to Roads and Maritime Services. The consent authority must take into consideration:

- *Any submission that Roads and Maritime provides in response to the application within 21 days after the notice was given (unless, before the 21 days have passed, Roads and Maritime, advises that it will not be making a submission), and*
- *The accessibility of the Site, including:*
 - *The efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips; and*
 - *The potential to minimise the need for travel by car and to maximise the movement of freight in containers or bulk freight by rail; and*
- *Any potential traffic safety, road congestion or parking implications of the development.*

(ISEPP, Cl 104)

A Traffic and Transport Impact Assessment has been prepared to identify and address the potential traffic implications of the Proposal, and is summarised in Section 15 and presented in Appendix E. Consultation has been undertaken with Roads and Maritime during the preparation of this EIS (described in Section 7).

6.3.3 State Environmental Planning Policy No. 33- Hazardous and Offensive Development

SEPP 33 links the permissibility of an industrial development proposal to its safety and environmental performance. Certain activities may involve handling, storing or processing a range of materials, which, in the absence of controls, may create risk outside of operational borders to people, property or the environment. Such activities would be defined by SEPP 33 as a 'potentially hazardous industry' or 'potentially offensive industry'. SEPP 33 applies to any industrial development proposals which fall within these definitions.

Under Clause 3, a development is deemed part of a potentially hazardous industry if it satisfies the definition:

“a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:

- a) to human health, life or property, or*
- b) to the biophysical environment,*

and includes a hazardous industry and a hazardous storage establishment.”

A development is deemed part of a potentially offensive industry if it satisfies the following definition:

“a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.”

The Department of Planning (2011) guideline “Applying SEPP 33” provides a risk screening procedure to facilitate determination of whether a proposed development is applicable under the SEPP. If SEPP 33 is triggered under this screening test, Clause 12 of SEPP 33 requires that any proposal to carry out a potentially hazardous development must be supported by a Preliminary Hazard Analysis (PHA).

As the Proposal falls within the definition of a “potentially hazardous industry” or a “potentially offensive industry”, a screening assessment was undertaken, which is outlined in Section 8. The assessment found no potentially hazardous or dangerous goods would be stored onsite that would exceed the prescribed thresholds outlined in Applying SEPP 33, and that a PHA was not required for the Proposal.

6.3.4 State Environmental Planning Policy No. 55- Remediation of Land

The objective of SEPP 55 is to provide for a coordinated state-wide planning approach for the remediation of contaminated land. SEPP 55 aims to promote the remediation of contaminated land with the objective of reducing the risk of harm to human health or other aspects of the environment.

Clause 7 of SEPP 55 requires the approval authority to have regard to certain matters before granting approval. These matters include:

- Whether the land is contaminated;
- Whether the land is, or would be, suitable for the purpose for which development is to be carried out; and

- If remediation is required for the land to be suitable for the proposed purpose, whether the land will be remediated before the land is used for that purpose.

SEPP 55 also imposes obligations to carry out any remediation work in accordance with relevant guidelines, developed under the CLM Act (discussed above) and to notify the relevant council of certain matters in relation to any remediation work.

No ground disturbance or excavation is included in the proposal; therefore, the proposal does not require a phase 1 investigation.

6.3.5 Sydney Regional Environmental Plan No. 20- Hawkesbury Nepean River

SREP 20 aims to protect the environment of the Hawkesbury-Nepean River System by ensuring that the impacts of future land uses are considered in a regional context. The Proposal site is not located within an area classified as having significance, however the St Marys Industrial precinct is located immediately adjacent to an area of Regional Significance. The Proposal site is located approximately 130 m from the boundary of the area identified as having Regional Significance.

The feasible alternatives of the Proposal have been considered in Section 3 of this EIS, and the impacts of the Proposal on the environment have been considered throughout Sections 11 to 20 of the EIS. In addition, an OEMP would be implemented to ensure that land use is considered in a regional context to minimise environmental impacts. As a result, SREP 20 has been considered throughout the preparation of the EIS.

6.3.6 Sydney Regional Environmental Plan No. 30- St Marys

SREP 30 aims to provide a framework for sustainable development and management, including rezoning of and for urban and employment-generating development and for conservation purposes.

While the Proposal site is located outside the area that SREP 30 applies to, the impacts of the Proposal on areas to which SREP 30 applies have been considered throughout the preparation of the EIS.

6.4 Local Environmental Plan and Development Control Plan

6.4.1 Penrith Local Environmental Plan 2010

The Project is wholly located within the Penrith City Council (PCC) Local Government Area (LGA). The Penrith LEP 2010 governs land use within the PCC LGA.

The Project site is zoned IN1 General Industrial under the Penrith LEP 2010 identified in the Zoning Map shown below as Figure 19.

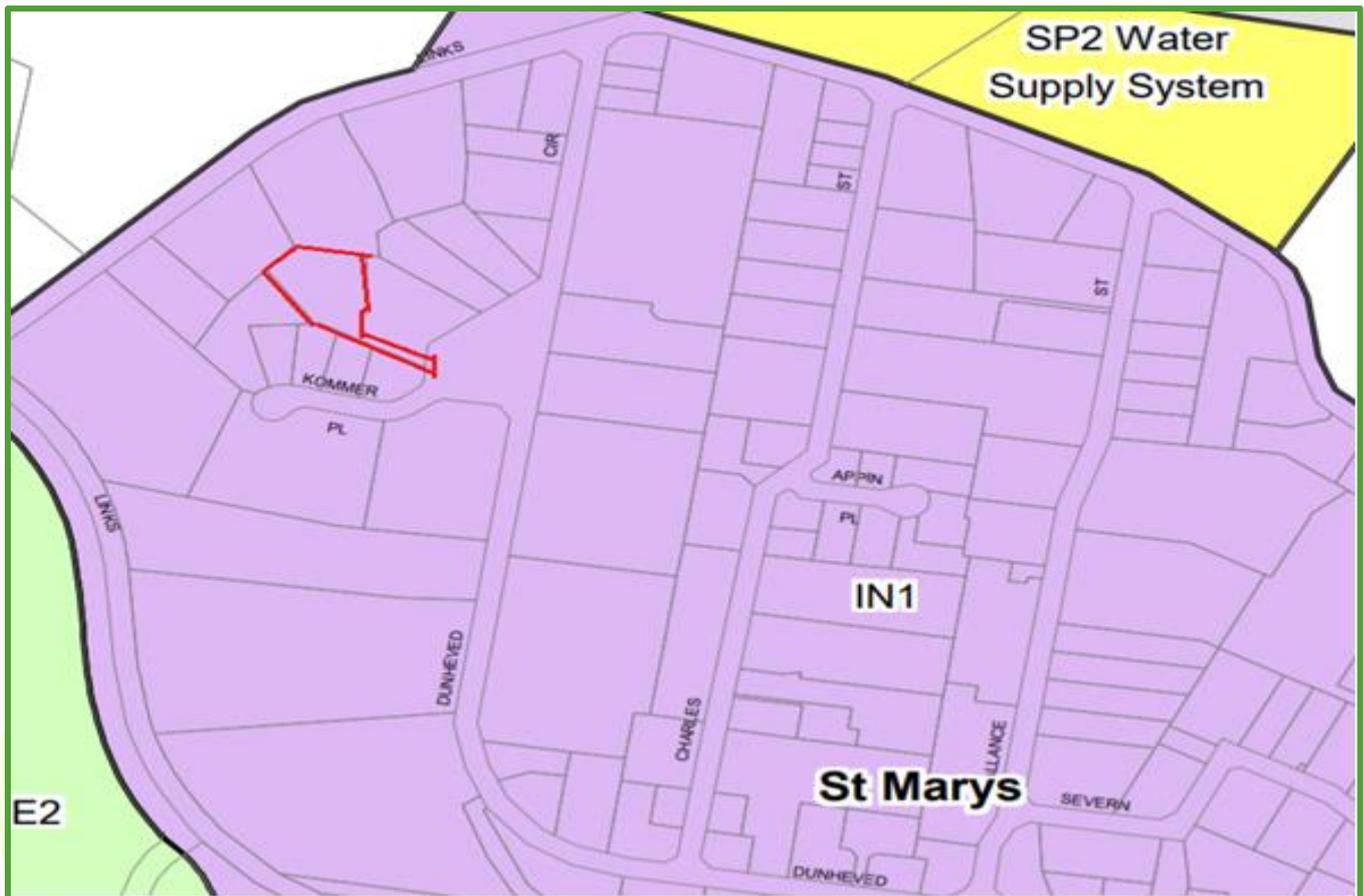


FIGURE 19 LAND USE ZONING- IN1 GENERAL INDUSTRIAL UNDER THE PLEP 2010

The proposed increase in throughput at the existing resource recovery facility is consistent with the objectives of the IN1 General Industrial zone which are:

- To provide a wide range of industrial and warehouse land uses.
- To encourage employment opportunities.
- To minimise any adverse effect of industry on other land uses.
- To support and protect industrial land for industrial uses.
- To promote development that makes efficient use of industrial land.
- To permit facilities that serve the daily recreation and convenience needs of the people who work in the surrounding industrial area.

The proposal is identified as an industrial use permissible under SEPP Infrastructure. The operation of the facility will provide for increased employment opportunities in the local area and is an industrial use utilising existing industrial land and development.

Given that no works are proposed to the existing building, there will be no change to the height of the building or floor space ratio on the site. Overall, the proposed development is consistent with the applicable clauses of the Penrith Local Environmental Plan.

6.4.2 Penrith Development Control Plan

The *Penrith Development Control Plan 2014* (Penrith DCP) supports the Penrith LEP by providing more detailed controls that apply to the Penrith LGA. As the Proposal is SSD the provisions of the Penrith DCP do not apply. However, consideration has been given to the objectives of the DCP to demonstrate consistency

of the Proposal with the overarching aims of Penrith City Council for the site and the surrounding area. General provisions of the Penrith DCP include:

- Water management;
- Land management;
- Waste management;
- Landscape design;
- Culture and heritage;
- Advertising and signage;
- Transport, access and parking;
- Noise and vibration; and
- Infrastructure and services.

The Proposal is generally compliant with provisions regarding waste management, transport, access and parking and noise and vibration. Given that there are no works proposed to the existing resource recovery facility, minimal clauses of the DCP apply to the proposal.



7 Consultation and Stakeholder Engagement

7.1 Overview

A stakeholder and community consultation program have been undertaken by the reDirect Recycling to assist in the preparation of the EIS for the Project. This chapter provides an overview of stakeholder engagement for the Project, a description of the stakeholder engagement activities undertaken and a summary of the findings that have been incorporated into this EIS.

7.1.1 Formal Consultation Requirements

Stakeholder engagement and consultation is an integral component in the preparation of an EIS for State Significant Development (SSD) projects. The SEARs for the Project state that:

During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and potentially affected landowners. You must consult with:

- Penrith City Council
- Department of Planning, Industry and Environment, specifically the:
 - Environment, Energy and Science Group (including the Climate Change and Sustainability Division)
 - Water Group
- Environment Protection Authority
- Fire and Rescue NSW
- Transport for NSW (including the former Roads and Maritime Services)
- Sydney Water

The EIS must describe the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.

7.2 Government Consultation

Consultation with government agencies was initiated by the Department of Planning, Industry and Environment (DPIE) during the preparation of the Secretaries Environmental Assessment Requirements (SEARs). Government Agencies that provided a response to DPI&E for inclusion in the SEARs included:

- Penrith City Council
- Department of Planning, Industry and Environment, specifically the:
 - Environment, Energy and Science Group (including the Climate Change and Sustainability Division)
 - Water Group
- Environment Protection Authority
- Fire and Rescue NSW
- Transport for NSW (including the former Roads and Maritime Services)
- Sydney Water

Consultation was undertaken by the reDirect Recycling with the required Government agencies during the preparation of this EIS to clarify agency requirements and to seek feedback. Each agency was sent a copy of

the Preliminary Environmental Assessment Report, to provide the agency with the opportunity to provide any additional input. The sections below summarise the key requirements outlined in both the SEARS and further comments provided because of further consultation.

7.2.1 NSW Department of Planning, Industry and Environment

The Department of Planning, Industry and Environment (DPIE) required that an Environmental Impact Statement (EIS) be prepared, which specifically addressed the following issues:

- Strategic context;
- Suitability of the site;
- Waste management;
- Hazards and risks;
- Air quality and odour;
- Noise and Vibration;
- Soil and water;
- Traffic and transport;
- Fire and Incident management;
- Greenhouse gas and energy efficiency
- Cultural Heritage and Aboriginal Cultural Heritage
- Ecologically Sustainable Development
- Environmental Planning Instruments and other policies;
- Guidelines; and
- Consultation.

DPIE also listed the key stakeholders to be consulted during the preparation of the development application. DPIE confirmed no additional issues need to be considered in the EIS.

7.2.2 Penrith City Council

Penrith City Council provided detailed comments to DPIE to assist in the formulation of the SEARS requirements. Penrith City Council recommended that the EIS address the following issues:

- Stormwater drainage in particular demonstration that the existing on-site stormwater is adequate for the proposal;
- Compliance with Water Sensitive Design Guidelines;
- Access and Road Design and potential for any upgrades; and
- Potential impacts on proposed town centre development at Jordan Springs East.

A further email was sent to Penrith City Council on the 14th August 2020 as a follow up, requesting any further comments they may have regarding the proposal. No further comments were offered by council.

7.2.3 NSW Environment Protection Authority

The NSW Environment Protection Authority (EPA) provided comprehensive details of the requirements of the EIS. In addition, it specifically highlighted the following issues to be addressed:

- Environmental Impacts of the proposal;
- Licensing;

- Air Quality;
- Noise and Vibration;
- Management of Dangerous Goods and Hazardous Materials;
- Wheel Wash;
- Incident Risks and Contingency Plans;
- Waste Management; and
- Surface water controls.

The EPA provided relevant legislation and guidelines with which to assess the above requirements. As a result of further consultation (email sent 14/8/2020), the EPA confirmed they have no additional issues that need to be considered in the EIS.

7.2.4 NSW DPIE- Environment, Energy and Science Group

NSW EES Group provided comments to inform the formulation of the SEARs for the proposal, they highlighted the following issues:

- Aboriginal Cultural Heritage;
- Biodiversity;
- Flooding and
- Soil and Water.

Further consultation was undertaken with the EES group in the form of an email sent 14/8/2020. No response was received.

7.2.5 NSW DPIE- Water and Natural Resource Access Regulator

NSW WANRAR was consulted by DPIE during the formulation of the SEARs. They provided the following comments in regard to the requirements required to be addressed in the EIS.

- Water Supply;
- Consolidated Water Balance;
- Impacts on surface and groundwater; and
- Proposed surface water and groundwater monitoring.

A further email was sent to WANRAR on the 14/8/2020 to see if they had any further comments or requirements. No response was received.

7.2.6 Fire and Rescue NSW

Fire and Rescue NSW provided comments to DPIE to assist in the formulation of the SEARs requirements for the project. Fire NSW deemed that insufficient information was provided, and more informed requirements will be outlined once the EIS has been reviewed. A further email was sent to Fire NSW on the 14/8/2020 requesting any further comments in relation to the proposal. Fire NSW confirmed that they had no further comments.

7.2.7 Transport for NSW

Transport for NSW requested that a Traffic Impact Assessment for the proposal be prepared dealing with the following issues.

- Daily traffic movements;

- Site traffic management;
- Compliance of internal roadways and sites ability to handle 26 metre b-doubles;
- Swept path analysis for all vehicles;
- Forecast impacts traffic volumes in the vicinity;
- Details of any proposed upgrades;
- Accessibility of the site; and
- Assessment of relevant planning documents.

Follow up consultation was undertaken with TfNSW in the form of an email sent 14/8/2020. The email requested further comments from TfNSW regarding the proposal. TfNSW confirmed they had no further comments in relation to the proposal.

7.2.8 Sydney Water

Sydney Water provided comments to DPIE in relation to the reDirect Recycling proposal, with the following requested to be included in the EIS:

- Water demands for the site;
- Stormwater treatment and re-use;
- Water quality impacts;
- Protection of existing stormwater assets; and
- Trade waste.

Further consultation with Sydney Water was undertaken in the form of an email sent 14/8/2020. Sydney Water confirmed in their response to the email that they had no further comments.

7.3 Community Consultation

During the development of the EIS, consultation was primarily undertaken to facilitate engagement between the project team and key community stakeholders. This engagement served a dual purpose:

- To identify key community issues for consideration in the EIS and associated technical studies; and
- To create broad awareness of the Proposal to any remove uncertainty around the Proposal.

The community consultation program commenced was undertaken from 20 August 2020 to 20 September 2020. Consultation activities undertaken to date include:

- A dedicated webpage (www.reDirect Recyclingstaging.com.au/st-marys-major-project) that offers general information about the Proposal, along with a factsheet, the preliminary environmental assessment that was prepared for the SEARs, site plans and a link to the project page on the DPIE Major Projects site.
- A contact number and project email address (development@borgs.com.au) were used to provide a central point of contact for any community enquiries.

An information postcard was letter boxed dropped to all properties within 500m of the site. The information card provided a brief overview of the project and advised receivers to visit the project website to gain more information and advised where to send comments, issues and feedback. Figure 20 shows the area encompassed by the 500m consultation distance. A total of ninety-five postcards were delivered out to landowners and the community seeking feedback on the Proposal.

A copy of the postcard provided to the community is presented in Figure 21.

No submissions were received via telephone, email or online during the consultation period. This is a similar outcome for consultation carried out for the previous major project proposal for Bingo. As will be demonstrated in this EIS, minimal impact is expected on any adjoining or further afar property owners, or the community in the general area.

7.4 EIS Public Exhibition and Post Exhibition

This EIS will be placed on public exhibition for a minimum period of 30 days. The proponent will continue to commit resources to satisfy consultation requirements during the public exhibition phase and throughout the life of the Project. The proponent will actively engage with key stakeholders to ensure they are aware the EIS is on exhibition. Information about the EIS will be made available on the Project website https://www.reDirect_Recyclingrecycling.com.au/st-marys-major-project/ and contact details for key Project representatives will continue to be made available on the Project website and on any distributed material.

The proponent will continue to undertake consultation with stakeholders as necessary post determination of the EIS for the Project.



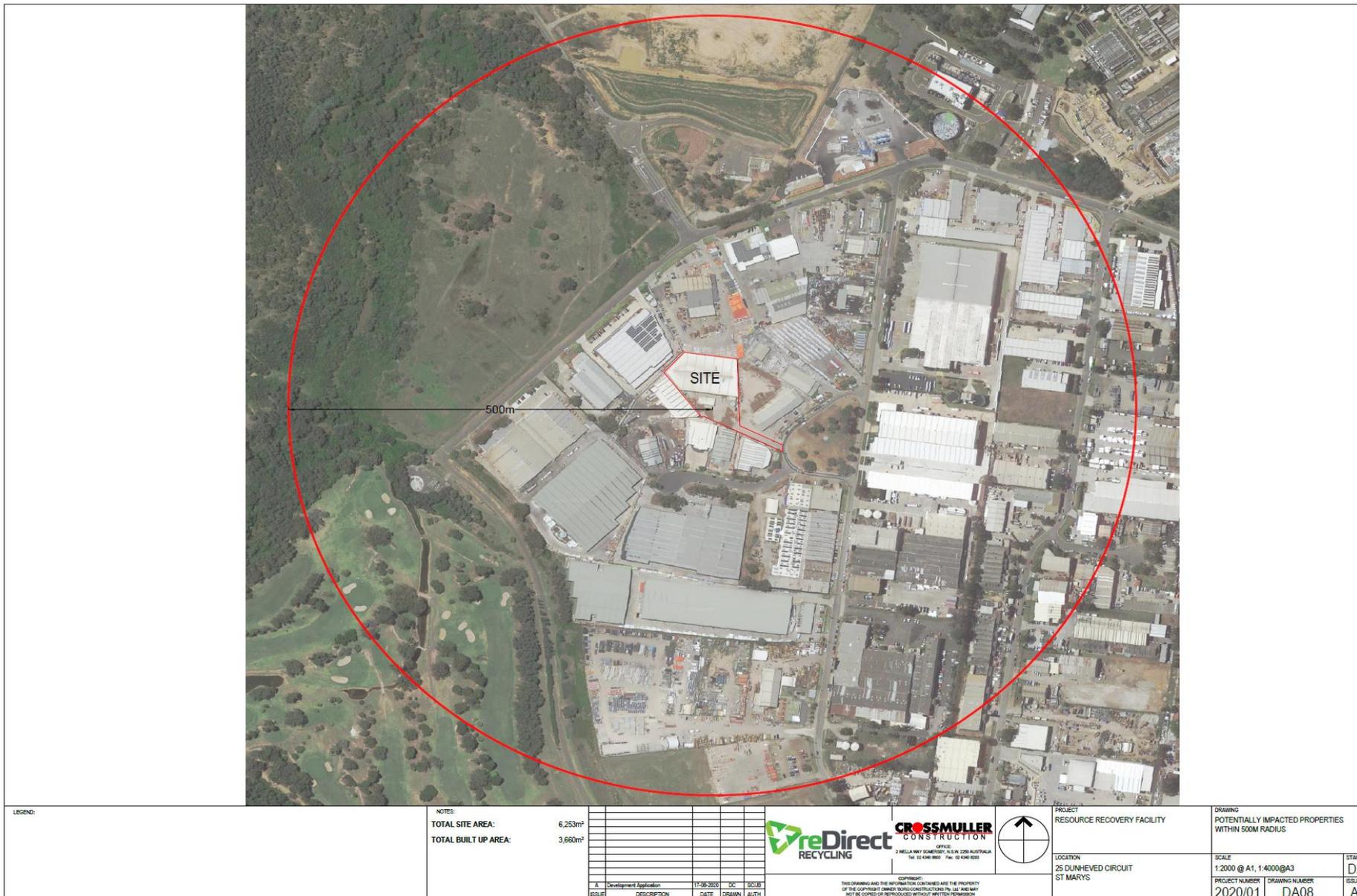


FIGURE 20 POTENTIALLY IMPACTED PROPERTIES, 500M RADIUS FROM PROPOSAL SITE



Application Details

Major Project Number: SSD-10474

Applicant: reDirect Recycling

Location: 25 Dunheved Circuit, St Marys

Proposal: Increase in throughput at existing Resource Recovery Facility - 150,000 tonnes per annum consisting of wood, plasterboard and metals

Contact: Sam Coles
development@borgs.com.au

Period of consultation: 20/8/2020 - 20/9/2020

Notice of State Significant Development

reDirect Recycling have lodged a State Significant Development application with the NSW Department of Planning, Industry and Environment to increase the throughput at the existing Resource Recovery Facility located at 25 Dunheved Circuit, St Marys. It is proposed to process 150,000 tonnes of waste per annum consisting of 110,000 tonnes of waste wood/timber, 30,000 tonnes of plasterboard and 10,000 tonnes of metal.

reDirect Recycling values the local community, and is asking for feedback or comments in relation to the proposal.

For more information visit www.redirectrecycling.com.au/st-marys-major-project/

Any comments or feedback can be sent to development@borgs.com.au

A Borg company

FIGURE 21 COPY OF INFORMATION POSTCARD DELIVERED TO 95 SURROUNDING PROPERTIES

8 Hazard and Risk Assessment

A Preliminary Hazard Analysis and Environmental Risk Assessment has been performed to identify key potential impacts of the development, as well as potentially offensive or hazardous issues that need to be considered as part of the EIS process.

The assessment has been performed according to AS/NZS ISO 31000: 2009 *Risk Management - Principles and Guidelines* and the Preliminary Hazardous Analysis has been informed by the *Hazardous and Offensive Development Application Guidelines - Applying SEPP 33* (NSW Department of Planning, 2011)³. We have also considered the following guidelines published by the NSW Department of Planning in 2011:

- *Hazardous Industry Planning Advisory Paper No 2 - Fire Safety Study Guidelines*⁴
- *Hazardous Industry Planning Advisory Paper No 3 - Risk Assessment*⁵
- *Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning*⁶
- *Hazardous Industry Planning Advisory Paper No 6 - Hazard Analysis*⁷.

8.1 Scope

The assessment has been performed to identify the risks posed to people, property and the environment, and to identify potential hazardous and offensive issues that need to be addressed as part of the development to ensure compliance with SEPP 33. The assessment also considers off-site risks to people, property and the environment (in the presence of controls) arising from atypical and abnormal hazardous events and conditions (i.e. equipment failure, operator error and external events). The hazard treatment measures that have been proposed assist in producing a 'low' level of risk in accordance with the risk acceptance criteria.

8.2 Methodology

The NSW Department of Planning (2011) in the *Hazardous and Offensive Development Application Guidelines - Applying SEPP 33* sets out a process for screening potentially hazardous materials that are stored on site as part of a proposed development.

Potential risk typically of holding certain types of hazardous materials on site depends on:

- the properties of the substance(s) being handled or stored;

³ NSW Department of Planning (2011). *Hazardous and Offensive Development Application Guidelines - Applying SEPP 33*. Published by the NSW Department of Planning. Internet publication: <http://www.planning.nsw.gov.au/en/Policy-and-Legislation/-/media/3609822D91344221BA542D764921CFC6.ashx>

⁴ NSW Department of Planning (2011). *Hazardous Industry Planning Advisory Paper No 2 - Fire Safety Study Guidelines*. Published by the NSW Department of Planning. Internet publication: <http://www.planning.nsw.gov.au/Policy-and-Legislation/-/media/CCC734E980C4427DB95D319DF073C41A.ashx>

⁵ NSW Department of Planning (2011). *Hazardous and Offensive Development Application Guidelines- Risk Criteria for Land Use Safety Planning*. Published by NSW Department of Planning. Internet publication: <http://www.planning.nsw.gov.au/Policy-and-Legislation/-/media/0D39F08E7889409BBA1FA88D5FB859FD.ashx>

⁶ NSW Department of Planning (2011). *Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning*. Published by the NSW Department of Planning. Internet publication: <http://www.planning.nsw.gov.au/Policy-and-Legislation/-/media/0D39F08E7889409BBA1FA88D5FB859FD.ashx>

⁷ NSW Department of Planning (2011). *Hazardous Industry Planning Advisory Paper No 6 - Hazard Analysis*. Published by NSW Department of Planning. Internet publication: <http://www.planning.nsw.gov.au/Policy-and-Legislation/-/media/3ACC37BE3EFE4BAAB3EBA5872AFBA8BD.ashx>

- the conditions of storage or use;
- the quantity involved;
- the location with respect to the site boundary; and
- the surrounding land uses.

Risk screening needs to be undertaken as part of the SEPP 33 guidelines based on an estimate of the consequences of fire, explosion or toxic release from material(s) being handled. It takes into account information from the proponent on the properties of the materials, quantity, type of storage or use, and location.

The methodology used to inform preliminary hazard analysis and environmental risk assessment has included the following steps:

- Identify and screen the hazards associated with the project;
- Examine the maximum reasonable consequence of identified events;
- Qualitatively estimate the likelihood of events;
- Proposed risk treatment measures;
- Qualitatively assess risks to the environment, member of the public and their property arising from atypical and abnormal events and compare these to applicable qualitative criteria;
- Recommend further risk treatment measures if considered warranted; and
- Qualitatively determine the residual risk assuming the implementation of the risk treatment measures.

It is important to note that this preliminary hazard analysis and environmental risk assessment has been undertaken at an early stage of the proposed development to help inform key issues to be considered in the EIS. All hazards need to be identified, and an assessment of the resultant risk levels on a cumulative basis is also undertaken as part of the study.

8.2.1 Risk Management

The environmental risk assessment has been informed by AS/NZ 31000: 2009 *Risk Management Principles and Guidelines* and *Hazardous Industry Planning Advisory Paper No 3 - Risk Assessment* (NSW Department of Planning, 2011). The risk management process has been informed by the following elements:

- Establish the context;
- Identify the risks;
- Analyse the risks;
- Evaluate the risks; and
- Treat risks.

8.2.2 Risk Criteria

The following principles have been adopted to identify and assess risk in this study. This has been informed by the *Hazardous Industry Planning Advisory Paper No. 4 - Risk Criteria for Land Use Safety Planning* (NSW Department of Planning, 2011).

- The avoidance of all avoidable risks;
- The risk from a major hazard should be reduced wherever practicable, even where the likelihood of exposure is low;

- The effects of significant events should, wherever possible be contained within the site boundary; and
- Where the risk from an existing installation is already high, further development should not pose any incremental risk.

8.2.3 Qualitative measurement of consequence, likelihood and risk

To undertake a qualitative risk assessment, it is useful to describe the levels of consequence of a particular event, and the likelihood or probability of such an event occurring. Risk assessment criteria have been developed in AS/NZS ISO 31000: 2009 which allows the risk assessor to develop risk criteria during the establishment of the context.

In according with AS/NZS ISO 31000: 2009, Table 3 and Table 4 have been reviewed as part of establishing the context of the project. These tables were considered to be consistent with the specific objectives of the preliminary hazard analysis and environmental risk assessment.

TABLE 3 QUALITATIVE MEASURES OF PROBABILITY

Event	Likelihood	Description
A	Almost certain	Happens often
B	Likely	Could easily happen
C	Possible	Could happen and has occurred elsewhere
D	Unlikely	Hasn't happened yet but could
E	Rare	Conceivable, but only in extreme circumstances

TABLE 4 QUALITATIVE MEASURES OF MAXIMUM REASONABLE CONSEQUENCE

Event	People	Environment	Asset / Production
1	Multiple fatalities	Extreme environmental harm (e.g. widespread catastrophic impact on environmental values of an area)	More than \$1B loss or production delay
2	Permanent total disabilities, single fatality	Major environmental harm (e.g. widespread substantial impact on environmental values of an area)	\$100M to \$1B or production delay
3	Minor injury or health effects (e.g. major lost workday case / permanent disability)	Serious environmental harm (e.g. widespread and considerable impact on environmental values of an area)	\$5M - \$100M loss or production delay
4	Minor injury or health effects (e.g. restricted work or minor lost workday case)	Material environmental harm (e.g. localised and considerable impact on environmental values of an area)	\$250K to \$5M loss or production delay
5	Slight injury or health effects (e.g. first aid / minor medical treatment needed)	Minimum environmental harm (e.g. minor impact on environmental values of an area)	Less than \$250K or production delay

Combining the probability and consequence tables, Table 5 provides a qualitative risk analysis matrix to assess risk levels.

TABLE 5 QUALITATIVE RISK ANALYSIS MATRIX USED IN THIS PRELIMINARY HAZARD ANALYSIS AND ENVIRONMENTAL RISK ASSESSMENT

	Probability ¹					
	A	B	C	D	E	
Consequence	1	1 (H)	2 (H)	4 (H)	7 (M)	11 (M)
	2	3 (H)	5 (H)	8 (M)	12 (M)	16 (L)
	3	6 (H)	9 (M)	13 (M)	17 (L)	20 (L)
	4	10 (M)	14 (M)	18 (L)	21 (L)	23 (L)
	5	15 (M)	19 (L)	22 (L)	24 (L)	25 (L)

¹ Legend - L: low; M: Moderate; H: high; Risk numbering: 1 - highest; 25 - lowest risk. Colour coding: Green: tolerable risk; orange: ALARP - as low as reasonably practicable; red: intolerable risk.

Risk acceptance criteria for the project have been formulated following consideration of the *Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning* (NSW Department of Planning and Environment, 2011d) and AS/NZS ISO 31000 2009 - *Risk Management Principles and Guidelines*.

In assessing the tolerability of risk from potentially hazardous development, both qualitative and quantitative aspects need to be considered. Relevant general principles considered in this study as documented in the *Hazardous Industry Planning Advisory Paper No 4 - Risk Criteria for Land Use Safety Planning* (NSW Department of Planning, 2011):

- The avoidance of all avoidable risks;
- The risks from a major hazard should be reduced wherever practicable, even where the likelihood of exposure is low;
- The effects of significant events should, wherever possible be contained within the site boundary; and
- Where the risk from an existing installation is already high, further development should not pose any incremental risk.

8.2.4 Hazardous Materials

There will be minimal hazardous materials stored at the site. The only hazardous materials will be lubricating oil and other solvents for equipment maintenance.

The facility will also store up to 1375 m³ wood and timber waste, and up to 20 m³ of paper waste extracted from the plasterboard waste, which are not hazardous but are combustible.

These materials will be stored at several locations. The SEPP 33 thresholds are described in Table 6 below. The Facility will be designed and operated to not exceed the thresholds for waste storage.

TABLE 6 RISK SCREENING ANALYSIS OF POTENTIALLY HAZARDOUS MATERIALS HELD ON SITE AS PART OF THE PROPOSAL

Material / potential pollutant	Storage location*	Dangerous Goods Class ¹	Packing Group ³	Maximum quantity on site	Screening method ⁴	Threshold ⁵	Notes	Potentially hazardous development?
Wood/timber waste	Wood processing area	n/a	n/a	436 tonnes	n/a	n/a	Not a dangerous good but is potentially flammable	No
Paper waste	Plasterboard processing area	n/a	n/a	3 tonnes	n/a	n/a	Not a dangerous good but is potentially flammable	No
Small quantities of lubricating oil / solvents	Chemical storage cabinet	9	III	<500L	n/a	n/a	Not classified as a dangerous goods	No

¹Dangerous Good Class:

- Class 2.1 Dangerous Goods are classified as 'flammable gases';
- Class 2.2 Dangerous Goods are classified as 'non-flammable, non-toxic gases';
- Class 3 Dangerous Goods are classified as 'flammable liquids';
- Class 6 Dangerous Goods are classified as 'toxic substances'
- Class 7 Dangerous Goods are classified as 'radioactive';
- Class 8 Dangerous Goods are classified as 'corrosive';
- Class 9 Dangerous Goods are classified as 'miscellaneous dangerous goods and articles';

²Combustible Liquid: "Any liquid other than a flammable liquid that has a flashpoint, and that has a fire point less than its boiling point":

- C1: Combustible liquid with flashpoint >60.5°C <150°C
- C2: Combustible liquid with flashpoint >150°C

³Packing Group

- Packing Group I is a group of dangerous goods that are classified as 'substances presenting high danger'
- Packing Group II is a group of dangerous goods that are classified as 'substances presenting medium danger'
- Packing Group III is a group of dangerous goods that are classified as 'substances presenting lower danger'

⁴Screening method is the methodology used to assess dangerous goods in the NSW Department of Planning (2011) *Hazardous and Offensive Development Application Guidelines - Applying SEPP 33*.

⁵ Where dangerous goods are stored on-site which exceed the nominated thresholds as per Department of Planning (2011) *Hazardous and Offensive Development Application Guidelines - Applying SEPP 33*, the proposed development is considered to be hazardous and requires detailed assessment under SEPP 33.

8.2.5 Small quantities of oil, solvents for machine maintenance

Small quantities (<50L each) of lubricating oil, grease and solvents will be stored on site for the purpose of machine maintenance.

This material will be stored in a self-bundling chemical storage cabinet. The cabinet will be inside the warehouse, away from main traffic areas. A chemical spill kit will be located next to the cabinet to allow any spills to be dealt with quickly. The building is bunded.

8.3 Further hazard identification, scenarios, consequence, likelihood analysis and risk assessment

To help understand further hazards possible as part of the proposed development, a series of potential worst-case scenarios have been assessed to determine possible consequences, likelihood and risk. The NSW Department of Planning's (2011) *Hazardous Industry Planning Advisory Paper No 6 - Hazard Analysis* has been used to assist in guiding this analysis.

As per the above guidelines, this assessment has qualitatively assessed the impacts of the largest possible event on people, plant and the environment. The worst-case scenarios reflect any foreseeable factors that could exacerbate the severity of an accident, including abnormal process conditions, out of hours manning levels, and the potential for control measures to be disabled or rendered inoperable by the accident.

The worst-case scenarios we have assessed include the following:

- Vehicle collision on entry to the site, resulting in injury, death or possible fire;
- Leaks / spills on vehicle entry to the site, with potential impacts on stormwater and fire risk;
- Vehicle theft and malicious damage, leading to equipment failure and injury to person(s);
- Leaks / spills in outside the warehouse, with potential impacts on stormwater;
- Vehicle collision between delivery vehicles with other on-site vehicles through driver error, or pedestrian, resulting in injury or death inside the warehouse;
- Excess wood dust and build-up of electrostatic electricity causing spark and fire;
- Equipment breakdown and excess stock stored in the facility increases risk of vehicle collision or fire
- Leakage of fuel and oil containers in workshop, potentially igniting and/or moving into stormwater, through human error or malicious act;
- Fire caused by ignition source (e.g. cigarette, hot work such as welding, arson) and flammable materials (e.g. wood, paper) catch fire.

Prevention and treatment measures to reduce the likelihood and resulting consequences from these worst-case scenarios are mapped out in Table 7 below. Note that a risk rating category has been prepared to understand the significance of these risks - on the environment and human health. Note that the risk ratings estimated as part of the qualitative analysis are specified after implementation of the risk prevention, treatment and detection measures.

TABLE 7 HAZARD IDENTIFICATION, SCENARIO, CONSEQUENCE, PREVENTION/TREATMENT MEASURES AND RISK RATING TABLE

Facility event	Cause / comment	Possible results & consequences	scenarios, &	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
Entry to site							
Vehicle collision	Possible collision of delivery vehicles with other on-site vehicles through driver error, or pedestrian, resulting in possible injury or death. Possibility of vehicle fire.	Fire possible outside of the Facility, potentially spreading across the site. Possible impacts on stormwater from discharge of fire water.		<ul style="list-style-type: none"> • Ensure vehicle speed limits and regular driver education • Firefighting equipment • Emergency management / response plan • Pollution incident response management plan / Environmental management plan • Traffic management plan • Work health and safety plan • Hazardous material management plan • Operator and driver training • Spill response equipment and training • Emergency response • Communications • Spill containment and sweeping of hardstand 	Possible (C)	3	13 (Moderate risk)

Facility event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
			<ul style="list-style-type: none"> Contact emergency services (NSW Fire Service) 			
Leak / spill	Vehicle collision / damage causes spill / leak of hazardous material	Collision causes leakage of vehicle fuel or oil onto hardstand and possible stormwater impacts and a fire risk	<ul style="list-style-type: none"> Ensure vehicle speed limits and regular driver education Firefighting equipment Emergency management / response plan Pollution incident response management plan / Environmental management plan Traffic management plan Work health and safety plan Hazardous material management plan Operator and driver training Spill response equipment and training Emergency response Communications Spill containment and sweeping of hardstand 	Possible (C)	5	22 (Low risk)

Facility event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
			<ul style="list-style-type: none"> Contact emergency services (NSW Fire Service) 			
Vehicle theft / malicious damage	Vehicle or material within truck stolen	Components of a truck are stolen and leads to equipment failure and possible safety risk to staff	<ul style="list-style-type: none"> Ensure staff compliance with site security measures Emergency management / response plan Traffic management plan Work health and safety plan Contact emergency services (Police) Site security / limited access 	Possible (C)	5	22 (Low risk)
Within the Facility						
Leak / spill	Vehicle collision / damage causes spill / leak of hazardous material	Collision causes leakage of vehicle fuel or oil onto handstand and possible stormwater impacts and a fire risk	<ul style="list-style-type: none"> Ensure vehicle speed limits and regular driver education Firefighting equipment Emergency management / response plan Pollution incident response management plan / Environmental management plan Traffic management plan Work health and safety plan 	Possible (C)	5	22 (Low risk)

Facility event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
			<ul style="list-style-type: none"> • Hazardous material management plan • Operator and driver training • Spill response equipment and training • Emergency response • Communications • Spill containment and sweeping of hardstand • Contact emergency services (NSW Fire Service) 			
Theft malicious damage	/ Vehicle or material within truck stolen	Components of a truck are stolen and leads to equipment failure and possible safety risk to staff	<ul style="list-style-type: none"> • Ensure staff compliance with site security measures • Emergency management / response plan • Traffic management plan • Work health and safety plan • Contact emergency services (Police) • site security / limited access • Contact emergency services (NSW Police) 	Unlikely (D)	5	24 (Low risk)

Facility event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
Vehicle collision	Possible collision of delivery vehicles with other on-site vehicles through driver error, or pedestrian, resulting in possible injury, death or fire	Fire possible in Facility, potentially spreading to other parts of the site	<ul style="list-style-type: none"> • Ensure vehicle speed limits and regular driver education • Firefighting equipment • Emergency management / response plan • Pollution incident response management plan / Environmental management plan • Traffic management plan • Work health and safety plan • Hazardous material management plan • Operator and driver training • Spill response equipment and training • Contact emergency services (NSW Fire Service) 	Possible (C)	3	13 (Moderate risk)
Excess dust causing fire	Fire caused by excess dust and build-up of electrostatic electricity or spark and fire	Excess build-up of dust during operations, and spark through electrostatic electricity or spark	<ul style="list-style-type: none"> • Ensure staff compliance with hot work procedures • Regular machinery maintenance and safety inspections 	Possible (C)	3	13 (Moderate risk)

Facility event	Cause / comment	Possible results & consequences	scenarios, & Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
		through electrical failure	<ul style="list-style-type: none"> • Dust minimisation practices • Firefighting equipment • Emergency management / response plan • Pollution incident response management plan / Environmental management plan • Traffic management plan • Work health and safety plan • Hazardous material management plan • Operator and driver training • Spill response equipment and training • Contact emergency services (NSW Fire Service) 			
Equipment breakdown and excess stockpiling	Excess stock increases stored in Facility increases risk of vehicle collision or fire	Collision of vehicles due to constrained operational area, possible fire as a result	<ul style="list-style-type: none"> • Cease receipt of Waste on the site and divert trucks to other facilities • Firefighting equipment • Emergency management / response plan 	Unlikely (D)	5	24 (Low risk)

Facility event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
			<ul style="list-style-type: none"> • Pollution incident response management plan / Environmental management plan • Traffic management plan • Work health and safety plan • Hazardous material management plan • Operator and driver training • Spill response equipment and training • Contact emergency services (NSW Fire Service) 			
Storage of hydrocarbons	Leakage of oil or solvents	Spill of oil/solvents, and potentially ignite and/or move into stormwater, through human error or malicious act	<ul style="list-style-type: none"> • Ensure fuels stored in fully bunded container. • Staff training on safe storage of fuel. • Emergency management / response plan • Pollution incident response management plan / Environmental management plan • Traffic management plan 	Unlikely (D)	3	18 (Low risk)

Facility event	Cause / comment	Possible scenarios, results & consequences	Prevention, Treatment Measures and Detection Protection Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
			<ul style="list-style-type: none"> • Work health and safety plan • Hazardous material management plan • Spill response equipment and training • Emergency response • Communications • Spill containment and sweeping of hardstand • Contact emergency services (NSW Fire Service) 			
Fire	Fire caused by ignition source (e.g. cigarette)	Flammable waste is ignited through contact with an ignition source (e.g. cigarette, battery spark, arson, etc.)	<ul style="list-style-type: none"> • Ensure strict non-smoking policy is enforced at all times • Site security • Firefighting equipment • Emergency management / response plan • Pollution incident response management plan / Environmental management plan • Traffic management plan • Work health and safety plan 	Possible (C)	3	13 (Moderate risk)

Facility event	Cause / comment	Possible results & consequences	Prevention, Treatment and Detection Measures Required	Likelihood	Consequence	Risk rating and category (after treatment measures) ¹
			<ul style="list-style-type: none"> • Hazardous material management plan • Operator and driver training • Spill response equipment and training • Contact emergency services (NSW Fire Service) 			



8.4 Conclusion

As a result of this analysis, it is suggested that the worst-case scenarios modelled with risk prevention, treatment and detection measures are all moderate or low risks. All risks are low except those that involve fire caused by vehicle collisions, excess dust and some other form of ignition. While there are no dangerous goods stored on site, there will be stockpiles of combustible material.

The proposed development is not considered a potentially hazardous development as per the SEPP 33 Guidelines, therefore, no further Preliminary Hazard Analysis or Multi-Level Risk Assessment has been performed.



9 Fire Safety and Management

9.1 Existing Building Suitability

As has been demonstrated in section 2.4, the 25 Dunheved Site has been used for resource recovery and waste processing since 2001, with the current building constructed in 2016, for the purpose of being used for resource recovery and waste processing. The building was approved under DA2015/1042 with a Construction Certificate issued by Steve Watson and Partners on the 28th October 2016. The construction certificate application included a Fire Engineering Report prepared by Austech International Pty Ltd. The FER was prepared in concurrence with NSW Fire and Rescue (Project Ref. FRN16/2361, Job No. BFS16/2281-18837).

The purpose and use of the building identified for the preparation of the FER was for resource recovery and waste processing. The FER determined that the proposed waste facility was suitable in relation to fire safety measures identified in the BCA/NCC at the time, and the building had suitable measures to deal with any fire incident. The waste facility was taking, handling, and processing a number materials including wood and timber, green waste, construction and demolition waste and general wastes.

A Final Occupation Certificate for the building was issued 9th June 2017 by Steve Watsons and Partners. It is assumed that as part of gaining an OC for the site, NSW Fire and Rescue would have carried out an inspection of the premise to assure that it complied with the FER and fire standards. The OC indicates that a Final Fire Safety Certificate has been issued for the building and the use on the site.

The current reDirect Recycling proposal does not propose any changes to the building, and seeks to continue the use as a resource recovery facility, with throughput increased to 150,000 tonnes per annum, with a mix of materials including wood and timber, plasterboard and metals. As per the previous approvals and certificates issued for the building and the use, the building suitable for the proposed increase in throughput.

The FER, fire service plans and hydraulic plans are included in Appendix 8.

9.2 Material Storage

The quantities of materials are identified below in Table 9.

TABLE 8 STORAGE CAPACITY ON SITE

Material	Maximum storage quantity
Unprocessed Waste Timber Wood	302 tonnes
Processed Timber/Wood	201 Tonnes
Unprocessed Plasterboard	114 tonnes
Gypsum	82 tonnes
Metals	20 tonnes

The waste wood chip storage will store chip produced from pallets and other recycled woods identified in this report. The chip is stored temporarily prior to transport to Oberon to be used in the production of particle board or for mulch, and animal bedding. The chip has a water content of approximately 30%; hence, ignition would be unlikely to occur. If ignition did occur, it would propagate relatively slowly through the storage. Notwithstanding this, there is the potential for ignition to occur, given the onsite processing. The unprocessed material, given its denser and larger size, is also unlikely to ignite.

The chip developed onsite is of a particle size that exceeds the limits for developing a combustible atmosphere; hence, the potential for a dust explosion or flash fire are considered low. Furthermore, a misting dust suppression system is used when materials that create dust are processed.

Notwithstanding this, there may be amounts of finer particles amongst the chip may accumulate within the processing and storage area which, as dust layers increase in thickness, there is a potential for layer disturbance, resulting in dispersal of the dust leading to a dust cloud within the storage. Given the size, volume and ventilation of the building, ignition of a dust cloud causing an explosion is unlikely. The risk of a dust atmosphere has been undertaken;

- **Fuel** - Low concentrations present; however, housekeeping procedures limit dust accumulation within microchip storage.
- **Ignition Sources** - potential electrical & processing equipment providing ignition sources.
- **Oxygen Supply** - Present within the air.
- **Confinement** - The storage is internal, however adequate ventilation and volume.
- **Dispersion/Particle Size** - The particle size of the microchip is above the particle size that is larger than the require combustible dust size for wood. Based on the processes in the area, sufficient accumulation and dispersion is unlikely to occur.

Plasterboard and Gypsum have a higher moisture content than timber/wood, so as has been described above, ignition of plasterboard and processed gypsum is unlikely as the material are not combustible. The wastepaper removed from the plasterboard as part of the process does pose some risk of ignition. Paper will be regularly removed from bins and sent off-site for further processing, with no paper left in bins overnight. If there is an abundance of paper on-site it will be dampened.

9.3 Fire Services

This section summarises the fire safety service measures that are existing within the building, that were certified when the occupation certificate was issued for the building.

- Fire Hydrants in accordance with BCA E1.3 and AS 2419.1-2005;
- Fire Hose Reels is accordance with BCA E1.4 and AS 2441-2005; and
- Automatic Sprinkler System in accordance with BCA E1.5 and AS 2118.1-1999, specs as below.

TABLE 9 SPRINKLER HEAD PROPERTIES

Sprinkler Type	Hazard Category	RTI	Activation Temp.
Tyco TY323	OH3	36 (m.s) ^{1/2}	68°C

- Portable Fire Extinguishers in accordance with BCA E1.6 and AS2444-2001;
- Building Occupant Warning System in accordance with BCA E2.2 and AS1670.1-2015;
- Emergency Lighting and Exit Signage in accordance with BCA E4.4, E4.5, E4.6 and E4.8 and the relevant provisions of AS2293.1-2005; and
- Smoke Vents with a minimum aerodynamic free area of 38m².

9.4 Further proposed fire safety measures

The following will be installed or mandated for use within the facility once operational to further improve the fire safety of the building and operations.

- Two Way Radio systems for all staff within the facility to aid in emergency notification and evacuation;
- Fire suppression system installed above and below manual picking line for firefighting purposes;
- Spray dust suppression system to maintain moisture within the warehouse and stockpiles;
- On-board manual fire suppression is to be provided on all fleet vehicles (e.g. waste vehicles, front end loaders, forklifts, shredders);

- Adoption of Emergency Control Procedures including the development of an Emergency Response Plan and Emergency Management Plan, along with risk minimisation strategies; and
- Ongoing consultation and communication with Fire NSW.

9.5 Fire Safety in Waste Facilities Compliance

The proposal for the increase in throughput at the existing waste facility at 25 Dunheved Circuit, St Marys is consistent with the Fire Safety in Waste Facilities Guidelines, including the guidelines relating to special hazards.

TABLE 10 COMPLIANCE WITH NATIONAL CONSTRUCTION CODE AND FRNSW GUIDELINE

Performance Requirements	Description of Provision	Guideline Reference	Compliance
CP9	'Specialist fire appliance' access is provided to satisfy performance requirement CP9 of the NCC and FRNSW guideline Access for fire brigade vehicles and firefighters.	Clause 7.4.1	Refer to FER. Suitable access is provided to hydrants. Premises inspected by Fire NSW prior to issue of occupation certificate.
CP9	Adequate firefighter access is provided to the building, fire safety systems and equipment.	Clause 7.4.7	Refer to FER. Available firefighter access to the building, fire safety systems and equipment.
EP1.3	A fire hydrant system is installed to Australian Standard AS 2419.1 and provides coverage for both internal and external stockpiles	Clause 7.5.1	Yes, Refer FER. Hydrants located at front of building.
EP1.3	The fire hydrant system incorporates enhanced standard of performance for external stockpiles (i.e. one additional hydrant to flow).	Clause 7.5.3	No external stockpiles proposed.
EP1.3	Fire hydrants are not located within 10 m of any stockpiled storage (or vice versa), whether being internal or external.	Clause 7.5.4	Hydrant located at entrance to buildings next to roller doors. Protected from internal stockpiles via rated walls
EP1.3	The fire hydrant system delivers the required number of fire hydrants to flow simultaneously for a minimum of four hours duration.	Clause 7.5.7	Annual fire safety statements issued for the site indicate compliance
EP1.3	A fire brigade booster connection is installed within sight of the designated site entry point.	Clause 7.5.6	Yes
EP1.3	A fire hose reel system is installed to Australian Standard AS 2441 and provides coverage for both internal and external stockpiles.	Clause 7.5.8	Refer to FER. Fire hose reels located in and external to the building.
EP1.1	An automatic fire sprinkler system is installed to Australian Standard AS 2118.1 and designed for special hazard (e.g. 'high hazard' class).	Clause 7.6.1	Refer to FER. Sprinkler designed for OH3 hazard class

Performance Requirements	Description of Provision	Guideline Reference	Compliance
EP1.4	A fire brigade booster connection is installed for the automatic fire sprinkler system and is co-located with the hydrant system booster.	Clause 7.6.5	Yes
EP1.4	The fire sprinkler system delivers not less than the total hydraulic demand for a minimum of two hours duration.	Clause 7.6.6	Yes, allowed for 400m ³ of coverage. Annual fire safety statements issued for the site indicate compliance
EP2.2	Manual alarm points are installed for staff to initiate alarm of fire.	Clause 7.7.1	Yes, Refer to FER.
EP2.2	An automatic smoke hazard management system is installed and designed so the smoke layer does not descend below 4 m above floor level.	Clause 7.7.4	No. Raise ridge Smoke Vent located is installed as approved and open roller doors.
EP2.2	Low level openings (e.g. roller doors) on two or more walls to assist with venting de-stratified smoke.	Clause 7.8.1	Roller doors and openable PA doors located around building. Refer FER
EP2.2	The automatic smoke hazard management system is capable of continuous operation for a minimum of two hours duration.	Clause 7.8.3	Roof vent is always open, and roller doors can stay open in the case of an event.
EP2.2	A fire detection and alarm system is installed to Australian Standard AS 1670.1 and designed for the fire scenarios and environment (e.g. visual flame detectors, infrared detectors, heat detectors/probes).	Clause 7.8.4	Yes, Refer FER.
N/A	An automatic fire water run-off containment system is provided and designed to contain the total hydraulic demand of the fire hydrant and fire sprinkler systems.	Clause 7.9.1	Yes, 400m ³ of storage internally with a further 150m ³ external to the building.
N/A	Pollution control equipment is provided to divert fire water run-off and isolate stormwater drainage in the event of fire.	Clause 7.9.6	Yes
NSW BPB	The waste facility complies with NSW RFS Planning for Bush Fire Protection when located on bush fire prone land.	7.10.1	Not located in in bushfire prone area
CP2	Any separating masonry wall, revetment or pen is to extend at least 1 m above and at least 2 m beyond the stockpile.	Clause 8.2.6	Yes
N/A	Any stockpile prone to self-heating is to be monitored and rotated as necessary to dissipate any hotspots.	Section 8.3	Not applicable due to particle size of waste timber/wood
CP2	Any external stockpile is to be limited in size and maintain minimum separations to prevent fire spread, including reduced separation when	Section 8.4	No external stockpiles

Performance Requirements	Description of Provision	Guideline Reference	Compliance
	protected by a masonry wall or an automatic fire sprinkler system.		
CP9	Fire brigade vehicle access is provided between external stockpiles	Clause 8.4.11	No external stockpile
CP2	Each internal stockpile is to be limited in size to 1,000 m ³ .	Clause 8.5.2	Yes, internal maximum stockpile amount is under 1000m ³
CP9	Internal stockpiles are to be maintain a minimum of 6 m unobstructed access on each accessible side.	Clause 8.5.3	Yes, 6m clearance on accessible sides of stockpiles
N/A	An operations plan is to be documented and implemented for stockpile management and a copy is be included within the Emergency Services Information Package (ESIP).	Section 8.6	To be developed and submitted prior to operation
WHS Reg.	An emergency plan is to be provided for staff and other persons at the waste facility in the event of fire.	Section 9.3	Will be provided to all staff prior to operation
N/A	An Emergency Services Information Package (ESIP) is provided for firefighters in accordance with FRNSW guideline Emergency services information package and tactical fire plans.	Section 9.4	Will be provided to Fire NSW prior to operation
EP&A Reg.	Fire safety systems are to be inspected and maintained with corresponding fire safety statements being issued; The provision of maintenance should be covered in any leasehold contract.	Section 9.5	Annual Fire Safety Certificates have been issued for the building since construction.

10 Ecologically Sustainable Development

The *Environmental Planning and Assessment Act 1979* references the definition of ecologically sustainable development defined in section 6(2) of the *Protection of the Environment Administration Act 1991*:

For the purposes of subsection (1) (a), ecologically sustainable development requires the effective integration of social, economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:

(a) the precautionary principle—namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,

(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:

(i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

(iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

10.1 Environmental Benefits

The proposed development will consider environmental best practice and sustainability to reduce the impact of the development on the environment. The resource recovery facility will use best practice fixed and mobile plant and equipment for waste processing to enable the processing of up to 150,000 tonnes per year.

The proposed development will expand timber and plasterboard recycling infrastructure in NSW and will make an important contribution towards increasing the recycling rate of business waste from 53% (in 2017-18) to 70% by 2021, supporting the *NSW Waste and Resource Recovery Strategy 2014-21*⁸.

⁸ NSW EPA (2014). *NSW Waste Avoidance and Resource Recovery Strategy: 2014 - 2021*. Internet publication : <http://www.epa.nsw.gov.au/wastestrategy/warr.htm>

10.2 Cleaner Production Principles

Cleaner production is a practical method for protecting human and environmental health. This is achieved through the continuous application of an integrated, preventive environmental strategy towards processes, products and services. Cleaner production increases the overall efficiency of products and services and reduce damage and risks for humans and the environment. A proactive approach to the reduction in the risk and consequence of potential environmental impacts at the source results in a decreased reliance on reactive environmental mitigation measures.

The cleaner production techniques that are applicable to the ongoing operations of the project include:

- Selecting and using the most appropriate technology and materials to reduce the quantity of resources used and to minimise the amount of waste generated;
- Improved operation and maintenance practices to reduce the quantity of resources used and to minimise the amount of waste generated;
- Employing processes that are efficient in their consumption of energy, materials and natural resources and reduce greenhouse gas emissions;
- Selecting energy efficient plant and equipment for use in the facility;
- Installing solar panels on the roof to provide electricity to the facility;
- Reuse of captured stormwater as a major source of water for the site;
- Safely disposing of any residual wastes and process residues;
- Promoting the safe use, handling, recycling and disposal of waste products through an understanding of their life cycle.

Where cleaner production principles can no more remove environmental risk or consequence, mitigation strategies must be considered to ensure the remaining potential environmental harm is reduced to the lowest risk level possible.

10.3 Greenhouse Gas Emissions

Wilkinson Murray Pty Ltd prepared a Greenhouse Gas Assessment for the proposed development (see Appendix I).

The assessment identified sources of greenhouse gas emissions associated with the proposed development, in accordance with the SEARs. The assessment estimated that the operation of the facility would account for approximately 0.003% current NSW equivalent carbon dioxide emissions. The assessment did not consider the greenhouse gas emission savings as a result of diverting waste from landfill and avoided raw material use through recycling. However, the EPA Recyclator has been used to determine the benefits of the proposal in regard to greenhouse benefits, landfill minimisation, energy savings and water savings. The benefits of the proposal are shown in Figure 22.

The assessment report recommended reDirect Recycling consider measures to further reduce emissions, such as;

- Utilise energy efficient building design features, such as natural ventilation and lighting, and insulation;
- Consider on-site renewable energy, such as solar power; and
- Investigate the feasibility of using electric powered mobile plant on-site (instead of diesel-powered).



FIGURE 22 GREENHOUSE GAS, WATER, ENERGY AND LANDFILL BENEFITS OF THE PROPOSAL USING THE EPA RECYCLATOR.

10.4 Environmental Management System

Adopting an Environmental Management System (EMS) and a monitoring program, for both the construction and operational phases, is an important component of the proposal to demonstrate reDirect Recycling's commitment to implementing the measures outlined in this EIS.

To ensure an integrated approach, the EMS will include Environmental Management Plans (EMPs), specifically created to address the management and mitigation of the following environmental issues:

- Waste;
- Air Quality;
- Noise and Vibration;
- Traffic;
- Water Quality;
- Fire Safety and Bushfire Risk;
- Chemicals and Fuels;
- Visual Impact; and
- Work health and safety.

The key objectives of the EMPs will be to ensure:

- Works are carried out in accordance with relevant environmental statutory requirements and relevant non-statutory policy, as detailed throughout this EIS;
- Works are carried out in accordance with the goals and requirements presented in this EIS;
- Works are carried out in such a way as to minimise the likelihood of environmental degradation;
- Works are carried out in such a way as to manage the impact of the works on neighbouring properties;
- All employees engaged in the works comply with the terms and conditions of the EMPs;
- Clear procedures for management of environmental impacts, including corrective actions;
- Continual improvement of environmental management; and
- Responsibilities and reporting requirements to ensure compliance with the EMP.

The EMPs will be prepared following assessment and approval of the Project and will serve as working documents to be used throughout the detailed design, construction and operational stages. They will be integrated into reDirect Recycling's existing management systems, procedures and plans for its activities within the facility, to ensure consistency in approach.

Each EMP developed for the site will contain, but not be limited to, the following information:

- Goals and objectives;
- Licenses, permits, approvals and statutory requirements;
- Lists of required actions, timing and responsibilities (including relevant environmental authorities);
- Operational procedures for preventing environmental impacts;
- Reporting requirements and procedures;
- Corrective and preventative action procedures;
- Procedures and forms for documentation and reporting of issues;
- Standard specifications for incorporating environmental safeguards;
- Environmental awareness and environmental management training and education requirements
- Guidelines for emergencies;

- Surveillance, review and auditing procedures for modification of the EMPs;
- Complaint procedures;
- Maintenance and monitoring programs; and
- Quality assurance procedures.

Adherence to the EMPs will enable environmental safeguards and mitigation measures to be effectively implemented and sustainable work practices adopted for the entire Project. This also demonstrates the reDirect Recycling's commitment to preventing environmental pollution, minimising the impact of the proposal on the environment and complying with all relevant legislation.

10.5 Environmental Monitoring and Reporting

Environmental monitoring will be a fundamental component of the Operational EMPs for the proposed development.

Monitoring programs will be developed and presented in EMPs, in accordance with the conditions of approval and Licence requirements.

Monitoring requirements will be focused on ensuring compliance with the relevant environmental sub-plans, for example:

- Visually monitoring dust generation from work zones to ensure that excessive dust is not being produced;
- Monitoring noise and vibration generation from work zones to ensure that excessive noise and vibration is not being produced; and
- Monitoring stockpiling heights.

Monitoring requirements will also be focused on ensuring current mitigation/management systems remain fit for purpose and are in good working order to ensure they will remain effective.

Operational monitoring may also result from investigative monitoring or regulatory compliance monitoring, such as conducting investigative noise monitoring in response to specific complaints.

Environmental performance reporting is a key decision support tool that provides management with the information to make meaningful and positive change. Reporting requirements will be details in the EMPs for the relevant implementation phases.

The identification of actual and potential non-conformities contributes to continual improvement of the environmental management system through corrective action and preventive action, respectively. If the reports identify any shortcomings in the way that the construction activities or the operations are being conducted, or in the performance of environmental control structures, the necessary changes will be made to the EMPs to reflect these changes. The NSW EPA will receive all relevant reports and prompt notification of any incidents or deviations in performance as well as updated EMPs as required.

10.6 Environmental Auditing and Continual Improvement

Environmental system audits will be conducted in accordance with a schedule nominated in the EMP. This will include a schedule of independent audits by accredited external auditors. Quantified and unquantified information contained in the EIS will be assessed to ensure that the construction and operational phases of the Project meet acceptable environmental standards. Audits will be based on available information and observations. Environmental audits will also assess the Project against any Conditions of Approval imposed by statutory authorities. The register that is completed during compliance audits becomes a record of the evaluation of compliance. All detected non-compliances will be followed up with corrective actions as per the flow chart below.

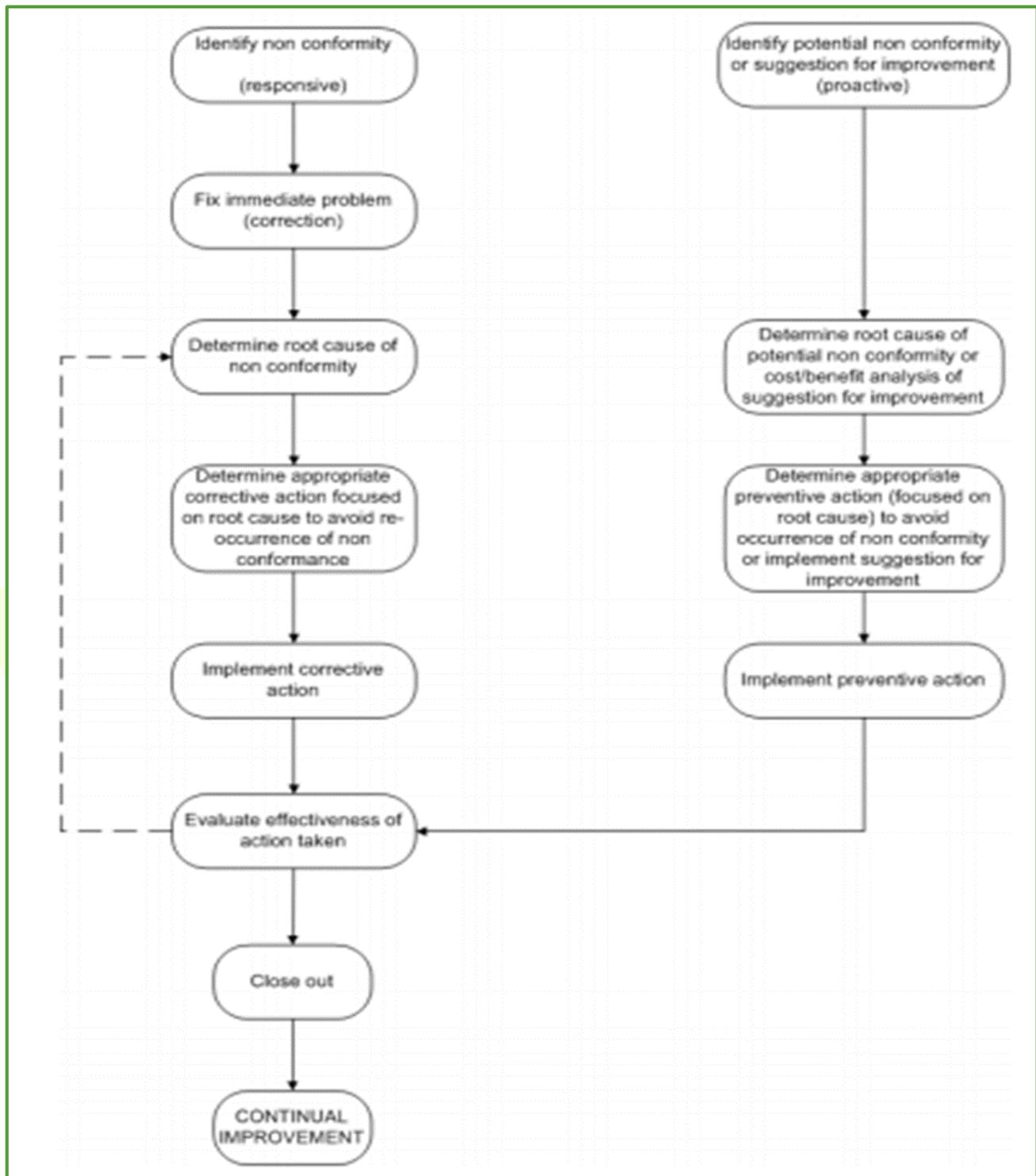


FIGURE 23 NON-COMPLIANCE CORRECTIVE ACTIONS FLOW CHART

Actual and potential non-conformities identified and suggestions for improvement are made by the following means:

- Internal audit;
- External audit;
- Site inspections;

- Feedback from external parties;
- Complaints from customers or other stakeholders;
- Suggestions for improvement from staff and contractors;
- Occurrence of environmental emergencies and accidents;
- Testing of emergency preparedness and response; and
- Management review.

The above flowchart illustrates the organisation's process for non-conformity, corrective action and preventive action, through:

- Identifying actual and potential environmental nonconformities;
- Recording suggestions for improvement;
- Taking appropriate action to correct non-conformities and mitigate environmental impacts;
- Taking corrective action to avoid recurrence of non-conformities; and
- Taking preventive action to avoid occurrence of non-conformity.

reDirect Recycling or their environmental representative will be responsible for maintaining a register of environmental nonconformity and suggestions for improvement to environmental management. Each record is associated with a corrective and/or preventive action. Corrective and preventive action will require a change environmental management documentation in a continual process for document control.

This process has the ultimate goal of driving continual improvement.

10.7 Conclusion

The objective of this Section of the EIS is to outline how the recommended environmental protection measures will be implemented and managed in an integrated manner to demonstrate that the proposal is capable of complying with statutory obligations under EPA licenses or approvals.

This Section described the mitigation measures to be implemented for potential impacts of the proposal that have been identified throughout this EIS. This Chapter provides an outline of the proposed environmental management measures, and additional strategies, including cleaner production principles, which will be followed when planning, designing, establishing and operating the proposal. These measures and processes will be incorporated into EMPs and monitoring programs to ensure a commitment to implementing the requirements of relevant legislation outlined in this EIS. Monitoring the efficacy of those measures will inform a process to drive continual improvement.

11 Air Quality

11.1 Introduction

An Air Quality Impact Assessment (AQIA) was prepared by Wilkinson Murray. This section provides a summary of that AQIA. A full copy of the AQIA report is provided as Appendix F.

11.2 Methodology

The assessment has been conducted in general accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*⁹

11.2.1 Meteorological Modelling

No meteorological observation data is available for the site. Therefore, site-specific meteorological data was generated using a prognostic model. The prognostic model used was The Air Pollution Model (TAPM), developed and distributed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

The prognostic modelling domain was centred at 33.91° S, 151.19° E and involved four nesting grids of 30 km, 10 km, 3 km and 1 km with 41 grids in the lateral dimensions and 25 vertical levels.

The TAPM model included assimilation of wind data collected at Penrith Lakes AWS during 2018.

The TAPM results, including predictions of wind speed, wind direction, temperature, humidity, cloud cover, solar radiation, and rainfall, were used as inputs to AERMET - AERMOD's meteorological pre-processor. AERMET uses the TAPM data, along with land use data, to calculate mixing heights and velocity scaling parameters.

11.2.2 Dispersion Modelling

The dispersion model chosen for this assessment was AERMOD - the US EPA regulatory Gaussian plume air dispersion model.

AERMOD is a steady state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts. It includes treatment of both surface and elevated sources, and both simple and complex terrain.

AERMOD is accepted by NSW EPA for use in air quality impact assessments.

11.3 Existing Environment

11.3.1 Surrounding land use and sensitive receptors

The land use immediately surrounding the site is industrial. The nearest sensitive receptors are residents located in the nearby suburbs of Werrington County, North St Marys, Ropes Crossing and Central Precinct and the Dunheved Golf Course. Discrete receptors have been identified in these suburbs for assessment purposes, as shown in Figure 24.

⁹ EPA (2016), *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*.

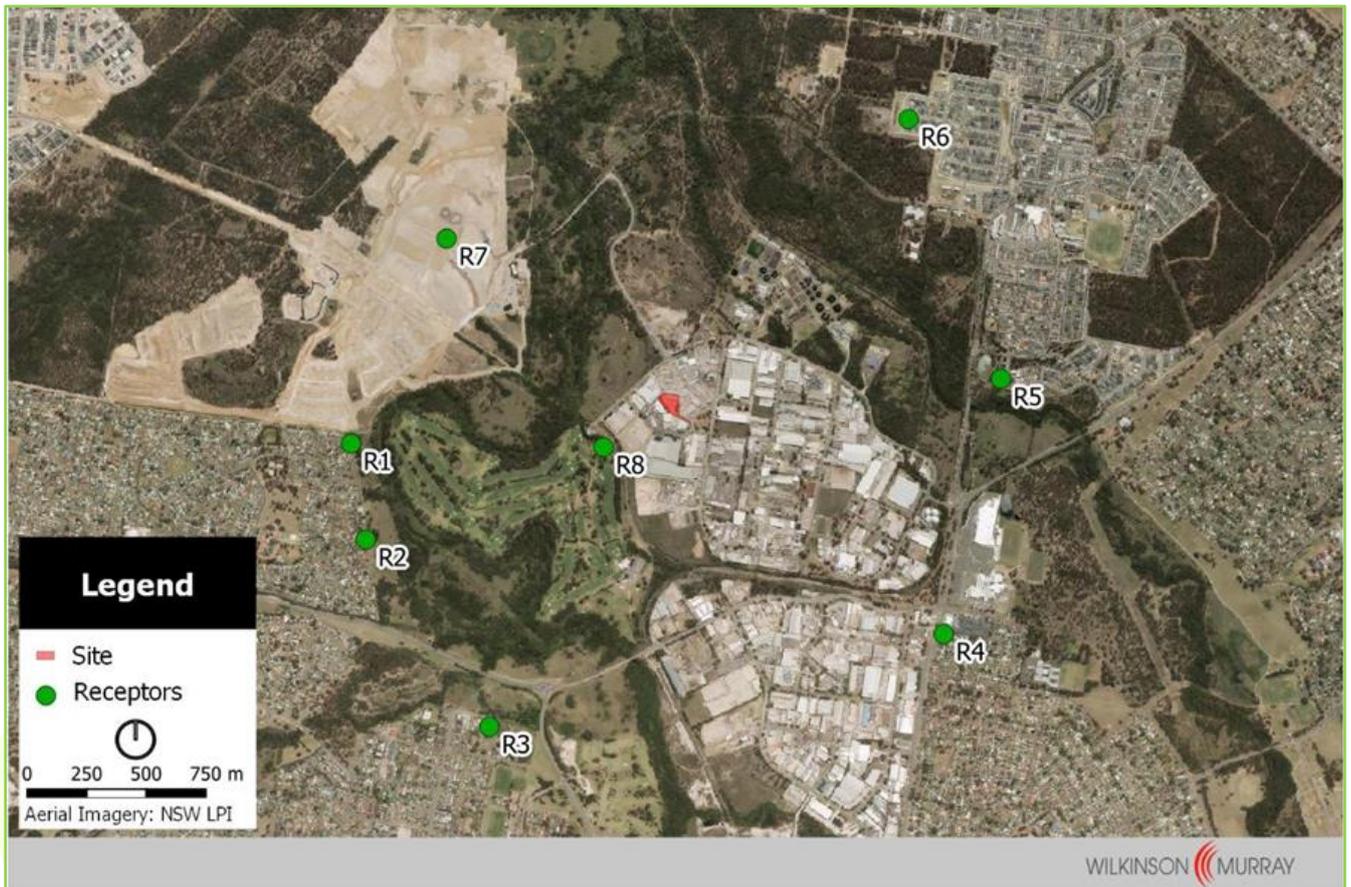


FIGURE 24 SENSITIVE RECEPTORS

11.3.2 Local Meteorology

Long term meteorological data for the area surrounding the site is available from the Penrith Lakes AWS operated by the Bureau of Meteorology (BoM). The Penrith Lakes AWS is located approximately 8.5 km west of the Site and records observations of a number of meteorological data include wind speed, wind direction, temperature, humidity and rainfall.

Temperature data recorded at the Penrith Lakes AWS indicates that January is the hottest month of the year, with a mean daily maximum temperature of 31.2°C. July is the coolest month with a mean daily minimum temperature of 5.3°C. February is the wettest month with an average rainfall of 123 mm falling over 8 days. There are, on average, 71 rain days per year, delivering 705 mm of rain.

Wind data from Penrith Lakes AWS has been incorporated into the dispersion modelling for this assessment. The wind rose plots show similar patterns of wind speed and wind direction over the five-year period, with south-westerly winds being prevalent throughout the year. Wind speed and wind direction during 2018 are generally representative of the five-year period and have therefore been adopted for modelling purposes.

11.3.3 Local Ambient Air Quality

Table 11 summarises the background air quality adopted for assessment purposes.

TABLE 11 BACKGROUND AIR QUALITY ADOPTED FOR ASSESSMENT

Pollutant	Averaging Period	Adopted Background Concentration/Level
PM10	24-hour	47.6 µg/m ³
	Annual	19.4 µg/m ³
PM2.5	24-hour	23.2 µg/m ³
	Annual	7.8 µg/m ³
TSP	Annual	48.5 µg/m ³
Deposited Dust	Annual	2.16 g/m ² /month

11.4 Impact Assessment

11.4.1 Operational Air Emissions

Dust emissions during operation of the Proposal have been estimated based on information provided by the client, using emission factors sourced from both locally developed and US EPA developed documentation.

The significant sources of dust/particulate emissions associated with the operation of the Proposal are identified as:

- Loading/unloading of material;
- Processing (grinding/crushing and screening) material;
- Truck movements on paved roads; and
- Diesel exhaust from mobile plant.

No material handling, processing or stockpiling would occur outside the building. Therefore, wind-blown dust emissions would be negligible. A control factor of 70% has been applied to all sources located inside the building.

The estimated dust emissions associated with the operation of the Proposal are presented in Table 12. Detailed emissions inventory is provided in the AQIA.

TABLE 12 ESTIMATED OPERATIONAL DUST EMISSIONS

Source/Activity	Annual Emissions (kg/year)		
	PM2.5	PM10	TSP
Loaded trucks entering site	3.5	14.6	76.2
Unloaded trucks leaving site	0.8	3.4	17.7
Raw material dumped to stockpile	3.4	22.3	47.1
Load material into crusher	3.4	22.3	47.1
Processing material	2.3	12.2	121.5
Screening material	1.1	16.7	562.5
Unload processed material to stockpile	3.4	22.3	47.1

Source/Activity	Annual Emissions (kg/year)		
	PM2.5	PM10	TSP
Load processed material to truck	3.4	22.3	47.1
Empty trucks entering site	1.2	4.8	s24.8
Loaded trucks leaving site	2.5	10.4	54.4
Exhaust Emissions	84.5	87.3	87.3
Total	109.4	238.4	1132.7

11.4.2 Particulate Matter (PM2.5 and PM10) and TSP

Table 14 presents the dispersion modelling results for particular matter and TSP at sensitive receptors.

TABLE 13 DISPERSION MODELLING RESULTS

Receptor	PM2.5				PM10				TSP	
	24-hour		Annual		24-hour		Annual		Annual	
	Increment	Total	Increment	Total	Increment	Total	Increment	Total	Increment	Total
Goal	25 µg/m ³		8 µg/m ³		50 µg/m ³		25 µg/m ³		90 µg/m ³	
R1	0.1	23.3	<0.1	7.8	0.2	47.8	<0.1	19.4	0.1	48.6
R2	0.2	23.4	<0.1	7.8	0.3	47.9	<0.1	19.4	0.1	48.6
R3	0.1	23.3	<0.1	7.8	0.3	47.9	<0.1	19.4	0.1	48.6
R4	<0.1	23.2	<0.1	7.8	0.1	47.7	<0.1	19.4	<0.1	48.5
R5	0.1	23.3	<0.1	7.8	0.1	47.7	<0.1	19.4	<0.1	48.5
R6	0.1	23.3	<0.1	7.8	0.2	47.8	<0.1	19.4	<0.1	48.5
R7	0.1	23.3	<0.1	7.8	0.2	47.8	<0.1	19.4	0.1	48.6
R8	1.4	24.6	0.2	8.0	3.0	50.6	0.4	19.8	1.3	49.8

The results indicate compliance with the impact assessment criteria at all receptors except at R8 (Dunheved Golf Course) where the 100th percentile 24-hour average PM₁₀ concentration exceeds the criterion.

To further investigate the potential air quality impacts at R8, a contemporaneous assessment of 24-hour average PM₁₀ concentrations has been conducted. The contemporaneous assessment involves adding the existing background concentration, as observed at the St Marys AQMS, to the predicted incremental concentration for each day of the simulation.

The contemporaneous assessment shows that the contribution of the Proposal to total PM₁₀ concentrations is very low, and that the Proposal does not result in additional exceedances of the impact assessment criterion. Therefore, in accordance with the Approved Methods, no further mitigation of PM₁₀ emissions from the Proposal is warranted.



FIGURE 25 CONTOUR PLOT: INCREMENTAL 24-HOUR PM_{2.5}

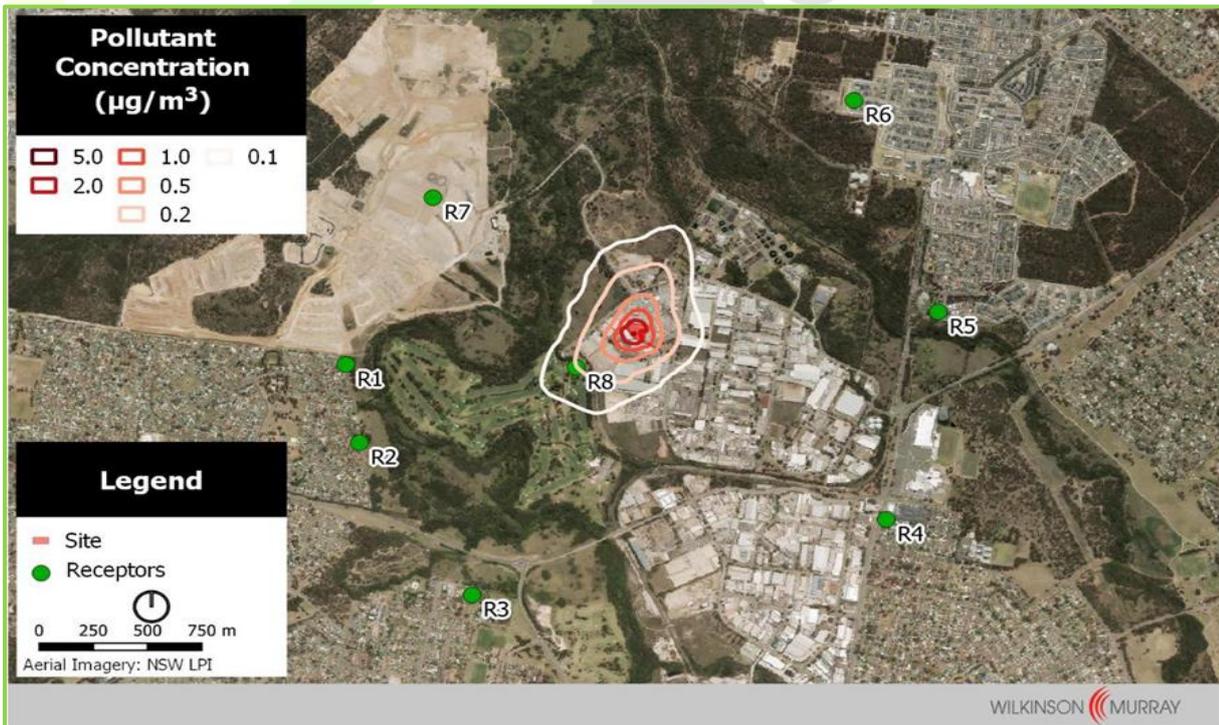


FIGURE 26 CONTOUR PLOT: INCREMENTAL ANNUAL PM_{2.5}



FIGURE 27 CONTOUR PLOT: INCREMENTAL 24 HOUR PM10

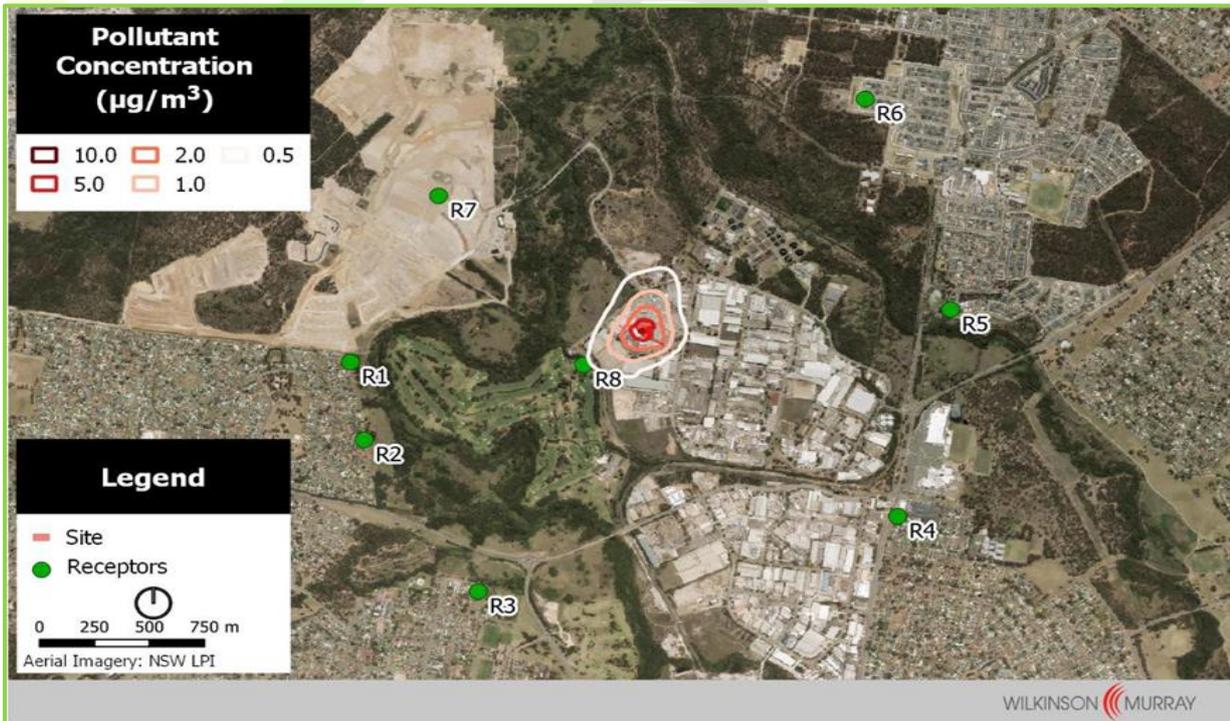


FIGURE 28 CONTOUR PLOT: INCREMENTAL ANNUAL PM10

11.4.3 Deposited Dust

The predicted levels of deposited dust at sensitive receptors are presented in Table 14.

TABLE 14 PREDICTED DEPOSITED DUST IMPACTS AT SENSITIVE RECEPTORS

Receptor	Deposited Dust	
	Annual	
	Increment	Total
Goal	2 g/m ² /month	4 g/m ² /month
R1	<0.01	2.16
R2	<0.01	2.16
R3	<0.01	2.16
R4	<0.01	2.16
R5	<0.01	2.16
R6	<0.01	2.16
R7	<0.01	2.16
R8	0.02	2.18

The results in Table 14 indicate compliance with the impact assessment criteria for deposited dust.

11.5 Mitigation Measures

Air quality impacts associated with the operation of the Proposal are predicted to comply with relevant impact assessment criteria. Notwithstanding, in an effort to minimise air quality impacts associated with the Proposal, the following mitigation measures should be implemented where reasonable and feasible:

- Engines of vehicles and plant to be switched off when not in use
- Vehicles and plant to be fitted with pollution reduction devices where practicable
- Vehicles and plant to be maintained in accordance with manufacturer's specifications
- Reduce drop heights when handling dusty material
- Dampen excessively dusty material during handling
- Trafficable areas to be swept/cleaned regularly
- Vehicles restricted to designated routes
- On-site speed limits enforced
- Vehicle loads to be covered when travelling off-site.

11.6 Conclusions

Wilkinson Murray Pty Limited has been engaged by Borg Manufacturing to prepare an Air Quality Impact Assessment (AQIA) for inclusion in the Environmental Impact Statement (EIS) relative to the project.

Potential dust impacts associated with the operation of the Proposal have been assessed in general accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*.

Quantitative assessments of potential dust impacts from the operation of the Proposal have been conducted, based on TAPM meteorological simulations and the AERMOD dispersion modelling system.

The results of the dispersion modelling indicate that dust and particulate matter concentrations due to the operation of the Proposal would comply with the established criteria at all sensitive receptors.

Several measures have been identified to further reduce air quality impacts associated with the operation of the Proposal.



12 Noise and Vibration

12.1 Introduction

A Noise and Vibration Impact Assessment (NVIA) was conducted by Wilkinson Murray in October 2020. This section provides a summary of the NVIA. A full copy of the report is provided at Appendix G.

12.2 Methodology

The assessment has been carried out in accordance with the following guidelines:

- NSW Noise Policy for Industry¹⁰ ;
- NSW *Road Noise Policy*¹¹ (DECCW, 2011); and
- *Assessing Vibration: a technical guideline*¹².

12.3 Existing Environment

The site is located within a well-established industrial area and it is surrounded by industrial buildings. Existing residential receivers are situated more than 825m from the site.

Seven (7) discrete receiver locations were used in this study to assess the potential noise impacts of the site operations at sensitive receptor locations identified in the area surrounding the Project Site and were selected based on their close proximity to the Project Site.

A golf course (AR1) is present to the west at approximately 300m from the subject site and this has been considered in the assessment as an active recreational area.

These locations of the nearest receivers identified are presented in Table 15 and Figure 29.

A receiver (TR1) along Forrester Road has been selected for the assessment of off-site road traffic noise due to its proximity to the main road.

TABLE 15 NOISE SENSITIVE RECEIVERS

Receiver ID	Land use	Address	Approx. Distance to site
R1	Residential	21 Hartog Drive Werrington County	1,290 m
R2	Residential	12 Poole Street Werrington County	1,390 m
R3	Residential	66 Reid Street Werrington	1,500 m
R4	Residential	199 Forrester Road, North St Marys	1,375 m
R5	Residential	12 Townsend Crescent, Ropes Crossing	1,245 m
R6	Residential	50 Rafter Parade, Ropes Crossing	1,430 m
R7	Residential	St Marys ADI Site Central Precinct	825 m

¹⁰ NSW EPA (2017) *Noise Policy for Industry*.

¹¹ NSW DECCW (2011), *NSW Road Noise Policy*.

¹² NSW DEC (2006), *Assessing Vibration: a technical guideline*.

Receiver ID	Land use	Address	Approx. Distance to site
AR1	Active Recreation (Golf Course)	118-176 Links Road, St Marys	300 m
TR1	Residential	185 Forrester Road, North St Marys	1,440 m

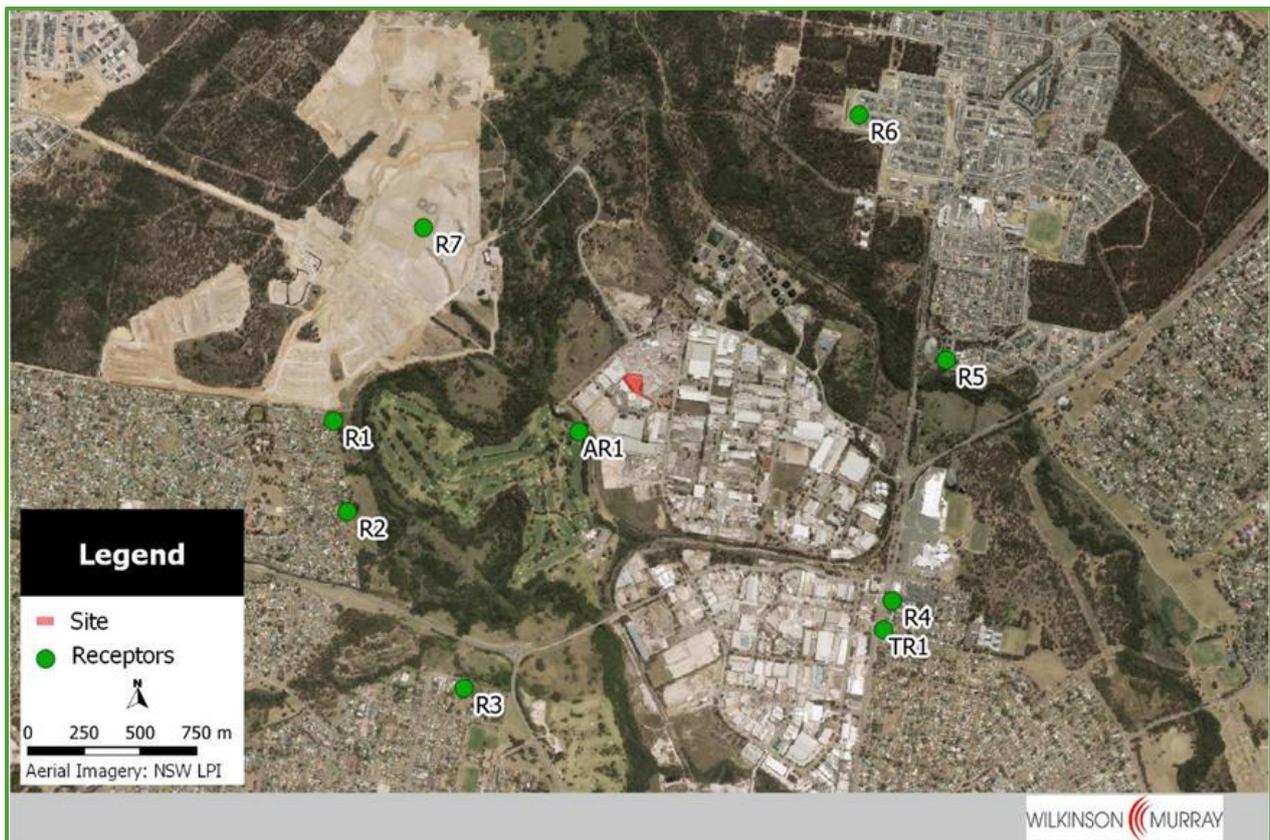


FIGURE 29 NEAREST SENSITIVE RECEIVERS

12.3.1 Existing Ambient Noise Levels

The ambient noise levels are taken from previous noise assessments conducted in the area.

The monitoring locations are presented in Figure 30.

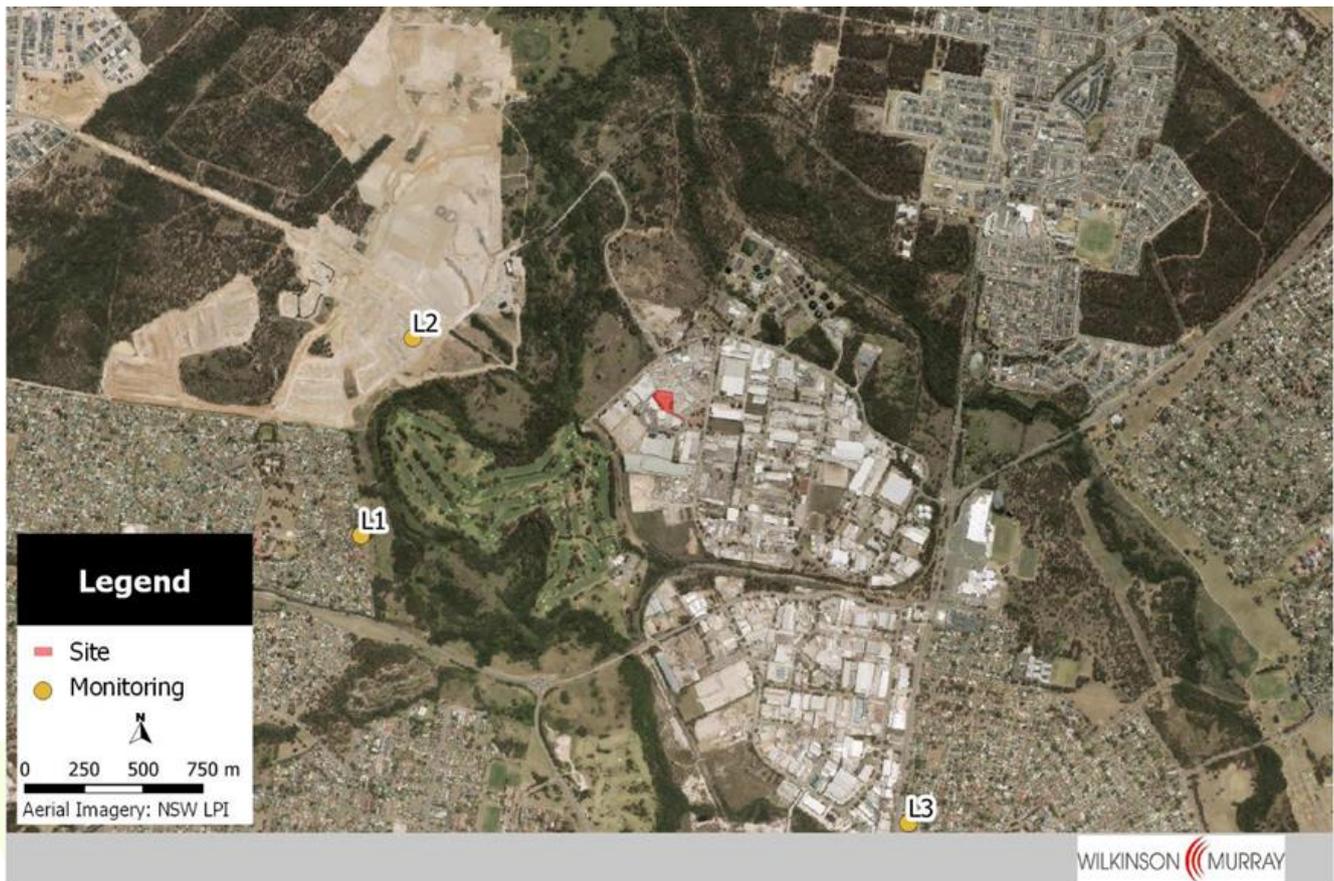


FIGURE 30 NOISE MONITORING LOCATIONS

The data obtained from the previous noise assessments was processed in accordance with the procedures contained in the NSW “Noise Policy for Industry” (NPfI, 2017). A summary of the measured ambient (L_{Aeq}) and rating background levels (RBL) is presented in Table 16.

TABLE 16 MEASURED NOISE LEVEL

Location	$L_{Aeq,period}$ (dBA)			RBL (dBA)		
	Day ¹	Evening ²	Night ³	Day ¹	Evening ²	Night ³
L1 - 12 Poole Street, Werrington County	58	57	47	44	42	36
L2 - Near Colonel Way, Werrington County	45	38	41	34*(35)	32	28**(30)

1 Day is defined as 7.00am to 6.00pm;

2 Evening is defined as 6.00pm to 10.00pm;

3 Night is defined as 10.00pm to 7.00am;

* NPfI recommends a minimum criterion of 35dBA.

** NPfI recommends a minimum criterion of 30dBA.

These locations are typical suburban areas close to the St Marys industrial area, therefore the background noise levels measured at these locations are considered representative of the background noise levels at all other residential receivers.

12.3.2 Existing Road Traffic Noise Level

Long-term unattended noise monitoring was undertaken by Wilkinson Murray on Forrester Road, North St Marys, which is the major transport route for the project.

The existing traffic noise levels consistent with the noise descriptors used for traffic noise impact assessment ($L_{Aeq,15hours}$ and $L_{Aeq,9hours}$) is presented in Table 17. In analysing the background noise levels, any data affected by inclement weather conditions has been discarded according to the requirements of the NPfI.

TABLE 17 EXISTING ROAD TRAFFIC NOISE LEVELS

Location	Daytime (7am to 10pm)	Night Time (10pm to 7am)
	$L_{Aeq,15hour}$ (dBA)	$L_{Aeq,9hour}$ (dBA)
173 Forrester Road	67	62

12.4 Impact Assessment

Site related noise emissions were modelled using the CadnaA Ver2020 noise prediction software. To complete this, a representative 3-D model within the software was constructed of the site and surrounding receivers.

12.4.1 Operational Noise Assessment

The dominant noise would be generated internally within the processing shed by the processing line as well as mobile plant including operations of frontend loaders, telehandler and tipping operations from trucks. Externally, noise will be dominated by trucks entering and leaving the site.

The operational scenario considered all equipment to be simultaneously and continuously operating throughout the 15-minute assessment period. This is considered to be a conservative assumption as it is unlikely to occur.

Seven locations surrounding the site have been selected as representative of surrounding residences, whereby night noise criteria have been applied based on ambient noise measurements.

TABLE 18 PREDICTED OPERATIONAL NOISE LEVELS

Receiver	Predicted Noise Levels $L_{Aeq,15min}$ (dBA)	Project Noise Trigger Levels Day/Evening/Night	Complies (Yes/No)
R1	28	49/43/38	Yes
R2	27	49/43/38	Yes
R3	27	49/43/38	Yes
R4	26	49/43/38	Yes
R5	20	49/43/38	Yes
R6	18	39/37/35	Yes
R7	21	39/37/35	Yes
AR1	41	58	Yes

A review of results indicates compliance for 24 hour operations will be easily achieved and that no mitigation measures are warranted. Figure 31 shows the modelled noise contours compared to the identified sensitive

receptors. Figure 32 presents noise contours for the assessed operational scenario around the boundary of the site.

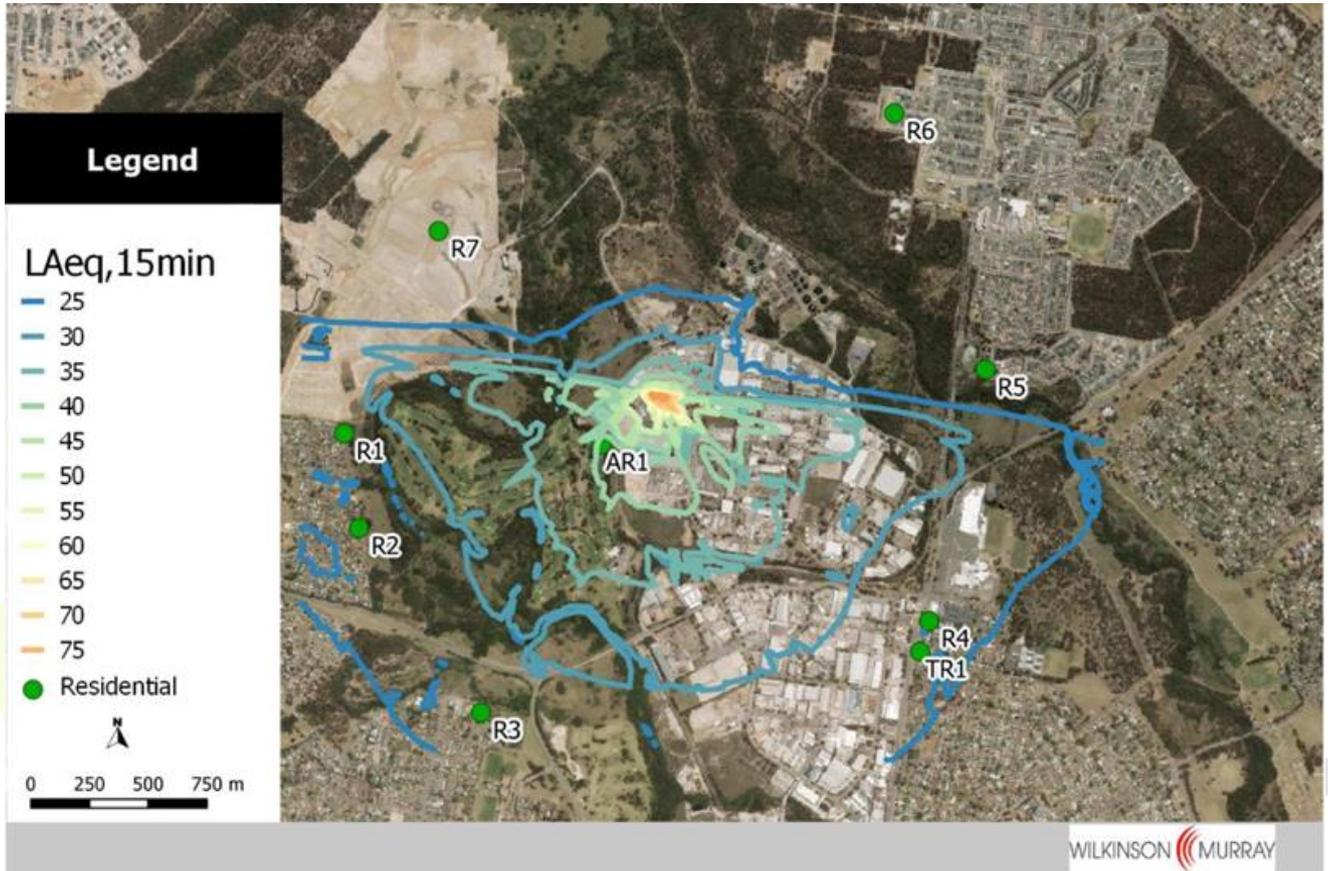


FIGURE 31 OPERATIONAL NOISE LEVEL CONTOURS



FIGURE 32 OPERATIONAL NOISE LEVEL CONTOURS AROUND THE BOUNDARY OF THE SITE

A review of the contours indicates general compliance with the industrial amenity noise criteria of 70dB_A L_{Aeq,1hr}.

12.4.2 Sleep Disturbance Assessment

The instantaneous noise sources and their typical L_{AFmax} SWL that may have the potential to generate sleep disturbance can be summarised as follows:

- Truck dumping 110-115 dBA L_{AFmax}
- Reversing alarms 100-115 dBA L_{AFmax}

To be conservative, the upper level has been used for the noise predictions. The predicted night time L_{AFmax} noise levels at receivers surrounding the site are summarised in Table 19.

TABLE 19 PREDICTED MAXIMUM NOISE LEVELS AT RESIDENCES L_{AFmax}

Receiver	Noise Level L _{AFmax}	Night Criteria	Complies (Yes/No)
R1	33	52	Yes
R2	32	52	Yes
R3	31	52	Yes
R4	31	52	Yes
R5	31	52	Yes

Receiver	Noise Level L_{AFmax}	Night Criteria	Complies (Yes/No)
R6	29	52	Yes
R7	28	52	Yes

A review of results indicates that compliance with sleep disturbance will be easily achieved.

12.4.3 Cumulative Noise Levels

A review of predicted noise levels indicates that the highest predicted noise levels from the facility will be $L_{Aeq(15minute)}$ of between 27 and 28 dBA at Werrington County residences to the west of the site. These levels compare to existing noise levels of 41-48 dBA that have been measured at these residences.

As the predicted noise levels are more than 10dBA below existing L_{Aeq} noise levels at residences, the contribution to cumulative noise levels will not be perceptible.

12.4.4 Road Traffic Noise Assessment

Road traffic noise impacts on Forrester Road during daytime is considered negligible due to the existing high traffic volume. The main impact would occur during night time on residential receivers located along Forrester Road. For the purpose of assessing the road traffic noise impact, receiver TR1 has been considered in the assessment.

12.4.5 Road traffic noise associated with staff cars would be negligible.

For the assessment of road traffic noise impacts, the peak two-way truck movements presented in Figure 2-4 in the Traffic Impact Assessment report have been considered. These are equal to 62 truck movements during daytime and 18 truck movements during night time.

Prediction of future road traffic noise levels was undertaken based on the assumption that all trucks associated with the proposal have similar noise emission characteristics. Noise levels from trucks were measured along Forrester Road and the highest sound pressure levels were considered for the assessment. This provides a conservative approach to the assessment.

The predicted future road traffic noise levels are shown in Table 20.

TABLE 20 PREDICTED NOISE LEVELS ASSOCIATED WITH ROAD TRAFFIC AT TR1

Period	Existing Road Traffic Noise $L_{Aeq,period}$	Predicted Additional Road Traffic Noise	Cumulative Road Traffic Noise	Criteria
Night Time 10pm-7am				
$L_{Aeq,9hour}$ (dBA)	62	54	62.6	64

The cumulative road traffic noise levels were predicted to comply with the noise criteria. The increase in traffic noise levels from the recycling facility was predicted to be less than 1dB. An increase of traffic noise levels of less than 2dB is not considered noticeable to the human ear.

12.5 Mitigation Measures

As the noise levels are expected to be within acceptable thresholds, the mitigation measures required are minimal.

reDirect Recycling undertakes to keep the roller shutter doors to the warehouse closed as much as possible, to minimise the operational noise from the site.

12.6 Conclusions

Wilkinson Murray Pty Limited prepared a Noise and Vibration Impact Assessment (NVIA) for inclusion in the Environmental Impact Statement (EIS) relative to the project.

Noise and vibration from the proposed development has been assessed against NSW Government policies in relation to operational noise and road traffic noise.

The noise impact associated with operational activities is predicted to comply with the noise criteria at all the considered residential receivers.

Potential noise impacts from traffic on the surrounding road network, arising from additional truck movements associated with the operation of the recycling facility are predicted to not be noticeable as increases in noise level of 1dB was predicted.



13 Cultural Heritage

13.1 Cultural Heritage

An Aboriginal and Historic Heritage Desktop Due Diligence Assessment was conducted by Archaeological Risk Assessment Services in August 2020. This section provides a summary of the assessment. A copy of the full report is provided at Appendix J.

13.2 Methodology

13.2.1 Aboriginal heritage

Through Heritage NSW, an extensive Aboriginal Heritage Information Management System (AHIMS) search was conducted by ARAS Pty Ltd on 28th July 2020 (AHIMS search ID 12832). The search covered an area of approximately 3 km² that encompassed the project area.

The assessment also reviewed previous archaeological research conducted in the St Marys/Dunheved area.

In western Sydney, modelling aimed at discerning patterns of the distribution of artefacts across landscape, which is important for predicting potential for archaeological deposit. Large-scale excavations demonstrated that the majority of archaeological deposits do not have any surface indications, therefore predictive modelling is used as a primary investigative tool.

13.2.2 Historic heritage

Research on the history of the St Marys area was conducted. Searches were conducted on the NSW State Heritage Register and the National Heritage Register. In addition, the heritage items listed on the *Penrith Local Environment Plan 2010* were reviewed.

13.3 Existing Environment

No known Aboriginal sites or potential Aboriginal sites were identified within the area proposed for the SSD modification as a result of this desktop assessment. No known historic heritage sites were identified within the area proposed for SSD modification as a result of this desktop assessment. Given the scale of previous historical development and land-use impacts on 25 Dunheved Circuit St Marys, most physical cultural heritage evidence has probably been removed.

13.4 Impact Assessment

The due diligence desktop assessment, based on the existing and proposed legal requirements of the NSW *National Parks and Wildlife Act (1974)*, NSW *Heritage Act 1977* and the type of archaeological evidence found on: LOT 143 DP 1013185, 25 Dunheved Circuit St Marys, found that:

- The assessment area is located within the City of Penrith Council's IN1 General Industrial land;
- The proposed SSD modification activities **will not** cause any sub surface ground disturbance impacts or visual amenity impacts;
- The assessment area is considered to have **no** Aboriginal heritage value potential;
- The assessment area is considered to have **no** Historic heritage value potential; and
- The above conclusion is reached based on background archaeological/historical research, and land-use history.

13.5 Conclusion

An Aboriginal and Historic Heritage Desktop Due Diligence Assessment was conducted by Archaeological Risk Assessment Services in August 2020.

The assessment included searches of all relevant databases, including AHIMS, the NSW State Heritage Register, the National Heritage Register and the *Penrith Local Environment Plan 2010*.

No known Aboriginal sites or potential Aboriginal sites, or historic heritage sites, were identified within the area proposed for the SSD modification as a result of this desktop assessment. Given the scale of previous historical development and land-use impacts on 25 Dunheved Circuit St Marys, most physical cultural heritage evidence has probably been removed.

The assessment area is considered to have no Aboriginal heritage value potential.

The assessment area is considered to have no Historic heritage value potential.



14 Waste Management

14.1 Introduction

A Waste Management Plan was prepared by Jackson Environment and Planning Pty Ltd. This section provides a brief summary of the Waste Management Plan. A copy of the full report is provided at Appendix D.

14.2 Methodology

The waste generation at the site was estimated for both the construction/demolition phase of the project and the operational phase of the project. The estimated amounts, treatment processes and final destination were determined. As the proposed development is a recycling facility, much of the waste management on site during the operational phase coincides with the facility's normal operations. In addition, other sources of waste, such as employee waste, were estimated and described.

The estimated maximum on-site storage was calculated by estimating the floor area and multiplying by the maximum stockpile height (4m).

14.3 Existing Environment

The site currently operates as a waste transfer station for inert waste. It has development consent to receive, sort and transfer up to 18,000tpa of dry, inert waste (timber, green waste, concrete, brick, metal).

The site has an existing warehouse, two in-ground weighbridges and on-site detention tanks. All operations are conducted inside the warehouse.

There is an office building on-site, with an existing waste and recycling system to capture employee waste.

14.4 Impact Assessment

The major changes to the site operations as a result of the development will be an increase in waste accepted at the site to 150,000tpa and the installation of processing equipment.

The updated facility will accept mainly wood waste ($\approx 110,000$ tpa), with some plasterboard ($\approx 30,000$ tpa). The wood waste will be sorted and shredded. The plasterboard will be processed in a turbo-separator, which will separate the paper from gypsum, and pulverise the gypsum.

Some metal will be received at the site ($\approx 10,000$ tpa), either as scrap metal or embedded in the wood. Metal will be separated and sent for recycling.

Small quantities of non-recyclable waste may be received at the site as contamination in loads. The contaminants will be stored in a skip bin and removed periodically for disposal to landfill. It is estimated that contaminants will comprise 2-3 wt% of incoming waste.

Overall, the recovery rate for the facility is expected to be 97-98 wt%.

14.5 Mitigation Measures

All vehicles will be weighed arriving and leaving the facility. Data required for the required monthly waste data reporting will be collected at the gatehouse.

The waste receiving and inspection procedures will conform to the NSW EPA's *Standards for Managing Construction Waste in NSW*. For loads with small quantities of contaminants, the contaminants will be picked out either in the Tip and Spread area, or on the picking station. Loads found to have a large proportion of non-conforming waste during the inspection process will be re-loaded and removed from site.

"Clean" timber suitable for processing into mulch will be received, stored and processed separately to other waste wood and wood products. Wood products will be sampled and tested to ensure they meet specifications

required for the specific end use, e.g. The Mulch Order 2014 and the Borg specific Urban Waste Residues Order.

Plasterboard will be processed to meet the requirements of the *Recovered Plasterboard Resource Recovery Order 2014*. Recovered gypsum will be regularly sampled and tested to ensure it complies with the order.

The office waste management system will be expanded to include a co-mingled recycling bin and a paper/cardboard bin.

14.6 Conclusion

A Waste Management Plan was prepared by Jackson Environment and Planning Pty Ltd.

The development will update the existing recycling facility to increase the throughput from 18,000tpa to 150,000tpa. Equipment will be installed for improved material separation and size-reduction.

The main waste accepted on site will be wood waste and plasterboard. A small amount of waste metal will be received, as separate loads and embedded in the waste wood.

The recovered materials will be paper, gypsum, shredded wood and scrap metal. All these products will be transferred off-site for re-use or for further processing and recycling. A small amount of residual waste will be extracted from the incoming waste, which will be removed regularly from the site for disposal to landfill.

Overall, the recovery rate for the facility is expected to be 97-98 wt%.



15 Traffic

15.1 Introduction

A Traffic Impact Assessment (TIA) was prepared by The Transport Planning Partnership (TTPP) in November 2020. This section provides a summary of the TIA. A copy of the full report is provided as Appendix E.

15.2 Methodology

In preparing the TIA, reference was made to the following:

- An inspection of the site and its surrounds
- Penrith City Council Local Environmental Plan (LEP) 2010
- Penrith City Council Development Control Plan (DCP) 2014
- Plans for the proposed development as prepared by Cross Muller Construction
- Swept path assessments undertaken by TTPP
- Future Transport 2056 and supporting documents;
- NSW Freight and Ports Plans 2018-2023;
- Guide to Traffic Generating Developments 2002 (RTA);
- Technical Directions TDT 2013/04a Guide to Traffic Generating Developments.
- Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development.

15.2.1 Traffic Survey

Due to the irregular traffic climate caused by the COVID-19 pandemic at the time of this assessment, traffic surveys undertaken in 2020 would not be reflective of typical traffic conditions. As such, historic traffic survey data has been utilised from the Traffic Impact Assessment which was prepared as part of the application for SSD-8200 (submitted by Bingo Industries, former owners of the site).

Typical weekday traffic data was collected at the key nearby intersection of Ropes Crossing Boulevard-Forrester Road-Links Road on Wednesday 15th June 2016. Traffic surveys were undertaken during the following road network peak periods:

- AM survey period: 7:00am - 10:00am; and
- PM survey period: 3:00pm - 6:00pm.

At the time of the traffic data collection, the former site was in operation.

15.2.2 Estimating Traffic Generation

For a resource recovery facility, traffic generation is a function of the volume of waste throughput at the facility. Therefore, the traffic generation for the site was based on an empirical traffic generation assessment which considers the tonnage of waste to be transported through the site.

15.2.3 Traffic Modelling

SIDRA Intersection 9 modelling software has been used to assess the traffic implications arising from the proposal on the key nearby intersection of Ropes Crossing Boulevard, Forrester Road and Links Road.

SIDRA modelling analysis has been undertaken to assess the impact of the proposal on the intersection operation of the nearby intersection Ropes Crossing Boulevard- Forrester Road- Links Road roundabout. The modelling analysis considers the opening year of the development which has been taken as by the end of year 2020, and opening year plus 10 years i.e. year 2030.

For the year 2030, background traffic growth plus (population increase) and growth in traffic due known proposed developments in the vicinity, are based on TfNSW's STM projections given for Links Road, Ropes Crossing Boulevard and Forrester Road.

15.3 Existing Environment

The site is situated within the Dunheved Business Park North Precinct, which is accessed via Links Road from Forrester Road. The Dunheved Business Park South Precinct is located due- south while the Dunheved Business Park East Precinct is located on the east side of Forrester Road.

Nearby roads used to access the site are; Dunheved Circuit, Krommer Place, Links Road and Forrester Road.

The existing site contains:

- A 3,455 m² waste processing building - constructed of concrete tilt panels and metal cladding with a ridge height of 11.9 m;
- A site office and amenities building (of approximately 180 m² gfa);
- Two inground 20m weighbridges;
- External areas sealed with concrete hardstand;
- Water tanks.

The site has a battle-axe block configuration. The site is accessed via two-way driveway having a width of 14m. It is a shared driveway with the neighbouring site, 21 Dunheved Circuit. The portion of the driveway to 25 Dunheved Circuit is wide enough for a two-way driveway (see Figure 33).



FIGURE 33 SITE ACCESS CONFIGURATION

There is an inbound weighbridge and an outbound weighbridge located on-site. These weighbridges are provided as separate inground weigh stations with dimensions 20 m long by 3.2 m wide. Vehicle circulation throughout the site follows a general clockwise direction over the inbound weighbridge, through the waste processing building, and over the outbound weighbridge.

When previously owned and operated by Bingo Industries, the site was approved for a total of 10 car parking spaces on-site (at 25 Dunheved Circuit).

Table 21 shows the modelled existing traffic conditions for the nearby intersection of Ropes Crossing Boulevard, Forrester Road and Links Road (a roundabout), which is considered the most likely to experience traffic delays.

TABLE 21 EXISTING CONDITIONS SIDRA MODELLING RESULTS

Intersection	Worst Performing Movement	Peak Period	Average delay (s)	Level of Service (LoS)
Ropes Crossing Boulevard- Forrester Road- Links Road	Links Road (western approach), right turn	AM	14	A
	Links Road (western approach), right turn	PM	21	B

The modelling results indicate that the roundabout currently operates at a LoS A and LoS B during the AM and PM road network peak periods, respectively. The worst performing movement is determined based on the average delay which is the right turn movement from Links Road (western approach) to Forrester Road (southern approach). Vehicles undertaking this movement experience an average delay of 14 seconds in the AM and 21 seconds in the PM peak periods, respectively.

The modelling results show that the roundabout operates satisfactorily under the existing conditions.

15.4 Impact Assessment

15.4.1 Traffic Generation

Deliveries to the site are proposed across a 24-hours/ 7-day period. The majority of small to medium deliveries (around 95%) will be undertaken by rigid trucks during the day between 7am-4pm while most larger deliveries (around 80%) will occur at night between 6pm-3am. Most of the processed material (around 80%) will be dispatched from the site after 6pm.

Delivery and collection vehicles will range in size from a 12.5 m heavy rigid vehicle (front lift truck/ hook-lift truck/ skip bin truck) to a 19 m semi-trailer (walking floor trailer).

Using the tonnage data for the facility, a total of 126 daily vehicle trips are anticipated to be generated by the future RRF on a typical day. The 24-hour profile for vehicle trips generated by the Proposal is expected to be as presented in Table 22.

TABLE 22 FUTURE TRAFFIC GENERATION

Hour Starting	Heavy Vehicles (Waste Deliveries and Product Collections)		Light Vehicle Trips (Employees)		Total (Light Vehicles + Heavy Vehicles)	
	No. of Vehicles	No. of Trips	No. of Vehicles	No. of Trips	No. of Vehicles	Total Trips
0:00	2	4	0	0	2	4
1:00	2	4	0	0	2	4
2:00	2	4	0	0	2	4
3:00	1	2	0	0	1	2
4:00	1	2	0	0	1	2
5:00	1	2	0	0	1	2
6:00	1	2	Shift change-over: 5 cars exit and 6 cars enter	11	12	13
7:00 [1]	2	4	0	0	2	4
8:00	2	4	0	0	2	4
9:00	2	4	0	0	2	4
10:00	2	4	0	0	2	4
11:00	2	4	0	0	2	4
12:00	2	4	0	0	2	4
13:00	2	4	0	0	2	4
14:00 [2]	2	4	Shift change-over: 6 cars exit and 6 cars enter	12	14	16
15:00	2	4	0	0	2	4
16:00 [3]	1	2	0	0	1	2
17:00	1	2	0	0	1	2
18:00	2	4	0	0	2	4
19:00	3	6	0	0	3	6
20:00	3	6	0	0	3	6

Hour Starting	Heavy Vehicles (Waste Deliveries and Product Collections)		Light Vehicle Trips (Employees)		Total (Light Vehicles + Heavy Vehicles)	
	No. of Vehicles	No. of Trips	No. of Vehicles	No. of Trips	No. of Vehicles	Total Trips
21:00	3	6	0	0	3	6
22:00	2	4	Shift change-over: 6 cars exit and 5 cars enter	11	13	15
23:00	3	6	0	0	3	6
Total	46 HV	92 HV Trips	17 LV	34 LV Trips	80 Vehicles	126 Vehicles Trips

Notes:

[1] - Local road network AM peak hour

[2] - Site operational peak hour

[3] - Local road network PM peak hour

In the context of the wider road network, heavy vehicles will use Great Western Highway, M4 Western Motorway and M7 Westlink Motorway when travelling to/from the site. Within the vicinity of the site, heavy vehicles would travel to/from the site via Forrester Road, Links Road and Dunheved Circuit.

The results of the intersection modelling analysis indicate that the intersection would continue to operate at a LoS A in the AM peak period and LoS B in the PM peak period, with no increase in average delay in the opening year of the proposed development. The worst performing movement remains as the right turn movement from Links Road (western approach) to Forrester Road (southern approach), experiencing the same average delay as under the existing conditions.

Modelling results for the future 2030 scenario indicates that background traffic growth which is unrelated to the proposed development would cause the intersection to operate poorly (LoS F) in the AM and PM peak periods. Inclusion of the development generated traffic results in a marginal increase in average delay; that is, plus 2 seconds in the AM peak hour and plus 4 seconds in the PM peak hour. As such, the impact to the intersection operation caused by the proposed development would be negligible. In response to the poor level of service in the 2030 future scenario, it is expected that the traffic flows through this junction would be alleviated through the construction of new link roads.

The modelling results of future scenarios indicate that the Proposal is expected to generate a minor impact on the surrounding road network during at peak times.

It is acknowledged that TfNSW (RMS) has requested further detail as follows, “the traffic modelling should consider the scenarios of year 2026, 2031, 2036 and the year until the facility cease operation” To address this request, two future scenarios have been assessed, namely, the proposed development Opening Year and a plus 10 years scenario. In both cases, the Proposal is expected to have a negligible impact on the surrounding network which is also expected to continue into the future beyond 2030.

Furthermore, it is not known when the RRF is proposed to cease operation. However, for as long the Proposal operates as assessed within this TIA, it is not expected to have a noticeable impact on the surrounding road network.

Also, TfNSW has requested that the modelling analysis “should include, but not be limited to the intersections of Forester Road/Links Road/Ropes Crossing Boulevard and Forester Road/Christie Street/Boronia Road.” The intersection of Forester Road/Links Road/Ropes Crossing Boulevard has been assessed in this TIA on the basis that it is the primary access point to the Dunheved Business Park North Precinct which is where the subject site is located.

Following the proposed vehicle haul route (Figure 4.2 of the TIA at Appendix E), the number of vehicle trips passing through this roundabout would be equal to those passing through the Forester Road/Christie Street/Boronia Road intersection. The impact of the Proposal at the Forester Road/Links Road/Ropes Crossing Boulevard has been assessed to be minor. Therefore, it is expected that the Proposal would also generate a minor impact at the intersection of Forester Road/Christie Street/Boronia Road.

15.4.2 Site Access

All vehicle movements in/out of the site will be undertaken in a forward direction only. Reversing into and out of the site would not be permitted under any circumstance.

Similarly, vehicle circulation routes within the site would occur in a forward direction.

Sight distance to the Dunheved Circuit loop road north approach is satisfactory as there are no objections between the driveway and an oncoming vehicle. Looking towards the south approach, there is an existing tree located within the reserve area opposite the site. As observed on-site, the existing tree does not impede visibility between the driveway and an oncoming vehicle.

The site access driveway is approximately 100 m in length and is able to accommodate the stacking of five (x5) 19 m semi-trailers or seven (x7) 12.5 m heavy rigid vehicles at one time. In addition, one vehicle can be accommodated on the inbound weighbridge while another vehicle is located within the material processing building. Therefore, the site is able to accommodate between 7-9 heavy vehicles on-site, subject to the type of vehicle.

The maximum number of heavy vehicles generated by the future RRF per hour would be in the order of three trucks. This would occur from 7pm each day. As such, queuing of site-generated vehicles would be entirely accommodated on-site and there would be no queueing from the site onto the frontage road.

The circulation road layout on-site has been designed to accommodate forward movements by the largest vehicle accessing the site, that is, a 19m semi-trailer. Circulation aisles within the site provide sufficient width for the 19m semi-trailer (longest vehicle) to adequately move through the site.

All heavy vehicles accessing the site would enter by turning left-in off the Dunheved Circuit loop road. Upon exit, all trucks would turn left-out from the same driveway.

15.4.3 Car Parking

Standard daily operation would involve 5-6 employees on-site at any one time. During busy processing periods, there may be up to 10 employees on-site at a time. Therefore, provision for 10 car parking spaces will sufficiently accommodate all staff on-site. The proposed car parking layout is satisfactory.

15.5 Mitigation Measures

reDirect Recycling will continue to monitor the traffic issues on and near the site.

15.6 Conclusions

The TIA made following summary and conclusions:

- The proposal seeks to facilitate an annual waste throughput of 150,000 tonnes of timber waste material and increase its hours of operations to 24-hours per day, 7 days per week.
- Having regard to Penrith City Council’s DCP the proposed development generates a parking requirement of 48 car parking spaces. However, based on first principles, the proposed provision of

10 off-street parking spaces would adequately accommodate the 5-6 employees (or maximum 10) proposed to be on-site at any given time.

- The proposed parking layout is consistent with the dimensional requirements as set out in the Penrith City Council DCP and Australian Standard for Off Street Car Parking (AS2890.1:2004 and AS2890.6:2009).
- The proposed site ingress and egress points are consistent with the requirements as set out in the Council's DCP and Australian Standards.
- The proposed RRF is estimated to generate an average of 126 vehicle trips per day and 16 vehicle trips in the peak hour vehicle trips in the peak hour (site peak period).
- Comparatively, the proposed RRF will generate approximately half the amount of daily vehicle trips of the former site operation. Furthermore, the proposed RRF would generate a third less vehicle trips during the site peak period.
- In addition, SSD-8200 was granted approval for the operation of a RRF estimated to generate an average 194 trips per day (and up to 239 trips at peak times) and 20 trips in the peak hour (and up to 24 trips at peak times). Therefore, the proposed RRF will also generate significantly less vehicle trips in comparison to the previous development approval.

The traffic impacts due to the proposed operation of a timber waste resource recovery facility have been assessed to be minor.



16 Water Use and Conservation

16.1 Introduction

Eclipse Consulting Engineers were engaged to conduct an assessment of water issues related to the development. The full report is provided at Appendix K.

16.2 Methodology

A water balance was performed to estimate the demand met by the rain water tank collecting water from the office building roof. The water use assumed to be:

- 4 toilets using 0.1 kL/day/toilet; and
- No water used for landscaping maintenance.

The daily rainfall data used was from the nearest weather station, Orchard Hills Treatment Works. The data was supplied by the Bureau of Meteorology.

16.3 Existing Environment

There is an existing 10 kL rainwater tank that collects rainwater from the roof of the office building. The catchment area is 180 m².

The facility is currently operating at reduced capacity. Once at full capacity, it is anticipated that the number of staff, and hence toilet use, will increase.

It should be noted that there are no landscaped areas on the site.

The site is connected to town water supply and to town sewerage.

16.4 Impact Assessment

The facility is currently operating at reduced capacity. Once at full capacity, it is anticipated that the number of staff, and hence toilet use, will increase.

Based on the rainfall estimates and assumed toilet water use, it was calculated that approximately 64.9% demand will be met by re-using the rainwater from the office building roof to flush toilets. The shortfall will be met by the town water supply.

16.5 Mitigation Measures

No further mitigation measures are required.

16.6 Conclusions

The site has no landscaped areas. Therefore, no water is required for landscape maintenance.

Based on the rainfall estimates and assumed toilet water use, it was calculated that approximately 64.9% demand will be met by re-using the rainwater from the office building roof to flush toilets.

The site is connected to the town water supply. The shortfall will be met by the town water supply.

No further mitigation measures are required.

More details are provided in the report at Appendix K.

17 Stormwater Management and Water Quality

17.1 Introduction

A Stormwater Management Plan was prepared by Eclipse Consulting Engineers. The full report is provided at Appendix K.

17.2 Methodology

The daily rainfall data used was from the nearest weather station, Orchard Hills Treatment Works. The data was supplied by the Bureau of Meteorology.

A DRAINS model was used to review the on-site detention system used to control discharge of stormwater from the site. A Horton/ILSAX hydrological model was used to determine the pre-development discharge rates from the site. The MUSIC model was used to assess water quality of stormwater leaving the site.

A flood analysis waste conducted by reviewing the site location to flood prone land identified in the report *Updated South Creek Flood Study* prepared by Worley Parsons on behalf of Penrith City Council in 2015.

17.3 Existing Environment

Stormwater is collected in four (4) 50kL hydraulically linked on-site detention (OSD) tanks. Stormwater from the roof of the main warehouse building and the paved areas around the site is captured in the OSD tanks, via a Ecosol GPT 4200 gross pollutant trap. Figure 34 shows an outline of the stormwater system as constructed in 2016.

The existing treatment train was modelled using MUSIC and found to not meet the Penrith City Council pollution reduction requirements. The MUSIC model outcomes for the existing stormwater system is presented in Table 23.

TABLE 23 MUSIC MODEL RESULTS FOR EXISTING STORMWATER TREATMENT TRAIN

	Pollutants generated (kg/yr)	Residual pollutants (kg/yr)	% Reduction target	% Reduction achieved
Total suspended solids (TSS)	319	122	85	61.8
Total phosphorus	0.765	0.504	60	34.1
Total Nitrogen	8.07	7.26	45	10.1
Gross Pollutants	102	0.555	90	99.5

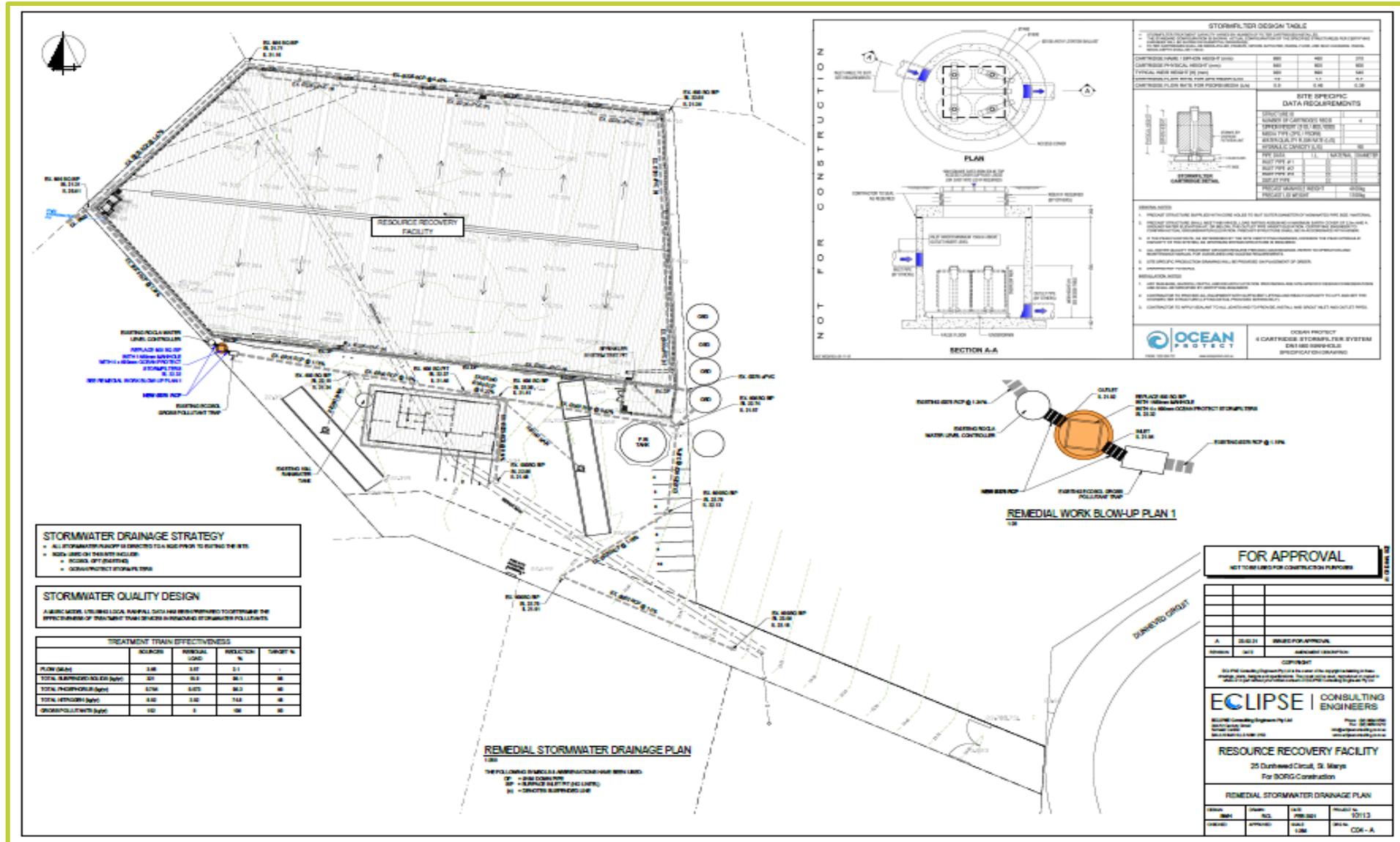


FIGURE 34 STORMWATER DRAINAGE PLAN FOR THE SITE

17.4 Impact Assessment

All processing will be conducted inside the warehouse building. Therefore, stormwater will not come into contact with stored materials or dust generated by processing. The main source of stormwater contamination will be oil/fuel drops on the vehicle paths on the paved areas and dust carried from the warehouse on the tyres of vehicles.

A wheel wash will be installed in the outbound lane of the driveway. Heavy vehicles will be required to drive through the wheel wash prior to exiting the site. Sludge will be regularly removed for off-site disposal. The water will be recycled.

To improve the performance of the stormwater treatment train, an Ocean Protect StormFilter will be installed after the Ecosol GPT. According to the MUSIC modelling, the updated system will meet the requirements of Penrith City Council for pollution reduction in stormwater (see Table 24).

TABLE 24 MUSIC MODEL RESULTS FOR UPDATED STORMWATER TREATMENT TRAIN

	Pollutants generated (kg/yr)	Residual pollutants (kg/yr)	% Reduction target	% Reduction achieved
Total suspended solids (TSS)	320	15.3	85	95.2
Total phosphorus	0.767	0.0737	60	90.4
Total Nitrogen	8.03	2.02	45	74.8
Gross Pollutants	102	0	90	100

According to the DRAINS modelling, the post-development flows have been reduced to match the pre-development flows at a maximum in all rainfall events less frequent than the 0.5EY event.

The site is located outside the mainstream and overland flooding events for the 100-year ARI events. As such, a quantitative flood impact assessment is not required.

17.5 Mitigation Measures

An Ocean Protect StormFilter will be installed in the stormwater treatment train after the Ecosol GPT. This will ensure the pollution reduction requirements are met.

A wheel wash will be installed in the outbound lane of the driveway to remove dust and sediment from heavy vehicles leaving the site.

A maintenance schedule will be established to ensure the GPT and wheel wash is cleared regularly and that the StormFilter cartridges are changed at appropriate intervals.

17.6 Conclusions

Stormwater is collected in four (4) 50kL hydraulically linked on-site detention (OSD) tanks. Stormwater from the roof of the main warehouse building and the paved areas around the site is captured in the OSD tanks, via a Ecosol GPT 4200 gross pollutant trap.

An Ocean Protect StormFilter will be installed in the stormwater treatment train after the Ecosol GPT. This will ensure the pollution reduction requirements are met. A wheel wash will be installed in the outbound lane of the driveway to remove dust and sediment from heavy vehicles leaving the site. A maintenance schedule will be established to ensure the GPT and wheel wash is cleared regularly and that the StormFilter cartridges are changed at appropriate intervals.

According to the DRAINS modelling, the post-development flows have been reduced to match the pre-development flows at a maximum in all rainfall events less frequent than the 0.5EY event.

The site is located outside the mainstream and overland flooding events for the 100-year ARI events. As such, a quantitative flood impact assessment is not required.

A Stormwater Management Plan was prepared by Eclipse Consulting Engineers. The full report is provided at Appendix K.



18 Other Issues

18.1 Soil

The whole of 25 Dunheved Circuit is hardstand concrete. The proposal does not include any disturbance with the concrete area, with soil not being impacted. The proposed wheel wash will be an above ground mobile unit. All other required facilities are existing on the site.

Given that there is no disturbance of soils, and the whole site is hardstand, contaminated soils is not considered to pose a risk or issue to the proposal.

18.2 Visual Impact

There are no proposed changes to the existing building. There will be no visual impact.



19 Cumulative Environmental Impacts

19.1 Introduction

This cumulative impact assessment addresses the cumulative environmental impacts of the proposed development. A cumulative impacts assessment is an environmental assessment that examines both the positive and negative environmental impacts of a proposal where there is a clustering of a land use type. A cumulative impact on the environment results from the incremental impact of human activities with consideration to the historic, current, and foreseeable planned activities for a particular area. Cumulative impacts from a cluster of premises will vary between locations but typically cumulative impacts are a product of the location, the number and type of facilities present in the vicinity, the way they are managed, and the capacity of the local environment to accommodate these facilities.

The proposed development is not considered to make a significant contribution to cumulative impacts due to the mitigation measures that will be put in place to manage environmental impacts, which is in addition to the numerous long-term cumulative benefits of the proposed development, including a contribution to the attainment of waste management objectives including the aims and objectives of relevant legislation around the management of problem wastes, illegal dumping and waste to landfill targets.

19.2 Objective

This cumulative impacts assessment aims to achieve the following objectives:

- Identify the extent that the receiving environment is already stressed by existing development and background levels of emissions to which this proposal will contribute;
- Assess the impact of the proposal against the long-term air, noise and water quality objectives for the area;
- Identified infrastructure requirements flowing from the proposal; and
- Assess the likely impacts from such additional infrastructure and measures reasonably available to the proponent to contain such requirements or mitigate their impacts.

19.3 Assessment of Stress Level of Existing Environment

The proposed development is located inside the St Marys Industrial Park. The St Marys Industrial Park contains a large number of industrial and commercial sites, including other waste facilities. The area is away from sensitive land uses. However, it is to be expected that there are existing industrial impacts, particularly noise, traffic and air quality.

As noted, the Greater Sydney Region Plan, the St Marys industrial area is an important industrial zone that provides access to employment and economic opportunity for Western Sydney. It is envisaged that the industrial area is to be kept for developments such as is proposed in this EIS.

19.4 Assessment of the Long-Term Impact of the Proposal

As identified within the respective Sections and technical studies, the proposal developments environmental impacts, such air, noise and traffic meet all relevant environmental legislation, policies and objectives. The following Sections provide a summary of the key long-term environmental impacts of the proposal.

19.4.1 Traffic

Modelling results for the future 2030 scenario indicates that background traffic growth which is unrelated to the proposed development would cause the intersection to operate poorly (LoS F) in the AM and PM peak periods. Inclusion of the development generated traffic results in a marginal increase in average delay; that is, plus 2 seconds in the AM peak hour and plus 4 seconds in the PM peak hour. As such, the impact to the

intersection operation caused by the proposed development would be negligible. In response to the poor level of service in the 2030 future scenario, it is expected that the traffic flows through this junction would be alleviated through the construction of new link roads.

The modelling results of future scenarios indicate that the Proposal is expected to generate a minor impact on the surrounding road network during at peak times.

19.4.2 Noise and Vibration

The noise modelling found that the ongoing operational noise will be well below the noise trigger levels in the Industrial Noise Policy. The noise modelling found that, as the predicted noise levels are more than 10dBA below existing L_{Aeq} noise levels at residences, the contribution to cumulative noise levels will not be perceptible.

The long-term cumulative effect of the development on noise and vibration in the area will be negligible.

19.4.3 Air Quality

To further investigate the potential air quality impacts at the most affected receptor, a contemporaneous assessment of 24-hour average PM_{10} concentrations was conducted. The contemporaneous assessment involves adding the existing background concentration, as observed at the St Marys AQMS, to the predicted incremental concentration for each day of the simulation.

The contemporaneous assessment shows that the contribution of the Proposal to total PM_{10} concentrations is very low, and that the Proposal does not result in additional exceedances of the impact assessment criterion.

As the population grows, and increased transport infrastructure is built in the area, the contribution of the development to the long-term air quality is likely to be minimal.

19.4.4 Biodiversity

The site is in the middle of an established industrial park. The impact to biodiversity at or near the site is negligible.

19.4.5 Soil

The site is covered in impervious paving. The activities at the site will have no impact on the soil below.

19.4.6 Water Quality

The stormwater assessment identified two improvements to be made to the stormwater treatment train; regular maintenance of the GPTs and the installation of an Ocean Protect StormFilter after the Ecosol GPT. This will result in an improvement in the quality of the stormwater discharged from the site.

19.4.7 Heritage

There are no items or sites of heritage value at or near the site. There will be no impact on heritage issues as a result of the development.

19.4.8 Visual Impact

The external view of the site from the street and surrounding properties will not change. Therefore, the visual impact will be negligible.

19.4.9 Bushfire

The site is not in a bushfire prone area. The development will have negligible impact on bushfire hazard risk in the area.

19.4.10 Infrastructure Requirements Flowing from the Proposal

No additional infrastructure is required to support the development.

19.5 Conclusion

Overall, the cumulative impact of the proposed development is expected to be minimal. The potential for adverse impacts will be mitigated by a range of measures, as listed in Section 20.



20 Mitigation Measures and Commitments

A wide range of mitigation measures to prevent or minimise environmental impacts that may be generated by the proposed facility have been detailed throughout this EIS. This Section of the report provides a compilation of the recommended mitigation measures (see Table 25). Implementation of these measures would be considered necessary to minimise impacts and maximise positive outcomes on the physical, social and economic environments of the local area and wider region.

20.1 Summary of Mitigation Measures

TABLE 25 COMPILATION OF MITIGATION MEASURES FOR THE PROPOSED DEVELOPMENT

Impact	Potential impact	Mitigation measures	Residual Impact
Air quality	Dust from processing and handling materials	<ul style="list-style-type: none"> All processing and handling will occur inside the warehouse Minimise drop heights for processed and dusty materials Dampen dusty stockpiles, if required Trafficable areas to be swept regularly. 	The modelling shows any dust will be contained within the warehouse and not impact surrounding areas.
	Emissions from vehicles and fuel-run plant	<ul style="list-style-type: none"> Engines and plant to be switched off when not in use Vehicles and plant to be fitted with pollution reduction devices where practicable Vehicles and plant to be maintained in accordance with manufacturer's specifications Vehicles restricted to designated routes On-site speed limits enforced Vehicle loads to be covered when travelling off-site. 	The mitigation measures will ensure the impact on surrounding areas will be minimal.
Noise and vibration	Noise from processing waste materials	<ul style="list-style-type: none"> All processing and handling will occur inside the warehouse Warehouse roller doors will be kept shut as much as possible. 	Noise modelling shows that the noise impact on surrounding areas is within acceptable levels, even when operating with roller doors open at all times. Closing the roller doors will further reduce noise outside the warehouse.

Impact	Potential impact	Mitigation measures	Residual Impact
	Noise from vehicles	<ul style="list-style-type: none"> Engines and plant to be switched off when not in use Vehicles and plant to be fitted with pollution reduction devices where practicable Vehicles and plant to be maintained in accordance with manufacturer's specifications Vehicles restricted to designated routes On-site speed limits enforced 	Vehicle movements were included in the noise modelling, which showed acceptable noise levels from the facility.



Impact	Potential impact	Mitigation measures	Residual Impact
<p>Waste management</p>	<p>Large quantities of wood waste and plasterboard will be processed at the site.</p>	<ul style="list-style-type: none"> • All vehicles will be weighed arriving and leaving the facility. Data required for the required monthly waste data reporting will be collected at the gatehouse. • The waste receiving and inspection procedures will conform to the NSW EPA's Standards for Managing Construction Waste in NSW. For loads with small quantities of contaminants, the contaminants will be picked out either in the Tip and Spread area, or on the picking station. Loads found to have a large proportion of non-conforming waste during the inspection process will be re-loaded and removed from site. • "Clean" timber suitable for processing into mulch will be received, stored and processed separately to other waste wood and wood products. Wood products will be sampled and tested to ensure they meet specifications required for the specific end use, e.g. The Mulch Order 2014 and the Borg specific Urban Waste Residues Order. • Plasterboard will be processed to meet the requirements of the Recovered Plasterboard Resource Recovery Order 2014. Recovered gypsum will be regularly sampled and tested to ensure it complies with the order. • The office waste management system will be expanded to include a co-mingled recycling bin and a paper/cardboard bin. 	<p>The residual waste from the site will be minimal. The waste management impacts will be very low.</p>

Impact	Potential impact	Mitigation measures	Residual Impact
Traffic	92 heavy vehicle trips and 34 light vehicle trips per day, spread over the 24hour operational period. The traffic monitoring found the facility will have negligible effect on surrounding traffic.	<ul style="list-style-type: none"> reDirect Recycling will continue to monitor the traffic issues on and near the site. 	Traffic impacts will be minimal.
Water use and conservation	No impacts	<ul style="list-style-type: none"> A 10 kL rainwater tank collects from the office building roof and uses it for toilet flushing. 	No impacts.
Stormwater management	Dust and sediment contamination of stormwater.	<ul style="list-style-type: none"> All processing and handling will occur inside the warehouse The site already has GPTs and stormwater is collected in OSD tanks. An Ocean Protect StormFilter will be installed in the stormwater treatment train after the Ecosol GPT. This will ensure the pollution reduction requirements are met. A wheel wash will be installed in the outbound lane of the driveway to remove dust and sediment from heavy vehicles leaving the site. A maintenance schedule will be established to ensure the GPT and wheel wash is cleared regularly and that the StormFilter cartridges are changed at appropriate intervals 	The development will result in improved stormwater treatment at the site.
Cultural heritage	No impacts. There are no heritage or Aboriginal items or sites near the facility.	No mitigation measures are required	No impact.

Impact	Potential impact	Mitigation measures	Residual Impact
Fire safety	Flammable materials will be stockpiled inside the warehouse. A fire would result in smoke and potential stormwater contamination.	<ul style="list-style-type: none"> • The building was constructed to NCC standards in 2017. A Fire Engineering Report was completed for the Construction Certificate. • The facility is fitted with fire safety systems; <ul style="list-style-type: none"> ○ Fire hydrants ○ Fire hose reels ○ Automatic sprinkler system ○ Portable fire extinguishers ○ Building occupant warning system ○ Emergency lighting and exit signage ○ Smoke vents • Two-way radios will be issued to staff • Fire suppression system to be installed above and below manual picking line • Spray dust suppression system to maintain moisture within the warehouse and stockpiles • Vehicles fitted with extinguishers • Emergency Control Procedures, including an Emergency Response Plan and Emergency Management Plan • Ongoing consultation and communication with FRNSW • Contaminated fire water will be collected in the OSD tanks. 	The risk of fire is minimal, with no ignition sources. Any fire will be quickly detected and extinguished. The amount of smoke and risk of stormwater contamination will be minimal.
Greenhouse gas emissions	Contribution to greenhouse gas inventory	reDirect is committed to installing solar panels on the warehouse roof to offset electricity use.	Reduced electricity use.
Soil	No impact	The site is covered in pavement.	No impact.
Visual impact	No impact	The view from the street and surrounding properties will not change.	No impact.

20.2 Conclusion

The objective of this Section of the EIS is to outline how the recommended environmental protection measures will be implemented and managed in an integrated manner to demonstrate that the proposal is capable of complying with statutory obligations under EPA licenses or approvals.

This Section described the mitigation measures to be implemented for potential impacts of the proposal that have been identified throughout this EIS. This Chapter provides an outline of the proposed environmental management measures, and additional strategies, including cleaner production principles, which will be followed when planning, designing, establishing and operating the proposal. These measures and processes will be incorporated into EMPs and monitoring programs to ensure a commitment to implementing the requirements of relevant legislation outlined in this EIS. Monitoring the efficacy of those measures will inform a process to drive continual improvement.



21 Conclusion

The Proposal, which is classified as State Significant Development in accordance with Clause 23(3) of the State and Regional Development SEPP, has been subject to an Environmental Impact Statement in accordance with the *Environmental Planning and Assessment Act 1979*, *Environmental Planning and Assessment Regulations 2000* and the Secretary's Environmental Assessment Requirements. The potential environmental, social and economic impacts, both direct and cumulative, have been identified and thoroughly assessed as part of this EIS. The assessment concluded that no significant environmental impacts have been identified because of the Proposal. It is considered that any potential impacts can be satisfactorily mitigated through a range of measures that have been identified within the EIS. In addition, the Proposal has been assessed against and has been found to be consistent with the priorities and targets adopted in relevant and draft State plans as well as Government policies and strategies.

The Proposal would provide significant benefit in terms of providing a sustainable resource recovery facility that facilitates Borg to engage in a Circular economy operation. The benefits of the circular economy model are tremendous and will lead to improved environmental outcomes including direct impact on greenhouse gas emissions by lowering the amount of raw materials needed for the manufacturing of particle board, the increased sequestration of carbon by extending the life of pine plantations and the overall benefits of keeping material in the productive economy for longer.

Overall, the EIS concludes that the development proposed is in the public interest and approval is recommended.



APPENDIX A - Issued Secretary's Environmental Assessment Requirements



APPENDIX B - Set of Plans for proposal



APPENDIX C - Capital Investment Value



APPENDIX D - Waste Management Plan prepared by Jackson Environmental



APPENDIX E - Traffic Impact Assessment prepared by The Transport Planning Partnership



APPENDIX F - Air Quality Impact Assessment prepared by Wilkinson Murray



**APPENDIX G - Noise and Vibration Impact Assessment
prepared by Wilkinson Murray**



APPENDIX H - Fire Safety Information



APPENDIX I - Greenhouse Gas Assessment prepared by Wilkinson Murray



APPENDIX J - Cultural Heritage Assessment prepared by Archaeological Risk Assessment Services



APPENDIX K - Stormwater Management Plan and Water Quality Assessment prepared by Eclipse Consulting Engineers

