Environmental Impact Statement

Penrith Waste Recycling and Transfer Facility | 46-48 Peachtree Road, Penrith
State Significant Development 7733

Prepared for Benedict Recycling Pty Ltd | 2 June 2017

EMM

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Environmental Impact Statement

Final

Report J16099RP1 | Prepared for Benedict Recycling Pty Ltd | 2 June 2017

Approved by	**Phil Towler**
Position	Associate Director
Signature	
Date	2 June 2017

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ENVIRONMENTAL IMPACT STATEMENT CERTIFICATION

For submission of an environmental impact statement (EIS) under Part 4 of the NSW *Environmental Planning and Assessment Act 1979.*

EIS prepared by

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Proponent

Benedict Recycling Pty Ltd

Proposed development

Development and operation of a waste recycling and transfer facility, Penrith.

See Chapter 2 of the EIS for a detailed description of the proposed development.

Land to be developed

46-48 Peachtree Road, Penrith, Lot 45 DP 793931

Certification

In relation to this EIS (2 June 2017) we certify that:

- it has been prepared in accordance with Schedule 2, Clauses 6 and 7 of the NSW Environmental Planning and Assessment Regulation 2000;
- it has been prepared with all available information that is relevant to the environmental assessment of the development to which this EIS relates; and
- the information contained in this EIS is nether false nor misleading.

Philip Towler
Associate Director

Executive Summary

Benedict Recycling Pty Ltd (Benedict Recycling) proposes to construct and operate the Penrith Waste Recycling and Transfer Facility (the facility) at 46–48 Peachtree Road, Penrith (the site). The facility will process up to 180,000 tonnes per annum (tpa) of pre-classified general solid (non-putrescible) waste including building and demolition waste, selected commercial and industrial waste, soils, vegetation, virgin excavated natural material (VENM), excavated natural material (ENM), metals, rail ballast and spoil. Waste will be processed (screened and sorted) to produce saleable recycled materials. No odorous waste will be accepted. It is not proposed to compost, crush or shred any waste onsite.

Only 'pre-classified general solid (non-putrescible) waste' as defined by the Environment Protection Authority *Waste Classification Guidelines - Part 1: Classification of Waste* (Waste Classification Guidelines) (EPA 2014a) will be accepted by the site. No special, liquid, hazardous, restricted solid waste or general solid waste (putrescible), as defined in the *Waste Classification Guidelines* will be accepted at the facility.

Benedict Recycling purchased the site in Penrith because it is in an existing industrial area and is readily accessible to light and heavy vehicles. The site is currently used by an auto wrecker and there are a range of industrial and commercial businesses in the surrounding area. These businesses, businesses in the wider area, government agencies and members of the public will be able to access the facility to recycle waste, contributing to meeting government recycling targets. The activity will be compatible with existing surrounding land uses.

This EIS accompanies a development application (DA) for the proposal under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). It has been prepared in accordance with the EP&A Act and the Environmental Planning and Assessment Regulation 2000, and addresses the requirements of the relevant government agencies as described in the Secretary's Environmental Assessment Requirements (SEAR) and considers matters raised by stakeholders in the surrounding area that were consulted regarding the proposal.

The key findings of the EIS are:

- Traffic increases on Castlereagh Road will not generally be noticeable to existing road users.
- Traffic increases on Peachtree Road will generally be noticeable to other traffic using but will not significantly affect the future road capacity or general maintenance requirements.
- The Peachtree Road/Castlereagh Road/Thornton Drive and the Castlereagh Road/Mullins Road intersections will not be materially impacted by the facility.
- The predicted incremental and cumulative airborne particulate matter concentrations, dust deposition rates and odour concentrations generated by the proposal will be well below the corresponding NSW EPA criteria at the assessment locations and will not lead to any unacceptable impacts on the surrounding area.
- Operational noise levels for the daytime, evening, night and morning shoulder periods during calm and adverse weather conditions will meet the relevant project specific noise levels at all assessment locations.
- Maximum noise levels during the morning shoulder period (6 am to 7 am) are predicted to be below those likely to wake residents.

- The noise from traffic movements associated with the facility will be minor in comparison to existing traffic volumes and the overall increase in road traffic noise level from the facility at residences will be negligible.

- The cumulative industrial noise from the facility together with other industrial noise sources will not increase industrial noise levels above the relevant amenity criteria.

- Construction noise levels will be below the noise affected management level.

- The upgraded stormwater drainage system and rainwater reuse system will improve the quality of the surface runoff discharged from the site and will only marginally reduce the volume of runoff from the site.

- The site's existing concrete surface will be repaired where required so surface water on the site will not infiltrate to groundwater.

- No contamination issues have been identified that would preclude the proposed future land use as a waste recycling and transfer facility with minimal opportunities for soil access.

- There are no views to the site from residential areas, public recreational spaces or major roads.

- The facility is unlikely to have significant visual impacts given that it is located within an existing industrial estate and is consistent with the visual character of the area.

The EIS presents a range of management measures to minimise impacts from the facility. These are summarised in a statement of commitments.

The facility is considered to be in the public interest as it will:

- recycle materials, assisting government recycling targets to be met;

- assist to meet the demand for products with a recycled material content, such as construction materials specified by Roads and Maritime Services;

- meet community expectations that unwanted resources are recycled to the greatest possible extent rather than being disposed to landfill;

- provide a suitable use for an industrially zoned site;

- provide socio-economic benefits through employment and stronger regional industrial activity; and

- have only minor or negligible environmental and social amenity impacts with the implementation of the recommended mitigation and management measures.

Based on the assessment of the facility provided in this EIS, it is recommended that the facility is approved subject to implementation of the proposed management and mitigation measures.

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1 Introduction

1.1 Project objectives

Benedict Recycling Pty Ltd (Benedict Recycling) proposes to construct and operate the Penrith Waste Recycling and Transfer Facility (the facility) at 46–48 Peachtree Road, Penrith (the site). The facility will process up to 180,000 tonnes per annum (tpa) of pre-classified general solid (non-putrescible) waste including building and demolition waste, selected commercial and industrial waste, soils, vegetation, virgin excavated natural material (VENM), excavated natural material (ENM), metals, rail ballast and spoil. Waste will be processed (screened and sorted) to produce saleable recycled materials.

Ready-to-use recycled products will include soils and a range of recyclable materials. Segregated recycled materials that will be transported to other Benedict Recycling sites or sold to other recycling firms for further processing will include ferrous and non-ferrous metals, dry paper/cardboard, masonry (eg concrete, bricks, tiles, asphalt and gyprock) and plastics. All of these products will provide recycled feedstock while recovering a range of materials that would otherwise go to lower order uses or be disposed to landfill. It is not proposed to compost, crush or shred any waste onsite.

Only 'pre-classified general solid (non-putrescible) waste' as defined by the *Waste Classification Guidelines - Part 1: Classification of Waste* (Environment Protection Authority (EPA) 2014a) will be accepted by the site. No special, liquid, hazardous, restricted solid waste or general solid waste (putrescible), as defined in EPA (2014a), will be accepted at the facility. In addition, no odorous waste will be accepted.

Materials brought onto site will be removed either as products, recyclable residues or non-recyclable residues for disposal at an EPA-licensed landfill. No materials will be land-filled or otherwise disposed anywhere within the site during operation of the facility.

There are very few recycling facilities in western Sydney accepting the types of wastes that would be accepted by the proposed facility. The closest facilities are the St Marys Resource Recovery Facility, St Marys, which is close to capacity, and the Penrith Landfill, Mulgoa, which will soon close.

Benedict Recycling purchased the site in Penrith because it is in an existing industrial area and is readily accessible to light and heavy vehicles. The site is currently used by an auto wrecker, with a range of industrial and commercial businesses in the surrounding area. These businesses, businesses in the wider area, government agencies and members of the public will be able to access the facility to recycle waste, contributing to meeting government recycling targets.

1.2 The applicant

Benedict Recycling (the applicant) is part of Benedict Industries Pty Ltd (Benedict Industries), a New South Wales (NSW)-based group of companies with quarrying, resources and recycling businesses. Established in 1966, Benedict Industries is one of the largest producers of quarried materials in NSW and continues to be family owned and managed. Benedict Industries supplies a range of sands, soils, sandstone, decorative aggregates and recycled products to customers in the greater Sydney Region and across NSW. Benedict Industries owns operations in Menai, Newcastle, Chipping Norton, Moorebank, Menangle, Belrose, Mittagong, Appin and Cowra. Major customers include Roads and Maritime Services (RMS), Sydney Water, Holcim, Boral Concrete, Concrite, Fulton Hogan, Hanson, most major construction and infrastructure companies, as well as numerous local councils.

Benedict Recycling operates recycling facilities at Chipping Norton, Belrose, and Newcastle with operations in Canberra and Smeaton Grange planned.

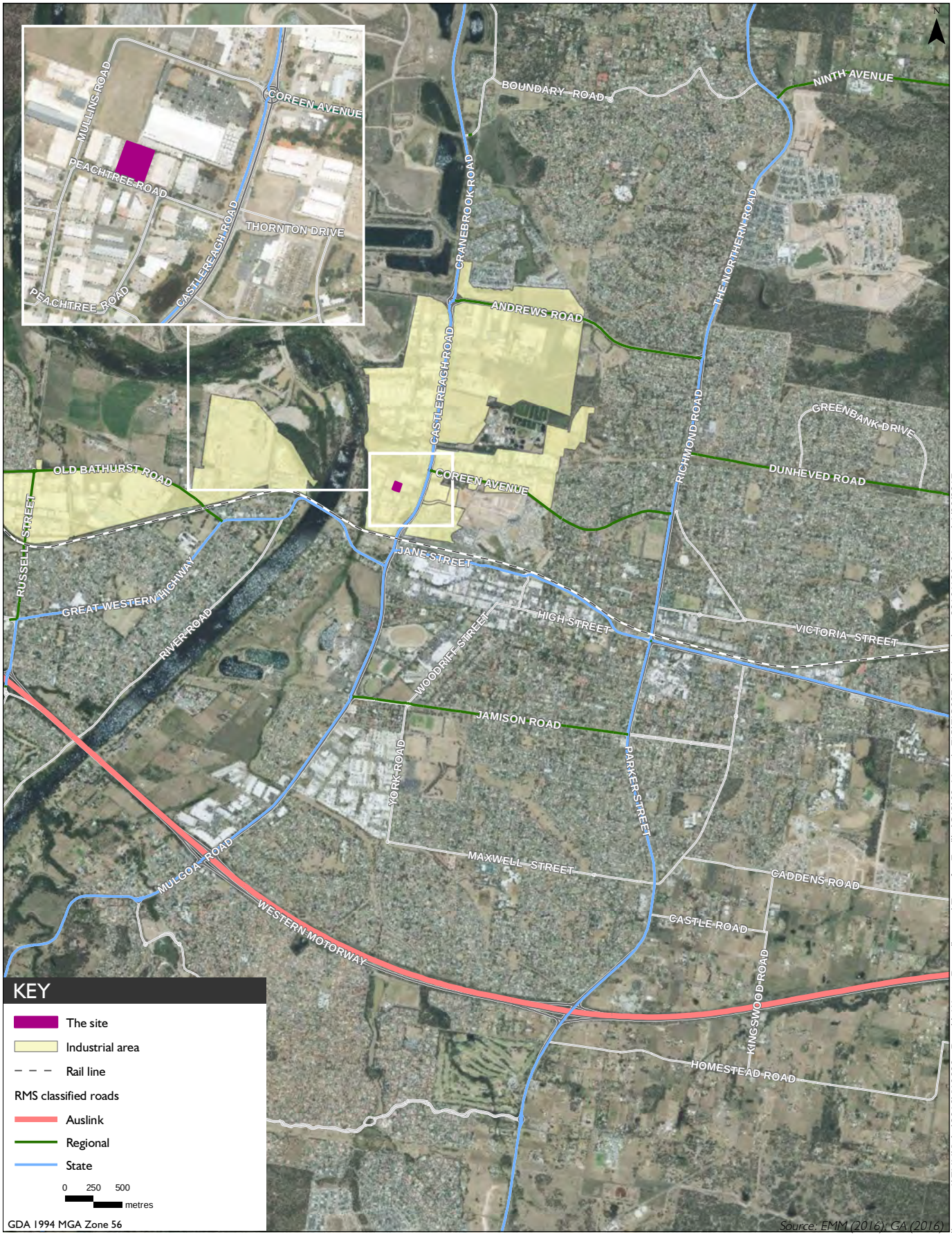
1.3 Site description

1.3.1 Location and characteristics

The site is at 46–48 Peachtree Road, Penrith and is legally described as Lot 45 in DP 793931, as identified in Figure 1.1. The site area is 4,367 m^2 and is generally flat (approximately 26 m Australian Height Datum (AHD)), with a slight slope towards the drains. The current site context is shown in Figure 1.2, with a recent survey at Appendix A.

The site is generally covered by concrete, with a shed (400 m^2), an awning (140 m^2) and an 18 m weighbridge in the south-east portion of the site (Photographs 1.1-1.4). The site has a 61 m long verge along Peachtree Road. The verge is grassed, with some trees along the western portion (Photograph 1.5-Photograph 1.7).

The awning measures approximately 9 m by 15.5 m and is approximately 5 m tall. It is constructed of a steel structure with six supports anchored into the cement slab and a colorbond canopy. Photographs 1.1, 1.3 and 1.4 provide multiple perspectives of the awning.



Site location

Penrith Waste Recycling and Transfer Facility
Environmental Impact Statement
Figure 1.1

Site context

Penrith Waste Recycling and Transfer Facility
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Figure 1.2

Photograph 1.1 **Weighbridge and colorbond gate to main yard in south-east corner of the site**

Photograph 1.2 **View north from the south-west corner of the site**

Photograph 1.3 View east from the north-west corner of the site

Photograph 1.4 View to the south-east corner of the site from the north-east corner

Photograph 1.5 View of the south-east corner of the site from Peachtree Road

Photograph 1.6 View along verge from south-east corner

Photograph 1.7 Trees at south-west corner

The developed portion of the site is bound by three colorbond walls to the east, west and north, and by a 3 m block wall, the southern wall of the shed, and a 2 m tall palisade fence/gate to the south. A 3 m block wall and colorbond gate separate the operational area of the site from the weighbridge and parking lot at the south-east corner (Photograph 1.5).

The site is zoned IN1 General Industrial under the Penrith Local Environmental Plan 2010 (Penrith LEP).

The site was previously used as a metal recycling yard by Metal One Recycling Pty Limited and is currently used by an auto wrecker, ie similar land uses to the proposed development. The site is fully serviced by utilities.

Benedict Recycling has purchased the site to develop the facility so it has secure tenure to meet Penrith's and the surrounding area's needs for many years to come.

1.3.2 Surrounding environment

The site is on a two-lane road (Peachtree Road) which is a loop road that provides access to an industrial estate off Castlereagh Road. The site is surrounded to the east, west and south by factory units, a cleared and levelled block to the north-west and Bunnings hardware store to the north-east. The Peachtree Hotel is about 70 m east of the site and there is a McDonald's restaurant about 100 m east of the site.

The nearest residences are about 620 m south-west of the site on the far side of the Main Western Railway / the Western Highway and about 620 m east of the site on Combewood Avenue (Figure 1.1).

The nearest natural features are Peach Tree Creek and the Nepean River about 240 m and 400 m west of the site respectively, both of which have associated riparian vegetation.

Land within the industrial estate (accessed via Peachtree and Mullins roads) is zoned IN1 General Industrial under the Penrith LEP.

1.4 Project justification and alternatives

1.4.1 Project justification

Recycling in Australia results in a wide variety of tangible and measurable environmental benefits compared to landfill disposal. Environmental benefits include energy savings, avoidance of greenhouse gas emissions, water savings, avoidance of waste, and significant reductions in natural resource use, eutrophication[1] and airborne pollutants. Environmental benefits are most apparent in the two significant stages of the waste process which are avoided: extraction of raw materials and disposal of waste to landfill.

The NSW Government has committed close to $500 million to transform waste and recycling in NSW. The *Waste Less, Recycle More: A Five-year $465.7 million Waste and Resource Recovery Initiative* (EPA 2013) states that "more effort is needed to continue increasing the recycling rate for waste from households, business and industry" and further, that "significant infrastructure investment is required in order to keep up with the increasing waste generation rates and meet the NSW recycling targets."

The *NSW Waste Avoidance and Resource Recovery Strategy 2014–21* (EPA 2014b) provides a framework for actions to minimise environmental harm from waste generation through to disposal, as well as maximising efficient resource use. The strategy:

- sets targets for preventing waste generation, increasing the recovery and use of secondary resources, reducing toxic substances in products and materials, and reducing litter and illegal dumping; and
- aims to increase the recovery and use of materials from the construction and demolition sector.

As an established recycling business in NSW, Benedict Recycling supports these strategies and their ongoing implementation. The facility will contribute to meeting the NSW Government's recycling strategies and targets.

Population in the area surrounding the site is increasing at a rate of 1.7% per year, compared to a Sydney Metropolitan average of 1.6% (2011–2031) (DPE 2016). Additionally, the Peachtree Industrial Estate has experienced continuous growth in large-scale industrial development, particularly in the last five years. This growth has created a significant demand for mixed waste recycling facilities in the area.

No mixed waste recycling facilities operate in the surrounding region except for Bingo's St Marys Transfer Station (there is no processing at this site) and Mulgoa landfill, which will be closing soon. The facility will complement the activities of Bingo's St Marys Transfer Station and Mulgoa landfill by accepting waste from local businesses and the general public. The facility will also allow additional waste generated in the Penrith region to be efficiently recycled.

[1] 'eutrophication' is the artificial, often detrimental, enrichment of an aquatic system by the addition of nutrients in waterways.

The facility has many benefits from an economic, social and environmental perspective. Specifically the facility will:

- divert recyclable and reusable wastes from lower order uses or landfill, including co-mingled waste for which there are few recycling alternatives in the area;
- divert wastes from landfill to preserve space for less recyclable materials, thereby extending the life of landfills;
- produce ready-to-use recycled soil materials to assist construction firms and government agencies (including councils) to meet their environmental commitments to use recycled materials;
- produce segregated recycled materials (eg ferrous and non-ferrous metals, gyprock, timber and plastics) for further processing;
- produce 'crusher ready' materials (eg masonry, bricks, concrete, tiles and asphalt) for offsite processing, reducing the requirement for quarried rock;
- provide storage for vehicles owned by small to medium-sized waste contractors away from residential areas and with appropriate environmental controls such as surface water runoff controls;
- provide a commercial return, thereby contributing to the economy of NSW; and
- provide employment for eight people within the waste recycling and transfer facility during normal operations with additional employees/contractors during extended operating hours.

The facility will assist the NSW Government in meeting waste reduction targets and increase the recovery and reuse of material.

1.4.2 Site location

Benedict Recycling purchased the site at Penrith for the sole purpose of developing the facility. The site is ideally suited for the development of such a facility because:

- the region is experiencing steady residential and industrial growth and the site is well located to meet the resulting demand for waste recycling;
- it is in an industrial zoned area where the intended use is permissible, with good separation from residential receptors;
- the site is currently being used by an auto wrecker and has been previously used for metal recycling;
- Peachtree Road is not a designated main road or 'spine' road and it is readily accessible from roads suitable for heavy vehicle use; and
- the site has existing utilities; an office, shed and weighbridge; and a sealed surface.

1.4.3 Consideration of alternatives

i Do nothing

If not developed with a waste recycling and transfer facility, the site will be developed for an alternative industrial purpose. Under this scenario, recyclable materials from the surrounding area that would be accepted by the facility would need to be processed at another, more distant, recycling facility; would need to be processed at a new facility developed elsewhere; or go to landfill.

ii Alternative land use

The land is zoned industrial, thereby preventing residential and/or commercial development. The facility is classed as industrial use and is therefore a consistent and compatible use for the site and permissible with consent within the IN1 General Industrial zone.

1.5 Purpose of report

This EIS accompanies a development application (DA) for the proposal under Part 4 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). The consent authority for the DA is the Minister for Planning and the determining authority is anticipated to be the Secretary of the Department of Planning and Environment (DPE) or the Planning Assessment Commission (PAC).

This EIS has been prepared in accordance with the EP&A Act and Environmental Planning and Assessment Regulation 2000 (EP&A Regulation), and addresses the requirements of the relevant government agencies as described in the Secretary's Environmental Assessment Requirements (SEARs) and matters raised by Penrith City Council (PCC), agencies and surrounding neighbours that are likely to be impacted by the proposal.

1.6 Secretary's environmental assessment requirements

As required under Section 78A of the EP&A Act, this EIS has been prepared to address specific requirements provided by DPE and other relevant agencies in the SEARs issued on 26 July 2016 (reference SSD 7733) and provided in Appendix B. The SEARs and where they are addressed in this EIS are summarised in Table 1.1.

Table 1.1 Secretary's environmental assessment requirements

Assessment requirements	Reference in EIS
Strategic context:	
• a detailed description of the development;	Chapter 2
• a demonstration that the site is suitable for the proposed use in accordance with *State Environmental Planning Policy No 55 – Remediation of Land*;	Section 3.3.6 Appendix H
• consideration of all relevant environmental planning instruments, including identification and justification of any inconsistencies with these instruments;	Chapter 3
• a list of any approvals that must be obtained under any other Act or law before the development may lawfully be carried out;	Section 3.6
• consideration of the issues discussed in the relevant public authorities responses to key issues;	Chapter 6
• a risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment;	Chapter 6
• a description of the existing environment; an assessment of the potential impacts of all stages of the development taking in to consideration relevant guidelines, policies, plans and statutes; and a description of the measures that would be implemented to avoid, minimise and if necessary, offset the potential impacts of the development;	This EIS
• a consolidated summary of all the proposed environmental management and monitoring measures, highlighting commitments included in the EIS; and	Table 7.1
• a capital investment value report from a qualified quantity surveyor.	Appendix I

Table 1.1 Secretary's environmental assessment requirements

Assessment requirements	Reference in EIS
Waste management:	
• a description of the waste streams that would be accepted at the site including the maximum daily, weekly and annual throughputs and the maximum size and heights for stockpiles;	Section 2.2.4
• a description of waste processing operations, including a description of the technology to be installed, resource outputs, and the quality control measures that would be implemented;	Section 2.3
• details of how waste would be stored and handled on site, and transported to and from the site including details of how the receipt of non-conforming waste would be dealt with; and	Section 2.2 Section 2.3 Section 2.7
• the measures that would be implemented to ensure that the proposed development is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.	Section 1.4.1
Traffic and transport	
• details of all traffic types and volumes likely to be generated during construction and operation, including a description of haul routes;	Section 6.2.2
• an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model;	Section 6.2.2 Appendix D
• detailed plans of the proposed layout of the internal road network and parking on site in accordance with the relevant Australian Standards; and	Figure 2.1 Appendix D
• plans of any proposed road upgrades, infrastructure works or new roads required for the development.	No road upgrades, infrastructure works or new roads are required
Air quality and odour	
• a quantitative assessment of the potential air quality, dust and odour impacts of the development in accordance with relevant EPA guidelines;	Section 6.3.3 Appendix E
• details of buildings and air handling systems and strong justification for any material handling, processing or stockpiling external to a building;	Section 2.7
• a greenhouse gas assessment; and	Section 6.4 Appendix E
• details of proposed mitigation, management and monitoring measures.	Section 6.3.2
Noise and vibration	
• a quantitative assessment of potential construction, operational and transport noise and vibration impacts in accordance with relevant EPA guidelines; and	Section 6.5.3 Appendix F
• details and justification of the proposed mitigation, management and monitoring measures.	Section 6.5.2
Soil and water	
• a description of water and soil resources, topography, hydrology, watercourses and riparian lands on or nearby to the site;	Section 1.3.2 Section 6.6 Section 6.7
• a detailed site water balance, including identification of water requirements for the life of the project, measures that would be implemented to ensure an adequate and secure water supply is available for the proposal and a detailed description of the measures to minimise water use at the site;	Section 6.6.2 Appendix G

Table 1.1 Secretary's environmental assessment requirements

Assessment requirements	Reference in EIS
• a description of how the project is consistent with all relevant Water Sharing Plans and Draft Water Sharing Plans;	Section 3.4.3
• details of stormwater, wastewater and leachate management systems including the capacity of onsite detention systems, and measures to treat, reuse or dispose of water;	Section 6.6
• a description of sediment and erosion controls;	Figure 6.2
• an assessment of potential impacts to soil and water resources, topography, drainage lines, watercourses and riparian lands on or nearby to the site;	Section 6.6 Section 6.7
• consideration of salinity, flooding and acid sulphate soil impacts;	Section 6.6.4 Section 6.7.2 Section 6.7.3
• consideration of Penrith City Council's Water Sensitive Urban Design Strategy;	Section 6.6.2 Appendix G
• characterisation of the nature and extent of any contamination on the site and surrounding area; and	Section 6.7.4
• details of any remediation that has occurred to date and associated management measures and plans.	Appendix H
Hazards	
• a preliminary risk screening completed in accordance with State Environmental Planning Policy No. 33 - Hazardous and Offensive Development and Applying SEPP 33 (DoP, 2011) [DoP 2011a], with a clear indication of class, quantity and location of all dangerous goods and hazardous materials associated with the development; and	Section 6.1
• should preliminary screening indicate that the project is "potentially hazardous" a Preliminary Hazard Analysis (PHA) must be prepared in accordance with Hazardous Industry Planning Advisory Paper No.6 - Guidelines for Hazard Analysis (DoP, 2011) [DoP 2011c] and Multi-Level Risk Assessment (DoP, 2011) [DoP 2011d].	Not required (see Section 6.1)
Fire and incident management	
• technical information on the environmental protection equipment to be installed on the premises such as air, water and noise controls, spill and clean-up equipment and fire management and containment measures (particularly in the event of a fire).	Section 5.6
Visual	
• an assessment of the potential visual impacts of the project; and	Section 6.8.4
• details of proposed measures to minimise visual impact on the scenic character and landscape values of the surrounding area.	Section 6.8.3

1.7 Penrith City Council requirements

The PCC letter (dated 18 July 2016) lists issues to be addressed in the assessment of the proposal. A copy of the letter is provided with the SEARs in Appendix B. These requirements, and where they are addressed in this EIS, are summarised in Table 1.2.

Table 1.2 Penrith City Council requirements

Assessment requirement	Reference in EIS
• The SSD will need to address the Penrith Local Environmental Plan 2010. In particular, consideration will need to be given to Clause 7.5 Protection of Scenic Character and Landscape Values, which applies to the site.	Section 3.3.2
• The immediate locality has a number of surrounding land uses that are considered to be of greater sensitivity than general industrial uses. These include McDonalds North Penrith and Peachtree Hotel. Consideration should also be given to the existing recreational spaces along the eastern bank of the Nepean River (Weir Reserve and Nepean Rowing Club) to ensure that the amenity of these spaces, as well as residential receivers is maintained.	Section 6.3 Section 6.5 Section 6.8 Section 6.9.1
• The traffic assessment report needs to consider the impacts on the Castlereagh Road/Peachtree Road intersection as well as Castlereagh Road/Mullins Road as an alternative access point to the development site (particularly given the local and regional road network and the provision of a roundabout at this intersection).	Section 6.2.1 Appendix D
• The EIS should detail the height of any stockpiles within the site and the visual impacts on the adjoining properties when considering the height of such stockpiles.	Section 6.8.4
• Details of the existing stormwater system within the site need to be provided within the documentation to ensure all stormwater from the site is appropriately captured and disposed of.	Section 6.6.2 Appendix G
• The EIS is to consider and address Council's Water Sensitive Urban Design Strategy located within the Penrith Development Control Plan 2014.	Section 6.6.2 Appendix G

2 Project description

Benedict Recycling proposes to construct and operate a waste recycling and transfer facility on the site and undertake ancillary activities.

This chapter describes the proposed waste recycling and transfer facility and the activities that are proposed. It also introduces the site-wide environmental controls. A plan showing the proposed site layout is provided in Figure 2.1, with detailed drawings at Appendix A.

A flowchart outlining the key steps in the proposed waste recycling and transfer process is provided in Figure 2.2.

2.1 Site components

The development will include the installation and use of the following site components:

- repairs to the existing concrete surface of the site where required;
- upgrade and widening of the entry driveway at the south-east boundary to Peachtree Road;
- relocation of awning the on eastern boundary to the north-east boundary and subsequent extension of the awning;
- construction of an exit driveway at the south-west boundary to Peachtree Road;
- a surface water management system;
- landscaping;
- ten on-site parking spaces with eight spaces for staff and two spaces for visitors;
- two weighbridges at the site entry and one weighbridge at the site exit;
- a wheel wash at the site exit;
- two demountable weighbridge offices;
- product bays (stockpiles) with 4 m high block walls;
- waste and product stockpiles within product bays;
- a manual hand unloading area for small vehicles;
- truck tipping area where wastes will be temporarily stored prior to processing;
- a sprinkling site irrigation system to minimise airborne dust;
- a flip-flow screen waste sorter housed in the processing shed;
- block walls at the north-east and north-west site boundaries;

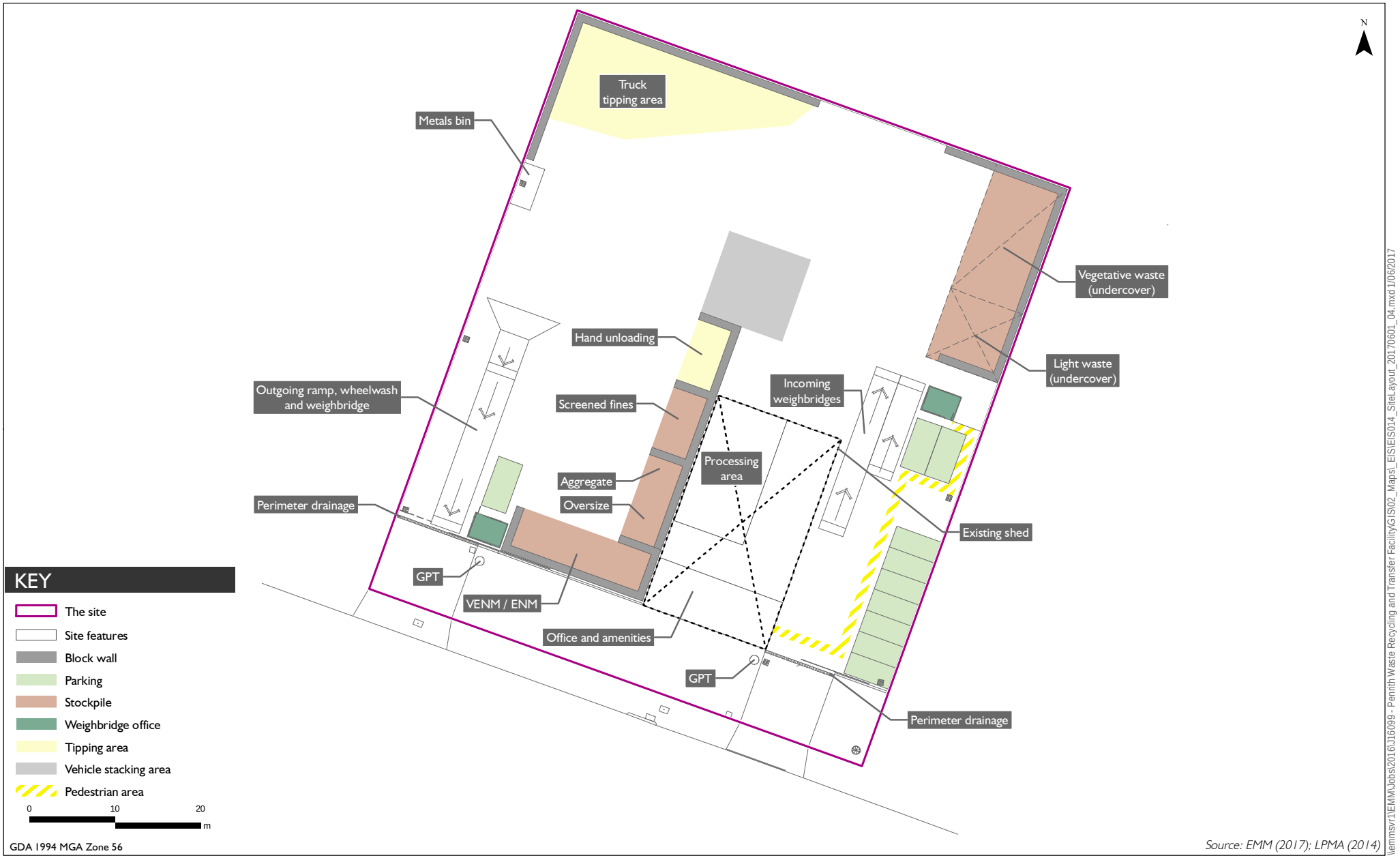
- 3 m block walls with colorbond automatic gates at the ingress and egress points;
- extension of 3 m colorbond fence at south-east corner; and
- out-of-hours truck parking.

2.1.1 Weighbridge and office areas

Initially, two above-ground weighbridges will be used for incoming vehicles. Later, a third above-ground weighbridge will be installed for outgoing vehicles.

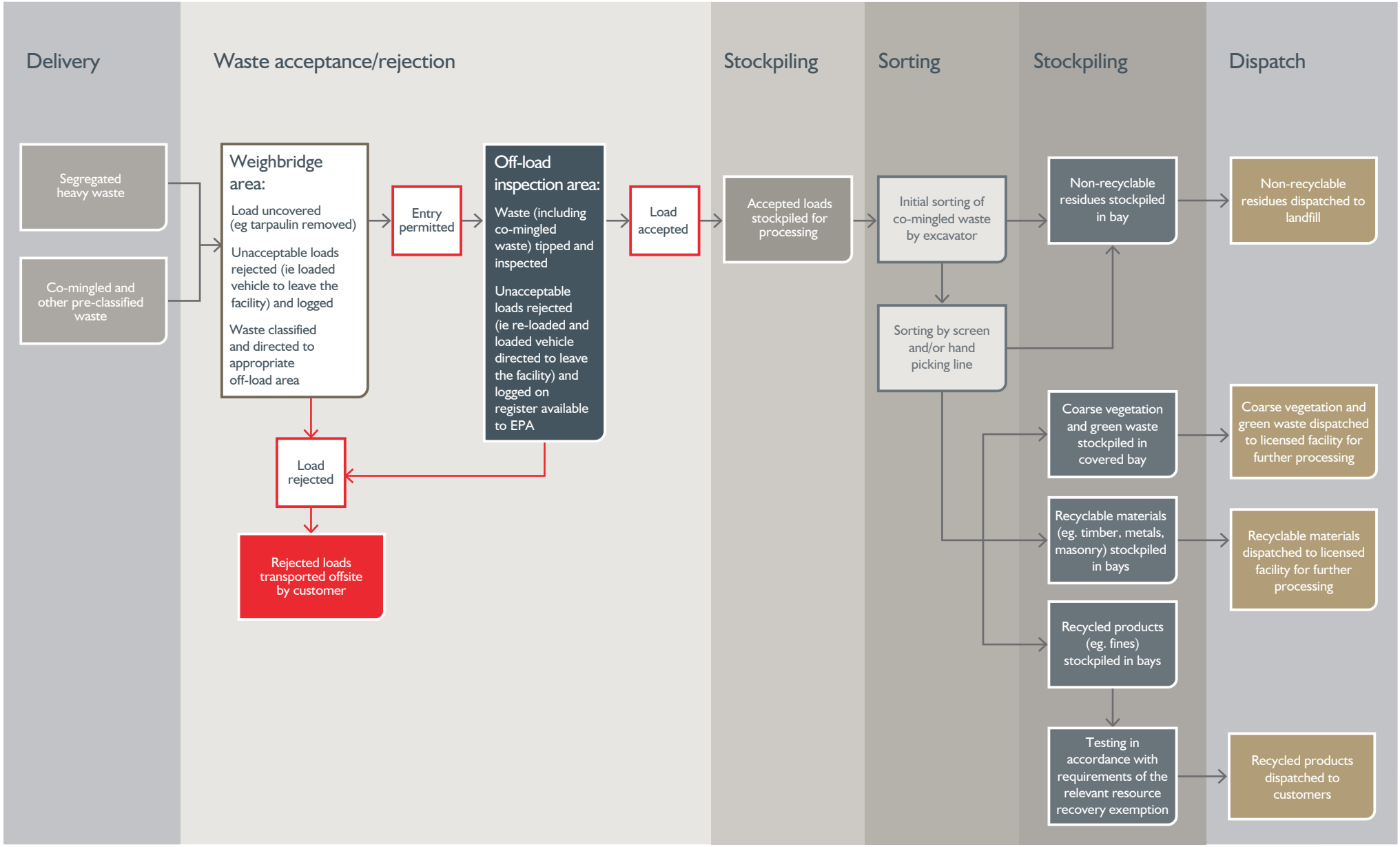
An above-ground self-contained wheel wash will be provided for trucks leaving the site. Water used in the wheel wash will be lost through evaporation and on tires leaving the wash. Periodic replenishment will be required. Sediment in the wheel wash will be regularly removed on an as-needs basis using an excavator.

A small ramp will be installed at the approach to the wheel wash. Light vehicles not using the wheel wash and weighbridge will be able to cross the ramp to the light vehicle exit, without obstruction.



Site layout

Penrith Waste Recycling and Transfer Facility
Environmental Impact Statement
Figure 2.1



EMM

Waste flowchart

Penrith Waste Recycling and Transfer Facility
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Figure 2.2

2.1.2 Processing shed

The majority of waste processing will occur in the existing shed, which is built of block walls and colorbond steel and enclosed on all sides. The shed is accessed to the north and east by roller doors (Photograph 2.1 and Photograph 2.2) and to the east by two pedestrian accessible doors.

Materials will enter the shed via an infeed hopper installed at the north side of the processing shed. The site of the hopper is currently occupied by an awning, which will be removed prior to installation of the hopper (Photograph 2.2).

The shed is approximately 26 m long, 16 m wide and 6 m tall, with an floor area of approximately 400 m^2. The floor of the shed is level concrete.

The interior of the shed is shown in Photograph 2.3 and Photograph 2.4. The existing floor plan of the shed is at Appendix A.

The processing within the shed will be undertaken by a flip-flow screen waste sorter (eg Finlay 883 flip flow screen or similar), with outputs to external product bays, through the western wall.

Processing within the shed is described in Section 2.3.

The shed is currently connected to water, sewer, power and telecommunications. The shed's existing amenities and office space will be refurbished as part of the development.

Modifications to the shed are shown in Appendix A and include:

- removal of an external awning at the north side of the shed;
- an opening at the north side of the shed to accommodate a hopper; and
- openings at the west side of the shed to connect to external product bays.

Photograph 2.1 Exterior of shed (south-east)

Photograph 2.2 **Exterior of shed (north-west)**

Photograph 2.3 **Interior of shed (north to south)**

Photograph 2.4 Interior of shed (south to north)

2.1.3 Site access

The site has been designed with separate access and egress points to allow all traffic to enter and exit the site in a forward direction. The maximum vehicle size to be permitted on site will be a 19 m articulated truck. On site vehicle movement is described in Sections 0 and 6.2.

The existing driveway in the south-east corner of the site will be upgraded to allow for dual entry lanes (Figure 2.1).

A new driveway with dual exit lanes will be constructed in the south-west corner of the site (Figure 2.1). This will not require modification to Peachtree Road beyond the kerb.

The entry and exit driveways will allow for 19 m trucks to enter and leave the site as shown in the swept path analysis, as described in Sections 0 and 6.2.

Vehicle access and egress will be strictly controlled, with gates being closed and locked outside of business hours.

2.1.4 Site surfacing

The site's existing concrete surface is generally flat, sloping towards drainage to prevent pooling of water on site, as demonstrated in the survey at Appendix A.

The concrete surface will be cleaned prior to occupying the site and repaired where required. The site's existing surface water management system will be upgraded to prevent the release of untreated stormwater runoff (see Section 6.6.2).

2.1.5 Tipping areas and bays

There will be separate tipping areas for small vehicles and trucks (Figure 2.1). Small vehicles will be directed to the hand unloading area to the west of the processing shed. The truck tipping area will be in north-west corner of the site and will have block walls (4 m tall) on the northern and western sides.

Bays will be constructed on the site, with 4 m tall block walls enclosing stockpiles as shown in Figure 2.1. The following bays will be located on the site:

- metal waste will be kept in a bin on the western edge of the site, south of the truck tipping area;
- aggregate/oversized materials and fines will be kept in separate bays to the south of the hand unloading area, directly west of the processing shed;
- excavated soils will be kept in a bay on the southern edge of the site, directly west of the processing shed; and
- vegetation and light waste will be kept in a bay in the north-east corner of the site. An existing awning on the eastern edge of the site will be relocated to the north-east corner of the site and extended, providing a roof over the bay. The roof of the awning will be approximately 5 m off the ground. (see Section 2.6).

2.1.6 Refuelling

Diesel will be supplied to mobile plant by an on-site refuelling contractor using a mini-tanker.

A diesel spill kit will be stored within the processing shed for emergency spill response. Any used absorbent material will be disposed of at an appropriately licensed waste facility and fresh material replaced in the spill kit.

The following measures will be implemented for safe refuelling and to prevent diesel from entering the environment:

- diesel will be supplied to mobile plant by an appropriately licensed and qualified on-site refuelling contractor using a mini-tanker;
- there will be a diesel spill kit stored within the processing shed. Refuelling activities and emergency spill response will be covered within the site's environmental management plan; and
- refuelling activities and emergency spill response plans will be included within the site's environmental management plan.

2.1.7 Parking

A total of ten car parking spaces will be provided at the site, with nine adjacent to the eastern site boundary, near the entry driveway and a single space adjacent to the site office near the exit driveway. These will provide eight employee and two visitor spaces. The number and size of car parking spaces will be in accordance with Part C10 of the Penrith DCP 2014. Car parking spaces will be at least 2.7 m wide by 5.4 m long (Appendix A).

A fence will be constructed between the entry weighbridge office and the eastern boundary, separating the primary employee and visitor parking from the rest of the site.

Given the industrial nature and generous width of Peachtree Road, there are currently no kerbside parking restrictions which apply in the immediate vicinity of the site. As noted in the *Traffic Impact Assessment* (TIA) (Appendix D), No Stopping areas will be required directly adjacent to the driveways to facilitate ingress and egress of 19 m articulated trucks. This will result in the loss of approximately 4 on-street car parks. As sufficient car parking is provided on the site, as per the Penrith DCP 2014, it is not expected that on-street parking will be used as a result of the normal operation of the facility.

Trucks may be parked overnight in parts of the facility that are not in use. The location and operation of overnight parking is described in Section 2.9 and Section 6.2.2vi.

2.1.8 Landscaping

Benedict Recycling will improve the appearance of the site as part of the development, including landscaping the verge along Peachtree Road, painting the building and constructing new walls and gates.

The verge between the site and Peachtree Road will remain grassed and the majority of on-site vegetation retained, except for vegetation at the exit driveway. Two trees will be planted in the grassed area of the site to offset this loss. Further information regarding landscaping is provided at Section 6.11.1.

Consistent with its other operations, Benedict Recycling will ensure that site's frontage is kept tidy and litter free.

2.2 Waste materials, sources and quantities

2.2.1 Waste materials accepted

The facility will accept 'Pre-classified general solid waste (non-putrescible)', as defined by EPA (2014a) and discussed in section see Section 2.2.3, consisting of the following:

- co-mingled and segregated construction and demolition waste, including tiles, bricks, concrete, glass, metal, wood, asphalt, gyprock and vegetation and uncontaminated soils;
- co-mingled and segregated commercial and industrial waste from factories and commercial premises such as paper/cardboard, cloth, plastics, rubber, wood, suitable slags, concrete and asphalt batching wastes and the like;
- excavated natural materials (ENMs) including virgin excavated natural material (VENM) such as sand and sandstone which are generated during bulk earthworks and road and infrastructure construction and repair;
- garden waste;
- wood waste;
- metals; and
- rail ballast and spoils.

2.2.2 Waste materials that will not be accepted

The following waste will not be accepted:

- special waste (including clinical and related waste; asbestos waste; whole loads of waste tyres; or anything classified as special waste under an EPA gazettal notice) as defined in EPA (2014a) Step 1;
- liquid waste as defined in EPA (2014a) Step 2;
- wastes pre-classified as hazardous waste as defined in EPA (2014a) Step 3;
- general solid waste (putrescible) as defined in EPA (2014a) Step 3;
- waste possessing hazards as defined in EPA (2014a) Step 4; or
- waste that requires chemical assessment to determine its classification as defined in EPA (2014a) Step 5.

No odorous waste will be accepted by the facility.

Vegetation waste will not be allowed to compost on site (see Section 2.6).

The materials accepted by waste facilities are restricted to specified waste types by the development consent for the facility and the site's Environment Protection Licence.

Waste facilities, including those operated by Benedict Recycling, have handling and inspection processes to check that waste delivered to the site does not contain materials that cannot be accepted (see Section 2.2.7). However, all facilities receive small quantities of materials that the facility is not licensed to accept. For example, a tin of paint in a mixed load of construction and demolition waste, a tyre or some asbestos sheeting stuck to concrete removed from an old house.

Should non-acceptable materials be found through the inspection process, the vehicle will be turned away and the load not accepted (see Section 2.2.7). When these materials are found during sorting, they will be segregated and stored in a covered bin in the processing shed, prior to removal from site for disposal as appropriate to the nature of the material.

Any materials that appear to be asbestos containing material will be bagged appropriately and placed in a 240 L wheelie bin cleared labelled "Asbestos." The bin will be kept within the shed on the eastern wall, clear of the roller doors. These materials will be removed from site by a contractor licensed to transport these materials as soon as there sufficient material to make up a small load.

Benedict Recycling takes its workplace health and safety (WHS) responsibilities for the protection of its workforce very seriously, including preventing workers from being exposed to contaminated waste (eg asbestos). It is also in Benedict Recycling's commercial interest that no contaminated waste is accepted onto the site that Benedict Recycling will then need to pay the high rates charged for it to be removed and disposed in a facility licensed to accept contaminated material. The waste inspections measures therefore protect Benedict Recycling as well as their neighbours.

2.2.3 Waste classification

Waste accepted by the site will be classified according to the *Waste Classification Guidelines - Part 1: Classification of Waste* (EPA 2014a). Waste that is pre-classified as general solid waste (non-putrescible) as listed in Table 2.1 will be accepted by the site.

Table 2.1 Pre-classified 'General solid waste (non-putrescible)' as defined by EPA (2014a)

The following wastes (other than special waste, liquid waste, hazardous waste, restricted solid waste or general solid waste (putrescible)) are pre-classified as 'general solid waste (non-putrescible)':

- glass, plastic, rubber, plasterboard, ceramics, bricks, concrete or metal;
- paper or cardboard;
- household waste from municipal clean-up that does not contain food waste;
- waste collected by, or on behalf of, local councils from street sweepings;
- grit, sediment, litter and gross pollutants collected in, and removed from, stormwater treatment devices and/or stormwater management systems, that has been dewatered so that they do not contain free liquids;
- grit and screenings from potable water and water reticulation plants that has been dewatered so that it does not contain free liquids;
- garden waste;
- wood waste;
- waste contaminated with lead (including lead paint waste) from residential premises or educational or child care institutions;
- containers, previously containing dangerous goods, from which residues have been removed by washing [The cleaning method must be as good as or better than the triple-rinsing method outlined in Appendix 2 of EPA (2014b)] or vacuuming;
- drained oil filters (mechanically crushed), rags and oil-absorbent materials that only contain non-volatile petroleum hydrocarbons and do not contain free liquids;
- drained motor oil containers that do not contain free liquids;
- non-putrescible vegetative waste from agriculture, silviculture or horticulture;
- building cavity dust waste removed from residential premises or educational or child care institutions, being waste that is packaged securely to prevent dust emissions and direct contact;
- synthetic fibre waste (from materials such as fibreglass, polyesters and other plastics) being waste that is packaged securely to prevent dust emissions, but excluding asbestos waste;
- virgin excavated natural material;
- building and demolition waste;
- asphalt waste (including asphalt resulting from road construction and waterproofing works);
- cured and uncured concrete waste from a batch plant;
- fully cured and set thermosetting polymers and fibre-reinforcing resins;
- fully cured and dried residues of resins, glues, paints, coatings and inks; and
- any mixture of the wastes referred to above.

In assessing whether waste has been pre-classified as general solid waste (non-putrescible), the following definitions apply:

Building and demolition waste means unsegregated material (other than material containing asbestos waste or liquid waste) that results from:

- the demolition, erection, construction, refurbishment or alteration of buildings other than:
  - chemical works;
  - mineral processing works;
  - container reconditioning works; and
  - waste treatment facilities.

Table 2.1 Pre-classified 'General solid waste (non-putrescible)' as defined by EPA (2014a)

- the construction, replacement, repair or alteration of infrastructure development such as roads, tunnels, sewage, water, electricity, telecommunications and airports;

and includes materials such as:

- bricks, concrete, paper, plastics, glass and metal; and
- timber, including unsegregated timber, that may contain timber treated with chemicals such as copper chrome arsenate (CCA), high temperature creosote (HTC), pigmented emulsified creosote (PEC) and light organic solvent preservative (LOSP);

but does not include excavated soil (for example, soil excavated to level off a site prior to construction or to enable foundations to be laid or infrastructure to be constructed).

Garden waste means waste that consists of branches, grass, leaves, plants, loppings, tree trunks, tree stumps and similar materials, and includes any mixture of those materials.

Virgin excavated natural material means natural material (such as clay, gravel, sand, soil or rock fines):

- that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities; and
- that does not contain sulfidic ores or soils, or any other waste;

and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette.

Municipal waste consisting of household domestic recycling that is set aside for kerbside collection or delivered by the householder to the waste facility (eg glass, plastic, cardboard, paper, aluminium and steel).

Wood waste means sawdust, timber offcuts, wooden crates, wooden packaging, wooden pallets, wood shavings and similar materials, and includes any mixture of those materials, but does not include wood treated with chemicals such as CCA, HTC, PEC and LOSP.

2.2.4 Waste quantities

Benedict Recycling propose that up to 180,000 tpa of waste will be accepted at the facility. Proportions of each waste type are unknown and will be variable according to local waste demographics. Therefore, a number of conservative assumptions have been adopted for determining the potential impacts of the waste recycling and transfer facility, as described in Chapter 6. The average and maximum amounts of material that the facility will accept, process and dispatch are summarised in Table 2.2.

Table 2.2 Facility throughput

Period	Facility throughput (tonnes)	
	Average[1]	Maximum
Annual	<180,000	180,000
Weekly	3,600	7,200
Daily	600	1,500

Notes: 1. Based on the facility being open 6 days per week for 50 weeks of the year.

2.2.5 Waste deliveries

The site will accept inert waste from councils, contractors and businesses and the general public. Accordingly, waste will be delivered to site by a variety of vehicles including:

- light vehicles such as cars with box trailers and utilities;
- single or dual axle heavy vehicles such as skip-bin trucks; and
- multiple axle combination heavy vehicles.

The site is accessible from Peachtree Road via Castlereagh Road, a major heavy vehicle route. Peachtree Road is in the IN1 General Industrial zone and is suitable for heavy vehicles. Vehicle movements associated with the proposed operations are described in Section 6.2 and Appendix D. A swept path analysis for the largest vehicle to be permitted on the site, a 19 m articulated truck, is included in Appendix C of the TIA (Appendix D).

Vehicles delivering waste will be directed to the weighbridge where the load will be inspected for potential contaminants and classified. Incoming waste will be inspected according to the incoming waste quality management plan (see Section 2.2.7) prior to being accepted. Any incoming waste loads that are suspected to contain contaminants (ie loads that contain wastes that are not listed in Table 2.1) will be rejected, reloaded (if it has been tipped) and the customer will be required to take the contaminated load out of the waste recycling and transfer facility immediately.

Acceptable loads will be issued a ticket and the driver will be instructed where to deliver the waste within the site. The driver will then deliver the waste to the appropriate area where it will be tipped and will be inspected prior to the vehicle being directed to the exit weighbridge. Generally, trucks will be directed to the truck tipping area, with segregated loads (eg only bricks or only VENM) directed to the appropriate stockpile area. Light vehicles will proceed to the designated hand unloading area via the vehicle stacking area so that they can be manually unloaded safely in a location that is away from trucks, heavy machinery and mobile plant.

Any rejected loads will be immediately reloaded for removal from the site and recorded in a 'rejected load' register. Generally, vehicles will be re-weighed as they leave the site to determine the mass of the load delivered.

2.2.6 Waste sources

The sources and types of wastes will vary. An estimate of the proportion of wastes and the corresponding recycled products is provided in Table 2.3 based on the other inert waste recycling plants operated by Benedict Recycling.

Table 2.3 Waste and products breakdown

Indicative waste → product	Estimated proportion
Excavated soils: Soils and fines from excavated materials → off-site use or blending to form recycled topsoil	33%
Screened fines: Concrete, excavated materials, bricks, rail ballast and spoils ('fines' with a particle diameter of less than 8 mm) → off-site crushing and blending to form products such as bedding sands	26%
Aggregate/oversized material: Concrete, excavated materials, rail ballast and spoils (material with a particle diameter of greater than 8 mm)→ off-site crushing and screening to produce aggregates	19%
Vegetative waste: Clean timber - non-CCA[copper chrome arsenic]-treated, coarse vegetation → off-site shredding and blending to form mulch	5%
Metals: Metals (predominately steel) → dispatched to a metals recycler	2%
Light Waste: Rubbish to landfill (plastics, paper/cardboard, concrete-based building products (eg Hardiplank), minor amounts of plaster board, containers, carpet, synthetics, rags, etc)	15%[1]

Note: 1. Generally 10–20%.

2.2.7 Incoming waste quality plan

General waste (non-putrescible) can contain materials (eg hazardous materials, including asbestos) that are not pre-classified general solid waste (non-putrescible) as defined by EPA (2014a) (see Table 2.1).

An incoming waste quality plan will be prepared in accordance with the NSW WorkCover *Management of Asbestos in Recycled Construction and Demolition Waste Guide* (NSW WorkCover 2010).

Incoming waste will be inspected in two stages:

1. a preliminary inspection of the incoming waste on the vehicle at the weighbridge; and

2. an inspection of the incoming waste after it is tipped off but before it is added to the appropriate feed stockpile. The customer will be required to wait until the waste has passed the inspection.

Incoming waste loads that are suspected to contain contaminants (ie loads that contain wastes that are not listed in Table 2.1) will be rejected and the customer will be required to take the contaminated load out of the waste recycling and transfer facility immediately.

The *Incoming Waste Quality Plan* will include:

- Prevention actions such as:
  - a 'no asbestos' clause in supplier contracts, advising suppliers that asbestos containing materials will not be accepted;
  - installing warning signage;
  - training workers on waste inspection and asbestos awareness and management; and
  - education programs at material source locations to minimise the risk of asbestos containing materials such as fibro entering the supply chain and being imported onto the premises.

- Contingency actions if potential asbestos containing materials are identified, including a rejected load register and reporting to the EPA.

- Empowering waste inspectors to reject loads considered 'suspect' or odorous.

Products for direct use without further processing will be tested in accordance with requirements of the relevant resource recovery exemption.

Information on rejected loads (date, time, vehicle registration number and customer name) will be entered into a register that is available for EPA inspection. EPA can follow-up regarding these rejected loads.

As it does at its other facilities, Benedict Recycling will charge a re-loading fee to customers that tip waste that is found to contain any materials that the facility is not licensed to accept (eg putrescibles, hazardous, liquid and odorous waste). Benedict Recycling has found that customers who have a number of loads rejected and have to pay the re-loading fee, as a result of their rigorous inspection regime, stop using Benedict Recycling's facilities.

2.3 Operating hours

The proposed operating hours are provided in Table 2.4.

Table 2.4 Operating hours

Period	Waste deliveries accepted	Processing	Materials dispatch
Monday–Friday			
6.00 am – 10.00 pm	Yes	7:00 am – 6:00 pm	Yes
10.00 pm – 6.00 am	On occasion[1]	No	No
Saturday			
6.00 am – 5.00 pm	Yes	7:00 am – 5:00 pm	Yes
5.00 pm – 7.00 am (Sunday)	On occasion[1]	No	No
Sunday[2]			
8.00 am – 4.00 pm	On occasion	No	No

Notes: 1. 24-hour infrastructure waste acceptance campaigns will occur up to 6 times per year, each for a maximum of 2 weeks.

2. Opening hours on public holidays will as for Sundays.

The facility would generally operate from 6 am to 4 pm Monday to Saturday.

The facility may also accept waste from 8 am to 4 pm on Sunday, if there is sufficient demand.

There will be no processing from 6 pm to 6 am, Monday to Friday, after 5 pm on Saturdays, or on Sundays or public holidays.

2.3.1 Early opening hours

It is common practice for building sites to fill trucks with waste at the end of the working day for overnight storage at the building site or a builder's depot. The 6 am to 7 am delivery window will allow the facility to accept the waste, allowing empty trucks to arrive at building sites, which normally open at 7 am.

2.3.2 Evening and overnight operations

Benedict Recycling is applying for extended opening hours (6 pm to 10 pm, Monday to Friday) to allow it to accept waste from civil construction and maintenance projects in the evening on occasions.

Benedict Recycling is also applying for extended overnight hours between 10 pm to 6 am to facilitate night time infrastructure works on a limited basis, no more than six times per year. Processing would not be permitted during this time. PCC would be notified prior to the occasions when the facility is accepting waste between 10 pm to 6 am. There will be an average on one waste delivery per hour (two movements) over the eight hour overnight period, in addition to employee movements. Traffic impacts associated with the overnight operations are discussed in Section 6.2.

The extended overnight hours would help enable large infrastructure projects, which typically produce waste in the evening and overnight. Public infrastructure projects, such as road and rail construction and maintenance, are commonly scheduled during these times to minimise delays to the public. More rarely, large private civil project also have consent to undertake construction at night.

These public and private projects generate large volumes of the types of waste that would be accepted by the facility, particularly excavated materials. As well as minimising inconvenience to public infrastructure users, night works can allow the efficient transport of inert wastes generated by civil works on the less busy road network. Waste processing is not proposed during this time. If operations such as the facility are not able to be open during these hours, local projects may be delayed due to the inability to remove waste efficiently.

2.4 Waste processing

The waste recycling process is straight forward and involves sorting using mobile equipment such as a grab, screening (ie sorting by size using an automatic screen) and transport of sorted materials via conveyer belt to stockpiles in external product bays to the west of the shed.

A flowchart showing the waste delivery, acceptance, processing and dispatch is provided in Figure 2.2, with the numbers shown corresponding to the steps listed below.

The general operation of the site is provided in Figure 2.3 and described below.

Waste recycling and transfer facility processing will include the following steps:

1) Waste will be inspected prior to being accepted on site and any loads suspected to contain material that cannot be accepted by the site will be rejected (see Section 2.2.7).

2) Segregated wastes will be unloaded and inspected at stockpile areas.

3) Co-mingled waste will be unloaded at the truck tipping area and hand unloading area. Waste will be stored in the tipping area prior to processing in the processing shed.

4) Waste deposited in the hand unloading area will be collected at the end of each day and taken to the shed for processing.

5) Waste processing will include sorting at the truck tipping area and screening within the processing shed. There will be no shredding or crushing on site.

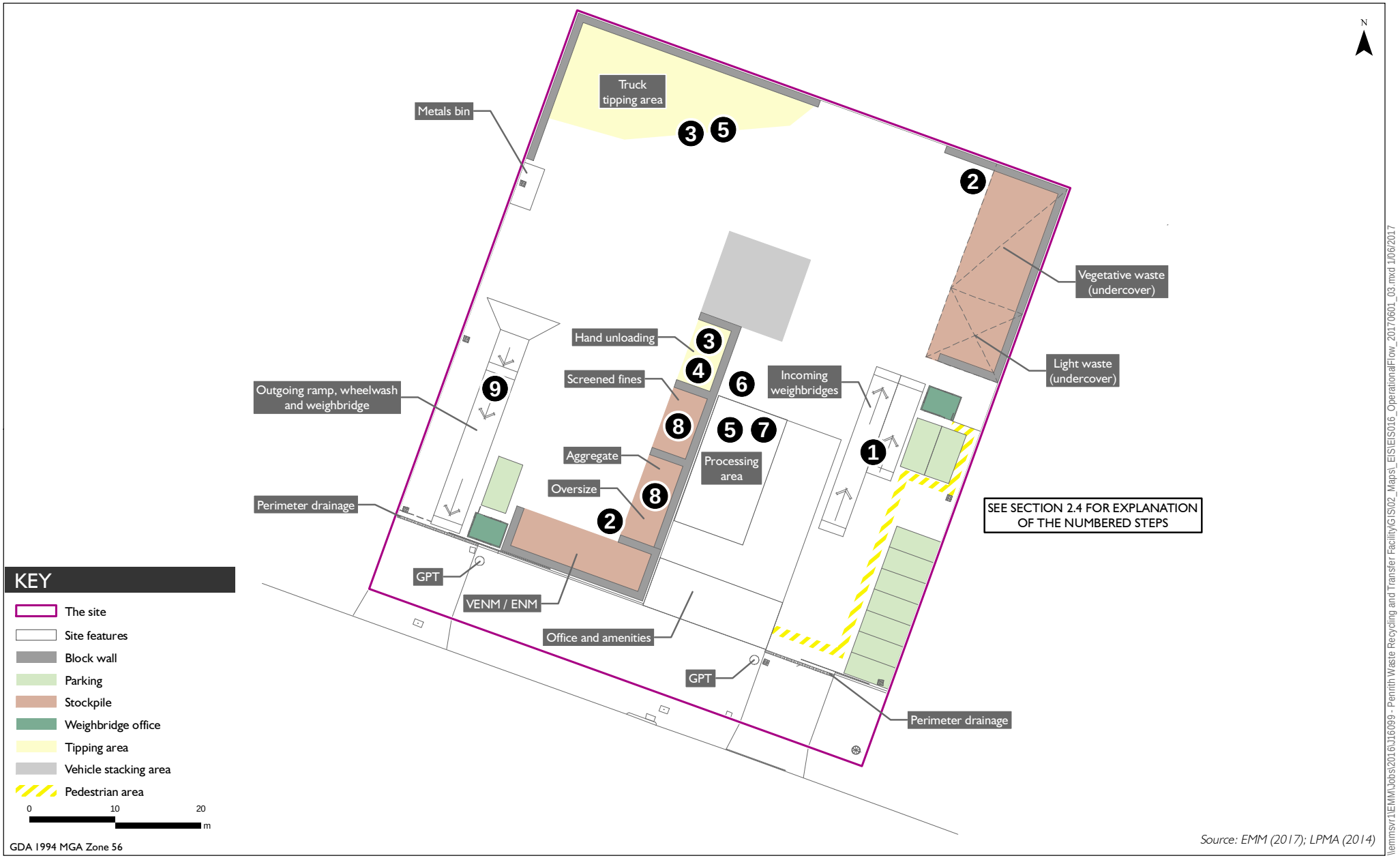
6) Waste in the truck tipping area will be loaded into the hopper by mobile plant directed by traffic controllers.

7) Screening within the processing shed will be performed by flip-flow screening equipment. The equipment will be used to handle and process the waste and products in the shed.

8) Sorted aggregates/oversized materials and screened fines will be deposited directly into stockpiles through the western side of the shed.

9) Metals, excavated soils, vegetative waste, screened fines and aggregate products will generally be dispatched by heavy vehicle for sale or further processing at another facility. Some waste (less than 20% by mass) will not able to be recycled onsite (referred to as 'non-recyclable residues'). Non-recyclable residues will generally be dispatched to a licensed landfill by heavy vehicle.

Dispatching of wastes to other facilities will be organised by an on-site manager. Dispatching will ordinarily be organised between 6 am-7 am and 3 pm-4 pm (or later in the event of extended hours). In the event that stockpiles are near capacity on a busy day, the manager will organise for trucks to be sent to the site to dispatch materials from specific stockpiles.



Site operational flow

Penrith Waste Recycling and Transfer Facility
Environmental Impact Statement
Figure 2.3

2.5 Non-recyclable residue

Not all of the material delivered will be able to be separated to allow it to be recycled onsite. This material, or 'non-recyclable residue', will be less than 20% (by mass) of the waste delivered to the waste recycling and transfer facility for processing. Non-recyclable residues will be stockpiled undercover prior being sent for further offsite recycling or disposal at an EPA licensed facility.

2.6 Vegetative waste

Waste that has a plant origin can be divided into:

- timber - wood that has been milled and used in buildings, pallets, etc;
- coarse vegetation - unprocessed coarse vegetation waste such as large branches, stumps and roots that take weeks or months to start to decompose/compost; and
- green waste - unprocessed vegetation waste such as grass clippings, leaves, small branches and weeds that may start to decompose/compost almost immediately.

In this EIS, 'vegetation waste' refers to coarse vegetation, green waste or a combination of both. The facility will receive much more coarse vegetation than green waste (see Section 2.6).

If left under the correct conditions, vegetation may compost, producing odours. The time that it takes for composting (and odour generation) to start depends on the size and composition of the piles. Large piles with low oxygen penetration start to compost faster than smaller, open piles. Green waste, such as fine grass clippings can start composting immediately. Conversely, coarser vegetation such as branches and stumps take much longer to start to compost, if at all.

Benedict Recycling's facilities typically only receive coarse vegetation. This coarse vegetation is generally in skip bins mixed with waste from demolition sites.

Houses generating green waste almost always dispose of this material in the free green bin provided by their council rather than hiring a skip bin or otherwise paying for disposal. Businesses generating vegetation waste, such as landscapers, find that it is cheaper to dispose of this vegetation waste if it is not mixed with other wastes. It would be uneconomic for these businesses to deliver this segregated vegetation waste to the facility.

The following management measures will be applied so that vegetation waste will not start to compost or produce odours within the facility:

- no odorous waste will be accepted;
- the minor amounts of vegetation waste (including green waste) that will be accepted at the facility as part of co-mingled loads will be segregated and stored in a covered bay (see Figure 2.1);

- vegetation waste will not be stored on site for extended periods;
- vegetation waste will be dispatched to another facility licensed to accept vegetation, as soon as there is enough to fill a truck or sooner if the material starts to compost(see Section 2.6); and
- vegetation waste will be monitored daily for any signs that composting is occurring (odour or increased temperature) and if this occurs, the stockpile will be broken apart and arrangements will be made immediately for the material to be dispatched from site in a smaller truck.

Effective procedures for handling of green waste has meant that Benedict Recycling has not received any odour complaints in over 30 years of operations at its facilities that except the same types of wastes as would be accepted by the Penrith Waste Recycling and Transfer Facility.

The Penrith Waste Recycling and Transfer Facility will not accept council kerbside green bin waste or putresibles waste.

What typically happens – an example from building site to recycled products

Co-mingled waste accepted by the site will typically be in skips from building sites or from homes disposing of unwanted materials in a skip hired for the purpose. A typical journey from one of these skips to recycled products is described below.

Filling a skip

Photograph 2.5 Example of co-mingled construction waste and a typical skip bin truck

Builders generally hire skip bins during a construction or demolition project. These skips are used for disposing of a range of inert wastes (ie material that cannot be re-used or that does not require specific handling such as asbestos). For example, a builder undertaking an office refurbishment will dispose of waste from the demolition phase including concrete; bricks; tiles; plaster-board; glass; office partitions; plastic and metal pipes; timber, carpet and synthetic flooring; and plastic and cardboard packaging. Further waste from the construction phase will include excess concrete; wood and metal off-cuts; empty cement bags; cardboard; plastic packing straps and plastic film wrapping. Soil and vegetation could be excavated as part of the construction works for an extension or a new construction.

On many occasions, particularly on smaller construction sites, all of these materials are placed in the site skip bin. When full, the skip is picked up by the waste contractor and the co-mingled waste is generally delivered to a recycler or a landfill for disposal. With the development of this proposed waste recycling and transfer facility, this co-mingled waste can be processed into useful products.

Arrival at the waste recycling and transfer facility

Photograph 2.6 Examples of wastes accepted (left-to-right: segregated masonry, segregated timber and co-mingled pre-classified waste)

A skip truck (or other vehicle) entering the waste recycling and transfer facility site will first stop to remove the tarp covering the load. The vehicle will then proceed to the weighbridge area.

Here, the full truck will be weighed and the waste will be inspected visually.

If the waste contains material that cannot be accepted by the facility (eg asbestos sheeting or closed containers) the driver will be instructed to leave the facility with the load and a record is kept with the particulars of each rejected load. Otherwise, if the load is acceptable the driver will be issued with a docket and will be directed to where the waste is to be unloaded within the facility.

For example, in the case of a construction or demolition project, the skip will contain co-mingled waste and the driver will be issued with a docket stating this and will be directed to the truck tipping area.

Unloading the waste

Waste will be emptied onto clear hardstand adjacent the appropriate waste stockpile or at the truck tipping area. Delivered waste will then be inspected while the truck waits. If waste is accepted, it will be added to the appropriate stockpile. Otherwise, it will be reloaded onto the vehicle that delivered the waste and the driver will be instructed to leave the facility with the load.

Vehicles will leave the site via the wheel wash and weighbridge.

Waste processing

Waste processing will depend on its level of segregation when delivered.

Waste will first be sorted by an excavator using a grab to remove large non-recyclable components.

Co-mingled waste will then be moved by grab or front-end loader to the hopper, where it will be loaded onto the flip-flow screen. The flip-flow plant uses a series of conveyors, fans and a vibrating screen to separate waste based on size and density. There will be three outputs from the flip-flow:

- oversized material (eg rubble);

- mid-size material (eg material >8 mm); and

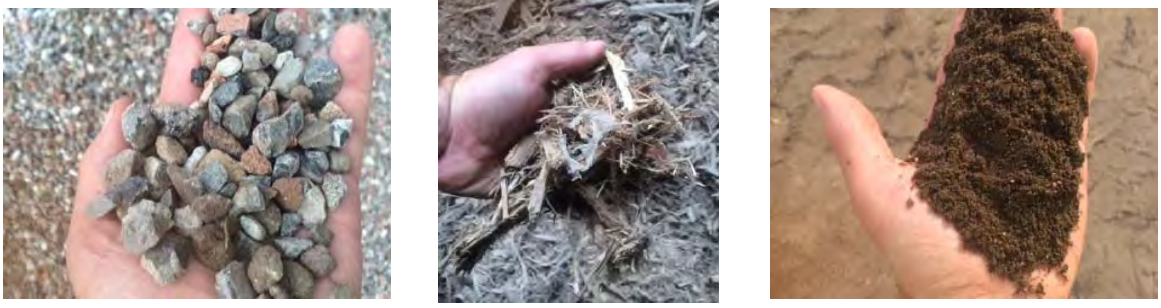
- <8 mm fines that will be dispatched (after testing and approval) as a natural soil substitute that replaces virgin top soils in a wide range of landscape applications.

Operation of a flip-flow is shown in the following clips:

- https://www.youtube.com/watch?v=e6d0MWFQCUw
- https://www.youtube.com/watch?v=JEu6e2L9A0U
- http://www.blue-group.com/en/recycling/fines-cleanup/

These wastes will be stockpiled outside of the shed as ready-to-use materials and as recycling feed products for further processing off-site..

Products



Photograph 2.7 Examples of ready-to-use products (left-to-right: building aggregate, shredded timber and soil substitute)

Photograph 2.8 Example recycling feed products (left-to-right: paper/cardboard, plastic and mixed metals)

For example, following additional processing offsite, the co-mingled waste in the construction site skip bin may include:

- building aggregates from the masonry following sorting, crushing and screening (these would be produced at a Benedict crushing facility at an alternative location);
- mulches and soil substitutes from the screen;
- timber mulches from the timber following shredding at an alternative Benedict facility;
- clean, dry paper and cardboard from packaging;

- ferrous and non-ferrous metals from pipes and office fittings; and
- various plastics from packaging and fittings.

Dispatch

Products like soil will be dispatched to retailers (eg construction and landscape suppliers); customers (eg local councils) requiring soils; or other Benedict sites for further processing. This will be by a combination of customer and contractor trucks. Non-recyclable residues will be delivered to a licensed landfill by contractor trucks.

2.7 Waste and product storage

Two primary stockpile types will comprise:

- waste feed stockpiles (ie truck tipping area and hand unloading area); and
- product stockpiles.

Permanent feed and product stockpiles are shown in Figure 2.1 and Figure 2.3.

There may also be some intermediate stockpiles formed during processing, these will be stockpiled in marked bins within the processing shed. The bins are not shown in the figures as they are mobile. However, they will be stored within the shed against the eastern and southern walls, clear of exits and emergency equipment, when not in use.

The maximum amounts of waste that will be stored on site at any one time are provided Table 2.5.

Table 2.5 Maximum stockpile sizes

Waste / stockpile type	Average tonnes per day (t)	Maximum stockpile volume (m^3)
Excavated soils	198	210
Screened fines	156	100
Oversized materials/aggregate	114	130
Vegetative waste (covered)	30	200
Metals	12	20
Light waste (covered)	90	300
Hand unloading area	na	50
Truck tipping area	na	500

Notes: 1. Waste TPD assumes average TPD distributed across estimated proportions of waste in Table 2.3.

2. Stockpile volumes extrapolated from stockpiles shown in Figure 2.1.

The stockpiles have been designed to allow for an average day's worth of waste can be accommodated within each stockpile area. However, wastes and products will be added and removed from the stockpiles during the day so the total amount of material passing through a stockpile in a day may exceed its maximum capacity at a single point in time.

This process, including dispatching of materials on average and busier days will be managed as described in Section 2.2.

The maximum stockpile height will be 5 m.

Other than sorting material using mobile plant at the truck tipping area, waste will be processed within the existing shed. The shed is enclosed on all sides and has a roller door facing the yard that will be open all day. Misters will be installed within the shed to control internal dust levels.

The processing shed is sufficiently large to allow waste sorting using a flip-flow screen. The shed will minimise potential noise and dust emissions from the site. However, it is not large enough to store waste or processed materials, beyond the bins discussed in Section 2.2.2.

The external storage and handling of materials has been considered within the relevant assessments: air quality (see Section 6.3); noise (see Section 6.5); water (see Section 6.6); soils and contamination (see Section 6.7); and visual (see Section 6.8).

These assessments found that there will be minor or negligible impacts on surrounding businesses and negligible impacts on the closest residences that are at least 620 m from the site.

The facility will be able to meet all environmental standards with external storage of materials with the management measures described in this EIS (as summarised in Table 7.1). As such, additional measures (eg the full enclose the site) beyond the proposed management measures are not considered warranted.

2.8 Plant and equipment

Indicative plant and equipment to be used at the facility is listed in Table 2.6, with a description of locations within the project site. Plant (or equivalent) listed in Table 2.6 has been used in noise and air quality assessments. Actual plant or equipment used may vary, but Benedict Recycling will ensure that noise and air quality compliance requirements are met.

Table 2.6 Indicative equipment and activities

Plant (or equivalent)[1]	Number	Location	Typical activities
Equipment used across the site			
Front end loader (eg Volvo L120 or equivalent)	1	External to processing shed	Unloading and loading trucks Moving waste and products
Trucks (customers)	4–5	External to processing shed	Delivering waste and dispatching products Returning to/leaving the site
13 t excavator	1	External to processing shed	Sorting waste using a variety of excavator attachments Loading trucks
Screening plant	1	Processing shed	Sorting co-mingled waste

Note: 1. As modelled in the air quality assessment (Appendix E) and noise assessment (Appendix F).

2.9 On-site vehicle movements

Traffic movements within the site will be largely un-restricted with the entire site consisting of a hard sealed surface (Figure 2.1). The internal traffic circulation and swept paths are shown in Appendix C of the TIA (Appendix D). It is noted that Figure 2.1 has been updated since the creation of the swept paths. However, the changes are largely to the placements of stockpiles and associated block walls. These changes have brought the elements away from the identified swept paths. The driveways have also been extended to accommodate the entrance and egress of vehicles, as required to accommodate the swept path of a 19 m articulated truck. As such, the swept paths remain valid.

The public vehicle access area, providing access to the hand-unloading facility, will be delineated from the heavy vehicle area using road-pavement markings and appropriate signage.

After passing through the weighbridge, light vehicles will only be able to stop in the hand unloading area and vehicle stacking area (see Figure 2.1). The vehicle stacking area will measure approximately 10 m by 10 m, allowing for several light vehicles to stack while waiting for the hand unloading area to become available. For instance, ten 2 m by 3 m utility vehicles would be able to stack in this area.

The vehicle stacking area will be appropriately signed to enable members of the public to remain within this marked allocated area at all times. Drivers and passengers will only be able to exit their vehicles at the hand unloading area.

Vehicles moving within the site, including into, around and out of the vehicle stacking area will be directed by a traffic controller.

If there is a 'surge' in light vehicle numbers at the facility at any time, drivers will be instructed by the traffic controller to wait in their vehicles. Heavy vehicles will be directed around the light vehicle stacking area when it is occupied.

Out of hours truck parking will be available at sites that are clear of operational uses at the end of the day. These locations may include areas adjacent to the truck tipping area, aggregate stockpile, and between the entry weighbridge and the truck tipping area. Parking movements will be overseen by the traffic controller at the beginning and end of each day.

2.10 Off-site vehicle movements

Sorted recyclable materials will be dispatched to a range of locations that will include:

- Benedict Recycling's facility in Chipping Norton (eg bricks, concrete, tiles, masonry and light residues);
- Benedict's soil and sand facility in Menangle (timber and fines); and
- other recycling facilities on a commercial basis.

The portion of wastes that cannot be recovered through recycling will be sent to an EPA licensed facility for disposal. It is anticipated that this will constitute 10–20% of material received. The facilities used will be determined on a commercial basis.

It is illegal to transport waste in an uncovered tray or trailer. Signs will be erected at the facility regarding drivers' legal obligation to ensure that waste is covered during transport. Covers on vehicles or trailers delivering waste will be removed once inside the facility. Vehicles dispatching products or residue will be covered prior to leaving the site.

2.11 Workforce

The facility will normally be operated by a single shift of eight employees operating from 6 am to 4 pm. On the days when after hours deliveries may be received until 10 pm in the evening, the site would be operated by about 15 employees in total, operating in two shifts of eight and seven persons respectively from 6 am to 2 pm for the morning shift and from 2 pm to 10 pm for the afternoon/evening shift.

2.12 Site office waste

Putrescible waste generated by site employees, such as from employee lunches and office waste, will be put in a 2 m^3 front-lift bin located next to the metals bin. Any recyclable waste will be deposited in a commercial recycling wheelie bin in the same location. Both bins will be emptied regularly by a private contractor.

2.13 Construction activities

Project construction will require:

- installing gates and repairing/replacing fencing;
- refurbishing and modifying the processing shed;
- constructing waste and product bays;
- installing weighbridges and demountable offices;
- constructing the exit driveway;
- upgrading the existing entry driveway;
- marking traffic/pedestrian circulation and parking bays;
- relocation and extension of the eastern awning;
- upgrading the surface water management system with two gross pollutant traps (GPTs), additional drains and associated stormwater pipes/pits; and
- landscaping.

The site is already connected to mains water, sewer, electricity and telecommunications.

No significant ground excavation is anticipated, other than 2 m deep, 2 m wide and 3 m long excavations for installation of GPTs and drainage pits. There will be minor ground disturbance associated with installing anchors for the demountable offices and relocated awning, installation of footings for weighbridges and relocation and upgrading of stormwater pipes. The potential impacts of the excavation on groundwater is discussed in Section 5.3.3 and Section 6.6.

The construction timeframe would be approximately two months.

The capital investment initial estimate indicates that about $377,488 site improvements would be required and about $1,110,000 of mobile plant would be used during operations. With design and project management fees, the capital investment value will be $1,599,049, excluding Goods and Services Tax (see Appendix I).

3 Statutory framework

3.1 Introduction

This chapter provides an overview of the statutory framework relevant to the proposal including State and Commonwealth legislation, and State, regional and local plans and policies.

3.2 Environmental Planning and Assessment Act 1979

The EP&A Act defines the statutory framework for planning approval and environmental assessment in NSW. The EP&A Act is administered by the Minister for Planning, statutory authorities and local councils.

Under Section 89D of the EP&A Act, the Minister for Planning is the consent authority. However, pursuant to Section 23 of the EP&A Act the Minister may delegate the consent authority function to a range of persons or public authorities, including the Secretary of the Department of Planning of Environment and the PAC.

3.2.1 State significant development

The proposal is classified as a State significant development (SSD) under the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP) (see Section 3.3.4). Part 4, Division 4.1 of the EP&A Act relates to the assessment of SSD applications. Applications made under Division 4.1 are required by Section 89H to take into consideration the relevant matters referred to in Section 79C(1) of the Act which include:

(a) the provisions of:

(i) any environmental planning instrument, and

(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and

(iii) any development control plan, and

(iiia) any planning agreement that has been entered into under Section 93F, or any draft planning agreement that a developer has offered to enter into under Section 93F, and

(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and

(v) any coastal zone management plan (within the meaning of the Coastal Protection Act 1979).

that apply to the land to which the development application relates,

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,

(c) the suitability of the site for the development,

(d) any submissions made in accordance with this Act or the regulations, and

(e) the public interest.

The above matters are considered below and throughout the EIS.

3.2.2 Approvals not required or which cannot be refused

Under Section 89J of the EP&A Act, the following authorisations are not required for SSD:

(a) the concurrence under Part 3 of the *Coastal Protection Act 1979* of the Minister administering that Part of that Act;

(b) a permit under Section 201, 205 or 219 of the *Fisheries Management Act 1994*;

(c) an approval under Part 4, or an excavation permit under Section 139, of the *Heritage Act 1977*;

(d) an Aboriginal heritage impact permit under Section 90 of the *National Parks and Wildlife Act 1974*;

(e) an authorisation referred to in Section 12 of the *Native Vegetation Act 2003* (or under any Act repealed by that Act) to clear native vegetation or State protected land;

(f) a bushfire safety authority under Section 100B of the *Rural Fires Act 1997*; and

(g) a water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than an aquifer interference approval) under Section 91 of the *Water Management Act 2000*.

Further, under Section 89K of the EP&A Act, the following authorisations cannot be refused and are to be substantially consistent with development consent for SSD:

(a) an aquaculture permit under Section 144 of the *Fisheries Management Act 1994*,

(b) an approval under Section 15 of the *Mine Subsidence Compensation Act 1961*,

(c) a mining lease under the *Mining Act 1992*,

(d) a production lease under the *Petroleum (Onshore) Act 1991*,

(e) an environment protection licence under Chapter 3 of the *Protection of the Environment Operations Act 1997* (for any of the purposes referred to in Section 43 of that Act),

(f) a consent under Section 138 of the *Roads Act 1993*,

(g) a licence under the *Pipelines Act 1967*.

3.3 Relevant provisions

This section gives consideration to the relevant provisions of the regulations and environmental planning instruments as required by Section 79C(1)(a) of the EP&A Act. No proposed instruments, planning agreements or coastal zone management plans are relevant to the project. Further, Clause 11 of the SRD SEPP (see Section 3.3.4) states that development control plans do not apply to SSD and, therefore, the Penrith DCP 2014 has not been considered specifically.

3.3.1 NSW Environmental Planning and Assessment Regulation 2000

Part 6 of the EP&A Regulation details procedures relating to SSD applications. Schedule 2 of the EP&A Regulation relates to the preparation of EISs. In particular, Clauses 6 and 7 of this schedule prescribe the form and content of an EIS. The Schedule 2 requirements, and where they are addressed in this EIS, are set out in Table 3.1.

Table 3.1 Schedule 2 requirements for an EIS

Requirement	Where contained in the EIS
Name, address and professional qualifications of the person(s) who prepared the EIS	Certification page
Name and address of the responsible person (the applicant)	Certification page
Address of land	Certification page
Description of development	Chapter 2
Assessment of the environmental impact	Chapter 6
Declaration that the EIS has been prepared in accordance with this Schedule, contains all available information that is relevant to the environmental assessment of the development and that the information contained in the statement is neither false nor misleading	Certification page
Summary of the EIS	Executive summary
A statement of the objectives of the development	Section 1.1
An analysis of feasible alternatives, having regard to its objectives, including the consequences of not carrying out the development	Section 1.4.3
A full description of the development	Chapter 2
A general description of the environment likely to be affected by the development	Section 1.3.2 Chapter 6
The likely impact on the environment of the development	Chapter 6
A full description of the measures proposed to mitigate any adverse effects of the development	Chapter 6
A list of any approvals that must be obtained under any other Act or law before the development, activity or infrastructure may lawfully be carried out	Section 3.6
A compilation of the measures proposed to mitigate any adverse effects of the development	Table 7.1
The reasons justifying the carrying out of the development, activity or infrastructure in the manner proposed, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development	Chapter 8

3.3.2 Penrith Local Environmental Plan 2010

The site is zoned IN1 General Industrial (Figure 3.1) under the Penrith Local Environmental Plan 2010 (the LEP). The facility is an industry that is permissible with consent within the IN1 zone, and is consistent with the following objectives of the IN1 zone:

- 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;

Zoning

Penrith Waste Recycling and Transfer Facility
Environmental Impact Statement
Figure 3.1

- to support and protect industrial land for industrial uses;
- to promote development that makes efficient use of industrial land; and
- to permit facilities that serve the daily recreation and convenience needs of the people who work in the surrounding industrial area.

Compliance with relevant standard and provisions of the LEP is detailed in Table 3.2.

Table 3.2 Penrith Local Environmental Plan 2010 provisions

Provisions	Compliance
IN1 General Industrial	
(1) Objectives of zone	
• *To provide a wide range of industrial and warehouse land uses.*	The proposal is for an industrial land use.
• *To encourage employment opportunities.*	The proposal provides for employment opportunities.
• *To minimise any adverse effect of industry on other land uses.*	The proposal minimises effects on other land uses (see Chapter 6).
• *To support and protect industrial land for industrial uses.*	The proposal is for an industrial use on existing industrial land.
• *To promote development that makes efficient use of industrial land.*	The proposal involves the adaption of an existing industrial site.
• *To permit facilities that serve the daily recreation and convenience needs of the people who work in the surrounding industrial area.*	The proposal is compatible with this objective.
4.3 Height of buildings	
The LEP specifies a maximum building height for the site at 12 m.	The existing building is approximately 10 m tall and no additional buildings are proposed.
5.9 Preservation of trees or vegetation	
(3) A person must not ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation to which any such development control plan applies without the authority conferred by: (a) development consent, or (b) a permit granted by the Council.	The removal of conifer trees (see Section 2.1.8) to construct the exit driveway would form part of the development consent for the proposal and does not require a separate permit.
7.1 Earthworks	
(2) Development consent is required for earthworks unless: (a) the work is exempt development under this Plan or another applicable environmental planning instrument, or (b) the work is ancillary to other development for which development consent has been given.	There will be minimal excavation required as part of the development (see Section 2.13). Earthworks are ancillary to the proposal and separate development consent is not required.

Table 3.2 Penrith Local Environmental Plan 2010 provisions

Provisions	Compliance
(3) Before granting development consent for earthworks, the consent authority must consider the following matters:	
(a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality,	Only minor excavation for water management system upgrades and site exit driveway will be required. Impermeable sheeting will be installed to avoid any salinity impacts. Minor excavations will not have a significant impact on groundwater.
(b) the effect of the proposed development on the likely future use or redevelopment of the land,	The site is currently used by an auto wrecker. The proposed facility will not change likely future use or redevelopment of the land.
(c) the quality of the fill or the soil to be excavated, or both,	Only minor excavation for water management system upgrades and site exit driveway will be required.
(d) the effect of the proposed development on the existing and likely amenity of adjoining properties,	The facility will have minor or negligible impacts on the amenity of adjoining properties (see Chapter 6).
(e) the source of any fill material and the destination of any excavated material,	Only minor excavation for water management system upgrades and site exit driveway will be required. Removed material will be dispatched to a facility licensed to receive excavated material.
(f) the likelihood of disturbing relics,	With the exception of the verge along Peachtree Road, the site is already concrete sealed. It is highly unlikely that the minor excavations required will disturb any relics.
(g) the proximity to and potential for adverse impacts on any waterway, drinking water catchment or environmentally sensitive area,	The facility is not predicted to have adverse impacts on any waterway, drinking water catchment or environmentally sensitive area (see Section 6.6 and Appendix G).
(h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development,	A range of environmental management measures are proposed, as summarised in Table 7.1.
(i) the proximity to and potential for adverse impacts on any heritage item, archaeological site, or heritage conservation area.	With the exception of the verge along Peachtree Road, the site is already concrete sealed. The closest listed heritage items are over 500 m from the site. The facility is not predicted to have adverse impacts on any heritage item, archaeological site, or heritage conservation area (see Section 6.10).

Table 3.2 Penrith Local Environmental Plan 2010 provisions

Provisions	Compliance
7.2 Flood planning ... (4) Development consent must not be granted for development on land that is at or below the flood planning level unless the consent authority is satisfied that the development: (a) is compatible with the flood hazard of the land, and (b) if located in a floodway, is compatible with the flow conveyance function of the floodway and the flood hazard within the floodway, and (c) is not likely to adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and (d) is not likely to significantly alter flow distributions and velocities to the detriment of other properties or the environment, and (e) is not likely to adversely affect the safe and effective evacuation of the land and the surrounding area, and (f) is not likely to significantly detrimentally affect the environment or cause avoidable erosion, destruction of riparian vegetation or affect the restoration and establishment of riparian vegetation, or a reduction in the stability of river banks or waterways, and (g) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding, and (h) incorporates appropriate measures to manage risk to life from flood, and (i) is consistent with any relevant floodplain risk management plan. ... (7) In this clause: **flood planning level** means the level of a 1:100 ARI (average recurrence interval) flood event plus 0.5 metres freeboard.	The water management report prepared for the proposal indicates that the proposed development is compliant with the Penrith LEP requirements for sites nominated within the flood planning area. Each of the matters listed are addressed in Section 5.3 of Appendix G.

3.3.3 State Environmental Planning Policy (Infrastructure) 2007

Part 3, Division 23 of the State Environmental Planning Policy (Infrastructure) 2007 (the Infrastructure SEPP) relates to waste or resource management facilities. Under Clause 121, development for the purpose of waste or resource management facilities is permissible with consent in a prescribed zone. A prescribed zone includes land zoned IN1 General Industrial. The site is zoned IN1 General Industrial under the LEP. Therefore, the facility is permissible with consent.

Schedule 3 of the Infrastructure SEPP details traffic generating development that is to be referred to the Roads and Traffic Authority (now RMS) and includes recycling facilities of any size or capacity. Clause 104 of the Infrastructure SEPP requires the RMS to be notified of an application for traffic generating development.

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

The State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP), amongst other matters, defines certain development as SSD. Clause 8 of the SRD SEPP states:

> (1) Development is declared to be State significant development for the purposes of the [EP&A] Act if:
>
> (a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and
>
> (b) the development is specified in Schedule 1 or 2.

The facility is permissible with consent by virtue of the LEP and the Infrastructure SEPP.

Schedule 1 of the SRD SEPP defines a range of general SSDs, including waste and resource management facilities. Clause 23 Waste and resource management facilities include the following:

> ...
>
> (2) Development for the purpose of waste or resource transfer stations in metropolitan areas of the Sydney region that handle more than 100,000 tonnes per year of waste.
>
> ...
>
> (3) Development for the purpose of resource recovery or recycling facilities that handle more than 100,000 tonnes per year of waste.

The facility will handle up to 180,000 tpa of waste and is, therefore, development specified in Schedule 1. Additionally, the facility meets both requirements of Clause 8 of the SRD SEPP and is, therefore, deemed to be SSD. Development consent for the facility is required from the Minister for Planning or their delegate.

3.3.5 State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

Under State Environmental Planning Policy No. 33 – Hazardous and Offensive development (SEPP 33) a preliminary hazard assessment (PHA) prepared in accordance with the current circulars or guidelines must be submitted with a SSD application for potentially hazardous or offensive development. The guideline *Applying SEPP 33* (DoP 2011a) includes a checklist and a risk screening procedure to determine whether a development is potentially hazardous or offensive.

An assessment against *Applying SEPP 33* found that the facility is not potentially hazardous (see Section 5.4). Further, the facility will not pose a significant risk to or have a significant adverse impact on human health, life, property or the biophysical environment. The facility will not be a potentially hazardous or offensive industry and, therefore, a PHA is not required.

3.3.6 State Environmental Planning Policy No. 55 – Remediation of Land

A preliminary investigation of contamination by EMM (Appendix H) considered whether the site is potentially contaminated under State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55). No contamination issues were identified that would preclude the proposed future land use as a waste recycling and transfer facility with minimal opportunities for soil access.

3.3.7 Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River (No 2—1997)

The Sydney Regional Environmental Plan No 20—Hawkesbury-Nepean River (No 2—1997) (SREP 20) applies to land within Penrith local government area (LGA). Part 2 of SREP 20 identifies the considerations, policies and strategies that are to be taken into consideration by the consent authority when determining an SSD application to which the plan applies. Further, Part 3 of SREP 20 identifies additional matters for consideration specific to the type of development. Matters for consideration for waste management facilities or works include:

> (a) Any potential for groundwater contamination.
>
> (b) The adequacy of the proposed leachate management system and surface water controls.
>
> (c) The long-term stability of the final landform and the adequacy of the site management plan.
>
> (d) If extraction of material is involved in the creation or other development of the waste management site, whether the extractive operation will have an adverse impact on the river system.

Matters (a), (b) and (d) have been considered in Section 6.6.. With regard to matter (c), no change is proposed to the final landform, and this EIS serves as the site management plan.

3.4 Other State legislation

3.4.1 Protection of the Environment Operations Act 1997

The NSW *Protection of the Environment Operations Act 1997* (POEO Act) is the principal NSW environmental protection legislation and is administered by the EPA. Section 48 of the POEO Act requires an EPL to undertake scheduled activities at a premise. Scheduled activities are defined in Schedule 1 of the POEO Act and include the following premise-based activities that apply to the facility:

- resource recovery – having on site at any time more than 1,000 tonnes or processing more than 6,000 tonnes per year of general waste;
- waste processing (non-thermal treatment) – having on site at any time more than 1,000 tonnes or processing more than 6,000 tonnes per year of general waste; and
- waste storage – received from off-site and storing of more than 1,000 tonnes of waste at any time or more than 6,000 tonnes per year.

As the facility involves scheduled activities, an EPL under the POEO Act will be required. Under Section 89K of the EP&A Act, an EPL cannot be refused if it is necessary for carrying out SSD that is authorised by a development consent, and is to be substantially consistent with that development consent.

3.4.2 Waste Avoidance and Resource Recovery Act 1997

The NSW *Waste Avoidance and Resource Recovery Act 2001* aims to encourage efficient use of resources and reduce environmental harm, through the principles of ecologically sustainable development and considering resource management options against the hierarchy of avoid, reuse and dispose.

The facility will be consistent with these objects through enhanced services for more quantities of resources to be recovered and recycled.

3.4.3 Water Management Act 2000

The NSW *Water Management Act 2000* (WM Act) regulates the use and interference with surface and groundwater in NSW where a water sharing plan (WSP) has been implemented.

Under Section 89J of the EP&A Act, water use approvals, water management works approvals and controlled activity approvals are not required for development that is SSD.

Section 91(2) of the WM Act requires an activity approval for the carrying out of a controlled activity in, on or under waterfront land. The facility does not include works within 40 m of a watercourse and an activity approval is not required.

Water sharing plans contain the rules for sharing and managing the water resources within water source areas. Two WSPs are applicable to the site: the Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources and the Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources. The facility will be consistent with the two water sharing plans.

As no surface water or groundwater will be taken for the facility, no water access licences or approvals will be required. Water from the roof of the processing shed will be stored in a dedicated rainwater tank, which does not require licensing or work approval.

The surface water assessment and water balance for the proposal are summarised in Section 6.6.

3.4.4 Roads Act 1993

The NSW *Roads Act 1993* (Roads Act) regulates the carrying out of various activities on public roads. Under Section 138 of the Roads Act it is an offence to:

(a) erect a structure or carry out a work in, on or over a public road, or

(b) dig up or disturb the surface of a public road, or

(c) remove or interfere with a structure, work or tree on a public road, or

(d) pump water into a public road from any land adjoining the road, or

(e) connect a road (whether public or private) to a classified road, otherwise than with the consent of the appropriate roads authority.

The facility involves construction of a new access driveway and stormwater outlets onto Peachtree Road and requires disturbance within a road reserve. Approval will be required under Section 138 of the Roads Act from PCC for works within the road corridor of Peachtree Road.

Under Section 89K of the EP&A Act, a consent under Section 138 of the Roads Act cannot be refused if it is necessary for carrying out SSD that is authorised by a development consent, and is to be substantially consistent with that development consent.

3.5 Commonwealth legislation

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), actions that may have a significant impact on a matter of national environmental significance (MNES) are 'controlled actions' and require approval from the Commonwealth. MNES include world heritage properties, wetlands of international importance, and listed threatened species and ecological communities.

The facility will not have any significant impacts on any MNES and, accordingly, a referral to the Commonwealth Minister for the Environment is not required.

3.6 Required approvals

The facility will require the following approvals:

- a Project Approval under Division 4.1 of the EP&A Act;
- an EPL under Section 48 of the POEO Act;
- consent under Section 138 of the Roads Act;
- a construction certificate under Section 109C of the EP&A Act; and
- an occupation certificate under Section 109C of the EP&A Act.

4 Consultation

4.1 Consultation to date

The SEARs for the proposal (Appendix B) require consultation with the following stakeholders:

- PCC;
- EPA;
- Office of Environment and Heritage (OEH);
- DPI;
- RMS; and
- the surrounding landowners and occupiers that are likely to be impacted by the proposal.

Consultation with all the above stakeholders has been undertaken for the proposal.

4.1.1 Agency consultation

The method and outcomes of the consultation with government agencies are detailed in Table 4.1.

Table 4.1 Summary of agency consultation

Stakeholder	Consultation methods	Outcomes
Government agencies		
EPA	A summary of the proposal was sent to the EPA and they provided input into the preparation of the EIS through the SEARs.	This EIS has been prepared in accordance with EPA comments included with the SEARs.
	A letter was sent on 5 August 2016 inviting further input.	No response to the consultation letter was received.
OEH	A summary of the proposal was sent to the OEH	The OEH Greater Sydney Planning Team concluded that no formal response was required and they had no need to be involved in the assessment of this project.
	A letter was sent on 5 August 2016 inviting additional input.	Heritage Council of New South Wales responded on 24 August 2016 indicating that the site is in the "general vicinity" of State Heritage Register (SHR) and Section 170 Heritage Conservation Register items. The Heritage Council recommended that a historic impact assessment be prepared.

Table 4.1 Summary of agency consultation

Stakeholder	Consultation methods	Outcomes
DPI	A summary of the proposal was sent to the DPI and they provided input into the preparation of the EIS through the SEARs.	This EIS has been prepared in accordance with DPI comments included with the SEARs.
	A letter was sent on 5 August 2016 inviting further input.	A response from DPI was received on 5 August 2016 confirming that DPI had no additional comments beyond those provided in response to the request for SEARs.
RMS	A summary of the proposal was sent to RMS and they provided input into the preparation of the EIS through the SEARs.	This EIS has been prepared in accordance with RMS comments included with the SEARs.
	A letter was sent on 5 August 2016 inviting further input.	A response from RMS was received on 17 August 2016 confirming that RMS had no further requests for inclusion in the EIS.
PCC	A summary of the proposal was sent to PCC and they provided input into the preparation of the EIS through the SEARs.	The EIS has been prepared to address this advice.
	A letter was sent on 5 August 2016 inviting further input.	No response to the consultation letter was received.
	A letter was sent on 31 October 2016 providing a copy of the project factsheet (see Appendix C) and seeking an opportunity to brief the Council.	No response to the consultation letter was received.

Consultation with community stakeholders has included face to face meetings, telephone calls, emails and the distribution of a factsheet summarising the proposal, predicted impacts and inviting feedback on the proposal. The factsheet has been provided by Benedict to 33 neighbours of the site.

A copy of the factsheet is provided in Appendix C. Details of community consultation conducted in November 2016 are presented in Table 4.2.

Table 4.2 Summary of community consultation

Address	Contact	Consultation method	Comment
47-53 Mullins Road, Penrith	Depot Manager, Busways	Factsheet	No response received to date.
22 Mullins Road, Penrith (undeveloped parcel of land to the north)	Director, McDonald Bros Holdings	Telephone conversation and email factsheet	No response received to date.
2182 Castlereagh Road, Penrith	National Property Development Manager, Bunnings	Face to face meeting at Bunnings Support Services Office	Main concern would be dust impacts on their loading dock. Contact asked whether a dust screen would be installed on the common boundary. To address their concerns, a 4 m block wall adjacent to the site and dust suppression devices will be installed onsite.

Table 4.2 Summary of community consultation

Address	Contact	Consultation method	Comment
38 Peachtree Road, Penrith	Site Manager, Trans Vent	Factsheet and discussion	No issues with the proposal.
Unit 1, 42 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 2, 42 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 3, 42 Peachtree Road, Penrith	Owner, Rick's Automotive Repairs	Factsheet and discussion	No issues with the proposal.
Unit 4, 42 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 5, 42 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 6, 42 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 7, 42 Peachtree Road, Penrith	Owner, PJ's Catering Service	Factsheet and discussion	No issues with the proposal.
Unit 1, 44 Peachtree Road, Penrith	Company Representative, MVR Rubber	Factsheet and discussion	No issues with the proposal.
Unit 2, 44 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 3, 44 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 4, 44 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 1, 50 Peachtree Road, Penrith	Owner, Penrith Auto	Factsheet and telephone conversation	No issues with the proposal.
Unit 2, 50 Peachtree Road, Penrith	Kwixtep Sales	Factsheet	No response received to date.
Unit 3, 50 Peachtree Road, Penrith	Company Representative, Protech Locksmiths	Factsheet	No response received to date.
Unit 4, 50 Peachtree Road, Penrith	Owner, Better Windscreens	Factsheet and discussion	Contact raised noise and dust concerns. The contact was advised that there would be controls in place to manage both noise and dust impacts from the proposal.
Unit 5, 50 Peachtree Road, Penrith	Owner, Just Power	Factsheet and discussion	Contact raised noise and dust concerns. The contact was advised that there would be controls in place to manage both noise and dust impacts from the proposal.
Unit 6, 50 Peachtree Road, Penrith	SK Air conditioning	Factsheet	No response received to date.
Unit 1, 52 Peachtree Road, Penrith	Business Owner, Murrays Sandwich Shop	Factsheet and discussion	No issues with the proposal.
Unit 2, 52 Peachtree Road, Penrith	Owner, Dent Ezy Fix	Factsheet and discussion	No issues with the proposal.

Table 4.2 Summary of community consultation

Address	Contact	Consultation method	Comment
Units 3 and 4, 52 Peachtree Road, Penrith	Owner, Roxx & Designs	Factsheet and discussion	No issues with the proposal.
Units 5 and 6, 52 Peachtree Road, Penrith	Digs Electrical Contracting	Factsheet	No response received to date.
Unit 7, 52 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 8, 52 Peachtree Road, Penrith	No signage	Factsheet	No response received to date.
Unit 9, 52 Peachtree Road, Penrith	Rowlands Horticultural Services	Factsheet	No response received to date.
54 Peachtree Road, Penrith	Owner, Peachtree Hotel	Factsheet and discussion	Contact's main concern was that large trucks may use their car park while drivers use the facilities at McDonalds.
2 Peachtree Road, Penrith	Owner, McDonalds	Factsheet and discussion	No issues with the proposal.
2/2 Peachtree Road, Penrith	Director, Tyrepower	Factsheet and discussion	No issues with the proposal.
Unit 3, 2 Peachtree Road, Penrith	Business Manager, Prestige Creations	Factsheet and discussion	No issues with the proposal.

4.2 Proposed consultation

This EIS will be placed on public exhibition. Benedict will respond to any submissions regarding the proposal. This may also highlight the need to consult with any individuals or groups with a particular interest in the proposal.

Ongoing consultation is planned with the following:

- PCC: regarding this EIS, development approval and subsequent consents;
- EPA: regarding an EPL;
- agencies providing comment on this EIS; and
- one-on-one consultation regarding the EIS and upcoming activities at the site if requested by neighbours/adjoining occupiers.

5 Hazards

5.1 Introduction

This chapter considers whether the facility is a potentially hazardous or offensive development according to SEPP 33 and whether a PHA is required, and references *Applying SEPP 33* (DoP 2011a) and the *Hazardous Industry Planning Advisory Paper No 4: Risk Criteria for Land Use Safety Planning* guidelines (DoP 2011b).

A description of the fire and incident management measures that will be implemented for the facility is also provided.

5.2 Hazardous materials

5.2.1 Applying SEPP 33 risk screening method

i Hazardous materials stored, processed or handled

Potentially hazardous or offensive development is defined by SEPP 33 as development which poses a significant risk to, or which would have a significant adverse impact on, human health, life, property or the biophysical environment, if it were to operate without employing any control measures. This includes developments for the handling, storing or processing of hazardous materials. A development is classified as a hazardous or offensive development if the thresholds in *Applying SEPP 33* — which compare the quantities of stored or used hazardous materials to the distance from publicly accessible areas — are exceeded. The hazardous materials classifications in the *Australian Code for the Transport of Dangerous Goods by Road and Rail* (National Transport Commission 2007) (the Dangerous Goods Code) are used in *Applying SEPP 33*.

Hazardous materials that are proposed to be stored and used at the facility are generally oils and grease. Storage conditions, quantities and hazardous properties of the materials are provided in Table 5.1. Hazardous materials will be stored in a sealed storage cupboard, approximately 4 m^3. The storage cupboard will be located within the processing shed along the southern wall.

No hazardous wastes will be accepted by the facility.

Table 5.1 Dangerous goods and other potentially hazardous materials to be stored onsite

Classification	Name	Storage conditions	Approximate quantity
Dangerous Goods			
Class 2.1 Flammable Gas	Battery terminal spray	Purpose built container, in sealed storage cupboard in processing shed	0.4 L
	Hi press spray grease	Purpose built container, in sealed storage cupboard in processing shed	0.4 L
	Acetylene	Three size G bottles (for 9.3 m^3 of gas at atmospheric pressure) chained to southern wall of the processing shed.	30 kg

Table 5.1 Dangerous goods and other potentially hazardous materials to be stored onsite

Classification	Name	Storage conditions	Approximate quantity
Class 2.2 Non-flammable, non toxic gas*	Oxygen	Five size G bottles (for 8.9 m^3 of gas at atmospheric pressure) chained to the eastern wall of the processing shed.	12 kg
	Contact cleaner aerosol	Purpose built container, in sealed storage cupboard in processing shed	0.4 L
Class 3 Flammable Liquid PG II	Plumbers priming fluid	Purpose built container, in sealed storage cupboard in processing shed	0.5 L
	Unleaded petrol	Purpose built container, in sealed storage cupboard in processing shed	20 L
	Grip base	Purpose built container, in sealed storage cupboard in processing shed	0.4 L
	Gasket sealant	Purpose built container, in sealed storage cupboard in processing shed	0.05 L
	Quick dry enamel	Purpose built container, in sealed storage cupboard in processing shed	3 L
Class 3 Flammable Liquid PG III	Hi-Tec heavy duty degreaser	Purpose built container, in sealed storage cupboard in processing shed	20 L
Class 8 Corrosive substances PG III	Chemtech Heavy Duty Degreaser	Purpose built container, in sealed storage cupboard in processing shed	20 L
Other hazardous materials			
	Flocculent	Purpose built plastic container on eastern wall of the processing shed.	1,000 L (1 m^3)
	Oils (engine, hydraulic, and diesel)	Purpose built containers, in sealed storage cupboard in processing shed	840 L
	Penetrant spray	Aerosol container, in sealed storage cupboard in processing shed	4 L
	Concentrated traffic film remover	Purpose built container, in sealed storage cupboard in processing shed	20 L
	Lubricant	Purpose built container, in sealed storage cupboard in processing shed	0.5 L
	Anti-bacterial soap	Purpose built container, in sealed storage cupboard in processing shed	20 L
	Grease	Purpose built container, in sealed storage cupboard in processing shed	15 kg
	Coolant	Purpose built container, in sealed storage cupboard in processing shed	40 L

*Notes: *Exempt from "Applying SEPP" risk screening test.*

Based on the information provided in Table 5.1, a screening test against the thresholds in SEPP 33 for dangerous goods is provided in Table 5.2. All Class 3 PG II and III flammable liquids have been grouped together as Class 3 PG II which has a more stringent screening distance.

The screening test determines that the hazardous materials are not potentially hazardous.

Table 5.2 Applying SEPP 33 screening test

Dangerous goods classification	Total quantities	SEPP 33 screening threshold	Potentially hazardous?
Class 2.1 (LPG only)	8 t*	10 t	No
Class 2.1 (liquefied excluding LPG)	30 kg	Greater than 500 kg at specified distance	No
Class 3 PG II	50 kg	Greater than 5 t at specified distance	No
Class 8 PG III	20 kg	50 t	No

*Notes: *Conversion used for LPG 1 L = 0.53 kg.*

ii Transport of hazardous materials

Applying SEPP 33 also sets threshold limits for the transportation of hazardous materials to and from a site.

The number of weekly and annual deliveries and the approximate quantities per load to the site are below the SEPP 33 transport screening thresholds as shown in Table 5.3.

Table 5.3 Applying SEPP 33 transportation screening test

Hazardous materials	Deliveries		Quantities per load	Potentially hazardous
	Weekly (peak)	Annual		
Class 2.1 Flammable Gas	1	6	7.5 kL	No
Other hazardous materials	4	54	15 kL	No

5.2.2 Other risk factors

Applying SEPP 33 requires an assessment of other hazards/risk factors outside the scope of the risk screening method. An assessment of other types of hazards associated with the proposal is provided in Table 5.4.

Table 5.4 Other types of hazards

Type of hazard	Comments
Any incompatible materials (hazardous and non-hazardous materials)	No
Any wastes that could be hazardous	No. Wastes delivered to site will be inspected and will not be accepted if they contain hazardous materials (see Section 2.2.7)
The possible existence of dusts within confined areas	Yes, however misters will be installed inside the processing shed to suppress airborne particles
Types of activities the dangerous goods and otherwise hazardous materials are associated with (storage, processing, reaction, etc.)	Only as indicated in Table 5.1
Incompatible, reactive or unstable materials and process conditions that could lead to uncontrolled reaction or decomposition.	No
Storage or processing operations involving high (or extremely low) temperatures and/or pressure.	No
Details of known past incidents (and near misses) involving hazardous materials and processes in similar industries.	No known incidents involving hazardous materials and processes at recycling facilities accepting only the type of inert/non-hazardous materials proposed at the Penrith Waste Recycling and Transfer facility.

There are no other hazards/risk factors outside the scope of the risk screening method associated with the proposal.

5.2.3 Hazard management

A range of hazard control measures will be implemented during construction and operation of the facility. Each of these will be appropriate for the hazard they are designed to control and will generally follow the *Hierarchy of Hazard Controls* (WorkCover NSW not dated):

- engineering controls:
  - design: components will be designed and constructed to comply with relevant standards; and
  - enclosure: components will be enclosed as appropriate.
- administrative controls:
  - operating procedures;
  - scheduled maintenance; and
  - training and reinforcing correct work procedures.

Storage and use of hazardous materials will be in accordance with the following Australian Standards:

- Australian Standard 1940:2004 The Storage and Handling of Flammable and Combustible Liquids; and
- Australian Standard 1596:2008 The Storage and Handling of LP Gas.

Site management processes will periodically review conformance with these controls and standards.

5.3 Potentially offensive industry

Relevant emissions and discharges to air, noise, and water arising from construction and operation of the facility have been assessed to determine if it is classified as a potentially offensive industry.

5.3.1 Air quality

Ramboll Environ assessed potential air quality impacts (see Section 6.3 and Appendix E). The assessment found that the predicted incremental and cumulative particulate matter concentrations, dust deposition rates and odour concentrations generated by the proposal will be well below the corresponding NSW EPA criteria at the assessment locations and will not lead to any unacceptable impacts on the amenity of the area.

An understanding of the types of general solid waste (ie not special, liquid or hazardous waste) is important in the context of potential odour emission from the site:

- Putrescible: solid waste that contains organic matter capable of being decomposed by microorganisms. As putrescibles wastes decay and are processed they produce odours, as does composting.

- Non-putrescible: waste that does not readily decay under standard conditions; emit offensive odours; or attract vermin or other vectors (including flies, birds and rodents).

The site will only accept non-putrescible waste, will not deliberately compost vegetation, and will implement management measures to prevent vegetation material from composting. Furthermore, the site will not accept kerbside green or putrescible waste from local council collections.

As there will be no composting on site and no odorous wastes will be accepted, very little, if any, odour will be emitted from the site.

5.3.2 Noise

EMM assessed potential noise impacts from the proposal (see Section 6.5 and Appendix F). The assessment found:

- Operational noise levels for the daytime, evening, night and morning shoulder periods during calm and adverse weather conditions are predicted to meet the relevant project specific noise levels (PSNLs) at all assessment locations.
- Maximum noise levels during the morning shoulder period (6 am to 7 am) are predicted to be below those likely to wake residents.
- The additional traffic movements associated with the facility are predicted to be minor in comparison to existing traffic volumes and the overall increase in road traffic noise level the facility at residences will be negligible.
- The cumulative industrial noise from the facility together with other industrial noise sources is not predicted to increase industrial noise levels above the relevant amenity criteria.
- Construction noise levels are predicted to be below the noise affected management level.

In summary, the facility will not lead to any unacceptable amenity impacts.

5.3.3 Water

Surface water from the proposal will be managed by the surface water management system (see Section 6.6 and Appendices G and H). The proposed stormwater drainage system and rainwater reuse system would improve the quality of the surface runoff discharged from the site and reduce the volume of runoff from the site.

The site's existing concrete surface will be repaired where required so surface water on the site will not infiltrate to groundwater.

The only excavation of the site subsoils will occur at the two GPT sites, a relocated drainage pit and the driveways (see Section 2.13), where impermeable sheeting will be installed to avoid any salinity impacts.

The installation of the GPTs and relocated drainage pit will require excavation of relatively small quantities of soil approximately 2 m below the existing slab level. As noted in Section 6.6.1, data from local groundwater bores indicate that the depth to groundwater in the alluvium in the vicinity of the site was recorded between 6.6–8.1 m below ground level. As such, this construction will not have a significant impact on groundwater.

5.4 Conclusion: Is the proposal a potentially offensive industry?

An assessment of the storage and transport of hazardous materials against *Applying SEPP 33* determined that the proposal is not potentially hazardous.

The facility will not result in unacceptable levels of pollution that will impact the amenity of the area, and as such is not a potentially offensive industry.

5.5 Other hazards

The following other hazards have been considered:

- Flooding: the proposed development is compliant with the requirements for sites nominated within the flood planning area as per the Penrith LEP (see Appendix G).
- Mine subsidence area: the site is not located within a mine subsidence area.
- Bushfire: the site is not located within bushfire prone land.

These factors do not represent a hazard resulting from the development.

5.6 Fire and incident management

An emergency and incident management plan (EIMP) will be prepared that describes procedures to manage incidents (eg spills or fire) that may occur at the site that have the potential to harm to people or the environment. The EIMP will compliment the Pollution Incident Response Management Plan (PIRMP) that is expected to be a requirement under the EPL. An outline of the EIMP is provided below.

5.6.1 Fire and incident prevention

A range of measures will be implemented to prevent air, water and noise emissions from causing impacts to people and the environment. These are documented in Chapter 6 and summarised in Table 7.1.

Additional measures that will be implemented to prevent fires will include:

- the site will be kept tidy;
- refuelling will be undertaken in a refuelling area clear of stockpiles and the measures described in Section 2.1.6 will be implemented;
- the small quantities of hazardous materials that will be kept on site will be stored and mapped in accordance with Australian Standard 1940 (see Section 5.2.1);
- site personnel will be trained in fire response;
- there will be fire extinguishers in vehicles, the weighbridge offices and in the kitchen, office and processing areas of the shed;
- fire hoses will be installed around the site in accordance with the National Construction Code and the relevant Australian Standards;
- the irrigation system will be used to keep materials moist on high fire-risk days; and

- spill response kits will be available should there be a spill of flammable substances.

5.6.2 Incidents

An incident is defined as:

- any inspection/test result that does not meet the acceptance criteria specified in any environmental approvals or relevant standard or legislation;
- any notice of non-compliance issued by a government agency with environmental jurisdiction;
- any non-conformance with identified objectives and targets;
- any action that causes unapproved environmental harm; and/or
- a community complaint.

5.6.3 Incident response

The following actions (as relevant) will be taken in the event of an incident that have the potential to harm to people or the environment:

- site resources including spill kits, heavy machinery and the site irrigation system will be used to respond to incidents immediately if safe to do so;
- emergency services will be contacted immediately for any non-minor incidents, ie where there is a risk that the incident cannot be controlled using site resources;
- all efforts will be made to control potential air pollution from the site during an incident;
- all efforts will be made to contain any contaminated discharge, spill or run-off from the site;
- the site will be made secure; and/or
- at the request of the EPA, groundwater beneath the site and/or surface water leaving the site will be monitored.

5.6.4 Spills

Spill kits will be kept on site to be used in the event that a hydrocarbon spill occurs. The following actions will be taken if a spill occurs:

- the first employee to identify spill will notify the site manager;
- emergency services will be called if there is a threat to human health or property;
- spill kits will be deployed;
- containment measures will be implemented immediately; and
- for reportable spills, the relevant agencies will be immediately notified (see below).

5.6.5 Incident reporting

All site personnel will be required to report environmental incidents (potential or actual harm to the environment) immediately to the Site Manager so that an assessment of the level of response required can be determined.

The following information included in the incident reporting:

- time, date, location and name of person who identified the incident;
- description of the incident and investigation;
- how and why the incident occurred;
- what were the actual and potential environmental impacts;
- corrective actions to reduce short-term recurrence and risk; and
- preventative actions to prevent long-term recurrence of the incident.

Benedict Recycling will notify the relevant agencies of any reportable incident associated with the facility immediately becoming aware of the incident (Table 5.5). As noted below, a detailed report will be provided to relevant agencies within seven days of the date of the incident.

Table 5.5 Incident notification

Incident	Notification period	Recipient
Pollution incident that causes, or may lead to, material harm to the environment	Immediately	EPA, DPE, Ministry of Health, WorkCover, Council and emergency services
All incidents at the facility	By the end of the shift	Site Manager
Exceedance of the limits/performance criteria	Within 7 days	Written report to DPE containing: • date, time and nature of exceedance/incident; • identifies the cause of exceedance/incident; • actions to date; and • proposed measures to address the exceedance.

Records of all incident records will be kept for at least four years.

6 Impact assessment

This chapter provides an assessment of the likely environmental impacts of the proposal as required by Section 79C(1b) of the EP&A Act. Further details of the existing environment, assessment methods, assessment criteria, predicted impacts and proposed management measures are provided in the following appendices:

- traffic impact assessment (Appendix D);
- air quality and greenhouse gas assessment (Appendix E);
- noise impact assessment (Appendix F);
- water assessment (Appendix G); and
- contamination assessment (Appendix H).

6.1 Preliminary risk assessment

This section assesses potential risks to the environment from the recycling facility in accordance with Australian/New Zealand Standard International Organisation for Standardisation 31000-2009 *Risk Management – Principles and Guidelines* (AS/NZS ISO 31000-2009) based on the implementation of management measures described in this EIS.

Two factors were considered in rating risk for each scenario: the potential consequences (ie the severity of the impact) and the likelihood that the impact will occur.

The criteria used to rate the potential consequences of impacts to the environment, individuals and society are provided in Table 6.1. When rating each risk, consideration has been given to the environmental management measures in place at the facility as summarised in Table 7.1. The criteria used to rate the likelihood that the impact will occur are provided in Table 6.2.

Table 6.1 Qualitative measures of consequence

Level	Potential consequences to individuals	Potential consequences to the environment and society
1	Minor injury or short-term health effect (eg requiring first aid)	Limited environmental impacts to a small area of low significance
		Low level repairable damage to commonplace structures
		Short-term local social issues or disruptions
2	Minor injury or short-term health effects requiring restricted work	Minor short-term environmental impacts not affecting environmental systems
		Moderate damage to items of local cultural significance or minor damage to items of regional significance
		Minor medium-term social impacts on local population

Table 6.1 Qualitative measures of consequence

Level	Potential consequences to individuals	Potential consequences to the environment and society
3	Major injury or health effects (eg lost time injuries or permanent disabilities) Minor injury or health effects to multiple people	Medium-term environmental impacts affecting local environmental systems Moderate damage to items of regional cultural significance Ongoing local social issues
4	Permanent total disability Major injuries or health effects to multiple people	Long-term environmental impacts with significant effects locally and some effects regionally Irreparable damage to items of regional cultural significance Widespread local social issues and moderate regional social issues
5	Fatality or multiple fatalities	Regional long-term environmental impacts on critical species, habitat or environmental systems Irreparable damage to items of national cultural significance Ongoing major regional social impacts

Table 6.2 Qualitative measures of likelihood

Level	Likelihood	Approximate chance of occurring during the life of the project
A	Practically impossible	0.1%
B	Not likely to happen	10.0%
C	Possible or could happen	50.0%
D	Likely to happen at some point	90.0%
E	Almost certain to happen	99.9%

The risk rating is determined by comparing the consequences and likelihood ratings using the matrix in Table 6.3. Risk levels comprise:

- Level 1 (high), where risks are likely to be unacceptable and additional management measures, major redesign or relocation of project components will be required;
- Level 2 (medium), where there will be some risk that can be managed with project-specific management measures, or cannot be further reduced but is in line with the societal risks associated with the incident type; and
- Level 3 (low), where risks are manageable and there is little risk.

Table 6.3 Risk rating

	Likelihood				
Consequence	**A**	**B**	**C**	**D**	**E**
5	**Level 2 (medium)**				**Level 1 (high)**
4					
3					
2					
1	**Level 3 (low)**				

The environmental risk assessment (Table 6.4) shows that there is a low risk that the facility will impact the environment. This is principally due to its location in an existing industrial area within a site that has existing environmental management measures in place.

Table 6.4 Environmental risk assessment

Risk description[1]	Environmental risk assessment			
	Consequence	Probability	Risk rating	Predicted impacts
Surface water				
Stormwater runoff is generated from the site and flows off site	2	E	Level 2 (medium)	Existing surface water controls at the site will be upgraded and used to control release of water from the site. This will include the installation of two GPTs.
Facility affects water available for other users	1	A	Level 3 (low)	Facility will be supplied by mains water.
Facility pollutes water	2	D	Level 2 (medium)	The water management system is designed to collect and treat runoff prior to discharge. Materials with the potential to generate leachate will be processed within the processing shed and stored under cover.
Facility impacts salinity	1	C	Level 3 (low)	The site has a "Moderate Salinity Potential" but there is no evidence of soil salinity on the site. This issue will have been dealt with at the sub division construction stage in order to provide a lot which complied with the salinity guidelines. The only excavation of the site subsoils will occur during installation of the water management system upgrades and the new driveway slab. Impermeable sheeting will be installed to avoid any salinity impacts.
Facility increases flood risks	2	C	Level 3 (low)	The site is elevated above the road and would have a low flood hazard given the shallow flood depths and low flow velocities. The site is an existing industrial area and the development will retain the existing features of the site and will not create any adverse impacts on flood behaviour compared to existing conditions.
Facility disturbs acid sulfate soils.	1	A	Level 3 (low)	There is no underlying potential for acid sulfate soils risk in the area.
Groundwater				
Reduced groundwater availability to other users.	1	A	Level 3 (low)	The facility will not take any groundwater and groundwater users will not be impacted.
Reduced water availability to groundwater dependent ecosystems.	1	A	Level 3 (low)	The recycling facility will not take any groundwater and groundwater dependent ecosystems will not be impacted.
Pollution of groundwater	3	A	Level 3 (low)	The site surface will be sealed so surface water on the site will not infiltrate to groundwater.

Table 6.4 Environmental risk assessment

Risk description[1]	Environmental risk assessment			
	Consequence	Probability	Risk rating	Predicted impacts
Air quality				
Dust levels exceed criteria at sensitive receptors	2	C	Level 3 (low)	Dust impacts will be low following the implementation of the control measures, particularly dust suppression.
Odour is detected at sensitive receptors	2	B	Level 3 (low)	Odorous material will not be accepted by the site and vegetation waste will not be allowed to compost. There will be little or no odour emissions from the site.
Significant GHG emissions are generated	1	A	Level 3 (low)	The GHG contribution from the facility to state and national GHG emissions will be low.
Noise				
Noise levels from recycling facility exceeds noise criteria at sensitive receptors	2	B	Level 3 (low)	Noise levels are predicted to be below applicable criteria at sensitive receptors.
Noise levels from road transport exceed noise criteria at sensitive receptors	2	B	Level 3 (low)	There will be a small to negligible increase in traffic movements and hence traffic noise at residential locations.
Ecology				
Direct impacts such as loss of native vegetation and fauna habitat; fragmentation	1	D	Level 3 (low)	The only vegetation within in the site is on the verge facing Peachtree Road. Two trees will need to be removed to construct the exit driveway. However, the development will include improved landscaping in this area.
Indirect impacts such as edge effects, introduced species, noise and impacts to Ramsar wetlands	1	A	Level 3 (low)	The nearest natural features are Peach Tree Creek and the Nepean River approximately 240 m and 400 m west of the site respectively. These will not be impacted by the facility.
Heritage				
Potential to disturb areas of Aboriginal cultural significance	2	A	Level 3 (low)	The site is heavily disturbed and sealed with a concrete slab.
Potential to disturb areas of historical (non-Aboriginal) significance	2	C	Level 3 (low)	The site is heavy disturbed and sealed with a concrete slab. There are no heritage items in the immediate area.

Table 6.4 Environmental risk assessment

Risk description[1]	Environmental risk assessment			
	Consequence	Probability	Risk rating	Predicted impacts
Traffic and transport				
Traffic volumes exceed the capacity of local roads and intersections.	2	B	Level 3 (low)	Vehicles associated with r facility will not significantly increase traffic volumes or decrease the level of service of intersections.
Traffic volumes exceed the capacity of regional roads and intersections.	2	A	Level 3 (low)	Vehicles associated with recycling facility will not significantly increase traffic volumes and or decreased the level of service regionally.
Visual amenity				
Local visual amenity is significantly impacted	1	C	Level 3 (low)	Visual impacts will be low.
Soils and contamination				
Depletion of soil resources.	1	A	Level 3 (low)	Only minor excavation for the water management system and site exit driveway will be required.
Disturbance of existing contamination.	2	C	Level 3 (low)	The site has not been identified as being contaminated. Only minor excavation for the water management system and site exit driveway will be required.
Importation of contaminants.	2	C	Level 3 (low)	Contamination impacts will be low following implementation of the management measures.
Bushfire and hazards				
Impacts to the site from bushfire.	2	A	Level 3 (low)	There are no contiguous areas with trees or shrubs close to the site.
Potential for the activities at the site to cause a bushfire.	3	B	Level 3 (low)	It is unlikely that a fire would start within the site. No flammable wastes will be stored externally and materials stored outside would be kept moist by the site's irrigation system. If a minor fire occurred, the site's fences would prevent it from spreading offsite.

6.2 Traffic and transport

6.2.1 Traffic and transport assessment

A TIA has been prepared for the proposal by EMM (Appendix D). The assessment considered impacts of traffic generation by the proposal on the existing and future traffic network, and was based on average daily vehicle movements to and from the site, including: delivery of 180,000 tpa of waste; dispatch of products and non-recyclable residues; employee and visitor vehicles.

The facility will normally be operated by a single shift of eight employees operating from 6 am to 4 pm. On the days when after hours deliveries may be received until 10 pm in the evening, the site would be operated by about 15 employees in total, operating in two shifts of eight and seven persons respectively from 6 am to 2 pm for the morning shift and from 2 pm to 10 pm for the afternoon/evening shift.

Under the normal site operations with single shift operation site employee car traffic movements would occur during the afternoon traffic peak hour. However, with the two shift operations, there would be no site employee car traffic movements during either the morning or afternoon traffic peak hours in the locality as the site employee car traffic movements would generally travel in to the site at either 6 am or 2 pm and out from the site at either 2 pm or 10 pm. Therefore, the traffic assessment conservatively assesses single shift operations when considering impacts during peak hours and assesses single shift operations when considering impacts during peak hours and two shift operations when considering overall traffic volumes.

The TIA assumed that all site traffic will leave the area via the traffic signal controlled Castlereagh Road/Peachtree Road/Thornton Road intersection 230 m east of the site.

The local road network includes a roundabout at the Castlereagh Road/Mullins Road intersection, approximately 250 m north of the Castlereagh Road/Peachtree Road/Thornton Road intersection. The Mullins Road intersection can also be to access/leave the Peachtree Road industrial area. The minor impacts on the Castlereagh Road/Peachtree Road/Thornton Road intersection (see Section 6.2.2) would be marginally reduced if the Castlereagh Road/Mullins Road intersection is also used by facility traffic to access/leave the industrial area. As such, the assessment of impacts to the Castlereagh Road/Peachtree Road/ Thornton Road intersection is conservative.

The traffic volumes on Castlereagh Road are similar at both intersections and the capacity of the roundabout at the Castlereagh Road/Mullins Road intersection for local traffic is expected to be greater than the capacity of traffic signal controlled Castlereagh Road/Peachtree Road/Thornton Road intersection. Far less facility traffic will access/leave the industrial area via the Castlereagh Road/Mullins Road intersection as the travel distances are greater. Given that minor impacts are predicted for the Castlereagh Road/Peachtree Road/Thornton Road intersection and impacts to the Castlereagh Road/Mullins Road intersection are predicted to lessen, the Castlereagh Road/Mullins Road intersection was not specifically modelled.

As described in Section 2.3, the facility will have limited extended overnight hours to accept overnight deliveries normally associated with night time infrastructure works. Given that there may be no overnight operations during any one specific year, traffic movements associated with those works have been averaged into the daily traffic movements, and subsequently factored into peak hour traffic impact calculations.

6.2.2 Traffic and transport impacts

i Traffic generation

The facility will generate a daily average of approximately 352 daily vehicle movements (ie 176 vehicles travelling to and from the facility), including 134 heavy vehicle movements.

ii Road capacity

The facility will increase the traffic volume on Castlereagh Road by up to 0.6% and by up to 5.0% for heavy vehicles (Table 6.5). These traffic increases will not generally be noticeable to existing road users.

The facility will increase traffic volumes on Peachtree Road by about 7.8% and by up to 37.2% for heavy vehicles (Table 6.5). These traffic increases will generally be noticeable to other traffic using Peachtree Road but would not significantly affect the future road capacity or general maintenance requirements for the road which was designed to carry industrial traffic, including heavy vehicle traffic.

Table 6.5 Summary of daily traffic volumes and increases with the facility traffic

Road	Existing daily traffic (all vehicles)	Additional daily traffic (all vehicles)	Increase (%)	Existing daily traffic (heavy vehicles)	Additional daily traffic (heavy vehicles)	Increase (%)
Castlereagh Road (north of Peachtree Road)	32,000	176	0.6%	1,340*	67	5.0%
Castlereagh Road (south of Peachtree Road)	35,000	176	0.5%	1,610*	67	4.2%
Peachtree Road west of Castlereagh Road	4,500	352	7.8%	360*	134	37.2%

Notes: **Existing daily heavy vehicle traffic movements are calculated using the upper limit of the range of surveyed am or pm peak hour proportions of heavy vehicle traffic.*

iii Intersection capacity

SIDRA traffic modelling of the Peachtree Road/Castlereagh Road intersection, as identified in TIA Figure 2.1 (Appendix D), found that the intersection is currently operating well, with traffic delays corresponding to level of service C.

The increases in traffic due to the project will not change the existing service level of the intersection at Peachtree Road/Castlereagh Road/Thornton Drive (Table 6.6). On the basis that traffic volume increases at the Castlereagh Road/Mullins Road intersection will be much smaller, the existing level of service at this intersection is not predicted to change.

Table 6.6 Summary of existing and proposed intersection operations

Intersection	Peak hour	Existing 2016 base traffic			With facility traffic		
		LoS	DOS	AVD	LoS	DOS	AVD
Peachtree Road/ Castlereagh Road/ Thornton Drive	Morning peak hour (8.00 to 9.00 am)	C	0.73	30.0	C	0.79	31.6
Peachtree Road/ Castlereagh Road/ Thornton Drive	Afternoon peak hour (3.30 to 4.30 pm)	C	0.89	39.9	C	0.90	40.1

Notes: LoS – Level of Service, DOS – Degree of Saturation, AVD – Average Vehicle Delay.

No road widening or reconstruction of Peachtree Road or Castlereagh Road will be required as result of facility-generated traffic.

iv Construction traffic

Facility construction traffic will be much lower than operational traffic with a maximum of 40 daily vehicle movements, comprising ten light vehicles and ten heavy vehicles. Therefore no traffic impacts during construction are predicted.

v On site traffic management

As noted in Section 2.8, light vehicles will only be permitted to stop in the stacking area and adjacent to the hand unloading stockpile (see Figure 2.1). The stacking area is approximately 10 m by 12 m, allowing several vehicles to stack simultaneously. Drivers and passengers will be able to safely exit their vehicles in these areas. Pedestrian crossing zones will be marked between the eastern parking area and the processing shed and between the eastern office and the processing shed. Vehicles moving within the site will be directed by a traffic controller.

As the facility will incorporate two weighbridges for incoming vehicles, vehicles will be able to enter the site without the need for queuing on Peachtree Road. Vehicles will take less than a minute to undertake recording and initial inspection before being able to enter the site, where the load is inspected in detail.

There will be approximately 87 waste deliveries by light vehicles, 45 waste deliveries by heavy vehicles and 22 recycled product or residue dispatched each day (see TIA Table 3.2 Appendix D). Assuming an even distribution over the ten hour daily operational period available for delivery (see Table 2.4), this amounts to approximately 8.7 deliveries by light vehicle and 4.5 deliveries by heavy vehicles each hour, or one vehicle arriving at the site every four to five minutes. As such, there will be sufficient weighbridge capacity for the site.

Vehicles are typically processed on the site in under 15 minutes. With an average of one incoming vehicle every four minutes, there will typically be two to three vehicles (a mix of light and heavy vehicles) on site delivering waste). Dispatching trucks will be scheduled early in the day when there are fewer deliveries.

The swept path analysis at Appendix C of the TIA (Appendix D) indicates that the site has capacity for two 19 m trucks to stack on approach to the truck tipping area. An additional 19 m truck will be able to stack between the entry weighbridge and the southern boundary of the site.

There is weighbridge and vehicle stacking capacity within the site to avoid the need for vehicles to queue in Peachtree Road. Between the processing area, weighbridge and stacking areas, the site has capacity for five 19 m trucks at any one time. In the event there should be a surge in vehicles such as this, staff will be reprioritised from other duties to process incoming trucks. With these measures in place, it is predicted that there will be no vehicle queuing on Peachtree Road.

vi Other transport issues

The facility will not have any impacts on road safety and traffic management, public transport services, pedestrians or cyclists.

As noted in Section 2.1.7, 4 on street car parks will be removed adjacent to the driveways to facilitate ingress and egress of 19 m articulated trucks. This is anticipated to have little impact on the availability of on street parking due to current low usage.

As noted in Section 2.1.7 and Section 2.9, out of hours truck parking will be restricted to areas that are not in use at the end of the day. Parking movements will be overseen by the traffic controller.

6.3 Air quality

An air quality and greenhouse gas assessment was prepared for the proposal by Ramboll Environ Australia Pty Limited (Appendix E).

The assessment considered the potential air quality impacts (including dust, odour and cumulative impacts) of the proposal during both construction and operations on nearby private properties (residential, commercial, industrial and recreational). The assessment was prepared in accordance with the *Methods for the Modelling and Assessment of Air Pollutants in New South Wales*.

Impacts were determined based on consideration of 17 potential sensitive receiver locations (see Figure 6.1) and prevailing meteorological conditions.

Air quality and noise assessment locations

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Figure 6.1

6.3.1 Air quality assessment

i Airborne particulate matter

The existing dust levels; sources of air emissions; potential dust emissions during operation; and the proposed control measures were assessed. The predicted dust levels at the 17 representative receptors were assessed against the relevant NSW EPA ambient air quality criteria.

The assessment assumed that 180,000 tpa of waste will be accepted annually and the processing of this waste will be evenly distributed across the year during times the facility is processing waste.

Cumulative impacts for 24-hour average PM_{10} and $PM_{2.5}$ were evaluated using a statistical approach which presents the likelihood of the proposed site operations causing additional exceedances of the 24-hour average assessment criteria for:

- existing ambient concentrations (NSW OEH St Marys and Richmond datasets);
- existing ambient + model predicted National Pollution Inventory (NPI) - sources concentrations; and
- existing ambient + model predicted NPI + model predicted project operational concentrations.

A risk screening method was adopted to assess potential dust impacts during construction.

ii Odour

The majority of material received by the facility will be inert construction, demolition, commercial and industrial wastes. The proposed facility will not accept odour generating materials, such as putrescible wastes, and will not generate odours onsite, such as through the composting of green waste. Only small amounts of green waste will be stockpiled and measures will be implemented to prevent vegetation waste (including green waste) composting (see Section 2.6). The facility will not accept council kerbside green bin waste or putresibles waste. Therefore, very little or no odour will be emitted from the facility.

However, the SEARs require “a quantitative assessment of the potential air quality, dust and odour impacts of the development in accordance with relevant Environment Protection Authority guidelines”, so some level of odour emission needed to be assumed to enable a quantitative assessment to be prepared.

The odour assessment used odour emission estimates based on Australian operations that accept putrescible waste and/or undertake composting. As described above, these activities will not occur at the facility so the findings of the assessment (odour levels at residences) are highly conservative.

6.3.2 Air quality management measures

The following measures will be implemented to minimise dust emissions from the site:

- Construction:
  - dust and air quality complaints will be recorded, identifying cause(s), and the measures taken to reduce emissions in a timely manner;
  - any incidents that cause exceptional dust emissions and the actions taken to resolve the situation will be recorded;

- the site will be regularly inspected and the inspection results recorded;
- the site speed limit will be 20 km/h;
- idling vehicles will be shut-down where practicable;
- all plant engines will be tuned and maintained regularly;
- all loaded vehicles entering and leaving sites will covered to prevent escape of materials during transport; and
- mains water will be used for effective dust suppression.

- Operations:
  - misters will be installed inside the processing shed and an automatic sprinkler system will be installed in the external areas to dampen all working and trafficable areas as required to prevent dust lift-off;
  - the screening plant will be contained within the processing shed;
  - the entire site will be sealed (as it is already) except for the landscaped verge along Peachtree Road;
  - water sprays will be used over any surfaces that have potential to generate unacceptable amounts of dust;
  - water sprays will be used on stockpiles and vehicle paths as well as the screening plant during opening hours as required; and
  - a wheel wash in will be used to clean truck tyres to prevent mud or sediment being carried to and deposited on the access road (and public roads).

The following measures will be implemented to prevent odour emissions from the site:

- putrescible waste will not be accepted on-site;
- no composting will be undertaken on the site; and
- odorous materials will not be accepted on site.

More detailed measures to prevent odour emissions from the site are described in Section 2.6.

6.3.3 Air quality impacts

i Dust

Predicted incremental and cumulative particulate matter concentrations and dust deposition rates concentrations generated by the facility will be well below the corresponding NSW EPA criteria at the assessment locations (Table 6.7).

Results of the frequency analysis for cumulative PM_{10} concentrations (Table 6.8) and cumulative $PM_{2.5}$ concentrations (Table 6.9) found:

- Cumulative 24-hour average PM_{10}: the frequency of additional exceedance is equivalent to 0.7 days per year or less at all commercial/industrial receptors, and zero for all residential receptor locations.

- Cumulative 24-hour average $PM_{2.5}$: the frequency of additional exceedance is equivalent to 1.6 days per year or less at all commercial/industrial receptors, and zero for all residential receptor locations. The frequency analysis for cumulative 24-hour average $PM_{2.5}$ indicates that the commercial/industrial receptors R1, R2, R5, R6 and R10 could experience one additional exceedance day per year.

Cumulative frequency analysis therefore indicates that emissions from the proposed facility are unlikely to result in an additional exceedance for 24-hour average PM_{10} in the surrounding environment. Emissions of $PM_{2.5}$ may result in an increase in exceedance by one day per year at the receptors immediately adjacent to the site boundary, with no increase in exceedance predicted at receptors further afield. The surrounding receptors are commercial/industrial and exposure for a continuous 24-hour average period at these locations is unlikely.

The potential for cumulative dust impacts in the surrounding environment is therefore low.

A screening assessment of the potential maximum 24-hour PM_{10} and $PM_{2.5}$ impacts that could be experienced during a peak operational day with a throughput of 1,500 tpd has been undertaken (Table 2.2). The results of the screening peak day modelling scenario (Table 6.10)found that while concentrations would increase based on the increased throughput across all receptor locations, the magnitude of increases at surrounding residential receptors (R11 to R17) is considered minor (at most 0.2 $\mu g/m^3$ for PM_{10} and 0.1 $\mu g/m^3$ for $PM_{2.5}$) and no residential receptor would breach the maximum 24-hour PM_{10} and $PM_{2.5}$ criteria as a result of the facility.

As noted in Table 6.8 and Table 6.9, the industrial and commercial receivers may have one additional exceedance day per year. It is expected that the effect of a 1,500 tpd day would be spread across a longer period than the average 600 tpd, coinciding with delivery and dispatch between 4 pm and 10 pm and delivery between 10 pm and 6 am. As such, the practical impact on neighbouring sites will be minimised as they will normally be closed during these times.

As such, the potential for cumulative dust impacts in the surrounding environment is within the relevant EPA criteria for residential receivers for both average and peak day operations, with minor additional exceedances for commercial and industrial receivers.

ii Odour

Predicted odour concentrations generated by the facility will be well below the corresponding NSW EPA criteria at all assessment locations (Table 6.7). The highest odour level predicted was 0.1 Odour Units, compared to the most sensitive NSW EPA criteria of 2.0 Odour Units which applies to urban areas.

Even with the highly conservative assumptions used in the odour assessment, there will be no offensive odours at any locations as a result of the facility.

Effective procedures for handling of green waste has meant that Benedict Recycling has not received any odour complaints in over 30 years of operations at its facilities that except the same types of wastes as would be accepted by the Penrith Waste Recycling and Transfer Facility.

Table 6.7 Incremental and cumulative concentration and deposition results

Receptor ID	Incremental concentration/deposition due to the facility							Cumulative concentration due to the facility + background air quality		
	TSP	PM_{10}	PM_{10}	$PM_{2.5}$	$PM_{2.5}$	Deposition	Odour	TSP	PM_{10}	$PM_{2.5}$
	Annual average	Maximum 24-hr	Annual average	Maximum 24-hr	Annual average	Annual average	99th Percentile 1-second	Annual average	Annual average	Annual average
	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	g/m²/month	OU	µg/m³	µg/m³	µg/m³
Criteria^	**90**	**50**	**30**	**25**	**8**	**2**	**2**	**90**	**30**	**8**
R1*	3.2	4.6	1.3	1.8	0.6	0.5	1	40.4	19.3	6.8
R2*	3.0	6.6	1.2	2.7	0.6	0.5	1	40.1	19.1	6.8
R3*	1.2	2.7	0.5	1.2	0.2	0.2	<1	38.0	18.3	6.4
R4*	1.5	5.3	0.6	2.3	0.3	0.2	<1	38.4	18.4	6.5
R5*	6.7	11.5	2.8	5.2	1.3	1.1	1	43.8	20.7	7.5
R6*	4.7	4.6	1.9	2.2	0.9	0.8	1	42.2	20.0	7.1
R7*	1.7	1.7	0.7	0.8	0.3	0.3	1	39.4	18.9	6.5
R8*	1.7	2.0	0.7	0.9	0.3	0.3	1	39.2	18.8	6.5
R9*	1.7	1.9	0.7	0.9	0.3	0.3	1	39.1	18.7	6.5
R10*	7.8	17.2	3.4	5.7	1.5	1.4	1	45.2	21.4	7.7
R11	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<1	35.6	17.2	6.2
R12	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<1	35.4	17.1	6.2
R13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	36.3	17.5	6.2
R14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	37.3	18.0	6.2
R15	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	47.1	22.9	6.4
R16	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	40.9	19.8	6.3
R17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	36.6	17.6	6.2

NA – Not applicable.

OU - odour units.

^ Criteria for TSP, PM_{10} and $PM_{2.5}$ are applicable to cumulative concentrations.

** Industrial/commercial receptor.*

Table 6.8 Change in frequency of 24-hour average PM_{10} concentrations greater than NSW EPA assessment criterion

Receptor	Ambient (St Marys)	Ambient + NPI	Ambient + NPI + facility	Increase due to facility	Number of additional days exceedance
R1*	0.2%	0.3%	0.4%	0.1%	0.2
R2*	0.2%	0.3%	0.4%	0.1%	0.2
R3*	0.2%	0.3%	0.3%	0.0%	0.1
R4*	0.2%	0.3%	0.3%	0.0%	0.1
R5*	0.2%	0.3%	0.4%	0.1%	0.5
R6*	0.2%	0.3%	0.4%	0.1%	0.3
R7*	0.2%	0.3%	0.3%	0.0%	0.1
R8*	0.2%	0.3%	0.3%	0.0%	0.1
R9*	0.2%	0.3%	0.3%	0.0%	0.1
R10*	0.2%	0.3%	0.5%	0.2%	0.7
R11	0.2%	0.3%	0.3%	0.0%	0
R12	0.2%	0.3%	0.3%	0.0%	0
R13	0.2%	0.3%	0.3%	0.0%	0
R14	0.2%	0.3%	0.3%	0.0%	0
R15	0.2%	0.6%	0.6%	0.0%	0
R16	0.2%	0.4%	0.4%	0.0%	0
R17	0.2%	0.3%	0.3%	0.0%	0

Note: **Commercial/industrial receptor location.*

Table 6.9 Change in frequency of 24-hour average $PM_{2.5}$ concentrations greater than NEPM goal

Receptor	Ambient (Richmond)	Ambient + NPI	Ambient + NPI + facility	Increase due to Project	Number of additional days exceedance
R1*	0.9%	0.9%	1.2%	0.3%	1.1
R2*	0.9%	0.9%	1.1%	0.3%	1.0
R3*	0.9%	0.9%	1.0%	0.1%	0.4
R4*	0.9%	0.9%	1.0%	0.1%	0.5
R5*	0.9%	0.9%	1.3%	0.4%	1.5
R6*	0.9%	0.9%	1.3%	0.4%	1.4
R7*	0.9%	0.9%	1.1%	0.2%	0.7
R8*	0.9%	0.9%	1.1%	0.2%	0.7
R9*	0.9%	0.9%	1.0%	0.2%	0.7
R10*	0.9%	0.9%	1.3%	0.4%	1.6
R11	0.9%	0.9%	0.9%	0.0%	0
R12	0.9%	0.9%	0.9%	0.0%	0
R13	0.9%	0.9%	0.9%	0.0%	0
R14	0.9%	0.9%	0.9%	0.0%	0
R15	0.9%	0.9%	0.9%	0.0%	0
R16	0.9%	0.9%	0.9%	0.0%	0
R17	0.9%	0.9%	0.9%	0.0%	0

Note: **Commercial/industrial receptor location.*

Table 6.10 Incremental (facility-only) peak day concentrations

Receptor	Maximum 24-hour average predicted concentrations (µg/m^3)	
	PM_{10}	$PM_{2.5}$
Criteria	***50#***	***25#***
R1*	11.3	4.5
R2*	16.1	6.6
R3*	6.7	3.0
R4*	12.9	5.7
R5*	28.6	13.0
R6*	11.5	5.5
R7*	4.2	2.0
R8*	4.9	2.3
R9*	4.7	2.2
R10*	35.0	13.2
R11	0.3	0.1
R12	0.4	0.2
R13	0.1	0.1
R14	0.1	0.1
R15	0.1	<0.1
R16	0.2	0.1
R17	0.2	0.1

Notes: 1. - denotes industrial/commercial receptor.*

2.# - criteria is applicable to cumulative concentrations.

6.4 Greenhouse gasses

A greenhouse gas quantification assessment was undertaken by Ramboll Environ. The estimation of greenhouse gas (GHG) emissions for the proposed waste recycling and transfer facility is based on the *National Greenhouse Accounts Factors* (NGAF) workbook (DoE 2015).

6.4.1 Greenhouse gasses management measures

Management measures that will be implemented during operations to minimise greenhouse gas emissions will include:

- on-site equipment will be regularly maintained and serviced to maximise fuel efficiency;
- energy efficient office fittings will be used; and
- energy efficiency will be progressively reviewed and implemented throughout the life of the facility.

6.4.2 Greenhouse gasses impacts

Annual Scope 1 emissions (direct emissions occurring within the boundary of a site or as a result of the site's activities), Scope 2 emissions (indirect emissions associated with the consumption of purchased electricity) and Scope 3 emissions (indirect emissions that occur from upstream and downstream activities) at full production are shown in Table 6.11. These represent approximately 0.0006% of total GHG emissions for NSW and 0.0001% of total GHG emissions for Australia, based on the National Greenhouse Gas Inventory for 2014. This is not considered to be a significant environmental impact.

Table 6.11 Summary of estimated annual greenhouse gas emissions

Greenhouse gas emissions (tonnes CO_2-e/annum)					
Scope 1	**Scope 2**	**Scope 3**			
On-site diesel	**Electricity**	**On-site diesel**	**electricity**	**Product transport (diesel)**	**Employee travel**
724	248	55	37	556	125

Notes: GHG emissions are reported in tonnes of carbon dioxide equivalents (t CO_2-e). Non-CO_2 gases are converted to CO_2-e by multiplying the quantity of the gas by its Global Warming Potential (GWP) – see Table 26 of the NGAF workbook.

6.5 Noise

6.5.1 Noise assessment

A *Noise Impact Assessment* (NIA) was prepared by EMM (Appendix F). The assessment was undertaken in accordance with the *Industrial Noise Policy* (INP)*, Interim Construction Noise Guideline* (ICNG) and *Road Noise Policy* (RNP). The assessment considered impacts to 17 representative assessment locations most likely to be affected by the proposal (Figure 6.1). As per the definitions provided in the INP, residential assessment locations were classified as "urban", as they are exposed to "*through traffic with characteristically heavy and continuous traffic flows during peak times*" and are located "*near commercial districts or industrial districts*."

The processing scenario for the assessment assumes that all plant and equipment is operating simultaneously to allow maximum noise levels to be predicted and, as such is considered to represent a worst-case scenario. Table 6.1 of the NIA (Appendix F) provides additional details regarding the assumed sound power levels for plant and equipment. It is noted that it will be rare for all equipment to be running simultaneously and that more than 180,000 tonnes of waste could be processed annually if all plant was used at full capacity.

As noted in Section 2.3, there will be no processing from 6 pm to 6 am, Monday to Friday, after 5 pm on Saturdays, or on Sundays or public holidays. The NIA has modelled daytime (delivery, dispatch and processing), morning and evening (delivery and dispatch) and overnight (delivery only) operations in order to assess the impact on the facility on the surrounding environment against the appropriate criteria for those times.

Ambient noise levels for Museum Drive, Penrith, in the residential area to the east of the site (noise monitoring location L2) are reported in *Penrith Commuter Car Park Noise report* (GHD 2016). Long-term unattended ambient noise monitoring was also undertaken by EMM at in Recreation Avenue, Penrith, in the residential area south-west of the site (noise monitoring location L1) from 21 July to 5 August 2016 (Table 6.12). Attended monitoring was undertaken by EMM in the surrounding area during deployment of the logger. The monitoring and assessment locations are shown in Figure 6.1.

Where receptors have been grouped together in the following tables, it has been assumed that the ambient acoustic environment at these receptors is similar.

Table 6.12 Summary of measured ambient noise levels

Location	RBL, dB			Ambient (L_{Aeq}) noise level, dB		
	Day	Evening	Night	Day	Evening	Night
L1. 4A Recreation Avenue, Penrith	32	33	30	44	40	44
L2. 1 Museum Drive, Penrith	43	42	40	59	55	49

Background noise levels derived from the long-term noise monitoring results were used to determine the relevant noise criteria for the proposal. Sound power levels for the plant to be used on the site were determined based on sound levels from similar equipment listed in EMM's noise emissions database. Noise levels at receivers were modelled using Brüel and Kjær Predictor noise modelling software.

6.5.2 Noise management measures

i Construction

The following management and mitigation measures will be implemented to minimise construction noise impacts:

- construction activities will be scheduled so that concurrent operation of plant is limited;
- construction plant will be properly maintained to ensure rated noise emission levels are not exceeded;
- construction activities will be guided by AS2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites*;
- a contact telephone number will be provided on a sign at the front of the site which the public may use to seek information or make a complaint;
- any noise complaints will be investigated and required corrective actions implemented rapidly; and
- any complaints and corrective actions will be logged.

ii Operations

The following management and mitigation measures will be implemented to minimise operations noise impacts:

- conventional work practices including:
  - the need to minimise noise and vibration will be regularly reinforced (such as at toolbox talks);
  - noisy activities and adoption of improvement techniques will be identified;
  - the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact neighbours will be minimised;

- the use of equipment that generates impulsive noise will be minimised;
- movement of materials and plant and unnecessary metal-on-metal contact will be minimised;
- material drop heights will be minimised and dragging materials along the ground will be minimised;
- site contact details will be provided on a board at the front of the site;
- any noise-related complaints will be handled promptly; and
- a complaints register will be maintained.

- plant and equipment:
  - quieter plant and equipment will be chosen based on the optimal power and size to most efficiently perform the required tasks;
  - plant and equipment will be operated in the quietest and most efficient manner; and
  - plant and equipment will be regularly inspected and maintained to minimise noise and vibration, and to ensure that all noise and vibration reduction devices are operating efficiently.
- work scheduling:
  - activities will be scheduling to minimise impacts by undertaking all possible work during hours that will least adversely affect sensitive receivers and by avoiding conflicts with other scheduled events; and
  - noisy activities will be scheduling to coincide with high levels of neighbourhood noise so that noise from the activities is partially masked and not as intrusive.

These are standard practices and are widely implemented. They include minimising material drop heights to:

- minimise noise emissions;
- maximise (fuel and time) efficiency by not lifting loads any higher than required;
- reduce wear and prevent damage to site surfaces that requires costly repair; and
- prevent damage to vehicle trays by lowering the load as far as possible before releasing or tipping - truck drivers are generally quick to highlight when drop heights are not minimised.

Dragging materials along the ground can be noisey. However, it, it is inefficient to drag materials along the ground rather than lifting them and quickly damages the site surface leading to costly repairs, so this practice is avoided.

6.5.3 Noise impacts

i Construction

Construction noise levels are predicted to be below the noise affected management level (Table 6.13). The hand-held jack hammer will be the only vibratory equipment that will be used during construction. It will be not be used within 1 m of offsite structures so vibrations will satisfy safe working distances. Notwithstanding, the construction management and mitigation measures listed in Section 6.5.2 will be implemented.

Table 6.13 Predicted construction noise

Assessment locations	Indicative construction noise level $L_{Aeq\ (15\ min)}$, dB	Construction noise management level, dB
	Standard construction hours	Standard construction hours
R1*	69	75 $L_{Aeq(15\ min)}$ (external)
R2*	66	
R3*	54	
R4*	49	
R5*	64	
R6*	68	
R7*	58	
R8*	65	
R9*	66	
R10*	68	
R11	40	53 $L_{Aeq(15\ min)}$ (noise affected) 75 $L_{Aeq(15\ min)}$ (highly noise affected)
R12	40	
R13	40	53 $L_{Aeq(15\ min)}$ (noise affected) 75 $L_{Aeq(15\ min)}$ (highly noise affected)
R14	40	
R15	40	
R16	45	65 $L_{Aeq(15\ min)}$ (external)
R17	42	60 $L_{Aeq(15\ min)}$ (external)

*Note: *Commercial/industrial receptor location.*

ii Operation

Operational noise emission levels are predicted to meet the relevant PSNLs at all assessment locations. for the daytime (Table 6.14), evening (Table 6.14) , night (Table 6.15) and morning shoulder (Table 6.15) periods during all assessed weather conditions. Details for plant and equipment modelling, including utilisation by operational phase (eg delivery, processing and night delivery) has been included in Table 6.1 of the NIA (Appendix F).

Table 6.14 Operational noise modelling results – daytime and evening

Assessment locations		Predicted operational noise level, dB					
		Daytime			Evening (Transporting + deliveries)		
ID	Type	Calm	Winds	Target noise level	Calm	Winds	Target noise level
R1	Industrial	62	62	70	59	59	70
R2	Commercial	63	63	65	60	60	65
R3	Industrial	53	53	70	50	50	70
R4	Industrial	48	48	70	45	45	70
R5	Industrial	60	60	70	57	57	70
R6	Industrial	61	61	70	58	58	70
R7	Industrial	53	53	70	50	50	70
R8	Industrial	61	61	70	59	59	70
R9	Industrial	59	59	70	56	56	70
R10	Commercial	61	61	65	58	58	65
R11	Residential	39	36	48	36	39	47
R12	Residential	39	36	48	36	39	47
R13	Residential	38	41	48	35	38	47
R14	Residential	38	40	48	35	37	47
R15	Residential	35	38	48	32	35	47
R16	Passive Recreation	41	44	50	38	40	50
R17	Active Recreation	43	45	55	40	43	55

Table 6.15 Operational noise modelling results – night and morning shoulder

Assessment locations		Predicted operational noise level, dB							
		Night (deliveries only)				Morning shoulder (transporting + deliveries)			
ID	Type	Calm	Winds	Inversion	Target noise level	Calm	Winds	Inversion	Target noise level
R1	Industrial	45	45	45	70	59	59	59	70
R2	Commercial	47	47	47	65	60	60	60	65
R3	Industrial	39	40	40	70	49	49	49	70
R4	Industrial	35	35	35	70	43	43	43	70
R5	Industrial	47	47	47	70	57	57	57	70
R6	Industrial	48	48	48	70	58	58	58	70
R7	Industrial	39	39	39	70	49	49	49	70
R8	Industrial	45	45	45	70	59	59	59	70
R9	Industrial	45	45	45	70	55	56	56	70
R10	Commercial	47	47	47	65	57	57	57	65
R11	Residential	25	28	28	45	36	39	39	47
R12	Residential	26	29	29	45	36	39	39	47
R13	Residential	24	27	27	45	34	37	37	47
R14	Residential	23	26	26	45	34	37	37	47
R15	Residential	20	23	23	45	31	34	34	47
R16	Passive Recreation	28	30	30	50	37	40	40	50
R17	Active Recreation	26	29	29	55	39	41	41	55

Assessment of the potential for sleep disturbance from the operation of the facility during the morning shoulder period (Table 6.16), based on the background noise monitoring at the relatively quieter ambient noise monitoring location L1, found that internal noise levels from maximum noise events at the facility are predicted to be below those likely to wake residents given that a facade including a partially open window will reduce external noise levels by 10 dB.

Table 6.16 Predicted maximum external noise levels at residential assessment locations

Assessment locations	Predicted L_{Amax} external noise level, dB			L_{Amax}, noise criterion, dB
	Calm	Winds	Inversion	
R11	54	57	57	55 L_{Amax}
R12	54	57	57	
R13	53	55	55	
R14	51	53	53	
R15	47	50	50	

The existing ambient noise levels in the area are steadily increasing from approximately 3 am each day and existing maximum noise levels at night are typically greater than 55 dB and above 70 dB on occasions, ie well above the highest predicted maximum noise level of 57 dB (L_{Amax}) from the facility. Therefore, the maximum noise levels from the facility will be within the levels already occurring in the area and the facility will not significantly increase the number of noise events during the night period.

Assessment of cumulative industrial noise from the facility and other industrial noise sources found the facility is not predicted to increase industrial noise levels above the relevant amenity criteria.

The additional traffic movements associated with the facility will be minor in comparison to existing traffic volumes and the overall increase in road traffic noise level the facility at residences will be negligible.

In summary, it is unlikely that project noise emissions from the facility will cause adverse impacts in the surrounding area.

6.6 Water

6.6.1 Water assessment

A water management report, including an erosion and sediment control plan and stormwater concept plan, has been prepared for the proposal by National Project Consultants Pty Limited (NPC) (Appendix G).

The site is generally flat and at approximately 26 m Australian Height Datum (AHD), with slight slopes towards the drains (see survey at Appendix A). There is a downwards slope over the 10 metres from the southern edge of the building line to the kerb. The gradient is approximately 1:6.6 (13 m run with a 1.5 m drop).

The site is in the Hawkesbury-Nepean River catchment and the local area gently slopes towards the Nepean River. The local area is on the Cumberland Plain which comprises gently undulating plains and low hills rising gradually from the flat, low lying areas (just above sea level) in the north to an altitude of around 350 m on the rolling hills of the Razorback Range to the south.

The nearest watercourse is Peachtree Creek, approximately 240 m from the western boundary of the site. Peachtree Creek drains to the Nepean River approximately 500 m north-west of the site. Boundary Creek is 380 m north of the site and runs east-west, draining into the Nepean River. The Nepean River flows north eventually forming the Hawkesbury River before discharging into Broken Bay approximately 60 km north-east of the site. The Nepean River is a major river and the broader Hawkesbury-Nepean River forms one of the largest coastal rivers in NSW.

The local Quaternary alluvial deposits support a discontinuous and unconfined local groundwater system adjacent to the Nepean River. The alluvial groundwater system is relatively permeable and is recharged via rainfall. The local groundwater flow direction is assumed to be towards the Nepean River. These systems are expected to be hydraulically connected. Data from local groundwater bores indicate that the depth to groundwater in the alluvium in the vicinity of the site was recorded between 6.6–8.1 m below ground level.

6.6.2 Management measures

As shown in the site survey at Appendix A, the site slopes from north to south and towards the eastern and western boundaries, and from north to south. Surface water on the site drains to the stormwater drainage system running along the eastern and western site boundaries.

The existing concrete surface will be repaired, where required, to prevent pooling across the site. The existing stormwater management system detailed below, shown indicatively in Figure 6.3 and with more detail provided in Figure 5 Appendix G.

i Construction phase

An erosion and sediment control strategy will be implemented during the construction phase to manage runoff (Figure 6.2) that will include:

- cleaning of drainage system before and during works;
- installing geotextile cloth to cover the grate of all the drainage inlet pits onsite to remove fine sediment and debris in runoff;
- using gravel filled bags around the perimeter of all the drainage inlet pits to temporarily pond runoff locally and remove medium to coarse sediments from runoff;
- using gravel filled bags across the existing and proposed entry driveway at the site boundary to temporarily pond runoff locally and remove sediments from runoff;
- installing a silt fence across the back of the kerb at the location of the new driveway construction to remove sediment from runoff prior to discharge to the gutter; and
- installation of a 10,000 L rainwater tank within the processing shed for reuse for dust suppression on site.

ii Operational phase (infrastructure)

Infrastructure upgrades are shown in Figure 6.3 and with more detail provided in Figure 5 Appendix G. These include:

- grated perimeter drainage lines will be installed at the entrance and exit driveways;
- runoff sediment traps in the existing and new drainage inlet pits will be used to remove sediment and debris at the source;
- GPTs will be installed at the southern boundary for both drainage lines to remove sediments, oil and grease prior to discharge to the gutter;
- drainage pipes will be relocated and upgraded to accommodate a 10 year ARI event; and
- water efficient fixtures will be installed in the amenity area of the processing shed.

A brochure for the modelled GPT, *Rocla CDS® Unit 0506*, is included in Appendix G. The GPT allows for gross pollutant removal, sediment capture, TSS removal, total phosphorous removal and hydrocarbon capture, with a free oil storage capacity of 150 litres. Each GPT will have a pipe flow of up to 152 L/s, for a combined 304 L/s.

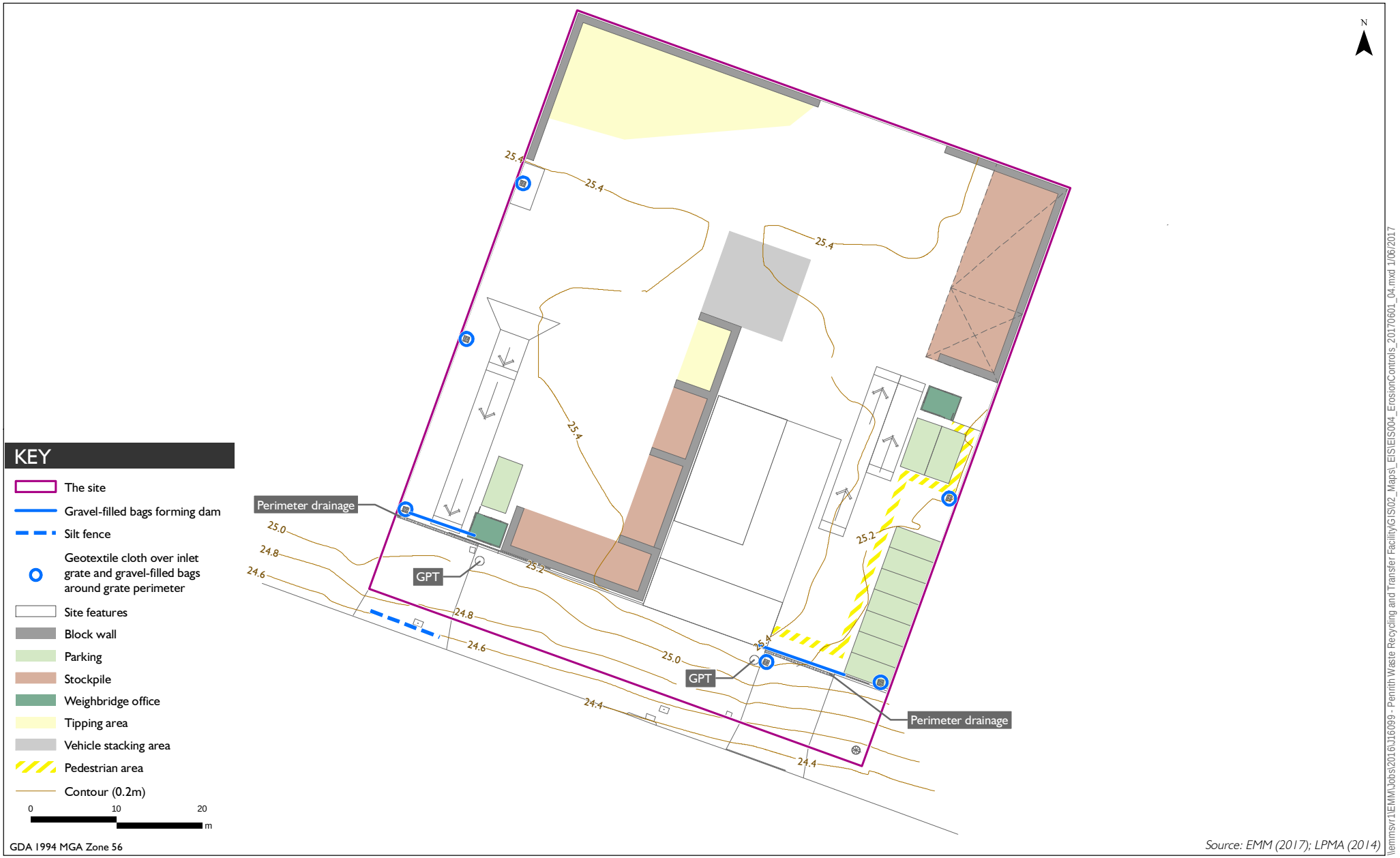
iii Operational phase (monitoring and maintenance)

When the site is operational, the following monitoring and maintenance activities will be undertaken to ensure that the stormwater system operates efficiently and as intended throughout the lifespan of the facility. The proposed measures include:

- the processing shed's guttering system will be inspected on a six monthly basis to remove accumulated debris;

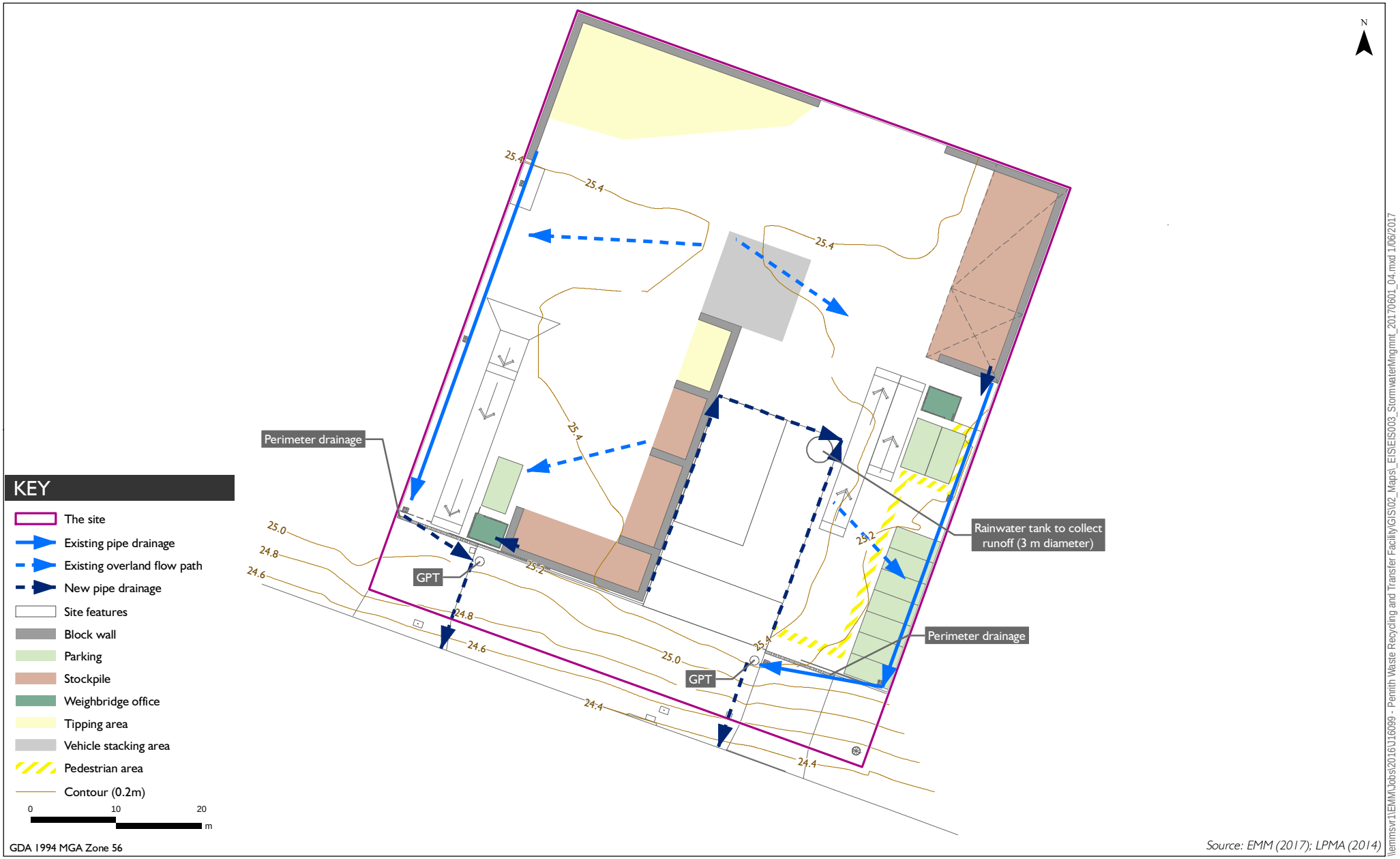
- rainwater tank will be inspected on a six monthly basis for structural integrity;
- drainage inlet pit sediment traps will be inspected on a monthly basis and cleared as necessary;
- drainage system will be inspected on six monthly basis and cleared to remove accumulated materials;
- GPTs will be serviced by a suction truck on a six monthly basis (or earlier, as required);
- green and light waste will be stockpiled under an awning, preventing runoff;
- groundwater will not be used; and
- water will not be used for product processing.

Implementation of the above upgrades and management measures will result in improved quality and reduced volumes of stormwater runoff from the site and will meet PCC requirements for Water Sensitive Urban Design (WSUD) (see Appendix G).



Erosion and sediment control plan

Penrith Waste Recycling and Transfer Facility
Environmental Impact Statement
Figure 6.2



Stormwater management concept plan

Penrith Waste Recycling and Transfer Facility
Environmental Impact Statement
Figure 6.3

6.6.3 Surface water impacts

i Drainage

Average annual runoff volume from the site under existing conditions has been estimated to be approximately 2,419 m^3.

Currently, surface water on the site drains to the southern boundary via the stormwater drainage pipelines running along the eastern and western site boundaries, discharging into the gutter in Peachtree Road (Figure 6.3). This is facilitated by grated inlet pits (600 x 600 mm) with bases lowered 150 mm to incorporate sediment traps and a 3 m long inlet pit in the Peachtree Road drainage system. This general configuration will be maintained, with additional management measures noted in Section 6.6.2.

Average annual rainfall for the site is approximately 803 mm. The site runoff from the site will be reduced following the development of the facility as runoff from the shed will be captured and reused for dust suppression on the site. Water used for dust suppression will reduce site runoff from the site by 12% (about 282 m^3 per year). This will is a significant reduction in runoff volume for the site, which will have a benefit both for the capacity of the stormwater system and for the water quality of the receiving waters.

However, it is not a significant reduction in runoff volume for the overall catchment of Peachtree Creek or the Nepean River. Therefore, while it is expected that the reduced runoff will aid in water quality, the volume of reduced runoff will not significantly impact Peachtree Creek or the Nepean River.

The site is within an industrial estate with allocated areas outside for drainage and riparian corridors. The facility will not adversely impact on watercourses or riparian corridors.

ii Water management and monitoring

The Section 3.2 of Penrith DCP 2014 details the requirements for surface water management and WSUD. It states that development which does not increase the impervious area by more than 250 m^2 does not require onsite detention or water quality treatment for runoff. This is generally appropriate, as increases to impervious surfaces beyond that level may increase the peak flow rate from the site. However, as noted in Section 6.6.2, improvements to the water management systems are proposed as part of the development.

In addition to the improvements, a water monitoring program will be implemented to confirm that runoff discharged from the facility does not have the potential to degrade water quality in Peachtree Creek which receives stormwater from the site and the surrounding industrial area.

Rainfall monitoring will be ongoing while the water quality monitoring program will be divided into two phases: validation monitoring and routine monitoring. There will also be discharge water quality monitoring.

The monitoring program is described below and will be further detailed in the Surface Water Monitoring and Mitigation Plan.

Water discharged from each of the GPTs will be collected and analysed. The GPTs will be fitted with a port to allow efficient sampling.

The analytes to be monitored (Table 6.17) are based on potential contaminants associated with industrial sites generally, and with recycling facilities specifically.

Table 6.17 Analytical suites

Analytical suite	Description	Analytes
Suite 1	Physico-chemical parameters	pH
		Total suspended solids
		Oil and grease.
Suite 2	Major ions	Electrical conductivity
		Calcium (Ca), magnesium (Mg), sodium (Na) and potassium (K)
		Chloride (Cl), sulfate (SO_4) and alkalinity
		Sulfide (S)
		Hardness
Suite 3	Nutrients	Total phosphorus
		Total nitrogen
		Nitrate/nitrite
		Ammonia
Suite 4	Metals and metalloids[1]	Aluminium (Al), silver (Ag), boron (B), berrylium (Be), bismuth (Bi), cadmium (Cd), cobalt (Co), chromium (Cr), copper (Cu), iron (Fe), gallium (Ga), mercury (Hg), lanthanum (La), manganese (Mn), molybdenum (Mo), nickel (Ni), lead (Pb), antimony (Sb), selenium (Se), tin (Sn), strontium (Sr), thallium (Tl), uranium (U), vanadium (V) and zinc (Zn)
		Chromium (VI)
Suite 5	Organics	Benzene, toluene, ethylbenzene and xylene (BTEX)
		Polyaromatic hydrocarbons (PAHs)
		Phenols
		Petroleum hydrocarbons (total recoverable hydrocarbons);
		Polychlorinated biphenyls (PCBs);
		Pesticides
Suite 6	Miscellaneous	Fluoride
		Cyanide
		Surfactants

Note: Dissolved concentration in water samples.

Validation monitoring will be conducted for the first 12 weeks of the operation of the facility. Surface water samples will be collected from the GPTs within 24 hours of each 24-hour heavy rainfall event. The amount of rainfall that will constitute a '24-hour heavy rainfall event' will be defined in the surface water monitoring and mitigation plan. If there are multiple 24-hour heavy rainfall events in a week, samples will only be collected after the first event. Measured concentrations will be compared to receiving water trigger values and groundwater trigger values.

If it can be demonstrated at the end of the validation monitoring period that there is low risk to Peachtree Creek/Nepean River when water is discharged, the validation monitoring program will cease and the routine monitoring program will be commenced (see below).

If the this cannot be demonstrated, sampling will continue at the same frequency, measuring the parameters that remain of potential concern. Alternative management and/or treatment options will also be considered.

The validation monitoring program will be extended to groundwater monitoring if groundwater trigger values are exceeded in surface water.

During routine monitoring, the water quality in the GPTs will be monitored quarterly. The site is fully sealed so any appreciable rain falling in on to the site will all be discharge via the GPTs. A rain gauge will be installed on site so that discharge volumes can be calculated.

The site makes up a small fraction of the total area of the industrial area and therefore runoff from the site will be small fraction of the total runoff from the industrial area and will be greatly diluted. Therefore short-term impacts from elevated pollutant concentrations are very unlikely to occur. The routine monitoring program will focus on the potential loads of contaminants from the site (and hence potential long-term impacts) to Peachtree Creek.

iii Stormwater management system capacity

The proposed new stormwater infrastructure, as shown in Figure 5 of Appendix G, will have a pipe capacity to accommodate runoff up to a 10 year ARI event. As such, all runoff on the site, up to a 10 year ARI event, will pass through the sediment traps and GPTs before entering the stormwater system.

Given that over 90% of annual pollutant load is contained in runoff up to the 3 month ARI storms, the upgraded stormwater infrastructure will have capacity to treat runoff without the need for onsite detention storage.

6.6.4 Flooding

The site is identified in the Penrith LEP as within the flood planning area. The flood planning area is defined as the area of land below the flood planning level and is thus subject to flood related development controls.

The water management report (see Appendix G) includes an assessment against Clause 7.2 (4) of the Penrith LEP. The assessment indicates that the project is compliant with the Penrith LEP requirements for sites nominated within the flood planning area.

The site is not impacted by 200 year ARI or 100 year ARI events, and the pipe capacity along the street has a nominal return period sufficient for >100 year ARI event (*Penrith Central Business District (CBD) Catchment Overland Flow Flood Study* (Cardno , 2015). Relevant extracts are provided at Appendix G.

A small portion (approximately 50 m^2) of the south-east corner of the site is mapped as impacted in a probable maximum flood (PMF) extent (see Appendix F). An extract of the flood study's mapped Probable Maximum Flood Extent is provided in Figure 6.4, with the site bounded in red.

Aside from the small roadside area, which is outside of the fenced operations area, the site is not impacted by ARI or PMF levels. As such, flood impact mitigation measures are not proposed.

Figure 6.4 Extract: Penrith CBD Overland Flow Flood Study 2015, Figure 8.1 PMF Flood Extent

6.6.5 Groundwater impacts

The existing concrete surface will be repaired where required. Consequently, there will be negligible transport of pollutants from the site surface into the groundwater. The only excavation of the site subsoils will occur during the installation of the stormwater management system upgrades (Section 6.6.2) and the driveways. Impermeable sheeting will be placed under the driveway slab.

Installation of the GPTs and drainage inlet pits will require excavation of relatively small quantities of soil approximately 2 m below the existing slab level, sp interaction with contaminated groundwater is unlikely (as this is deeper and assumed to be around 6.6 m BGL). Relocated and upgraded stormwater pipes will be shallower and closer to the existing slab level. Therefore, construction is not predicted to impact groundwater. However, DPI Water will be notified and an aquifer interference licence obtained if more than 3 ML of groundwater needs to be extracted during construction. Sediment excavated during construction will be disposed to an approved facility.

As GPTs and drainage inlet pits are sealed prefabricated units, once installed, they will not impact groundwater.

There will be no ongoing groundwater extraction or take.

The facility will not have any significant adverse impacts on groundwater flows or quality.

6.6.6 Water licensing

As no surface water or groundwater will be extracted for the facility, no water extraction licences will be required (see Section 3.4.3).

6.7 Soils and contamination

6.7.1 Soils

The site is in the Cranebrook soil landscape (OEH 2016). This consists of a terrace on Cranebrook Tertiary Alluvium in the Cumberland Plain. The soils beneath the slab at the site may include:

- Red Kandosols which are soils that lack a strong texture contrast with a massive subsoil;
- Yellow and Brown Sodosols which are soils that lack a strong texture contrast and have a sodic subsoil;
- Yellow and Brown Chromosols which are soils are lacking a strong texture contrast with a pH > 5.5 in the subsoil; and
- Stratic Rudosols which are soils that have negligible pedological organisation. The upper 0.5 m of the soil profile consists mainly of unconsolidated materials.

6.7.2 Acid sulphate soils

The site is not included in the OEH Acid Sulphate Soils (ASS) Risk Maps because there is no underlying potential ASS risk in the area.

6.7.3 Salinity

The site has a "Moderate Salinity Potential" but there is no evidence of soil salinity on the site. This issue will have been dealt with at the sub division construction stage in order to provide a lot which complied with the salinity guidelines.

The only excavation of the site subsoils will occur at the GPT and drainage inlet pit sites and the driveways, where impermeable sheeting will be installed to avoid any salinity impacts.

6.7.4 Contamination

A preliminary contamination assessment (PCA) has been prepared for the site (Appendix H) in accordance with State Environmental Planning Policy 55 – Remediation of Land (2014) (SEPP 55) and *Managing Land Contamination Planning Guidelines: SEPP 55 – Remediation of Land* (Department of Urban Affairs and Planning 1998) (SEPP 55 guidelines). The PCA has considered past or present potentially contaminating activities, providing a preliminary assessment of any site contamination activities.

i Previous uses

The site was initially used for agricultural purposes and was rezoned and redeveloped by Investa Property Group, the previous site owners, in the last 20 years. Due consideration of potential contamination of the site was required at both the rezoning and subdivision approvals phase. It is considered therefore that if the land had been contaminated, sufficient remediation would have been undertaken to render it useable for industrial purposes.

The historic use by scrap metal businesses means that there is potential for contamination in the site, as per the SEPP 55 guidelines, necessitating further investigation via the PCA.

ii Site inspection

The site is currently sealed with a concrete slab, with a large shed in the southern corner. Some minor cracks are evident in the existing concrete seal.

An 'oily sheen' has been observed across the slab. It is believed that grease and oil has gradually accumulated after being washed off of scrap metal during rainfall. While the site is sealed with concrete, the minor cracks in the seal create a potential pathway for minor subsurface hydrocarbon contamination.

An oil filled concrete cutting (ie oil pit for storing oils associated with the scrap metal business) was observed on the eastern side of the site, near the awning. No damage to the concrete cutting was observed.

iii Development controls and planning policies

Planning certificates, obtained under Section 149 of the EP&A Act, specify the development controls and planning policies that apply to the land, including contamination issues. The Planning Certificate for the site, issued on 2 September 2016, was reviewed for contamination issues. There are no references to contamination issues or audits applicable to the site.

iv NSW EPA contaminated land: record of notices

The EPA's Contaminated Land Public Record register (under Section 58 of the *Contaminated Land Management Act* 1997 (CLM Act) lists sites for which the EPA has issued regulatory notices under the CLM Act. The register includes the details of current and former regulatory notices issued.

A search of this register did not return any information on reported contamination or any regulatory notices issued for the site.

v NSW EPA contaminated land: sites notified

The EPA's register of contaminated sites notified to the EPA under Section 60 of the CLM Act provides an indication of the management status of that particular site. Under Section 60 of the CLM Act, properties must be registered with EPA if there is reason to suspect the land is contaminated, and one or more of the notification triggers in the Duty to Report guidelines exist at the site. Upon receipt of a Section 60 notification, the EPA assesses the contamination status of the site to determine whether the contamination is significant enough to warrant regulation by the EPA.

A search of this public register for the suburb of Penrith did not return any information on reported contamination or any regulatory notices issued for the site.

vi NSW EPA: environmental protection licences

The NSW POEO Act requires EPLs, issued by the EPA, to be held by owners or operators of premises where the activities being undertaken are potentially contaminating activities listed in Schedule 1 of the POEO Act. An EPL typically includes conditions that relate to pollution prevention, monitoring and reporting.

A search of this register was undertaken for the site and the suburb of Penrith. No records were found for the site. There are seven records within 2 km of the site were identified.

vii Conclusions

The PCA (Appendix H) concludes there have been potentially contaminating activities in the site and surrounds. This is consistent with the site's setting in an industrial area and industrial activities at the site.

No contamination issues have been identified that would preclude the proposed future land use as a waste recycling and transfer facility with minimal opportunities for soil access.

Minor ground disturbance works, could expose contractors to potentially contaminated soil, groundwater and soil vapour. However ground disturbance works are not expected to extend to depths greater than 2 m BGL, meaning the likely interaction with contaminated groundwater is low (as this is deeper and estimated to be around 6.6 m BGL). There is the potential for interaction by contractors with impacted soil and soil vapour during the construction phase only, if contamination is present. There are no significant environmental receptors close to the site.

The following mitigation actions will reduce the risk of contamination by the new proposed use:

- the concrete slab will be cleaned to remove residual oil;
- cracks in the concrete slab will be repaired where necessary;
- The concrete cutting will be drained of oil and steam cleaned/hot water pressure washed to remove the residual oil. The cutting will then be backfilled with concrete.;
- the construction management plan will include an unexpected finds protocol to ensure that if any contamination is encountered during excavation/construction, it can be appropriately managed; and
- all excavated material will be tested for petroleum hydrocarbons at a laboratory, and if results exceed the applicable guideline limits, the material will be disposed of at a licensed facility.

The proposed development is not expected to exacerbate potential subsurface contamination due to the minimal planned ground disturbance works and the proposed management and mitigation measures will identify and address any contamination that is identified. Further, it will reduce the risk of contamination from activities on the site. As such, a detailed investigation, as defined by the SEPP 55 guidelines, is not required.

6.8 Visual

6.8.1 Introduction

This section provides an assessment of the potential visual impact of the facility.

6.8.2 Visual character

The visual character of the surrounding land to the east, south and west is predominantly industrial, as the site is located within an industrial area west of Castlereagh Road. The dominant visual features in the vicinity are industrial uses and factory units, as shown in Photograph 6.1 and Photograph 6.2.

There is also a cleared and levelled block to the north-west and Bunnings hardware store to the north-east. The Peachtree Hotel is about 70 m east of the site and there is a McDonald's restaurant about 100 m east of the site.

The shed, existing driveway and front fence site are visible from Peachtree Road, while there are more distant views (100–200 m) the top of the shed and the site's back fence from Mullins Road.

The site, along with the surrounding industrial area, is within an area land identified as "Land with scenic and landscape values" on the Scenic and Landscape Values Map in the Penrith LEP 2010.

Photograph 6.1 Concrete batching plant at Peachtree Road

Photograph 6.2 Industrial units at Peachtree Road

6.8.3 Management measures

Management measures that will be implemented during construction and operations to minimise visual impacts will include:

- the verge along Peachtree Road will be landscaped - see conceptual landscape plan in Figure 6.5;
- the processing shed will be painted;
- new walls and fences will be installed; and
- the site's frontage will be kept tidy and litter free.

The verge between the site and Peachtree Road will remain grassed and the existing street trees retained, except for two trees at the exit driveway.

Conceptual landscape plan

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Figure 6.5

6.8.4 Visual impact assessment

i Current Peachtree Road frontage

The site fronts to Peachtree Road to the south, with multi-unit industrial tenancies to the east and west, an undeveloped site to the north-west and a storage yard for a hardware store to the north-east.

The western half of the Peachtree Road frontage currently consists of established vegetation, providing a high level of screening for the existing 3 m wall (Photograph 6.3). The eastern half of the Peachtree Road frontage currently consists of the existing shed, signage and palisade fence/gate on the eastern half (Photograph 6.4).

Photograph 6.3 Western frontage of the site from Peachtree Road

Photograph 6.4 Eastern frontage of the site from Peachtree Road

ii Potential impacts to Peachtree Road frontage

Detailed plans for modification of the Peachtree Road frontage is provided at Appendix A, including dimensions and elevations. This section explains the practical visual impacts of the modification.

A portion of the vegetation on the western edge of the site will be removed to allow for construction of the exit driveway and colorbond gate. These trees are shown in Photograph 6.5 and marked in red drawing A102 of Appendix A. As described in Section 6.11, a new tree will be planted in this area to help offset the loss and aid with screening, with a second tree planted near the eastern boundary.

The colourbound gate will be automated to allow it to be opened and closed when needed and minimise views into the site. When the gate is open, immediate views from the street will be to a weighbridge and the adjacent weighbridge office. These elements will provide screening for the bulk of the site. Trucks at the truck tipping area, moving towards the weighbridge and at the weighbridge will provide effective screening for the truck tipping area.

It is possible that waste in the truck tipping area may be visible from the street when no trucks are present. Due to the configuration of the site, this view would only be possible directly from the exit driveway and along approximately 25 m of the far side of Peachtree Road.

A 4 m high block wall, containing a stockpile with a maximum height of 5 m, will be constructed behind the existing 3 m wall to the west of the shed (Figure 2.1). The remaining vegetation adjacent to the existing wall and shed will provide a high level of screening from the street.

The screening is demonstrated in Figure 6.6 and Figure 6.7, which provide perspectives from the street, and Figure 6.8, which provides a perspective of the block wall from within the site. The figures show the maximum possible visual impact of the stockpile, assuming it is 5 m in height directly adjacent to the block wall. The visual impacts will be minimal, as the existing trees will provide screening for most views, except for a the south-west corner of the block wall, when viewed from the south-west.

Clearing and landscaping is explained more fully in 6.11.1. A new Forest Red Gum will be planted to aid in the screening of the south-west corner of the block wall.

The stockpile in the area will contain excavated soil. If a portion of the stockpile is visible through the vegetation, it will likely be brown and blend in with the vegetation when viewed from a distance.

Actual visual impacts are anticipated to be lower due to the following factors:

- it is not possible for the excavated soil stockpile to have a height of 5 m directly adjacent to the block wall;
- the stockpile will have a maximum height of 5 m further within the site and slope downwards to the wall; and
- the street is approximately 13 m from, and 1.5 m lower than, the base of the boundary wall and block walls.

Given the above, it is unlikely that the stockpile will be visible from Peachtree road, with a minor portion, approximately 1 m, of the block wall visible from the street.

Photograph 6.5 Vegetation to be cleared to construct site exit

Figure 6.6 View north-east to site from Peachtree Road (block wall in grey and maximum stockpile height in red)

Figure 6.7 View north-west to site from Peachtree Road (block wall in grey and maximum stockpile height in red)

Figure 6.8 View from north-east corner of site to south (block wall in grey and maximum stockpile height in red)

The existing palisade fence and gate will be replaced by a 3 m block wall and colorbond automated gate. The colorbond gate will be automated to allow it to be opened and closed as needed. It is likely that the gate will be required to be open throughout operating hours. Elements of the site, including the processing shed and visitor and employee parking areas will be visible from Peachtree Road. However, the bulk and scale of the building will be keeping with surrounding factory units and industrial developments.

As shown in Figure 6.5 and described in Section 6.11.1, Forest Red Gum and grass (*Lomondra longifolia*) will be planted in front of the block wall. The Forest Red Gum will grow to a height of 20 m, and the grass will grow to 1.5 m. This will provide screening for the block wall and enhance the existing visual amenity of the eastern portion of the frontage.

iii Potential impacts to Mullins Road and Coreen Avenue

As shown in Figure 1.1, there is a vacant lot to the north-west of the site, with frontages to Mullins Road and Coreen Avenue. The site measures between 80–200 m from the roads, across the vacant lot. Photograph 6.6 and Photograph 6.7 show the view from Mullins Road to the site from approximately 80 m and 120 m away, respectively.

As shown in Figure 2.1, the north-west corner of the site will have a 4 m block wall constructed around the truck tipping area. This wall would extend over the existing 3 m colorbond fence. The truck tipping area would have a fluctuating height over the course of the day as waste is tipped and moved to stockpile and processing areas. The maximum height of the stockpile would be 5 m.

The block wall, and potentially the truck tipping area stockpile would be visible from Mullins Road and Correen Avenue as distant views (100– 200 m) until the vacant site north of the facility site is developed.

Photograph 6.6 **Rear of site from Mullins road (80 m)**

Photograph 6.7 **Rear of site from Mullins road (120 m)**

More distant views beyond Mullins Road and Correen Avenue, including from the Nepean River, Boundary Creek, Peachtree Creek and Weir Reserve, are blocked by existing development and vegetation.

iv Overall visual impact assessment

The facility is unlikely to have significant visual impacts given that it is located within an existing industrial estate and is consistent with the visual character of the area, with visual screening from established vegetation on Peachtree Road. Infrequent and minor visual impacts at the exit driveway are anticipated, with distant minor visual impacts at the rear of the site.

A review of the visual impacts of the facility against Clause 7.5 of the LEP, *Protection of scenic character and landscape values*, is provided in Table 6.18.

Table 6.18 Protection of scenic character and landscape values

Item	Comment
(1) The objectives of this clause are as follows:	
(a) to identify and protect areas that have particular scenic value either from major roads, identified heritage items or other public places,	The site is with the land identified as "[l]and with scenic and landscape values" by the LEP.
(b) to ensure development in these areas is located and designed to minimise its visual impact.	The site is within an industrial area. The proposal includes measures to improve the visual amenity of the site compared to its current appearance (see Section 6.8.3).
(2) This clause applies to land identified as "Land with scenic and landscape values" on the Scenic and Landscape Values Map.	The site is with the land identified as "[l]and with scenic and landscape values" by the LEP.
(3) Development consent must not be granted for any development on land to which this clause applies unless the consent authority is satisfied that measures will be taken, including in relation to the location and design of the development, to minimise the visual impact of the development from major roads and other public places.	There are no views to the top of the existing shed (about 6 m tall) from Castlereagh Road due to the setback of the site from the road (230 m) and the intervening building heights. Therefore, there will be no views to the top of the new block walls (4 m tall) or the stockpiles (up to 5 m tall). The trees along the banks of Peachtree Creek prevent views from Weir Reserve to the site. There will be views to the facility from Peachtree Drive and Mullins Road. These roads are within an industrial area and the facility will be in keeping with the existing uses in the area.

6.9 Socio-economic

6.9.1 Recreational areas

There are recreational spaces along the eastern bank of the Nepean River. The closest section of Weir Reserve is about 230 m west the site and the Nepean Rowing Club is about 440 m south-west of the site. The air quality and noise assessments considered potential impacts to Weir Reserve (assessment location R16) and found that air quality criteria and noise criteria will be met (see Sections 6.3.3 and 6.5.3). The Nepean Rowing Club is almost twice the distance from the facility as assessment location R16 so will not be impacted. The trees along the banks of Peachtree Creek prevent views from Weir Reserve to the site.

Therefore, the facility will not impact the amenity of Weir Reserve or the Nepean Rowing Club.

6.9.2 Values of homes

The site is within a large existing industrial estate that is zoned IN1 General Industrial and will be consistent with the character of the industrial estate, particularly with the implementation of the project design and environmental management measures.

The closest residences are 620 m from the site with a range of industrial sites between these residences and the site.

Therefore, the facility it is not expected to reduce the value of local homes.

6.9.3 Value of recycling

The recycling sector is economically important and unique as it provides resources or inputs to a range of industries without depleting natural resources. This constitutes a significant distinction between recycling and waste management activity, such as landfill disposal.

The facility will provide local tradesmen with opportunities to recycle their waste locally. This will reduce waste disposal costs, including travel times, assisting to reduce building costs, and hence the price of new houses and other developments in the area.

Direct socio-economic benefits of the facility include the full time employment of eight persons, with more employed during extended operating hours.

Employees will be sourced from the local area where possible, to help alleviate local unemployment.

In addition to the provision of employment, recycling can create a sense of civic pride and satisfaction felt through participation in recycling; and an improved natural resource base for future generations due to higher recycling uptake.

Other socio-economic benefits of industrial development of within the industrial estate include:

- stronger regional industrial activity; and
- utilisation of suitable industrial land and resources.

6.10 Heritage

Correspondence with the Heritage Council of New South Wales (24 August 2016) indicated that the site is in the “general vicinity” of State Heritage Register (SHR) and Section 170 Heritage Conservation Register items. The Heritage Council recommended that a historic impact assessment be prepared.

The heritage items within 1.2 km of the site are listed in Table 6.19.

Table 6.19 Heritage items

Item	Reference	Distance to closet site boundary (m)
State Heritage Register (SHR)		
Victoria Bridge	SHR no. 1950	530
NSW Fire Brigades No. 10 vehicle number plates collection	SHR no. 1519	520
Shand Mason Fire Engine	SHR no. 1716	520
Ahrens Fox PS2 Fire Engine	SHR no. 1717	520
Dennis Big 6 Fire Engine within the Museum of Fire on Museum Drive (itself a local heritage item)	SHR no. 1718	520
Torin Building, 26 Coombes Drive	SHR no.1796	1,190
Section 170 Heritage Conservation Register items		
Peachtree Creek	Penrith Heritage Study (1987)	225
The Nepean River	LEP (1991)	400
Castlereagh Road	Penrith Heritage Study (1987)	189

The site is greater than 500 m from the heritage items listed in Table 6.19. There are a range of industrial uses and roads separating the site from these items. The facility will be visually consistent with the surrounding industrial land use (see Section 6.8) and, with the possible exception of the top of the existing shed, will not be visible from the items listed in Table 6.19. The facility will not impact on Peachtree Creek or the Nepean River (see Section 6.6.3) and will not significantly increase traffic on Castlereagh Road (see Section 6.2.2). Therefore, there are no potential impacts to heritage items and a historic impact assessment has not been prepared.

6.11 Biodiversity

6.11.1 Vegetation removal and landscaping

With the exception of the verge along Peachtree Road, the site is concrete sealed and devoid of vegetation. The verge along Peachtree Road is grassed with vegetation along the block wall on the western portion of the frontage. These include conifers between 5 m and 8 m tall, as well as some lower vegetation. Some vegetation will need to be removed to construct the site entrance (Photograph 6.5).

The conifers removed will be replaced with two *Eucalyptus tereticornis* (Forest Red Gum), a tree with a maximum height of 20–50 m. These will be placed along the southern boundary wall, with one east of the exit driveway (close to where the removed conifers) and one to the east of the entry driveway. Landscaping will also be improved by planting areas of *Lomondra longifolia* - a grass that grows to about 1.5 m tall. Landscaping locations are shown in the landscape concept plan at Figure 6.5.

6.11.2 Introduction of pests

There will be no putrescibles, for example food waste, accepted on to the site. Therefore, animals (native animals or vermin) will not be introduced to the site through waste loads and will not be attracted to the site.

Delivered waste will have a short residence time on the site before being sorted, and the sorted waste dispatched. Waste will not be stockpiled for sufficient time to allow animals (eg rats or termites) to construct nests that could facilitate increasing numbers in the area. If there are termites in timber delivered to the site they are unlikely to cross open ground around the facility or increase termite numbers in the wider area.

7 Statement of commitments

A site specific EMP, to be required as a condition of consent, will be prepared for the proposal that incorporates the site specific measures summarised in Table 7.1. All Benedict staff will be trained to understand and implement the EMP as it relates to the tasks that they are undertaking.

Table 7.1 Summary of mitigation measures to be included in the EMP

Key issue	Management measure
Air quality	Management measures that will be implemented during construction and operations to minimise air quality impacts will include: • Construction: - dust and air quality complaints will be recorded, identifying cause(s), and the measures taken to reduce emissions in a timely manner; - any incidents that cause exceptional dust emissions and the actions taken to resolve the situation will be recorded; - the site will be regularly inspected and the inspection results recorded; - the site speed limit will be 20 km/h; - idling vehicles will be shut-down where practicable; - all plant engines will be tuned and maintained regularly; - all loaded vehicles entering and leaving sites will be covered to prevent escape of materials during transport; and - mains water will primarily be used for effective dust suppression. • Operations: - misters will be installed inside the processing shed and an automatic sprinkler system will be installed in the external areas to dampen all working and trafficable areas; - screening plant will be contained within the processing shed; - the entire site will be sealed (as it is already) except for the landscaped verge along Peachtree Road; - water sprays will be used over any surfaces that have potential to generate unacceptable amounts of dust; - water sprays will be used on stockpiles and vehicle paths as well as the screening plant during opening hours as required; and - a wheel wash will be used to clean truck tyres to prevent mud or sediment being carried to and deposited on the access road (and public roads). The following measures will be implemented to prevent odour emissions from the site: - putrescible waste will not be accepted on site; - no composting will be undertaken on site; and - odorous materials will not be accepted on site. More detailed measures to prevent odour emissions from the site are described in Section 2.6.

Table 7.1 Summary of mitigation measures to be included in the EMP

Key issue	Management measure
Greenhouse gases	Management measures that will be implemented during construction and operations to minimise greenhouse gas emissions will include: • on-site equipment will be regularly maintained and serviced to maximise fuel efficiency; • vehicle kilometres travelled on site will be minimised; and • energy efficiency will be progressively reviewed and implemented throughout the life of the facility.
Noise	Management measures that will be implemented during operations to minimise noise impacts will include: • there will be no processing between 6 pm and 7 am Monday to Friday, before 7 am or after 5 pm on Saturdays, on Sundays, or on public holidays; • the need to minimise noise and vibration will be regularly reinforced (such as at toolbox talks); • noisy activities and adoption of improvement techniques will be identified; • the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact neighbours will be minimised; • the use of equipment that generates impulsive noise will be minimised; • movement of materials and plant and unnecessary metal-on-metal contact will be minimised; • material drop heights will be minimised and dragging materials along the ground will be minimised; • quieter plant and equipment will be chosen based on the optimal power and size to most efficiently perform the required tasks; • plant and equipment will be operated in the quietest and most efficient manner; • plant and equipment will be regularly inspected and maintained to minimise noise and vibration, and to ensure that all noise and vibration reduction devices are operating efficiently; • activities will be scheduled to minimise impacts by undertaking all possible work during hours that will least adversely affect sensitive receivers and by avoiding conflicts with other scheduled events; • noisy activities will be scheduled to coincide with high levels of neighbourhood noise so that noise from the activities is partially masked and not as intrusive; • noise-related complaints will be handled promptly; and • a complaints register will be maintained.
Visual	Management measures that will be implemented during construction and operations to minimise visual impacts will include: • the street verge along Peachtree Road will be further landscaped; • the shed will be painted; • new walls and automated gates will be installed; and • the site's frontage will be kept tidy and litter free. The verge between the site and Peachtree Road will remain grassed and the existing street trees will be retained, except for two trees at the exit driveway, which will be offset within the verge area. The maximum height of stockpiles will be 5 m.

Table 7.1 Summary of mitigation measures to be included in the EMP

Key issue	Management measure
Water	The existing concrete surface will be cleaned and repaired, where required. **Construction phase** An erosion and sediment control strategy will be implemented during the construction phase to manage runoff: • cleaning of drainage system before and during works; • installing geotextile cloth to cover the grate of all the drainage inlet pits onsite to remove fine sediment and debris in runoff; • using gravel filled bags around the perimeter of all the drainage inlet pits to temporarily pond runoff locally and remove medium to coarse sediments from runoff; • using gravel filled bags across the existing and proposed entry driveway at the site boundary to temporarily pond runoff locally and remove sediments from runoff; • installing a silt fence across the back of the kerb at the location of the new driveway construction to remove sediment from runoff prior to discharge to the gutter; and • installation of a 10,000 L rainwater tank within the processing shed for reuse for dust suppression on site. **Operational phase (infrastructure)** Infrastructure upgrades are shown in Figure 6.3 and with more detail provided in Figure 5 Appendix G. These include: • grated perimeter drainage lines will be installed at the entrance and exit driveways; • runoff sediment traps in the existing and new drainage inlet pits will be used to remove sediment and debris at the source; • GPTs will be installed at the southern boundary for both drainage lines to remove sediments, oil and grease prior to discharge to the gutter; • drainage pipes will be relocated and upgraded to accommodate a 10 year ARI event; and • water efficient fixtures will be installed in the amenity area of the processing shed. **Operational phase (monitoring and maintenance)** When the site is operational, the following monitoring and maintenance activities will be undertaken to ensure that the stormwater system operates efficiently and as intended throughout the lifespan of the facility. The proposed measures include: • the processing shed's guttering system will be inspected on a six monthly basis to remove accumulated debris; • rainwater tank will be inspected on a six monthly basis for structural integrity; • drainage inlet pit sediment traps will be inspected on a monthly basis and cleared as necessary; • drainage system will be inspected on six monthly basis and cleared to remove accumulated materials; • GPTs will be serviced by a suction truck on a six monthly basis (or earlier, as required); • green and light waste will be stockpiled under an awning, preventing runoff; • groundwater will not be used; and • water will not be used for product processing.

Table 7.1 Summary of mitigation measures to be included in the EMP

Key issue	Management measure
	A water monitoring program will be implemented to confirm that runoff discharged from the facility does not have the potential to degrade water quality in Peachtree Creek which receives stormwater from the site and the surrounding industrial area. Water discharged from each of the GPTs will be collected and analysed. The GPTs will be fitted with a port to allow efficient sampling. A Surface Water Monitoring and Mitigation Plan will be prepared that details: • rainfall monitoring; • validation monitoring; and • routine monitoring. It will provide trigger values and responses, including contingency measures
Contamination	The following mitigation actions will reduce the risk of contamination by the new proposed use: • the concrete slab will be cleaned to remove residual oil; • cracks in the concrete slab will be repaired where necessary; • the oil pit will be emptied, cleaned and filled/sealed with concrete; • the construction management plan will include an unexpected finds protocol to ensure that if any contamination is encountered during excavation / construction, it can be appropriately managed; and • all excavated material will be tested for petroleum hydrocarbons at a laboratory, and if results exceed the applicable guideline limits, the material will be disposed of at a licensed facility.
Diesel spill	The following measures will be implemented to ensure the safe refuelling of on-site plant and to prevent diesel from entering the environment: • diesel will be supplied to mobile plant by an appropriately licensed and qualified on-site refuelling contractor using a mini-tanker; • the filling area will be bunded so that any fuel spilled during plant refuelling will be captured and will drain to an interceptor trap; • there will be a diesel spill kit stored within the processing shed. Refuelling activities and emergency spill response will be covered within the site's environmental management plan; and • refuelling activities and emergency spill response plans will be included within the site's environmental management plan.

8 Conclusion and justification

8.1 Introduction

This chapter provides justification for the carrying out of the proposal against the principles of ecologically sustainable development (ESD). It also discusses the suitability of the site, any submissions made and whether the proposal is in the public interest as required by Section 79C(1)(c)–(e) of the EP&A Act.

Justification for the proposal based on biophysical, economic and social considerations is provided in Section 1.4.1.

8.2 Principles of ecologically sustainable development

Principles of ESD are defined in Clause 7(4) of Schedule 2 to the EP&A Regulation and include the following:

(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.

Consideration of the facility against the four principles of ESD is provided below.

8.2.1 The precautionary principle

Consideration of the precautionary principle requires two things:

1. That the proponent properly assesses all potential impacts using plausible worst case assumptions and, either, avoids them in project planning or incorporates effective safeguards into the project design.

2. That the relevant authorities make a well-informed decision about the project based on a sound knowledge of the project's implications and impacts, including any limitations on the accuracy of impact predictions.

There are no "threats of serious or irreversible damage" from the facility and planning and design for the facility meets the first test above. Design and management measures incorporated as safeguards are described in Chapters 2 and 6 this EIS. The Statement of Commitments (Chapter 7) summarises the key measures that will be implemented by Benedict Recycling to avoid, manage or mitigate predicted environmental impacts.

The second test will be satisfied by the comprehensive decision-making processes to be followed by NSW Government.

8.2.2 Inter-generational equity

The facility will recycle inert waste materials that would otherwise be sent to lower order uses or landfill, and will extend the benefits provided by existing landfills for current and future generations. Recycled materials will largely be reused in construction projects that will also benefit current and future generations.

8.2.3 Conservation of biological diversity and ecological integrity

The site is largely sealed and devoid of vegetation other than in the verge along Peachtree Road which contains grass and conifers. Given this and that the site is within an industrial area, the existing ecological integrity of the site is poor.

The facility will not impact any threatened biodiversity (flora and fauna) on the site.

The verge will be improved, with the existing street trees retained, except for two trees that required removal at the exit point of the facility. Two additional Forest Red Gums trees will be planted east of the site entry and beds of *Lomondra longifolia* will be planted.

This will improve the biological diversity value of the site and contribute to ecological integrity in the area.

8.2.4 Improved valuation, pricing and incentive mechanisms

The facility will accept inert waste that would otherwise go to lower order uses or to landfill. At least 80% of this waste will be recycled allowing it to be used to produce materials containing recycled material with an economic value. This will minimise the economic (and environmental) cost of disposing of the materials to landfill and, therefore, incorporates improved valuation, pricing and incentive mechanisms. Additionally, the facility will provide a source of recycled construction materials that reduces the development need of sourcing virgin materials.

8.3 Suitability of the site

The site is suitable for the facility given that it is:

- owned by Benedict Recycling;
- currently being used by an auto wrecker and has been previously used for metal recycling;
- is in a region with unmet demand for recycling services;
- within an industrial area that is readily accessible to light and heavy vehicles;
- flat and concrete sealed with a shed suitable for waste processing;
- has existing site services;
- distant from residences;
- has little environmental value currently; and
- can be operated without unacceptable impacts.

8.4 Submissions made

This EIS will be placed on public exhibition by DPE. The public will be invited to provide submissions on the facility this period. These submissions will be considered by DPE, the relevant agencies and the determining authority.

8.5 Public interest

The facility is considered to be in the public interest as it will:

- recycle materials, assisting government recycling targets to be met;
- assist to meet the demand for products with a recycled material content, such as construction materials specified by RMS;
- meet community expectations that unwanted resources are recycled to the greatest possible extent rather than being disposed to landfill;
- provide a suitable use for an industrially zoned site;
- provide socio-economic benefits through employment and stronger regional industrial activity; and
- have only minor or negligible environmental and social amenity impacts with the implementation of the recommended mitigation and management measures.

8.6 Conclusion

This EIS has been prepared in accordance with the SEARs; Clauses 71 and 72 of the EP&A Regulation; and feedback received during consultation.

There are very few recycling facilities in western Sydney accepting the types of wastes that that would be accepted by the proposed facility. The closest facilities are the St Marys Resource Recovery Facility, St Marys, which is close to capacity, and the Penrith Landfill, Mulgoa, which will soon close.

Based on the assessment of the facility provided in this EIS, it is appropriate that the facility is approved subject to implementation of the proposed management and mitigation measures.

Abbreviations

APZ	Asset protection zone
ARI	Average recurrence interval
ARRT	Advanced Resource Recovery Park
CP Act	*Coastal Protection Act 1979*
DA	Development application
DCP	Development Control Plan
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
EIS	Environmental impact statement
EMM	EMM Consulting Pty Ltd
EP&A	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment protection license
ESD	Ecologically sustainable development
GHG	Greenhouse gases
LEP	Local Environmental Plan
JV	Joint venture
LGA	Local government area
LOSP	Light organic solvent preservative
LPG	Liquid petroleum gas
mAHD	Australian Height Datum
MNES	Matter of national environmental significance
NIA	Noise impact assessment
NSW	New South Wales
OEH	Office of Environment and Heritage
PAC	Planning assessment commission
PHA	Preliminary hazard analysis
POEO Act	*Protection of the Environment Operations Act 1997*
RDF	Refuse derived fuel
RMS	Roads and Maritime Services
RNP	Road Noise Policy
RTA	Roads and Traffic Authority
SEARs	Secretary's Environmental Assessment Requirements
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
SSD	State Significant Development
TIA	Traffic impact assessment
TSP	Total suspended particulates
VNEM	Virgin natural excavated material
WMP	Waste Management Plan
WM Act	*Water Management Act 2000*

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