



GLOBAL RENEWABLES™



**ENHANCEMENT OF THE GLOBAL
RENEWABLES UR3R FACILITY
ENVIRONMENTAL ASSESSMENT
AUGUST 2015**

DA No. 323-11-2001-i

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Glossary & abbreviations

ADC	Alternative Day Cover for landfills
EPA	NSW Environmental Protection Agency
MSW	Municipal Solid Waste generated by households
OGM	Organic Growth Medium: compost produced by the UR-3R
UR-3R	Urban Resource – Reduction, Recovery and Recycling (AWT process)
WAMC	Waste Asset Management Corporation

Introduction and overview

EXISTING APPROVAL

On 25 February 2002, the Minister for Planning approved the development of The Eastern Creek Waste Management Centre: Urban Resource – Reduction, Recovery, Recycling Facility (UR-3R Facility) under Section 80(1) of the *Environmental Planning and Assessment Act, 1979*.

The purpose of the approval was to permit the processing of municipal solid waste (MSW) for the production of Organic Growth Medium (OGM) and recovery of reusable recyclables materials.

The approval covers several elements on site, including a receival hall for untreated waste, a composting hall, bio filter for odour management, open stockpiles for maturation and storage of OGM.

SCOPE OF MODIFICATION

The Modification will enable the facility to manufacture a Process Engineered Fuel (PEF) product from material that has in the past been disposed to landfill. By manufacturing a PEF product the UR-3R facility will increase the diversion rate from landfill from the current (65%) to over 90%. ¹

The modification will also facilitate the production of PEF indoors as well as indoor maturation and storage for the OGM product.

The physical changes on the site as a result of the Modification are:

- **External:**
 - The addition of a covered Maturation/PEF Building in which to mature and store OGM (reducing the need for open stockpiles). This building also accommodates the PEF processing equipment.
 - The addition of covered conveyors to transfer OGM and PEF feed materials from the Refining Building to the new Maturation/PEF Building and the Separations Building respectively.
 - The extension of the roof over a currently open area of the Separations Building.
 - The sealing of the land around the Maturation/PEF Building that may be used for product storage.
 - Increasing the parking capacity on the site.
 - Water management system upgrades to address the additional run-off from the new building by installing an underground water retention tank.
 - A new building to house workshop facilities , and
 - The potential installation of solar panelling on the roofs of built structures (subject to confirming feasibility).
- **Internal:**

¹ As measured from waste accepted by the UR-3R Facility (waste received less incompatible waste removed)

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- PEF processing equipment within the new OGM maturation/PEF building will include depending on PEF user requirements: optical sorting, drying, size reduction, baling and wrapping equipment, and
- Some minor equipment modifications within the Separations and Refining buildings to recover PEF feed materials for transfer to the PEF manufacturing building, and for storage or buffering of feed materials.

THE APPLICANT

Global Renewables has designed, constructed and operated alternative waste treatment facilities since its inception in 2000. The UR-3R Facility, the largest of its kind in the Southern Hemisphere, is Global Renewables' flagship facility and commenced operations in 2004.

The site is currently owned by SITA, following its acquisition of Waste Service NSW. Global Renewables holds a 17 year lease on the site from SITA, and owns and operates the UR-3R Facility on the site.

OVERVIEW OF THE SITE AND EXISTING OPERATIONS

The UR-3R Facility is built on the 5 hectare triangular area in the south-western corner of the Eastern Creek Waste Management Centre (WMC). The main operation at the WMC is the Eastern Creek landfill.

The UR-3R facility shares the main entrance and weighbridge with the WMC.

The landfill is licensed to receive 550,000 tonnes of waste per year. In addition to this, 220,000 tonnes of waste per year are delivered to the UR-3R Facility.

An aerial photograph depicting the site's context is provided in **Figure 1**.

NEED FOR THE MODIFICATION

This modification is designed to help NSW meet the targets set in the *NSW Waste and Resource Recovery Strategy 2014-21*² and *NSW 2021: A plan to make NSW number one*³. Specifically, by 2021 the NSW Government aims to divert 75% of waste from landfill (Key Result Area 3), and recycle more than 70% of MSW generated in NSW (Key Result Area 2). The UR-3R Facility, already a 'best in class' facility, will be critical in Western Sydney meeting these goals. The proposed Modification will enable additional valuable resources to be collected and reused which are currently not recovered from the waste stream.

The Eastern Creek region is known to be affected by odour relating to the multiple waste facilities in the area, as described in the *Western Sydney Regional Odour Assessment*⁴ (The Odour Unit, 2013). Covering the OGM maturation stockpiles is expected to further reduce the risk of offensive odour being omitted by the UR-3R Facility in the Eastern Creek valley. This is described in more detail in the accompanying qualitative odour assessment contained in **Attachment 1**.

² <http://www.epa.nsw.gov.au/wastestrategy/warr.htm>

³ <http://www.nsw.gov.au/2021>

⁴ <http://www.epa.nsw.gov.au/resources/pollution/CRWSydOdourPt1.pdf>

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The Modification does not include any combustion of PEF. However, the Modification is consistent with the Resource Recovery Criteria specified in the *NSW Energy from Waste Policy Statement*⁵, both in the specific percentage of total facility feedstock that will be made into PEF, and in the overall principle that energy recovery will not undermine higher order waste management options.

⁵ <http://www.epa.nsw.gov.au/wastestrategy/energy-from-waste.htm>

Existing site operations

SITE FACILITIES AND SERVICES

Figure 2 shows the Eastern Creek WMC site layout. The entrance to the site is from Wallgrove Road, approximately 1.8 km south of the M4 Motorway and less than 0.5 km south of the M7 exit. The WMC site includes a range of facilities and infrastructure, including but not limited to weighbridges, amenities and office buildings, tanks, car parking, and landfill gas flaring.

The Eastern Creek WMC is managed by SITA. The landfill is owned and operated by Waste Asset Management Corporation (WAMC). SITA operate a Greenwaste Processing and Composting Facility (GWPCF) on the WMC to the north of the UR-3R Facility. Energy Developments Limited (EDL) and LMS Energy (LMS) manage the gas extraction activities on the site. The SITA Centre Manager monitors these contractors' performance as required.

The Eastern Creek WMC is open from 4.00 am to 4.00 pm on weekdays and from 8.00 am to 5.00 pm on weekends. It is closed to the public on Good Friday and Christmas Day, but is open to council vehicles for restricted hours on those two days.

Signs at the entrance to the site explain the charging structure, operating hours and types of wastes accepted. They also provide information relating to access and site control.

SITA controls access to the Eastern Creek WMC during the operating hours and also provides after-hours security on a full time basis.

Eastern Creek WMC accepts only solid wastes which are defined by the NSW EPA as suitable for disposal in a Solid Waste Class 1 Landfill. Facilities are provided for the collection and storage of small quantities of household paints, paint solvents and cleaners. Materials collected in this area are removed by contractors licensed to handle and dispose of this type of waste.

UR-3R FACILITY

The UR-3R Facility uses mechanical and biological technologies designed to recover resources from the MSW stream. The Facility uses the existing Eastern Creek WMC entrance road, the weighbridge facilities and a sealed road all the way to the UR-3R facility.

From the point of waste receipt at the Facility, there are four basic elements to the process:

- Waste Receipt and Pre-sorting;
- Waste Sorting;
- Composting and Refining; and
- Maturation.

Figure 3 shows the current Facility layout.

Waste Receipts

After entering the site via the WMC weighbridge, trucks tip waste into the receipt hall where initial pre-screening with mobile plant takes place to remove inappropriate and/or hazardous materials. The waste

is then loaded via the mobile plant onto the plant's single feed line where an additional manual pre-sort is undertaken within a designated enclosed and air conditioned cabin to remove oversized recyclables (cardboard, scrap metals, paper) and hazardous/incompatible materials (for example gas bottles, lead acid batteries) prior to passing through a bag opener and into the mechanical sorting section of the UR-3R facility.

Waste Sorting

Recyclable ferrous and non-ferrous metals, hard plastics, paper and cardboard are recovered via a combination of automated and manual recovery for baling and sale into recyclable markets.

The balance of the materials is separated into an organic rich and an organic poor fraction, based on size and geometry.

The organic poor fraction (which is the oversized larger fraction) is primarily film plastics, textiles and other currently non-recyclable material. This is transferred via conveyor and top loaded into a transfer trailer for transport to the landfill.

The organic rich, undersized fraction is transferred into a state of the art, fully automated composting facility.

Composting and Refining

The organic rich material is composted in a fully automated and enclosed composting system.

The composting system processes the organic fraction in around 14 days under highly controlled conditions of turning, transporting, watering and aeration to produce a stabilized, pasteurized compost material that is ready for refining.

The refining system uses purpose built technology with aerodynamic, screening and milling unit operations to reduce the stone, metal, glass and plastic levels and produce an Organic Growth Medium (OGM) suitable for agricultural and mine site rehabilitation applications. An oversized component that is termed Alternative Daily Cover (ADC) is also produced for use at the adjacent landfill for daily cover operations.

Maturation

Following the refining process the OGM product is required (by EPA regulations) to undergo a further maturation period until it meets a specified level of stabilisation. In order to ensure effective maturation takes place, the refined OGM is transferred from the refining circuit via front end loader onto the open maturation area.

Once matured, the material is loaded via front end loader onto bulk haulage vehicles for transport to market.

The maximum quantity of OGM stored on the maturation area varies depending on operational and market conditions, but the size of the maturation area, along with the facility's EPA licence conditions, allows approximately 8000 tonnes.

MODIFICATION

Modification Overview

OBJECTIVES

The key objective of this Modification is to enhance the operational and environmental performance of the facility by:

- 1 Diverting additional waste from landfill; and
- 2 Reducing the potential for odour and dust emissions.

These key objectives are described below.

Divert additional waste from landfill

Currently the UR-3R facility diversion rate from landfill is 65-70%¹.

The 30-35% that is not diverted is disposed to landfill as either a residual material or an alternative daily cover (ADC) material that is used by WAMC to cover MSW at the end of the day's landfilling operations.

This residual and ADC materials contain significant amounts of plastic film, hard plastics, textiles, contaminated paper and cardboard that, if processed effectively, can be transformed into a high calorific alternative fuel to replace the use of fossil fuels in a number of potential applications.

This Modification will enable the energy within these materials to be recovered, therefore delivering a more sustainable approach to managing Sydney's waste.

TABLE 1 ADDITIONAL RESOURCE RECOVERY DUE TO THE MODIFICATION

MATERIAL RECOVERED	CURRENT RECOVERY (TONNES PER YEAR)	AFTER MODIFICATION (TONNES PER YEAR)	RECOVERY INCREASE (TONNES PER YEAR)
Plastics	300	300	
Paper	2 700	2 700	
Metals	2 500	2 500	
OGM	65 000	65 000	
PEF	0	65 000	65 000
TOTAL	70 500	135 500	65 000

The installation of a PEF manufacturing facility will allow a significant proportion of the residual and ADC material to be transformed into an alternative fuel product to replace existing fossil fuel usage within various industries.

Reduce the potential for odour and dust emissions

The original site layout as depicted in **Figure 3** includes open stockpiles for maturation of OGM. This approach has the potential to generate odour and dust emissions in certain weather conditions.

The Modification will enable the controlled maturation and storage of OGM, which is in line with best practice. It is understood from previous correspondence from the EPA that the covering of maturation

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stockpiles has the potential to be a requirement for similar facilities in the future, hence this modification allows the matter to be addressed proactively.

NEW EQUIPMENT AND BUILDINGS

The Modification's objectives will be achieved through several physical changes to the plant, both within the existing buildings on the site (internal) and through new or extended buildings (external). These are:

- **External:**
 - The addition of a covered Maturation/PEF Building in which to mature and store OGM (reducing the need for open stockpiles). This building also accommodates the PEF processing equipment.
 - The addition of covered OGM, ADC and residual conveyors to transfer the materials from the Refining and Separations Buildings to the new Maturation/PEF Building.
 - The extension of the roof over a currently open area of the Separations Building.
 - The sealing of the land around the Maturation Building that may be used for product storage.
 - Increasing the parking capacity on the site.
 - Water management system upgrades to address the additional run-off from the new building by installing an underground water retention tank.
 - A new building to house workshop facilities.
 - The potential installation of solar panelling on the roofs of built structures (subject to confirming feasibility).
- **Internal:**
 - PEF processing equipment within the new OGM maturation/PEF building will include depending on PEF user requirements: optical sorting, drying, size reduction, baling and wrapping equipment, and
 - Some minor equipment modifications within the Separations and Refining buildings to recover PEF feed materials for transfer to the PEF manufacturing building, and for storage or buffering of feed materials.

The Modifications are described in more detail below.

New OGM Maturation/PEF Production Building

Currently the OGM is matured for up to four weeks in open uncovered stockpiles. The Modification will allow for a new building to be constructed, which will achieve the same operational objective of maturing the OGM, but inside a building instead.

The “existing” aerial photograph and “after Modification” photomontage below illustrate the change. It should be noted that orientation of the pictures is different, and the other buildings are unchanged.

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Existing – the current facility with uncovered outdoor stockpiles



After Modification – artist's illustration showing the new OGM maturation building which also houses the PEF processing equipment



MODIFICATION

Figure 5 and 6 attached show the general arrangement drawing, with a section of the new Maturation/PEF Building along with a larger photomontage displaying the building in the context of existing buildings on the site.

PEF Processing Equipment

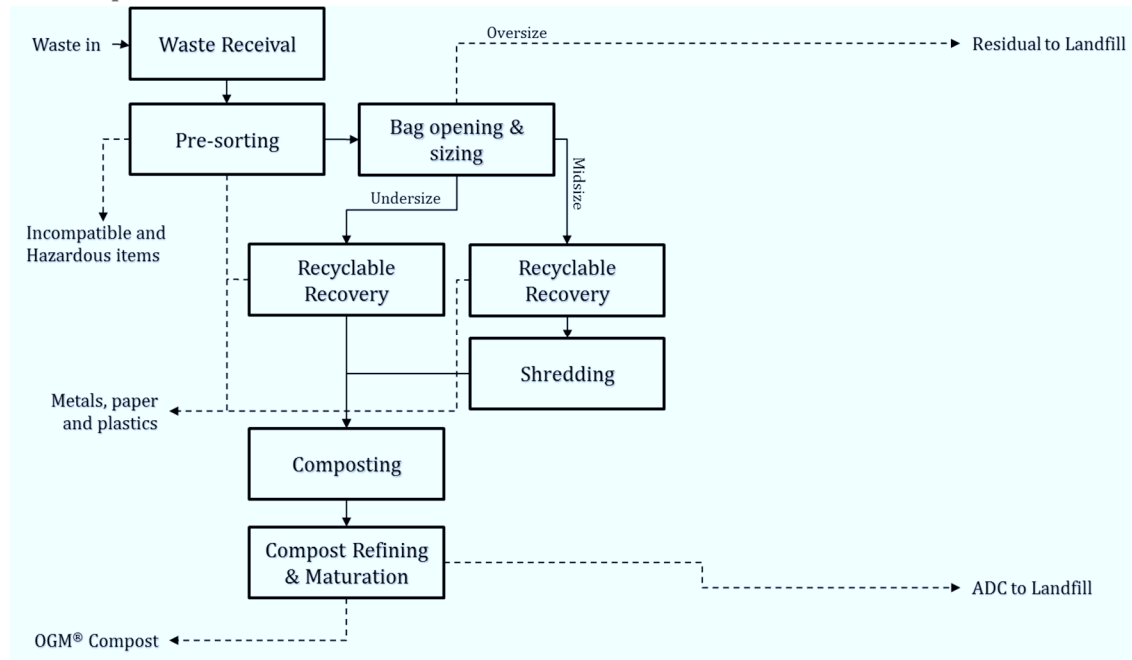
The PEF processing equipment to be housed in the new OGM maturation/PEF building will include equipment to remove PVC plastics that contain elevated levels of chloride, size reduction (shredding) equipment to ensure the PEF product is of a uniformed specific dimension, drying equipment to reduce the moisture content of the PEF and baling and bale wrapping equipment in order to efficiently transport the finished PEF to market.

In addition to the above equipment, additional equipment will be installed in the current Refining and Separations buildings to recover light fraction materials that will be transferred via conveyors to the PEF building.

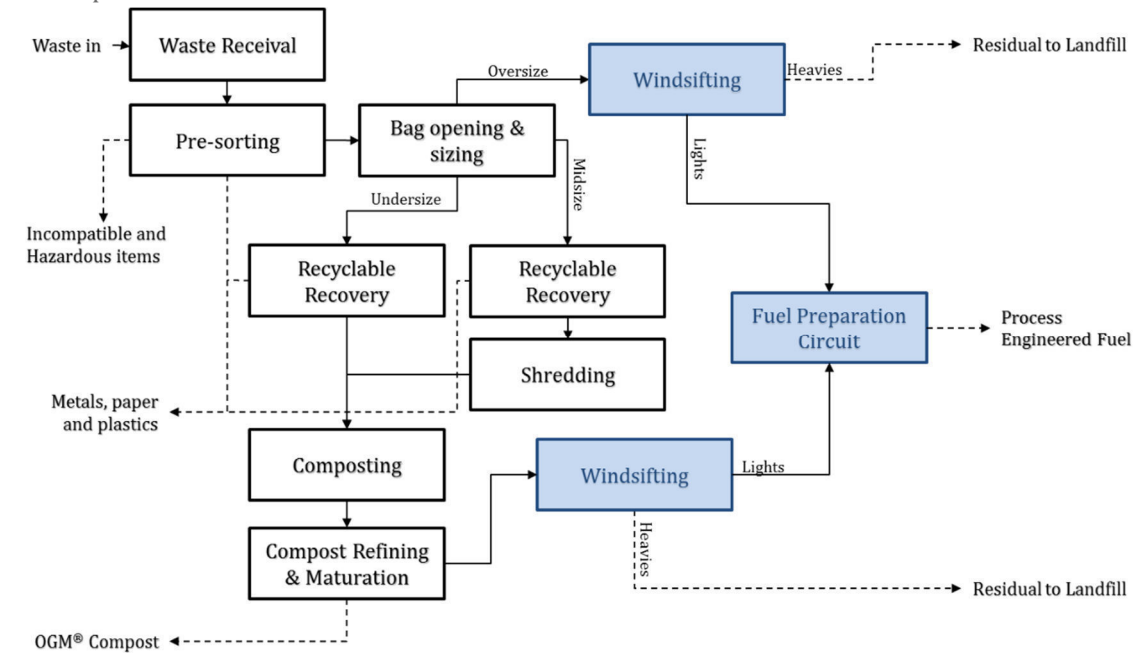
The current and proposed flow sheets are presented below.

MODIFICATION

Current process flow chart



Future process flow chart



New covered OGM, ADC and residual transfer conveyors

To facilitate a more sustainable transfer of the OGM from the refining circuit to the covered Maturation Building, a covered, elevated conveyor will be installed that will remove the current reliance on mobile plant to transfer OGM from the composting to the maturation stage of the process.

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In order to enable the manufacture of a PEF product from the current residual and ADC fractions additional covered conveyors will be installed to transfer material from the refining circuit and from the Separations Building to the new PEF building.

Figure 5 and 6 attached shows the general arrangement drawing with the elevated transfer conveyors in place along with a larger photomontage displaying the transfer conveyors in the context of existing and proposed buildings on the site.

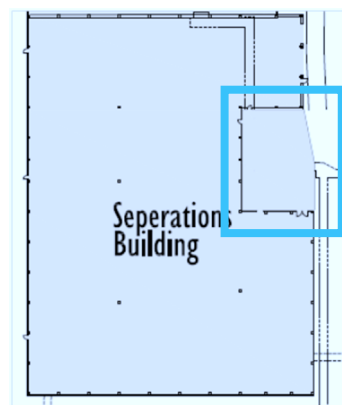
Extension of roof on Separations Building

There is a small section of the roofline of the Separations building which is proposed to be closed in as part of the Modification. The roofline will extend out to sit flush with the existing roof edges. The extent of the additional roof area is approximately 120m².

This is shown on the diagram at right. The roofline currently follows the black outline, and will be extended to the grey shaded area shown within the blue box.

The context of the roof in the overall site is shown in the general arrangement, shaded blue in **Figure 5**.

The extension will allow for additional undercover storage.



Sealing of land around OGM maturation/PEF building

The area around the OGM maturation area is currently unsealed. Part of the Modification is to seal this area to reduce the risk of dust generation and to provide enhanced water management.

The additional area to be sealed is approximately 2,000m².

New Permanent Workshop Building

The Modification proposes the construction of a permanent workshop facility within an available hardstand area directly east of the Separations building. The proposed location of the workshop is shown in the general site layout contained in **Figure 5**.

Introduction of solar electricity

Consistent with Global Renewables' focus on sustainability, the installation of photovoltaic solar panels to generate renewable energy is being investigated. The panels will take up to approximately 6,300m² of roof space on the Waste Receivals, Separation and/or Maturation/PEF buildings, and will be capable of generating approximately 750kW of electricity, which would represent approximately 50 percent of average site electricity requirements.

The feasibility of the panels is being evaluated.

Water management system enhancement

There will be an increase in water captured from the site, as a result of increasing the roof surface area and sealing of the site roadways. Currently, a first flush drainage system operates which captures the first

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flush of rainfall from the hardstand areas in an onsite storm water retention basin (OSD) dam at the northern entry to the site. The initial first flush of runoff is then transferred via pump to a first flush retention dam located at the eastern corner of the site, near the composting building, where the water is reused in the composting process. Subsequent surface water generated from each rainfall event is then released under controlled conditions to the natural drainage channel running along the western boundary of the site.

A surface water assessment was undertaken to ascertain whether the existing system was adequate to manage the additional drainage water generated from the Modification. This assessment showed that additional surface water retention capacity will be required in order to capture the first flush volumes of surface water generated during a one in one hundred year storm event.

The additional water from the newly sealed area is proposed to be captured in a new 230-280m³ (approximate) storage tank. This would service the surface water catchment of the new hardstand and building.

It is noted that the new detention system will not affect the operation or performance of the existing surface water management system, because it specifically address the new surface water generated by the Modification.

Car parking

The Modification will include the augmentation of car parking on the site, on the newly sealed area near the new OGM maturation/PEF building.

Currently there are 26 designated car park spaces on site, the Modification will increase the number of car park spaces to 43.

Planning context

In November 2001, Waste Service NSW applied for development consent for the construction and operation of a Municipal Solid Waste (MSW) processing and recycling facility at the Eastern Creek Waste & Recycling Centre (WRC). The process utilised was the Urban Resource – Reduction, Recovery and Recycling (UR-3R) Process developed by Global Renewables Australia Pty Limited (Global Renewables).

The Minister for Planning granted development consent to the proposal on 25 February 2002, subject to conditions (DA No. 323-11-2001, File No. S07/00516).

An application to modify the consent was lodged in accordance with Section 96 (2) of the *Environmental Planning & Assessment (EP&A) Act 1979*. The Modification sought to increase the waste processing capacity up to 220 000 tonnes per annum (tpa) compared to the approved Facility's 156 000 tpa capacity. The modified layout included indoor intensive composting, the elimination of wastewater irrigation, and the rearrangement of the building layout for improved noise and air quality control. On 25 November 2002 the Minister for Planning amended the development consent and modified relevant Conditions of Consent.

A further application for a minor modification was sought in July 2003 to relocate some of the composting fans, a car park, and access to the maturation area. Consent for this variation was issued on 4 September 2003.

A minor application was sought in December 2006 under Section 96(1A) to enable the UR-3R Facility to undertake intermediate refining of the organic materials prior to the maturation process in order to ensure compost standards were achieved. Consent for this variation was issued on 2 April 2007.

An additional minor application was made in September 2007 to address a minor layout change to the Intermediate Refining modification detailed above. Consent was granted on 28 April 2008.

LEGISLATION RELEVANT TO THIS MODIFICATION

Environmental Planning & Assessment Act 1979

The operation was originally approved under Part 4 of the EP&A Act as DA No. 323-11-2001-i.

This Modification is sought under section 75W of the EP&A Act. Clause 12 of Schedule 6A of the EP&A Act provides that section 75W of Part 3A of the EP&A Act continues to apply to modifications of development consents referred to in clause 8J(8) of the *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulation) following the repeal of \ part 3A.

Because the UR-3R related to State Significant Development, it falls within clause 8J (8) (b) of the EP&A Regulation. That is, section 75W of the EP&A Act continues to apply to modifications to the UR-3R facility.

SEPP (Western Sydney Parklands) 2009

The site is located within the Western Sydney Parklands area, and therefore SEPP (Western Sydney Parklands) applies.

PLANNING

There are several aims of the SEPP, the most relevant being “allowing for a range of commercial, retail, infrastructure and other uses consistent with the Metropolitan Strategy, which will deliver beneficial social and economic outcomes to western Sydney” (Part 1 Section 2 “Aims of Policy”).

This Modification is consistent with that aim because it will generate additional jobs and is broadly consistent with the Draft Metropolitan Strategy for Sydney to 2031 (2013).

The planning considerations of the SEPP are set out in Part 2 Section 12, which provides that development applications should consider a series of matters covering the SEPP’s aims, including environmental and social impacts with specific regard to the SEPP.

Because of the minor nature of this Modification, there are no impacts which would impact on the list of these considerations.

To an extent, the partial sealing of the site may impact on matter (l) “the effect on drainage patterns, ground water flood patterns and wetland viability”. These impacts are described in the section on *Groundwater and surface water* on page 20 below.

A copy of this EA has been provided to the Western Sydney Parkland Trust to ensure that they are informed about the development and can continue to be consulted on the developments within the Parkland’s envelope.

SEPP No. 33 - Hazardous and Offensive Development

The SEPP allows for consideration to be given to the potential for developments to pose threats of hazard or offence, and to provide for screening for potentially hazardous or offensive developments.

The original Environmental Impact Statement for the project undertook a Preliminary Hazard Analysis for the purpose of identifying whether the development was a hazardous or offensive industry. The finding was that there was some potential for odour impacts as a result of the development. Hence, the approval was conditioned to allow for adequate control of odour. Those conditions and odour controls remain relevant for this Modification, given it is substantially the same as that already approved.

NSW Waste Avoidance and Resource Recovery Strategy 2014-21

This Modification directly meets two of the Key Result Areas of the Waste Avoidance and Resource Recovery Strategy:

- *Key Result Area 3: Divert more waste from landfill and*
- *Key Result Area 2: Increase recycling.*

The target set for the waste diversion target is consistent with the target set for this Key Result Area, being:

By 2021–22, increase the waste diverted from landfill from 63% (in 2010–11) to 75%

The Modification is consistent with the objectives to increase landfill diversion, because it will divert an additional 65,000 tonnes of waste currently going to landfill.

PLANNING

Other relevant NSW legislation

The original Environmental Impact Statement indicated that the project would also comply with the following legislation. Given the minor nature of this Modification, this will continue to be the case.

- *Dangerous Goods Act 1975;*
- *National Parks and Wildlife Act 1974;*
- *Occupational Health and Safety Act 1983;*
- *Ozone Protection Act 1989;*
- *Protection of the Environment Administration Act 1991 (as amended by the Protection of the Environment Operations Act 1997);*
- *Protection of the Environment Operations Act 1997;*
- *Public Health Act 1991;*
- *Rivers & Foreshores Improvement Act 1948;*
- *Soil Conservation Act 1938;*
- *Threatened Species Conservation Act 1995;*
- *Traffic Control Act 1909;*
- *Unhealthy Building Land Act 1990;*
- *Waste Avoidance and Resource Recovery Act 2001*

LOCAL GOVERNMENT

Draft Blacktown Local Environment Plan 2013

It is understood that the Modification is consistent with the Draft Blacktown Local Environment Plan 2013. The Modification has been discussed with the Council, and it is expected that the Department of Planning and Infrastructure will refer the Modification to them.

IMPACTS

Environmental Impacts

SUMMARY

The expected changes in impact and required assessment are outlined below. NEED to finalise below table once all qualitative assessment complete

TABLE 2: SUMMARY OF CHANGES IN ENVIRONMENTAL IMPACT

TYPE OF IMPACT	EXISTING IMPACTS	IMPACT DUE TO MODIFICATION	ASSESSMENT PROPOSED
Air quality – odour	Potential for odour from open stockpiles	Reduced	Qualitative impact assessment based on extensive existing baseline data and local area knowledge by The Odour Unit
		Potential for odour from PEF operations	Qualitative impact assessment of odours from new PEF circuit connected to existing Bio filter
Air quality – dust	Potential for dust from open stockpiles	Reduced	None
		Potential for dust from PEF operations	All air from PEF operations discharged into bio filter plenum
Traffic	Up to 55,000 trucks per year (one way), or 200 trucks/day	Additional 1960 trucks per year (one way) or an additional 16 trucks/day to take PEF to market, same impact as when Eastern Creek landfill closes in 2017.	Assessment of the capacity of the site and local road network to accept the incremental increase in truck movements by Traffix
Noise	Noise from operations and traffic	Reduced noise from undertaking majority of OGM load out operations indoors, and transfer of OGM to maturation area by covered conveyor	Description of noise in the context of existing monitoring and management
		PEF processing	Description of noise in the context of existing monitoring and management
Visual amenity	None	Improved, new building vs open organic stockpiles	None
Hazard	None offsite	None	None

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Health impacts	Some potential	Reduced, less dust	None
Greenhouse gas	Reduces emissions by 200,000 tCO ₂ -e per year	Further reduction of approximately 30,000 tCO ₂ -e per year	The GHG saving will be noted
Groundwater and surface water	Surface water discharges	Improved water quality due to increased OGM covered storage	Qualitative assessment by Mott MacDonald
Flora, fauna, heritage	Some site clearing	None	None

The following section describes each potential impact in more detail.

AIR QUALITY

Odour

The odour emissions from the site are currently measured weekly in accordance with the Environmental Management Plan in order to ensure the odour management systems are working as designed.

The main existing management measures are:

- Fast closing doors on the receival hall, where the raw waste is received and the majority of potential odour impacts occur
- Maintaining negative pressure through the buildings to prevent fugitive emissions, with all internal air directed through a biofilter which reduces odour emissions.

By enclosing the majority of the OGM maturation stockpiles, the risk of nuisance odour will be significantly reduced.

A suitably qualified and experienced odour consultant (The Odour Unit) was engaged to provide a qualitative assessment of the predicted odour impacts as part of the Environmental Assessment for the Modification. This assessment is included in Attachment 1, letter dated 7 April 2014. The key finding (page 4) was:

It is clear that the proposed development will further decrease the low level, but at times still significant, odour emissions from the OGM maturing and storage activities on the UR-3R site. TOU finds that GR has appropriate odour monitoring and management procedures on the site to be able to assess the extent to which the development eliminates the off-site OGM-related odour impacts, with a backup option of capture and treatment of the OGM building ventilation air, if required.

If the existing management measures, monitoring and controls are found to not be adequate, the existing process of review will identify any shortcomings, and enable alternative management measures to be introduced if required.

PEF operations does have the potential to generate odour. Air from the PEF circuit will be captured and directed via ducting to the current onsite odour management system. The Odour Unit was also engaged

IMPACTS

to provide a qualitative assessment of the predicted odour impacts from the PEF circuit, and this assessment is also included in Attachment 1, letter dated 9 May 2015. The key finding (p4) was:

The overall finding from the assessment is that the existing bio filter system is capable of receiving and treating the increased loading from the proposed PEF system without any detrimental effects on odour removal performance.

The assessment by The Odour Unit also provides comments on overall fugitive odour emissions resulting from no air extraction from the new building that will house the OGM and the PEF circuit stating that (p3):

Given the PRF circuit will draw its cooling air from within a new building for which no air extraction or treatment is deemed necessary.....This should ensure that any related or unrelated fugitive odour emissions into the room are captured and treated in the bio filter.

Dust

The Environmental Protection License for the site states in O3.1 that:

All operations and activities occurring at the premises must be carried out in a manner that will minimize the emission of dust from the premises.

It is apparent that the covering of the majority of the maturation stockpiles will mean the potential for dust generation is significantly reduced. Additionally, the sealing of additional parts of the site will lead to reduced dust generation from traffic movements within the site. Therefore, the risk of generation of dust is expected to reduce.

Should there be a future issue arise with dust, the existing environmental management system will capture the issue and ensure that an alternative management regime is introduced with suitable controls.

The PEF operation has the potential to generate dust. In order to mitigate this risk all air emissions from the PEF operation will be directed to the bio filter that will remove the dust loads.

TRAFFIC AND TRANSPORT

The site currently accepts trucks through a common entrance for both the WMC and the UR-3R operations. The maximum extent of additional truck movements will be for the 98,000 tonnes of finished PEF product transported from the UR-3R facility to offsite markets. This material is currently transported via trucks to the adjacent landfill so does not actually leave the boundary of the WMC. However when the Eastern Creek landfill ceases operation in 2017 this material will need to be transported to an alternative landfill which most likely will be offsite. This is the basis on which the UR-3R Facility was originally consented with an expectation at that time that the Eastern Creek landfill would cease operation in 2015 and prior to the construction of the M7 motorway.

The finished PEF material will be loaded into either B-double truck configuration or into shipping containers with a maximum payloads of 44.5 tonne/truck. This represents an additional maximum of 3920 truck movements per year (or the equivalent of 16 trucks/day) arising from the Modification or no change compared to when the Eastern Creek landfill closes.

IMPACTS

It is noted that the landfill operation which currently accepts approximately 550,000 tonnes per year has a closure date of 2017⁶. After this time, it is not known whether the WMC will accept any truck movements associated with the landfill. Any reduction in the trucks entering the WMC after 2017 will more than offset the increase in truck movements associated with this Modification. It is further noted that, should the Modification not proceed, residuals and ADC that are currently transported within the boundary of the WMC would need to be transported outside of the WMC for disposal.

The site is located near the junction of the M4 and M7 with the site entrance on Wallgrove Road which services only the industrial occupants in the immediate vicinity.

To verify the minor nature of the Modification in the context of traffic, a suitably qualified and experience consultant, Traffix, was engaged to provide a qualitative assessment. This assessment is provided in Attachment 2. The key finding was:

In summary, the proposed Modifications are considered supportable from a traffic perspective. The PEF output will generate a 'worst case scenario' of up to an additional 4 truck movements (2 in 2 out) from the site during the critical a.m peak period which will have a negligible impact on the performance of the surrounding road network. (p.3)

NOISE

The site operates within noise limits applied by the Environmental Protection Licence and Development Consent, which provide noise limits at the nearest residential receiver.

Noise is currently managed on site through the EMP, which includes regular monitoring. Noise is typically comfortably within the noise limits.

The only potential for additional noise impacts from the facility as a result of the Modification could be the increase in truck movements (however these truck movements already exist on site with the operation of hauling the ADC and residuals. These movements operate at lower payload densities so more truck movements than what is proposed) and noise from the PEF manufacturing facility. Both the traffic and processing noise will remain within the noise limits for the site. This will be offset by a reduction in mobile plant noise generated when loading out OGM, as the majority of OGM load out operations will be undertaken indoors. The new PEF equipment is replacing redundant equipment from within the separations buildings, so it is not expect to cause a net change in the equipment noise.

The existing management measures, monitoring and controls will be adequate to assess the actual impact on noise once the Modification is completed. They will also identify any shortcomings, and enable alternative management measures to be introduced if required.

VISUAL IMPACT

The additional building on the site proposed in this Modification will not be visible from any of the nearby public roads or private properties. Therefore, visual impact is not a consideration.

⁶ Waste Assets Management Corporation, http://www.wamc.nsw.gov.au/sites/eastern_creek

IMPACTS

HAZARD ANALYSIS – ODOUR AND FIRE/EXPLOSION

Odour is discussed as part of the Air Quality section above, with already low impacts to be reduced as a result of the modification

The Preliminary Hazard Analysis⁷ for the site stated that:

No hazardous incident resulting in fire or explosion was shown to have an offsite impact.
(p. 12)

The Modification will not alter the hazard levels associated with the facility, therefore no further assessment is proposed.

HEALTH IMPACTS

Since commissioning the UR-3R plant in early 2004 no health risks have required a management response. Given the incremental nature of the Modification, and the improvements in dust control, health is not a consideration of the Modification.

GREENHOUSE GAS

At the UR-3R Facility, 90 tonnes CO₂-e of greenhouse gas emissions are avoided for every 100 tonnes of waste processed, and over 200,000 tonnes CO₂-e of emissions are avoided each year.

The Modification will further reduce the greenhouse gas emissions generated from waste by approximately 30,000 tonnes CO₂-e per year.

The calculations above refer only to the avoided methane emission from the landfilling of waste. There will also be a further greenhouse benefit associated with the use of the PEF to replace coal or other fossil fuels. This reduction is outside the scope of this project, and will be realised by the customers of the PEF.

GROUNDWATER AND SURFACE WATER

The site is currently required to collect the first flush of surface water, and monitor water discharges daily when they occur.

The effect of covering the maturation stockpiles with a building will see a net improvement in the quality of surface water on the site, because it is less likely to come into contact with organic material. The impact on quality will therefore be positive.

There will also be an increase in the capture of rain water as a result of increasing the roof surface area on the site and sealing some parts of the ground which are currently unsealed.

To verify the minor nature of the Modification in the context of surface water, a suitably qualified and experience consultant, Mott MacDonald, was engaged to provide a qualitative assessment. This assessment is provided in **Attachment 3**. The key finding was:

⁷ Granherne, 18 September 2001

IMPACTS

- In order to maintain the current discharge limitations from the site, additional surface water retention capacity is required.
- Two options have been recommended by Mott MacDonald that require between 230m³ to 280m³ of additional retention capacity to be constructed onsite.

Selection of the preferred option will be concluded during the detailed design phase of the project.

It is noted that the new retention system will not affect the operation or performance of the existing surface water management system, because it specifically addresses the new surface water generated by the Modification. Therefore, the Modification will not result in any change of impact related to surface water as a result of the Modification.

No change to groundwater will take place as a result of the Modification.

FLORA, FAUNA AND HERITAGE

The Modification is within the envelope originally assessed for flora, fauna and heritage. The new building will be located on an area of land which currently contains the maturation stockpiles.

Therefore, there will be no potential impact as a result of the Modification.

Consultation

NSW ENVIRONMENTAL PROTECTION AGENCY (EPA)

The EPA has been consulted during preparation of the Environmental Assessment, and in the context of the required variation to the Environmental Protection Licence.

The EPA indicated through consultation that the Modification was welcome from the perspectives of odour control and landfill avoidance. No particular issues with the Modification were raised.

It is expected that the EPA will be a referral agency and that the Department of Planning & Infrastructure will seek formal feedback on the assessment requirements.

BLACKTOWN CITY COUNCIL

Global Renewables has met with Blacktown City Council to discuss the Modification.

The Council raised the issue of ensuring adequate car parks are available, and suggested referring the Modification to the RMS. They also suggested that Western Sydney Parklands Trust was involved in the Modification. These matters have accordingly been addressed in this EA.

It is expected that the Council will be a referral agency and that the Department of Planning & Infrastructure will seek formal feedback on the assessment requirements.

ROADS AND MARITIME SERVICE (RMS)

Due to the increase in truck movements associated with the development, it is anticipated that the RMS will be a referral agency as part of the assessment process.

COMMUNITY

Global Renewables is part of the Eastern Creek Community Group, which represents the community and several of the larger businesses in the Eastern Creek area. Global Renewables has discussed the Modification with the group and will continue to discuss at future meeting.

WESTERN SYDNEY PARKLANDS TRUST

The land on which the UR-3R facility is located is inside the Western Sydney Parklands zone. The planning considerations of this are set out above in discussion of the State Environmental Planning Policy (Western Sydney Parklands) 2009, and this Modification is consistent with that SEPP.

A copy of this EA has been provided to the Western Sydney Parkland Trust to ensure that they are informed about the development and can continue to be consulted on the developments within the Parkland's envelope.

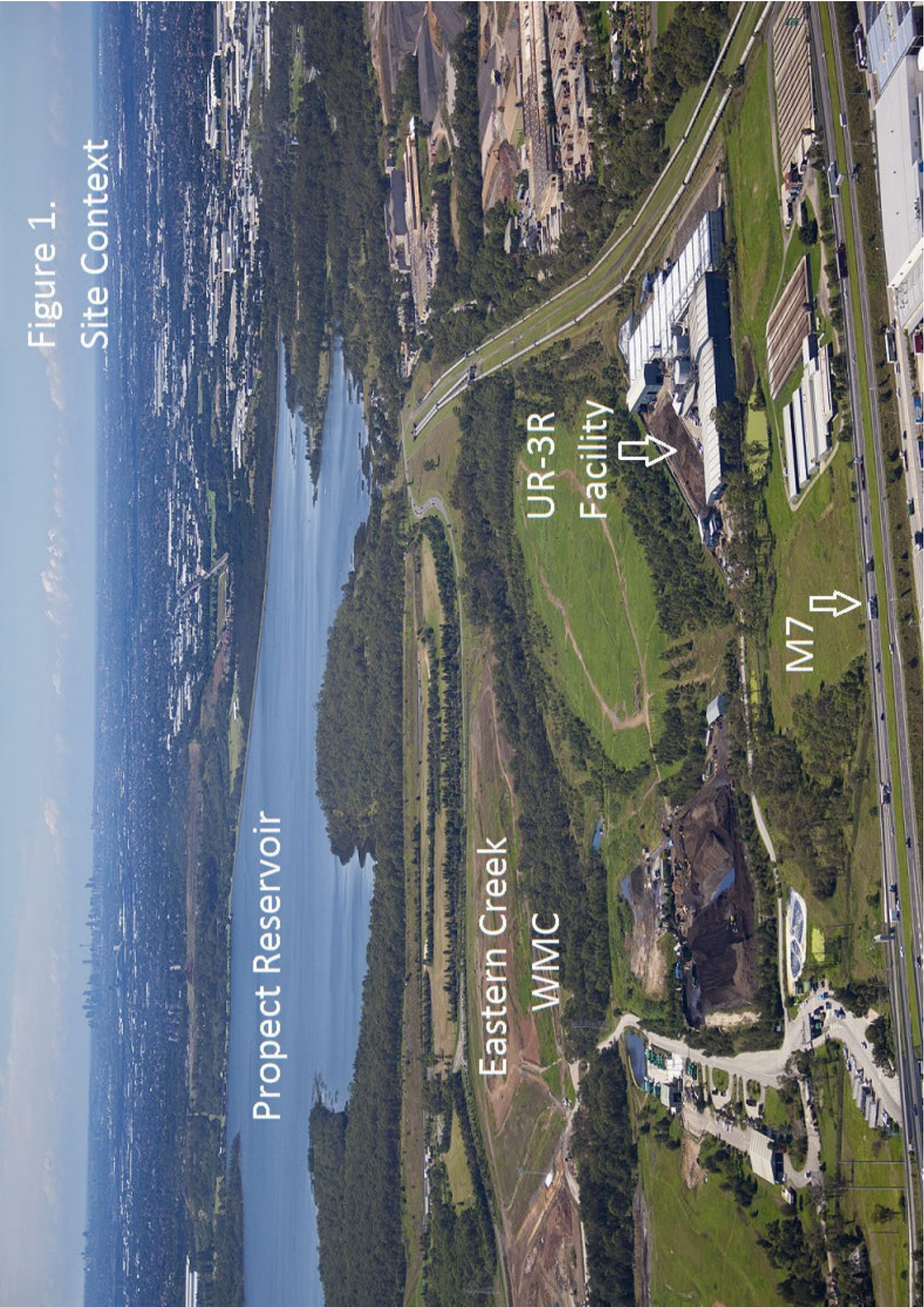
Figure 1.
Site Context

Propect Reservoir

Eastern Creek
WMC

UR-3R
Facility

M7



0 100 200
feet

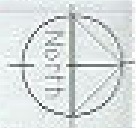


Figure 3.1
Eastern Creek and Site Layout

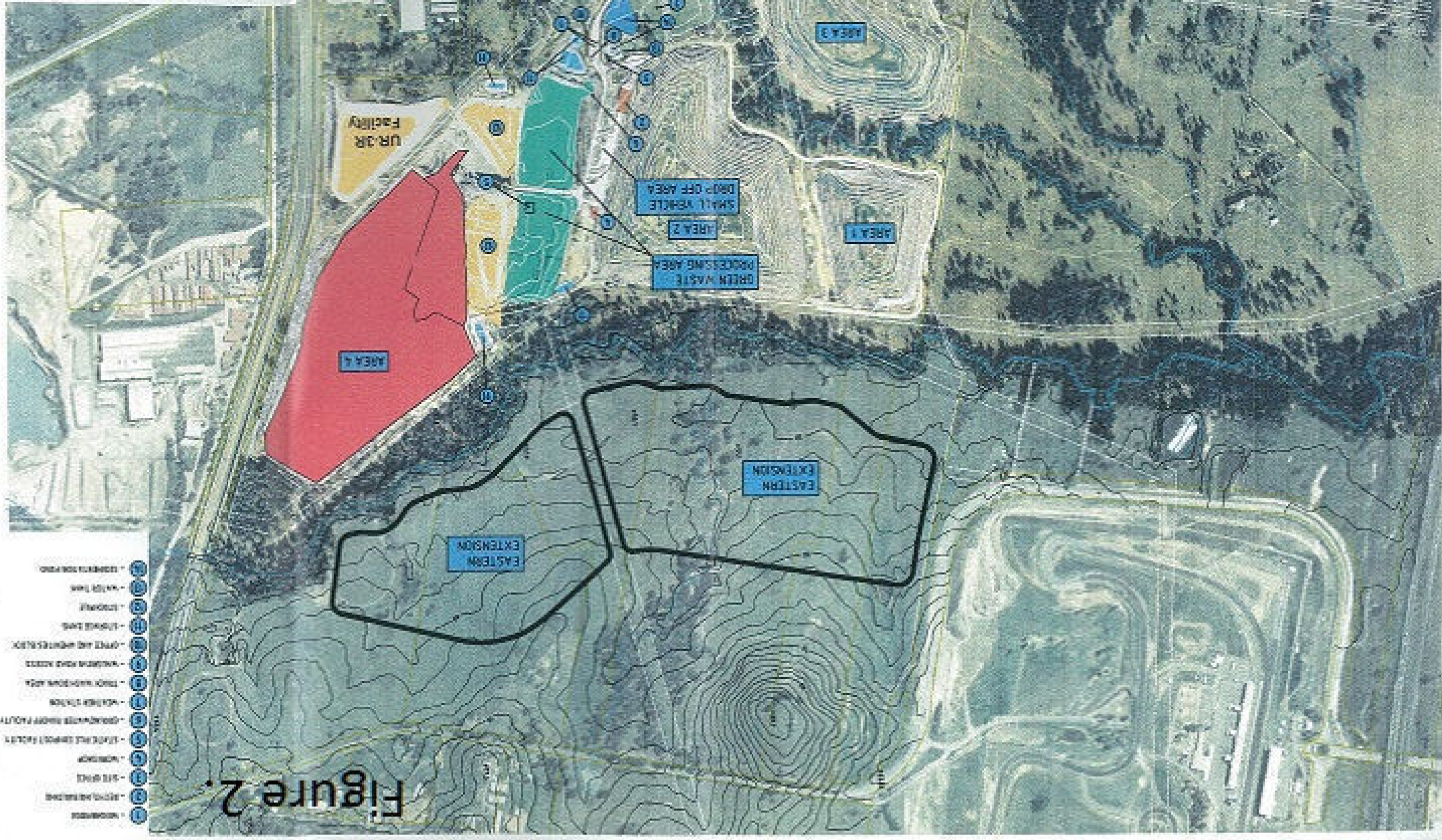
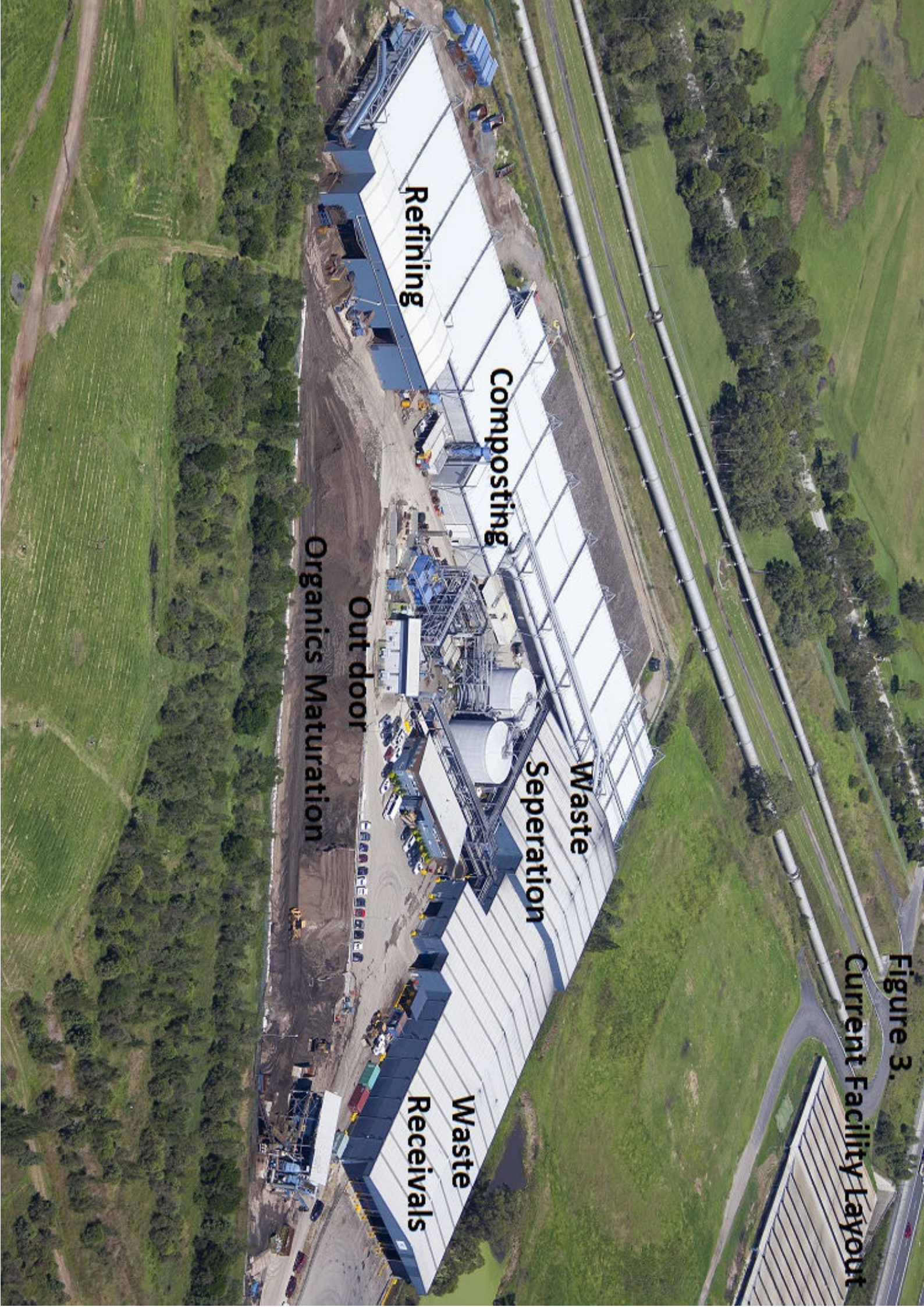


Figure 2.

Figure 3.
Current Facility Layout



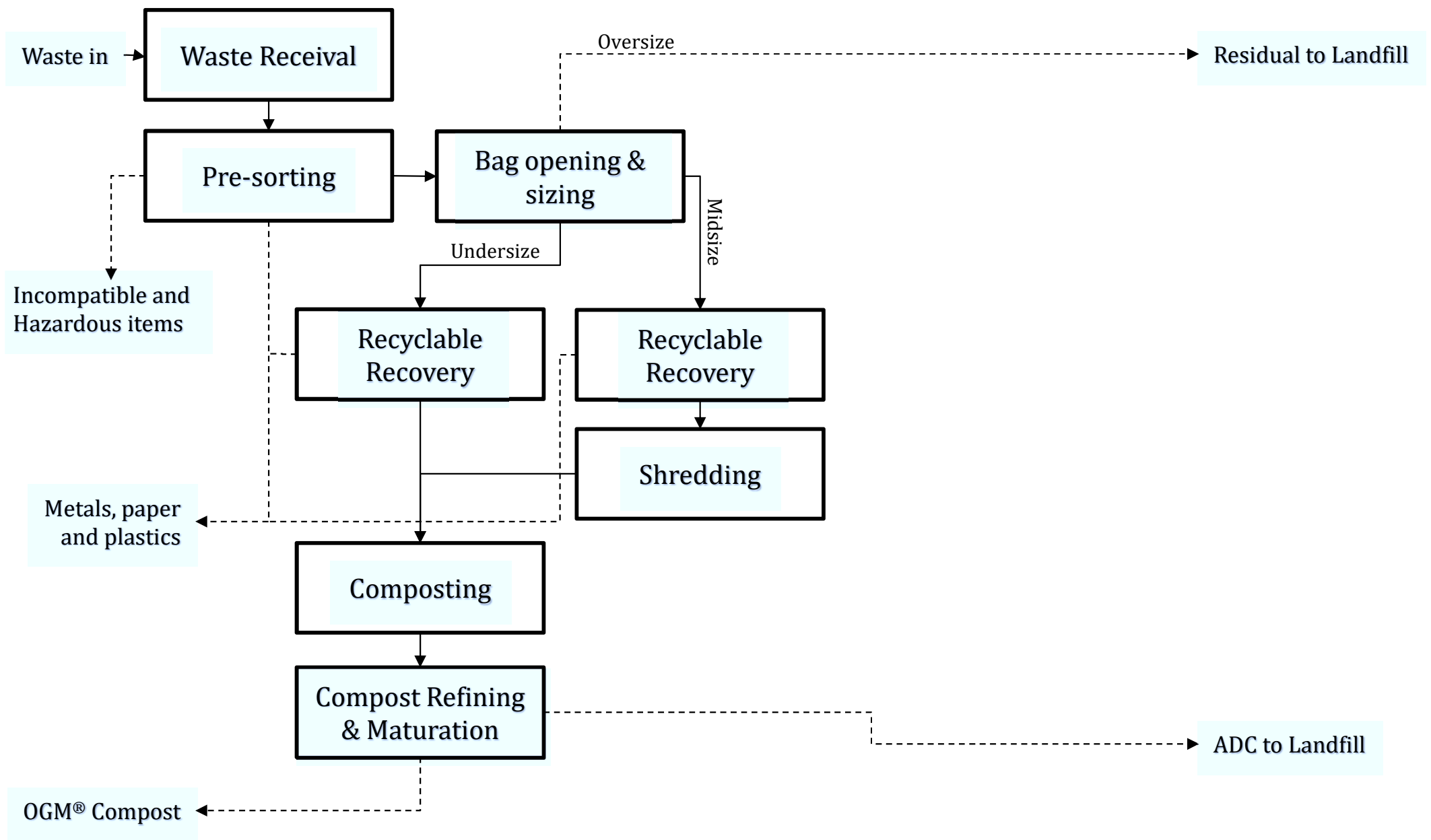


Figure 4. Current

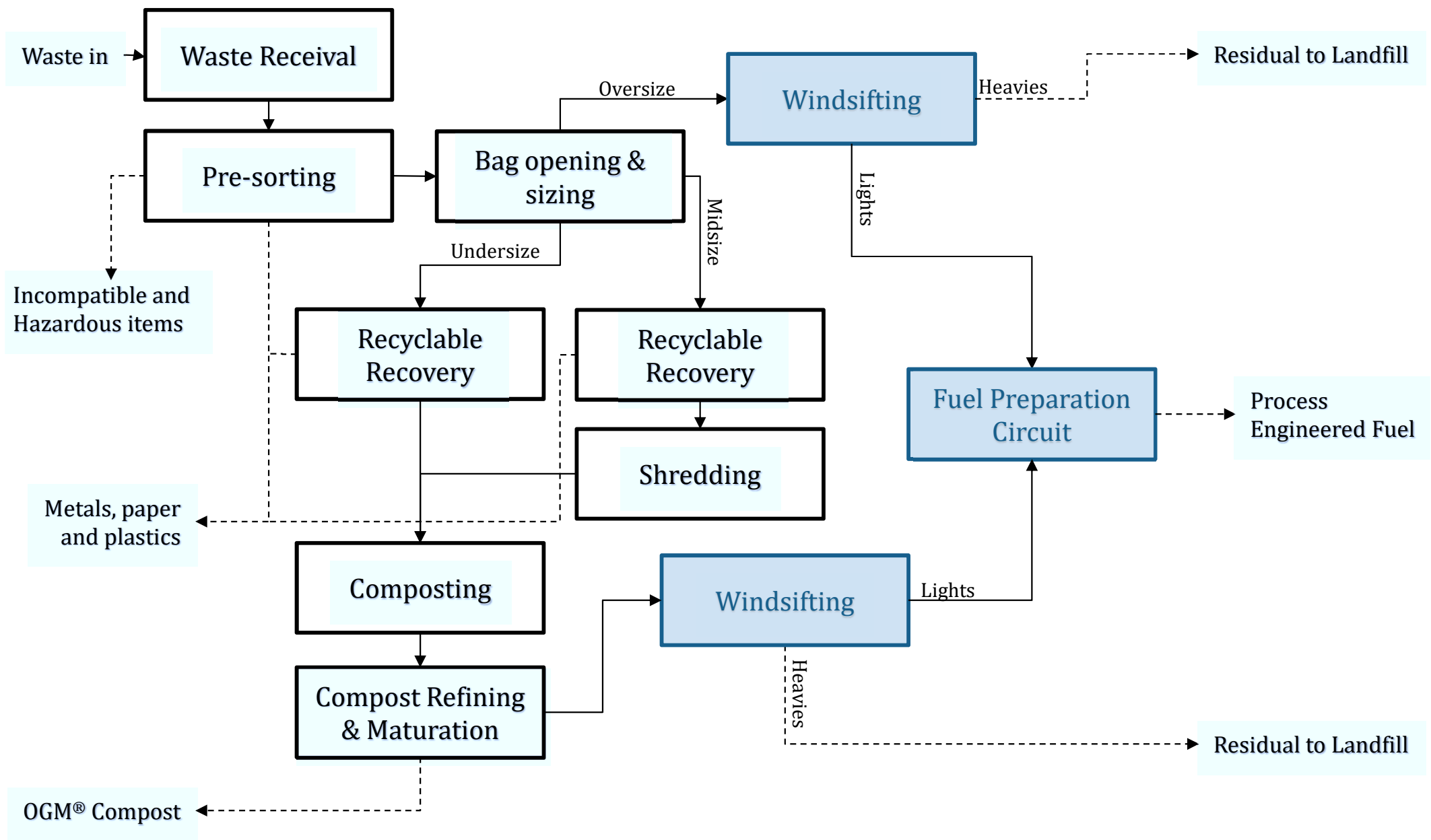


Figure 4. Proposed



1:200



1:500

FIG 5

D	PROPOSED WORKSHOP ADDED	04/05/15
C	LENTH OF BUILDING CHANGED	29/02/15
B	CHANGES AS REQUESTED BY CLIENT	29/04/14
A	CHANGES AS REQUESTED BY CLIENT	08/04/14

Rev.	Amendment	Date
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EASTERN CREEK
ORGANICS STORAGE

Client
GLOBAL RENEWABLES

PROPOSED SITE PLAN

BUTLER & CO ARCHITECTS Pty Ltd
ARCHITECTS & INTERIOR DESIGNERS

21 ALBERT AVE. LUNSWOOD NSW 2061
Phone (02) 9411 7311 Fax (02) 9419 2868

Drawn	Approved	Date
SG	-	29 April 15

Scale	Drawing No.	Revision
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