



## Application for works approval

### Part V Division 3 of the *Environmental Protection Act 1986*

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<b>Works approval number</b>	W6360/2020/1
<b>Applicant</b>	Eastern Metropolitan Regional Council
<b>DWER file number</b>	DER2020/000084
<b>Premises</b>	<p>Hazelmere Resource Recovery Park 77 Lakes Road Hazelmere WA 6104</p> <p>Legal description - Lot 100 on Plan 4553, Lot 301 on Deposited Plan 405273 and Lot 814 on Deposited Plan 410889 Certificate of Title Volume 1243 Folio 87, Volume 2870 Folio 90 and Volume 2948 Folio 355 As defined by the Premises map attached to the issued works approval</p>
<b>Date of report</b>	21 August 2020
<b>Decision</b>	Intent to grant works approval

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# 1. Definitions

Key terms relevant to this decision report and their associated definitions are listed in Table 1.

**Table 1: Definitions**

Term	Definition
ADR 83/00	Vehicle Standard (Australian Design Rule 83/00 – External Noise) 2005
ANC	Acid neutralising capacity
Applicant	Eastern Metropolitan Regional Council
ASS	Acid sulfate soils
Category / categories	Categories of prescribed premises as set out in Schedule 1 of the EP Regulations.
C&I	Commercial and industrial
Clearing Regulations	<i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i>
CRC	Community Recycling Centre
Decision Report	refers to this document.
Delegated Officer	An officer delegated under section 20 of the EP Act.
Department	The department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the <i>Public Sector Management Act 1994</i> and is responsible for the administration of the <i>Environmental Protection Act 1986</i> along with other legislation.
ECE R51	United Nations Regulation ECE 51-03 - Motor vehicles having at least four wheels with regard to their sound emissions.
Emission	has the same meaning given to that term under the EP Act.
EMRC	Eastern Metropolitan Regional Council
Environmentally Sensitive Area	means an area that is the subject of a declaration that is in force under section 51B of the EP Act.
EP Act	<i>Environmental Protection Act 1986 (WA)</i>

Term	Definition
EP Regulations	<i>Environmental Protection Regulations 1987 (WA)</i>
ESA	Environmentally Sensitive Area
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of, and during this application.
FOGO	means a source separated mixture of food organics and garden organics collected from bins designated for this purpose.
HHW	Household hazardous waste
HRRP	Hazelmere Resource Recovery Park
MRF	Material recovery facility
MS	Ministerial Statement
Noise Regulations	<i>Environmental Protection (Noise) Regulations 1997 (WA)</i>
Occupier	has the same meaning given to that term under the EP Act.
PASS	Potential acid sulfate soils
PEC	Priority ecological community
Prescribed Clearing	has the same meaning given to that term under the Clearing Regulations.
Prescribed premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Risk Event	As described in <i>Guidance Statement: Risk Assessment</i>
SPL	Sound pressure level
SWL	Sound power level
TEC	Threatened ecological community
tpa	tonnes per annum
WTS	Waste Transfer Station
WWTE	Wood waste to energy

## 2. Licence and amendment history

Table 2 provides the instrument history for the Premises.

**Table 2: Instrument history**

<b>Instrument</b>	<b>Issued</b>	<b>Nature and extent of works approval, licence or amendment</b>
W5923/2015/1	28/01/2016	Approval to construct a C&I waste recycling facility.
W5916/2015/1	06/06/2016	Approval to construct a wood waste to energy plant.
L9003/2016/1	10/11/2016	Licence to operate a C&I waste and timber recycling facility.
L9003/2016/1	17/06/2020	Amendment to include the wood waste to energy plant constructed under W5916/2015/1.
W6360/2020/1	21/08/2020	This works approval.

### 3. Purpose and scope of assessment

Eastern Metropolitan Regional Council (EMRC) submitted a works approval application (the Application) to the Department of Water and Environmental Regulation (DWER) to construct a waste transfer station (WTS) and community recycling centre (CRC) at their existing Hazelmere Resource Recovery Park (HRRP) premises (Premises).

The Delegated Officer has assessed the potential environmental and public health risks from the construction and operation of the proposed activities and these are documented through this Decision Report. The Decision Report explains how DWER has assessed and determined the application and provides a record of DWER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this documented is limited to DWER's assessment and decision-making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the Applicant's responsibility to ensure that they have all relevant approvals for their Premises.

### 4. Application details

The Application is to construct a new waste transfer station and community recycling centre at the Applicant's existing HRRP Premises, licenced under instrument L9003/2016/1. The existing Premises is located at Lot 100 on Plan 4553 and Lot 301 on Plan 405273, 77 Lakes Road Hazelmere WA 6104. The application will extend the Premises onto Lot 814 on Deposited Plan 410889, located adjacent to the west. Construction of the WTS and CRC will increase the volume and types of waste accepted at the Premises, requiring the addition Category 61 to the licence. Table 3 lists the documents submitted during the assessment process.

**Table 3: Documents and information submitted during the assessment process**

Document/information description	Date received
Application form and supporting documentation	13 February 2020
Environmental Assessment Management Plan <i>Hazelmere Community Recycling Centre and Waste Transfer Station</i>	13 February 2020
Fire and Emergency Management Plan 2020 <i>Hazelmere Resource Recovery Park</i>	4 March 2020
Applicant response to request for information	8 June 2020
Acid Sulfate Soil Management Plan <i>Hazelmere Resource Recovery Park</i>	8 June 2020

### 5. Existing Premises

#### 5.1 Overview

The HRRP opened in 2008 to manage waste for the EMRC's six member councils by diverting reusable products from landfill. Activities at the premises have comprised receipt and processing of waste timber and mattresses for reuse or disposal to landfill.

Works approval W5923/2015/1 was granted on 28 January 2016 to authorise construction of a commercial and industrial (C&I) waste sorting facility at the HRRP. Following construction, a licence to operate a C&I waste sorting facility and timber and mattress processing facility was granted for the Premises on 10 November 2016 (L9003/2016/1).

The Applicant recently finalised construction of a wood waste to energy plant at the Premises.

The Wood Waste to Energy (WWTE) plant uses clean wood chips to produce synthesis gas (syngas) and char. The syngas is then used in generators to produce electricity and the char is sold as a product.

Activities undertaken on the premises include:

- Recovery of waste timber for processing through an Integrated Outdoor HAAS timber processing system to produce wood fines and wood chips sold as animal bedding and landscaping material.
- Processing and downsizing of used mattresses through a slow speed Hammel shredder prior to disposal at a licensed facility.
- Acceptance and sorting of commercial and industrial dry waste streams to recover and separate recyclable wastes. Non-recyclable wastes are separated and disposed at a licensed facility.
- Pyrolysis of shredded wood waste at high temperatures (750-800 °C) in the absence of oxygen to produce a syngas for use in internal combustion engines for power generation. The power generated is exported to the State's electricity grid.

The prescribed premises categories and their assessed throughput are shown in Table 4 below.

**Table 4: Classification of premises and current design capacity**

Category	Category Description	Current design throughput
Category 37	Char manufacturing: <ul style="list-style-type: none"> <li>• premises on which wood, carbon material or coal is charred to produce a fuel or material of a carbonaceous nature or of enriched carbon content.</li> </ul>	5,000 tonnes per annual period
Category 60	Incineration: <ul style="list-style-type: none"> <li>• premises (other than premises within category 59) on which waste, excluding clean paper and cardboard, is incinerated.</li> </ul>	2,500 kg/hr
Category 61A	Solid waste facility: <ul style="list-style-type: none"> <li>• premises (other than premises within category 67A) on which solid waste produced on other premises is stored, reprocessed, treated, or discharged onto land.</li> </ul>	50,000 tonnes per annual period
Category 62	Solid waste depot: <ul style="list-style-type: none"> <li>• premises on which waste is stored, or sorted, pending final disposal or re-use.</li> </ul>	50,000 tonnes per annual period
Category 67	Fuel Burning: <ul style="list-style-type: none"> <li>• premises on which gaseous, liquid or solid fuel is burnt in a boiler for the supply of steam or in power generation equipment.</li> </ul>	3,000 kg per hour



## 5.2 Existing infrastructure and equipment

The existing site layout at the Premises is shown in Figure 1 and the following infrastructure and equipment are present:

- 40 m x 60 m steel C&I waste sorting facility
- Integrated outdoor HAAS timber processing system
- WWTE plant
- Hammel mattress shredder
- Dual weighbridge
- Fire control water tanks, pumps and piping
- 10.8 kL above ground storage tank

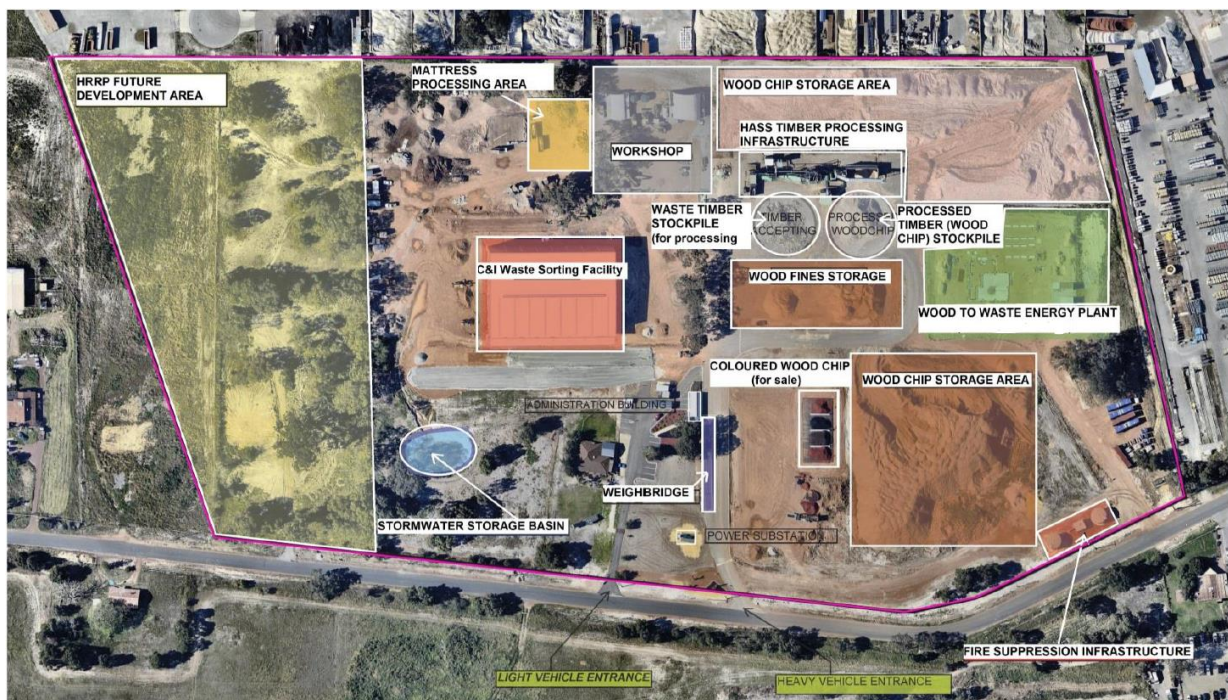


Figure 1: Current site layout and existing infrastructure at the Premises

## 6. Description of proposed activities

### 6.1 Overview

The Applicant is proposing to construct a waste transfer station and community recycling centre at the Premises. The construction will also be accompanied by associated internal road connections and modifications to the Premises' stormwater containment network. The proposed layout of the WTS and CRC relative to existing activities occurring at the Premises are shown in Figure 2 below.

The WTS will be used by kerbside collection and bulk waste transport vehicles for the deposition, temporary storage and consolidation of large quantities of waste at the Premises. The CRC will allow the community to drop off materials for reuse, recycling and disposal. The centre will contain designated drop off areas for specific materials and will be accessed through a one-way internal loop road within the Premises. The centre has been designed to maximise the separation of materials into clean waste streams for reuse, recovery and recycling.



The proposed works will be staged according to the projected timeline in Table 5 below.

**Table 5: Timeline of the proposed works and subsequent operation of the Premises**

Facility	Stage	Timeframe	Duration
Community Recycling Centre	Construction	December 2020 to May 2021	6 months
	Commissioning and handover	May 2021 to June 2021	2 months
	Environmental compliance report		
	Licence amendment		
	Start of operations	July 2021	
Waste Station Transfer	Construction	May 2021 to April 2022	12 months
	Commissioning and handover	April 2022 to May 2022	2 months
	Environmental compliance report		
	Licence amendment		
	Start of operations	June 2022	



**Figure 2: General layout of the WTS and CRC proposed at the Premises**

## 6.2 Proposed infrastructure

### 6.2.1 Community recycling centre

The CRC will be located in the southwestern portion of the Premises and will be comprised of the following:

- Reuse shed
- Household hazardous waste (HHW) shed
- Hardstand drop off area
- Kiosk
- Multi-tiered drop off facility (MTDOF)
- Sealed internal roads and service lanes
- Stormwater drainage and management system
- Visitor parking
- Fencing
- Signs and line markers

#### **Reuse area**

A reuse shed will be constructed at the start of the public entryway into the CRC to allow drop-off of materials for reuse/resale. The reuse shed will consist of a 50 m x 17 m (850 m<sup>2</sup>) enclosed building and a 22 m x 17 m (374 m<sup>2</sup>) bitumen sealed forecourt. Adjacent to the reuse shed will be a sealed parking area (1450 m<sup>2</sup>) for the loading and unloading of materials.

#### **Household hazardous waste area**

A HHW shed and hardstand will be constructed for the temporary storage of HHW. The shed will be fully enclosed, with accompanying bunding to contain leaks and spills. The shed will contain designated areas with receptacles to segregate incompatible waste types.

#### **Recycling area**

A recycling area will be present above an open air hardstand occupying a space of 1,050 m<sup>2</sup>. The area will contain a variety of designated containers for separation of waste types. Cages and purpose built receptacles will be provided to contain e-waste, car batteries and gas cylinders. 15 m<sup>3</sup> hooklift bins will be used for the deposition of inert waste, plastics, glass and cardboard. A baler machine will be located at a cardboard drop-off area.

#### **Multi-tier drop off facility**

The MTDOF will be comprised of a three sided, steel and metal partial enclosure, across an area of 1,900 m<sup>2</sup>. The area accessible to customers for waste deposition will be raised above the rest of the facility to separate their access from operational activities. The facility will contain 30 m<sup>3</sup> hooklift bins that are flush with the receive floor of the facility for ease of deposition. The hooklift bins will be seated so that all sides are sealed, excluding the top opening, to prevent material spillage. The hooklift bins will be situated above a concrete hardstand adjacent to a service vehicle lane and will be removed when full by service vehicles accessing the facility through two exterior facing 4 m industrial roller doors.

#### **Stormwater containment**

The CRC will require modification to the existing Premises drainage network and compensation basins. Below ground pipes will be installed to direct stormwater to underground retention cells designed to contain a 1% AEP rainfall event and with a minimum 1,800 kL total capacity. All stormwater will be contained and discharged onsite through infiltration.

The key infrastructure and equipment proposed for the CRC are outlined in Table 6 below and the CRC layout is shown in Figure 3.

**Table 6: Proposed CRC infrastructure and equipment**

Infrastructure or Equipment	Site Layout Plan reference
Enclosed reuse shed with adjacent bitumen sealed hardstand	Reuse shed and provisional CDS as shown in Figure 3
Enclosed and bunded HHW shed with segregated receptacles	Household hazardous waste shed as shown in Figure 3
Open air concrete hardstand: <ul style="list-style-type: none"> <li>• 150-250mm thick</li> </ul>	Figure 3
Waste receptacles: <ul style="list-style-type: none"> <li>• Cages</li> <li>• Self-bunded pallets</li> <li>• 15m<sup>3</sup> hooklift bins</li> <li>• 30m<sup>3</sup> hooklift bins</li> </ul>	As shown by waste type in Figure 3
Cardboard baler	Cardboard baler and container as shown in Figure 3
MTDOF: <ul style="list-style-type: none"> <li>• Three sided, multi-tiered, steel and metal partial enclosure</li> <li>• 150-250mm thick concrete hardstand</li> <li>• Vehicle access points</li> </ul>	Three sided shed over multi-tiered drop-off area as shown in Figure 3
1,800 kL underground stormwater infiltration cells and associated drainage pipelines	Stormwater infiltration cells as shown in Figure 3 <sup>1</sup>

Note 1: The Applicant revised the design of the stormwater system following submission of the application documents. Figure 3 is outdated and shows a stormwater pond rather than the underground cell system which is now proposed.

## 6.2.2 Waste transfer station

The WTS will occupy an area of approximately 18,400 m<sup>2</sup>, containing a 60 m x 73 m (4,438 m<sup>2</sup>) fully enclosed warehouse, ranging from 10m - 14m in height. The WTS roof will contain four extraction stacks, set at 2 m high, to allow air flow through the facility. The stacks will achieve a minimum of four air changes per hour. The WTS floor will be formed from 200 mm thick reinforced concrete at a slope of 1%. The floor will fall towards a spoon drain at the rear (south) of the facility. The spoon drain will contain collection points that divert leachate to a 20 kL below ground containment tank located outside the WTS. The facility is designed to a maximum capacity of 232,000 tpa with two days storage capacity after five days of operation. The WTS will consist of the following areas;

- An unloading area and tipping floor;
- A waste storage bunker area; and
- A bulk load out area.

### **Unloading area**

The 1,388 m<sup>2</sup> unloading area will be located in the northern portion of the facility adjacent to a reversing apron external to the building. The reversing apron will be sloped to fall northward away from the WTS. Entrance to the area will be through seven sound insulated fast action roller doors, with a 15 second close time, to reduce fugitive odour emissions.

### **Waste storage bunker**

The 1,830 m<sup>2</sup> waste storage bunker area will be located in the southern portion of the facility. Designated storage bunkers will be formed from 5 m high reinforced concrete walls. Moveable bunker walls will also be present to further delineate bunker areas for particular waste streams.

### **Bulk load out areas**

The bulk load out areas will be located on the western and eastern sides of the facility. Both areas will be comprised of a 305 m<sup>2</sup> loading area and a one-way vehicle lane, sunken 1 m below the level of the main WTS floor. The north and south sections of the lanes will be graded with a 1% slope to a drainage sump which connects to the below ground leachate tank. Entry and exit to the vehicle lane will be through two large sound insulated fast action roller doors located on the northern and southern ends of the facility. The entry and exit points will be fitted with an intercept drain to prevent stormwater ingress.

### **Stormwater containment**

The Applicant has indicated that either a stormwater infiltration pond or series of underground infiltration cells will be installed on the eastern margin of the WTS area. The use of a pond or underground cell system will be determined during detailed design. The pond or cells will have accompanying underground pipework to transport stormwater away from the external areas of the WTS. If a pond is used the circumference of the pond will contain a 1m high ring of gabion baskets to allow for deeper construction and more storage capacity.

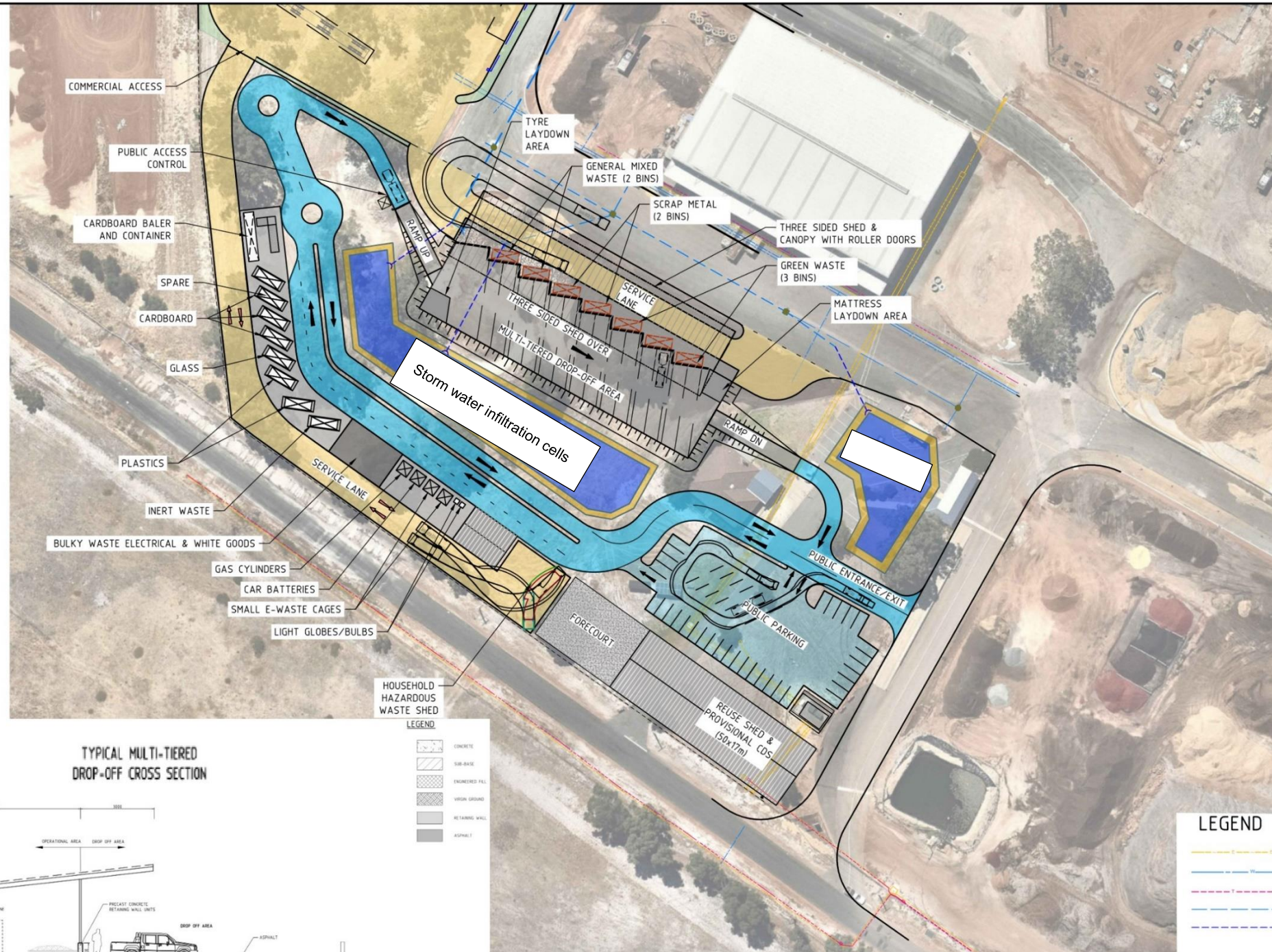
The key infrastructure and equipment proposed for the WTS are outlined in Table 7 below and the WTS layout is shown in Figure 4.

**Table 7: Proposed WTS infrastructure and equipment**

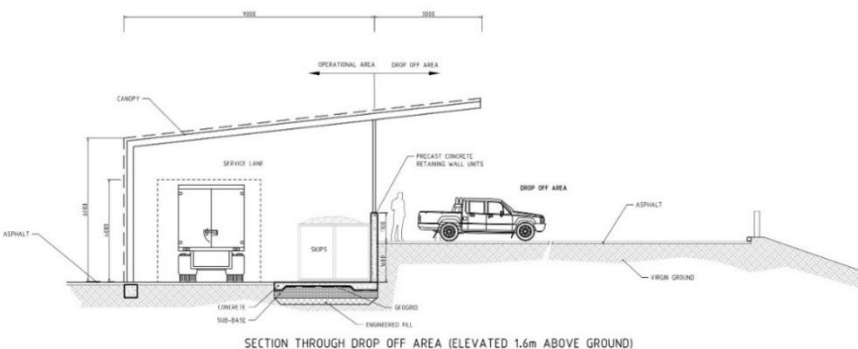
Infrastructure or Equipment	Site Layout Plan reference
Steel framework enclosed warehouse	Transfer station warehouse as shown in Figure 4
4 x 2 m high air extraction stacks capable of: <ul style="list-style-type: none"> <li>• Achieving 4 air exchanges per hour at an exit velocity of 15 m/s</li> </ul>	N/A
Unloading area and waste storage bunker floor: <ul style="list-style-type: none"> <li>• Reinforced concrete hardstand of 200 mm thickness</li> <li>• Constructed with a southward fall of 1% towards a leachate collection drain</li> </ul>	Unloading area and Waste storage bunker as shown in Figure 4
Vehicle lane reinforced concrete hardstand: <ul style="list-style-type: none"> <li>• 150 mm thick</li> <li>• Constructed with a fall of 1% towards a drainage sump connecting to underground leachate containment tanks.</li> <li>• Entry and exit points fitted with stormwater intercept drains</li> </ul>	Western and eastern perimeter of the Transfer station warehouse as shown in Figure 4.
Leachate spoon drain comprised of: <ul style="list-style-type: none"> <li>• Collection points draining to a containment tank</li> </ul>	Southern perimeter of the Transfer station warehouse as shown in Figure 4.
11 x sound insulated fast action roller doors with a: <ul style="list-style-type: none"> <li>• 15 s open and shut cycle</li> </ul>	N/A
20kL below ground leachate containment tank <ul style="list-style-type: none"> <li>• Fitted with a level sensor and high level alarm system</li> </ul>	Leachate trap as shown in Figure 4
External reversing apron: <ul style="list-style-type: none"> <li>• Constructed with a northward fall away from the WTS</li> </ul>	Reversing apron as shown in Figure 4
Bunded vehicle access points	N/A
5 m high reinforced concrete push walls and moveable bunker walls	N/A
Stormwater infiltration pond or cells and associated drainage pipelines	Stormwater area as shown in Figure 4.
2 x fire suppression water storage tanks	Fire water tanks as shown in Figure 4.
2 x front end loader	N/A
1 x long reach excavator with compaction attachment	N/A



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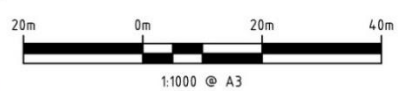
TYPICAL MULTI-TIERED DROP-OFF CROSS SECTION



LEGEND

[Pattern]	CONCRETE
[Pattern]	SUB-BASE
[Pattern]	ENGINEERED FILL
[Pattern]	VIRGIN GRASS
[Pattern]	RETAINING WALL
[Pattern]	ASPHALT

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B	20.11.2019	REUSE & CDS ENLARGED, BALER ADDED	
A	15.10.2019	PRELIMINARY ISSUE	

Project: **EMRC HAZELMERE WTS & CRC**

Title: **CRC CONCEPT LAYOUT WITH TRUCK ROUTING**

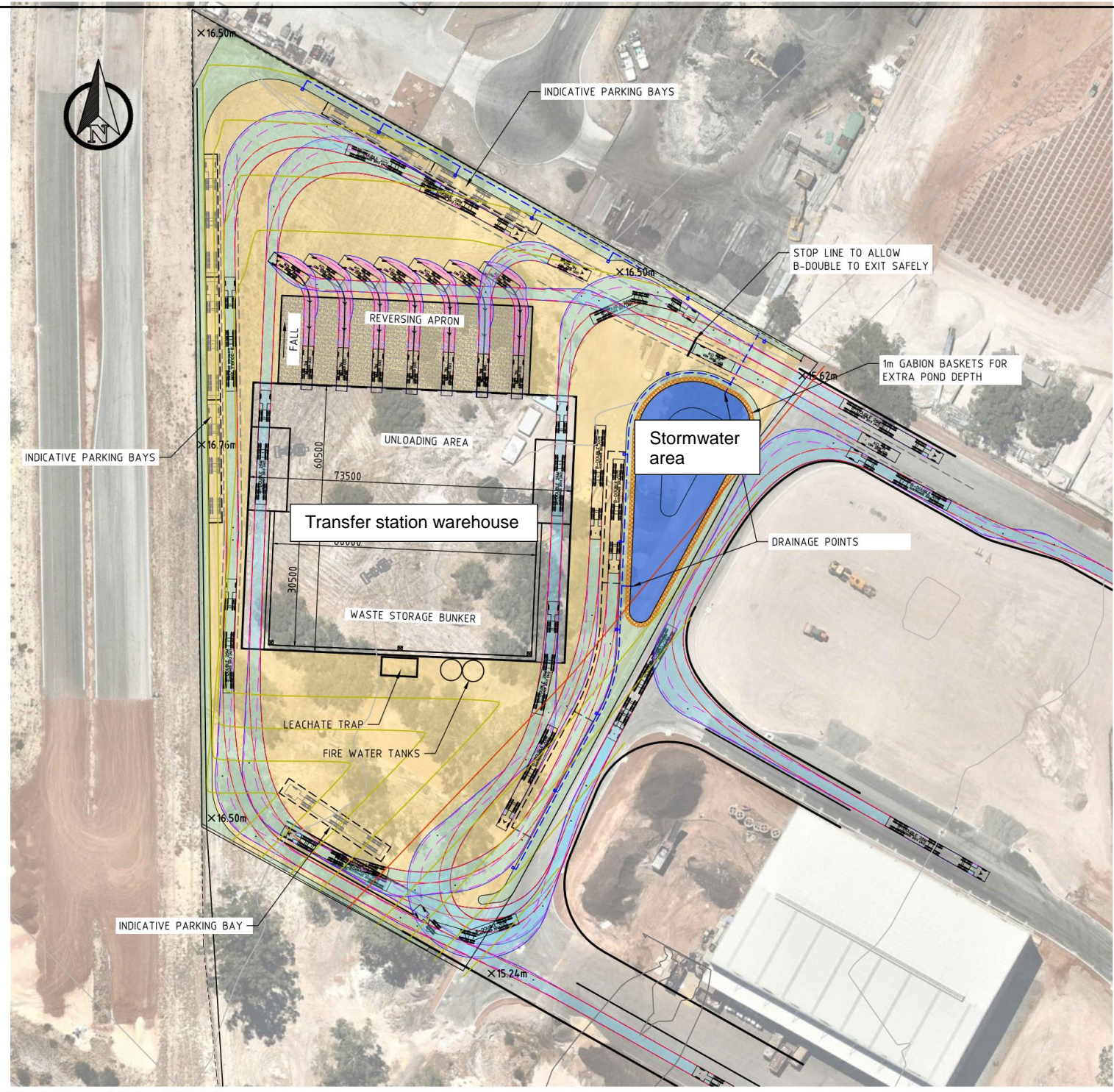
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Approved by:		Drp. No:	C-105
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Figure 3: Proposed CRC layout and MTDOF cross section



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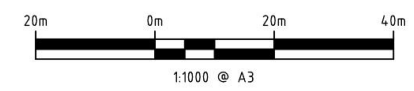
VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM  
HORIZONTAL DATUM: MGA 94 ZONE 50

YEAR 20-30 COMBINED ANNUAL TONNAGE 232,000tpa  
STORAGE OF 2 DAYS IN BUNKER USING 5 DAY OPERATION  
STORAGE OF 2.5 DAYS IN BUNKER USING 7 DAY OPERATION  
- UTILISES FREEBOARD  
B-DOUBLE PARK BAYS 28.0m x 3.0m  
BLUE SHADED VEHICLE MOVEMENTS ARE FORWARDS  
PINK SHADED VEHICLE MOVEMENTS ARE REVERSE

**LEGEND**  
 GULLY PIT WITH PIPELINE  
 MANHOLE WITH PIPELINE

**CONCEPTUALISATION OF PREFERRED OPTION**  
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No.	Date	Amendment / Issue	App.
A	15.10.2019	PRELIMINARY ISSUE	

Project: **EMRC HAZELMERE WTS & CRC**

Title: **WTS CONCEPT LAYOUT WITH TRUCK ROUTES**

Drawn by:	AB	Job No:	TW19062
Checked by:	CP	File No:	TW19062-C-102
Approved by:		Org. No:	
Scale:	1:1500 @ A3	Rev:	A
Date:	15.10.2019		

**Figure 4: Proposed WTS layout**



## 6.3 Proposed operations

### 6.3.1 Community recycling centre

The CRC will be open Monday to Saturday 8am to 5pm and Sunday on 8am to 2pm. The days are inclusive of public holidays except Christmas Day, Boxing Day and Good Friday. The facility will accept the following wastes at an expected rate of 15,000 tpa:

- Items suitable for resale and reuse
- HHW (1,000 tpa)
- Lightglobes and bulbs
- E-waste
- Car batteries
- Gas cylinders
- White goods
- Bulk electrical goods
- Mattresses
- Inert waste
- Plastics
- Glass
- Cardboard
- Tyres
- Scrap metal
- Green waste
- General waste

The community recycling centre will be divided into three operational areas, with customers directed to the relevant location on arrival. The three areas are the:

- Reuse area;
- Recycling area; and
- Multi-tier drop off facility (MTDOF).

Items that are suitable for resale will be deposited in the reuse area by customers. The forecourt area will be used for the display and sale of potentially reusable goods.

The recycling area will allow customers to deposit household hazardous waste in packages not exceeding 20 kg or 20 L. The wastes will be received and stored in the HHW shed and will include oil, paint, batteries, aerosols, pesticides, fluorescent tubes and household chemicals. The HHW will be segregated according to the type of potentially hazardous material within the waste to prevent incompatible material from coming into contact. When transportable quantities of HHW have been consolidated at the Premises a controlled waste carrier will be engaged to remove the waste to an appropriate facility for final treatment and disposal. HHW acceptance at the facility is expected to be 1,000 tonnes per annual period, of which more than 100 tonnes may be in liquid form. Accordingly the Premises will require the addition of Category 61.

The recycling area will also accept other material such as bulk white goods, e-waste, electrical items, recyclable inert waste, plastics, glass and cardboard. Bulk items will be deposited directly to a designated area of the concrete hardstand while smaller material will be stored in cages or 15 m<sup>3</sup> hooklift bins separated according to material type. Cardboard material will be periodically compressed by a baler.

Residential general waste, scrap metal, green waste, mattresses and tyres can be deposited by customers at the MTDOF. Prior to entry to the MTDOF the public will pass through a kiosk containing a site operator. The operator will inspect the waste material for suitability, accept payment and direct customers to the appropriate receptacles and areas. Customers will then enter one of the 14 bays and deposit waste material into the relevant 30 m<sup>3</sup> hooklift bin or direct to the hardstand, in the case of tyres and mattresses. Full general waste bins will be taken to the WTS for further sorting and consolidation. Mattress and green waste will be transported to the existing processing areas within the Premises.

### 6.3.2 Waste transfer station

The WTS will be open Monday to Friday 7am to 5pm and Saturday 7am to 2pm. The facility will accept the following waste streams:

- Municipal solid waste (MSW) from the kerbside collection and public open space bins provided by member councils.
- Food organics and garden organics (FOGO) from the kerbside collection.
- Commercial waste from private industry, operations on the Premises and non-recyclables from the CRC.

MSW from the kerbside collection will be consolidated and transported offsite to a waste to energy plant for final disposal, while commercial waste will be consolidated and transported to Red Hill for final disposal. FOGO waste will be consolidated and transported to a proposed FOGO composting facility at Red Hill. The yearly quantities shown in Table 8 below are proposed to be accepted at the facility. The proposed daily waste vehicle movements and tonnages are shown in Table 9.

**Table 8: Waste type and quantities proposed for acceptance at the WTS**

Waste type	Maximum design tonnage per year	Initial tonnage per year	Estimated tonnage in 15 years
MSW	95,000	70,000	82,500
FOGO	105,000	75,000	90,000
Commercial	30,000	30,000	30,000
<b>Total</b>	<b>230,000</b>	<b>175,000</b>	<b>202,500</b>

**Table 9: Proposed daily waste vehicle movements and tonnages**

Haulage vehicle type	Waste type	Total vehicle movements (in-bound)		
		Year 1	Year 15	Year 30
RCVs (9 tonnes)	MSW	33	39	45
	FOGO	36	43	50
	Commercial	14	14	14
	<b>Total</b>	<b>83</b>	<b>96</b>	<b>109 (981 tonnes daily)</b>
Haulage vehicle type	Waste type	Total vehicle movements (out-bound)		
		Year 1	Year 15	Year 30
Transfer trailers (30 tonnes)	MSW	10	12	14
	FOGO	11	13	15
	Commercial	4	4	4
	<b>Total</b>	<b>25</b>	<b>29</b>	<b>33 (981 tonnes daily)</b>

On arrival, trucks entering the Premises will be directed to the weighbridge where load details will be recorded and inspections will take place. Staff operating the weighbridge will direct the

driver to a specific entry on the northern side of the WTS. The collection vehicle will then reverse into the WTS through one of the fast action doors, which will close once the truck has entered. Wastes will be deposited by the delivery vehicles directly onto the floor of the WTS and the vehicle may be cleaned if required. The fast action doors will then re-open and the collection vehicle will exit the facility to the weighbridge.

A front end loader will further consolidate the waste on the tipping floor and transport it either to the waste storage bunker or the bulk load out area if quantities are suitable. Waste will typically be stored for no longer than 24 hours prior to offsite removal.

Once enough material has been consolidated, the waste will be loaded by a front end loader into a haulage vehicle at the bulk load out area. A long reach excavator with a compaction roller attachment will be used to compact waste within the haulage vehicle. The vehicle will then exit the Premises through the weighbridge and transport the waste to the relevant disposal site.

The waste storage bunker area will be periodically washed down with a street sweeper and high pressure hose. Wash down water will be directed to the leachate collection system through the grade of the facility. The leachate collection tank will be pumped out as required and transported to the Applicant's facility in Red Hill for disposal.

## 7. Legislative context and other approvals

### 7.1 Other approvals

Other approvals relevant to the premises are outlined in the Table 10 below.

**Table 10: Summary of approvals relevant to the Premises**

Legislation	Number	Approval
<i>Environmental Protection Act 1986 Part IV</i>	MS 1028	Ministerial statement that the Hazelmere Wood Waste to Energy Plant proposal may be implemented.
	N/A	The proposed WTS and CRC were referred to the EPA as a significant proposal. The referral was examined and determined not to be assessed under Part IV of the EP Act (s.39A).
<i>Planning and Development Act 2005</i>	N/A	The Applicant is considered to be a local government under section 6 of the <i>Planning and Development Act 2005</i> . Accordingly the WTS and CRC are considered public works and are exempt from requiring planning approval under the relevant Local Planning Scheme. This was confirmed by the City of Swan and the Applicant.

## 7.2 Environmental Protection (Clearing of Native Vegetation) Regulations 2004

The Premises has been historically cleared with minimal vegetation comprised of isolated trees remaining. These remaining trees are located predominately in Lot 814 within the footprint of the WTS and CRC. The Applicant has identified the trees as *Eucalyptus rudis*, *E. grandis* and *E. camaldulensis*. Of these only *E. rudis* is considered native vegetation, as *E. camaldulensis* is not native to the region and *E. grandis* is not native to WA (Western Australian Herbarium FloraBase, accessed April 2020). The Applicant stated that the non-natives were historically planted by the previous landowner.

The Applicant considers that clearing of native vegetation within the proposed WTS and CRC footprints is exempt from requiring a clearing permit as it is Prescribed Clearing under Regulation 5 of the Clearing Regulations. The clearing fits the definition of Regulation 5 Table Item 1: Clearing to construct a building. Item 1 is described as:

*Clearing of a site for the lawful construction of a building or other structure on a property, being clearing which does not, together with all other limited clearing on the property in the financial year in which the clearing takes place, exceed 5 ha, if –*

- (a) *the clearing is to the extent necessary; and*
- (b) *the vegetation is not riparian vegetation.*

The clearing will occur in an area of approximately 3 ha, the vegetation is not growing in association with a watercourse and the area is not an ESA.

## 7.3 Contaminated Sites Act 2003

Lot 100 on Plan 4553, which forms part of the Premises, was previously classified under the *Contaminated Sites Act 2003* as 'possibly contaminated – investigation required', the site is now classified 'decontaminated'. DWER's Contaminated Sites Register sets out the reasons for classification as follows:

- The site has been historically used as a waste recycling facility since 2008. This is a land use that has the potential to cause contamination, as specified in the guideline *Assessment and management of contaminated sites* (DER 2014).
- The site was reported because routine groundwater monitoring identified elevated concentrations of acidity, lead, manganese and sulfate in a monitoring bore located on the southwest portion of the site. Groundwater impacts were observed following construction of a sedimentation pond immediately up-hydraulic gradient of the monitoring bore.
- Investigations concluded that construction of the sedimentation pond disturbed potential acid sulfate soils (ASS) and infiltration of oxygen rich water through the pond contributed to oxidation of sulfides in the soil profile.
- Remedial works were undertaken which involved lining of the sedimentation pond and connected drains with crushed limestone. An acid sulfate soil management plan was also developed and implemented.
- Groundwater monitoring conducted post-remedial works found that metal and sulfate concentrations have returned to their previous levels. Acidity remained elevated, however was consistent with typical groundwater pH in the area.

The Site was classified as 'decontaminated' as it was determined to be successfully remediated and suitable for all land uses.

## 8. Emission sources, receptors and pathways

### 8.1 Emissions

The potential for emissions to impact on sensitive receptors has been assessed in accordance with the Department's Risk Framework. The key emissions during premises construction which have been considered in this report are **noise** and **dust** from earthworks, infrastructure placement and vehicle movements. There is also potential for **ASS** to be disturbed during excavation for subsurface infrastructure and stormwater containment cells.

Following completion and compliance with this works approval, an amendment to licence L9003/2016/1 under Part V of the EP Act will be required to authorise emissions associated with operation of the works. A risk assessment for the operational phase has been included in this Decision Report, however licence conditions will not be finalised until DWER assesses the amendment application. The key emissions considered during premises operation are **odour, noise, dust, leachate, stormwater, windblown waste, vermin and emissions during a fire event**.

The Applicant has proposed measures to assist in controlling these emissions, where necessary. The control measures are outlined in Section 10 and have been considered when undertaking the risk assessment detailed in Section 11.1.

### 8.2 Environmental siting

The Premises is located in the Hazelmere Industrial Park, approximately 14 km northeast of the Perth CBD and 2.2 km west of the Darling Fault. The Premises is relatively flat, sloping gently towards the southwest from 18 m AHD to 15 m AHD. Surrounding land uses are comprised of:

- General industrial to the northwest, north, east and south;
- Light industrial to the southwest;
- Special use zoning to the west; and
- Rural residential located adjacent to the Hazelmere Lakes.

#### 8.2.1 Potential receptors and environmental aspects

Risk is assessed as a combination of emission sources, the proximity and sensitivity of receptors to those emission sources and any pathways that can allow the emission to reach and potentially harm the receptor. Figure 5 and the table below provides a summary of human and environmental receptors in proximity to the premises which have a potential to be impacted from site activities, and the risk assessment in Section 9 considers these receptors in the context of emissions and potential pathways.

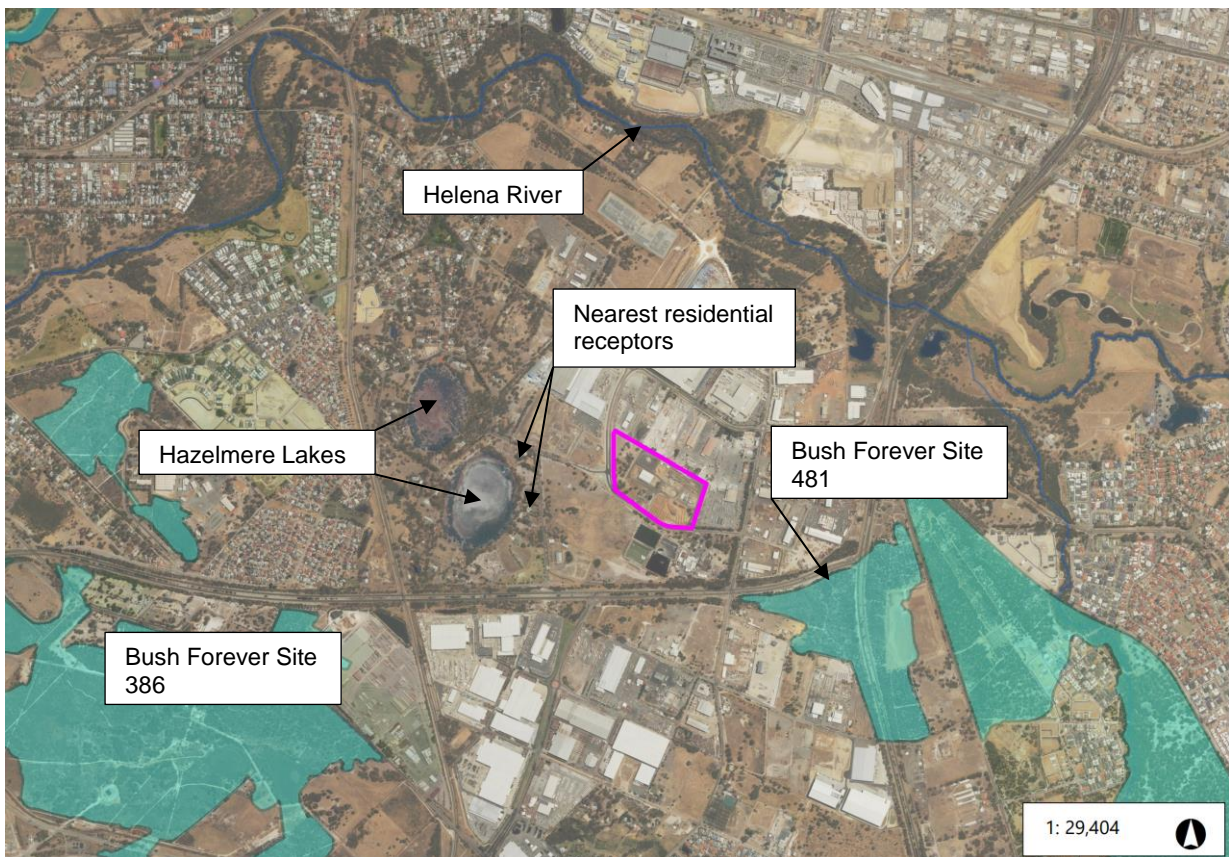
**Table 11: Distance to receptors**

Human receptors	Description	Distance from activity or prescribed premises
Sensitive receptors	Residential property at Lot 121 Vale Rd	Approximately 360 m west of the Premises boundary
	Residential property at 18 Lakes Rd	Approximately 370 m west of the Premises boundary
Industrial receptors	BGC Hazelmere Industrial Complex	Immediately adjacent to the north and east of the Premises boundary.



	Processing Site Asphalt Recyclers Australia Pty Ltd	Immediately adjacent to the north of the Premises boundary.
	Talloman Rendering Facility	Opposite the southern Premises boundary across Lakes Rd.
<b>Environmental receptors</b>	<b>Description</b>	<b>Distance from activity / prescribed premises</b>
Surface water	Hazelmere Lake South	Approximately 475 m west and down topographic gradient of the Premises boundary
	Hazelmere Lake North	Approximately 705 m west of the Premises boundary
	Helena River	Approximately 1.2 km northeast of the Premises boundary
Groundwater	Perth superficial aquifer. Local groundwater flow direction is inferred to be west to southwesterly, based on groundwater monitoring conducted by the Applicant.  There are 5 registered bores downgradient of the Premises. 3 are associated with the Talloman Rendering plant monitoring network and two are located on residential properties and potentially used for non-potable purposes.	Approximately 2 to 4 m BGL
Bush Forever	Site 386: Perth Airport	Approximately 1.5 km southwest of the Premises boundary
	Site 481: Stirling Crescent Bushland	Approximately 410 m southeast of the Premises boundary
Threatened and Priority Ecological Communities (TEC)	<i>Banksia</i> dominated woodlands of the Swan Coastal Plain IBRA region (BC Act Priority 3) (EPBC Act Endangered)	Approximately 285 m west of the Premises boundary
	<i>Banksia</i> dominated woodlands of the Swan Coastal Plain IBRA region (BC Act Priority 3) (EPBC Act Endangered)	The TEC buffer area is immediately adjacent to the southeast of the Premises boundary

	Shrublands and woodlands of the eastern side of the Swan Coastal Plain (BC Act Critically Endangered) (EPBC Act Endangered)	The TEC buffer area is immediately adjacent to the southeast of the Premises boundary
	<i>Banksia attenuata</i> woodlands over species rich dense shrublands (BC Act Endangered) (EPBC Act Endangered)	The TEC buffer area extends into the southeast of the Premises
Environmental aspects	Description	Distance from activity / prescribed premises
Acid sulfate soil (ASS)	Risk Class 1 - high to moderate risk of ASS occurring within 3m of natural soil surface.  Risk Class 2 - moderate to low risk of ASS occurring within 3m of natural soil surface but high to moderate risk of ASS beyond 3m.	The CRC footprint extends partially over the Class 1 area. The remainder of the Premises is considered Class 2.



**Figure 5: Receptors surrounding the Premises**

### 8.3 Pathways

Due to the type of emissions identified in Section 8.1 air, soil, surface run-off and groundwater have been considered potential pathways during the assessment. The meteorological, geological and drainage conditions at the Premises have been presented in the subsections below and this information has been considered in the risk assessment tables in Section 9.

Groundwater information is contained in Section 8.2.1 above, as it is considered both a potential pathways and receptor.

### 8.3.1 Soil type and geology

**Table 12: Geology and soil information at and surrounding the Premises**

Factor	Details
Soil type and surface geology	<p>The Premises is located within the Pinjarra System, described as a poorly drained coastal plain with variable alluvial and aeolian soils.</p> <p>The Perth Geological series describes two soil types at the Premises:</p> <ul style="list-style-type: none"> <li>• SAND (S10) - white to pale grey at surface over sandy clay to clayey sand of the Guildford Formation.</li> <li>• PEATY CLAY (Cps) – dark grey and black, soft variable organic content with quartz sand in places.</li> </ul> <p>Site specific geotechnical information described the Premises as having an underlying layer of Bassendean sand over clayey soils of the Guildford formation. Soil logs determined that very dense, fine to medium grained, grey moist sands were present in the subsurface.</p>

The Delegated Officer considers the surface geology and presence of shallow groundwater, located approximately 2 to 4 mbgl, may allow a potential pathway through infiltration to groundwater.

### 8.3.2 Meteorology

Using information available on the Bureau of Meteorology’s website, the closest available weather station for meteorological data is Perth Airport (No. 009021). This weather station is located approximately 3 km southwest of the Premises and is considered an accurate representation of average climatic conditions.

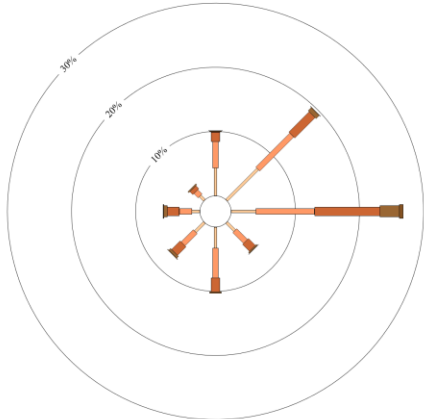
Wind frequency data collected at the Perth Airport station from May 1944 to August 2019, shows the prevailing wind direction is east to north-easterly in the morning and south-westerly to westerly in the afternoon (Figure 6). The predominant wind speed is between 20 - 29 km/hr.

The mean monthly rainfall and maximum temperatures at the Perth Airport weather station are shown in Figure 7. Rainfall at the Premises is expected to occur predominately during the winter months, peaking in July and corresponding to lower maximum temperatures. The Premises is likely to receive a mean annual rainfall of 816.6 mm. Table 13 shows that mean monthly evaporation is generally higher than rainfall excluding the May to August period.

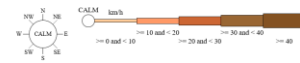
**Rose of Wind direction versus Wind speed in km/h (01 May 1944 to 11 Aug 2019)**  
 Custom lines selected, refer to attached note for details.  
**PERTH AIRPORT**  
 Site No: 009021 • Opened Jan 1944 • Still Open • Latitude: -31.9275° • Longitude: 115.9764° • Elevation 15 m  
 An asterisk (\*) indicates that calm is less than 0.5%.  
 Other important info about this analysis is available in the accompanying notes.



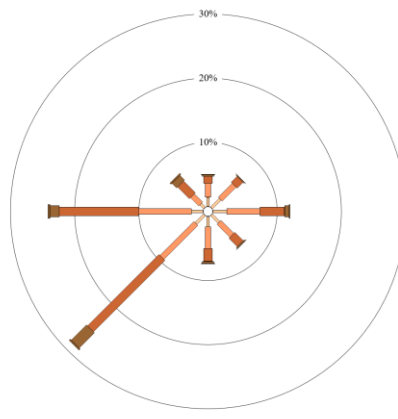
9 am  
 27485 Total Observations  
 Calm 12%



**Rose of Wind direction versus Wind speed in km/h (01 May 1944 to 11 Aug 2019)**  
 Custom lines selected, refer to attached note for details.  
**PERTH AIRPORT**  
 Site No: 009021 • Opened Jan 1944 • Still Open • Latitude: -31.9275° • Longitude: 115.9764° • Elevation 15 m  
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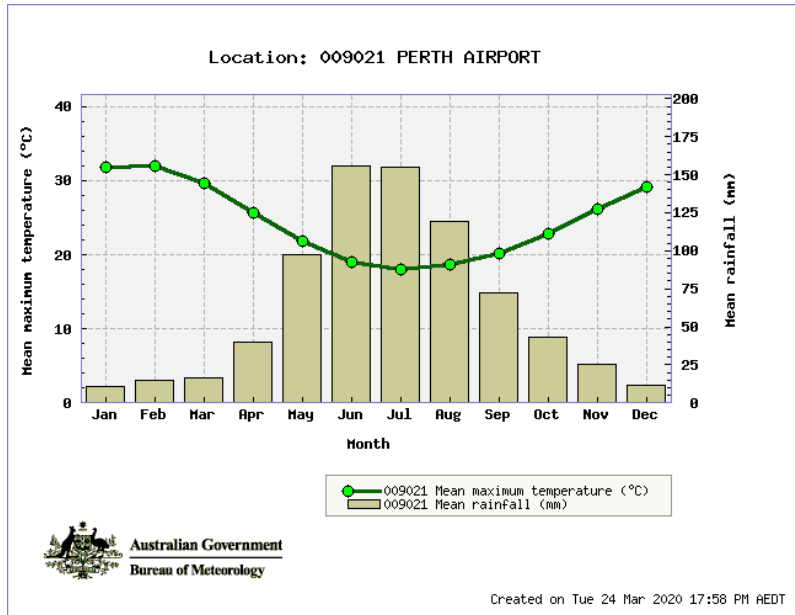
3 pm  
 27469 Total Observations  
 Calm 4%



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**Figure 6: Mean annual wind speeds and direction at 9am (left) and 3pm (right) recorded at Perth Airport<sup>1</sup>** Source: Bureau of Meteorology website [www.bom.gov.au](http://www.bom.gov.au)



**Figure 7: Mean monthly rainfall and maximum temperature at the Perth Airport weather station (1944 to 2020)** Source: Bureau of Meteorology website [www.bom.gov.au](http://www.bom.gov.au)

<sup>1</sup> It is important to note that these wind roses show historical wind speed and wind direction data for Perth Airport weather station and should not be used to predict future data

**Table 13: A comparison of mean evaporation with rainfall rates for the Perth Airport. Maximum and minimum values are shown in red and blue respectively.**

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Evaporation (mm)	300	250	200	125	80	60	60	80	100	150	250	250	1800
Rainfall (mm)	10.9	15.0	16.0	40.0	97.4	155.8	155.3	118.9	72.2	43.0	25.4	11.2	762.1

Source: Bureau of Meteorology website [www.bom.gov.au](http://www.bom.gov.au)

## 9. Detailed investigations

### 9.1 Odour impact assessment

#### 9.1.1 Overview

The Applicant undertook an odour impact assessment (EAQ Consulting, 2019) to inform the general design of the facility and risk of impact with regard to odour emissions. The assessment utilised odour dispersion modelling created by the CALPUFF program and included an operational odour analysis (OOA). The CRC was considered to be a low risk activity and the assessment focused primarily on operation of the WTS.

The OOA within the assessment provided the following daily processes and corrective actions summarised in Table.

**Table 14: WTS operational odour analysis**

Operational item	Description
Odour sources and emissions	<ul style="list-style-type: none"> <li>Automatic, pressure-pad initiated fast-action vehicle access doorways open.</li> <li>Waste trucks entering the facility and dropping waste onto the facility floor.</li> <li>Loader inside facility sorting and moving waste while fact-action doors are opening/closing.</li> </ul>
Process controls	<ul style="list-style-type: none"> <li>Fast action doors.</li> <li>Timing of truck movements.</li> <li>Waste not held on site for more than 24 hours.</li> <li>Ventilation system to be designed into the building.</li> <li>Leachate diverted to below ground storage tank and eventual offsite removal.</li> </ul>
Triggers and corrective actions	<ul style="list-style-type: none"> <li>Waste bunkers have two-day storage capacity for emergency requirements.</li> <li>The facility will feed two disposal facilities so options are available if issues arise at final disposal location.</li> <li>Alternative facilities to be used to accept waste if the two primary disposal sites are unavailable.</li> <li>Redundancy built in through multiple doors, plant and equipment to allow for operations to continue during any equipment malfunctions.</li> </ul>



Operational item	Description
Corrective action evaluation	<ul style="list-style-type: none"> <li>Based on the corrective actions above, it would be rare that the entire facility would have an unscheduled shutdown resulting in waste storage for periods exceeding 24 hours. Certain general components of wear and tear may break down during normal operations, but sufficient contingency exists for normal operations to return in a timely manner.</li> </ul>
Contingency actions	<ul style="list-style-type: none"> <li>Waste can be diverted between the two disposal facilities if required or an alternative sourced to accept waste and return operations to a normal 24 hours turnaround time.</li> </ul>

An odour emission profile was developed for the WTS by literature review of other transfer stations throughout Australia. Data availability for a WTS focusing on FOGO processing was poor, given the relatively new occurrence of FOGO collection. A MRF and rail freight terminal processing municipal solid wastes was selected as the basis for the odour emission rate. The facility was considered the most representative dataset available in the public domain, based on its stack design achieving 5 air changes per hour and FOGO being a component of municipal solid waste. The facility had derived an odour emission rate of 113.5 odour units per cubic metre per tonne per second (ou/m<sup>3</sup>/t/s). This value was derived from measuring odour emission rates from an extraction stack and comparing the tonnes of waste on the tipping floor at the time of sampling. The derived value was then used in conjunction with the proposed waste delivery schedule and quantities to determine the odour emission rates listed in Table 15 below.

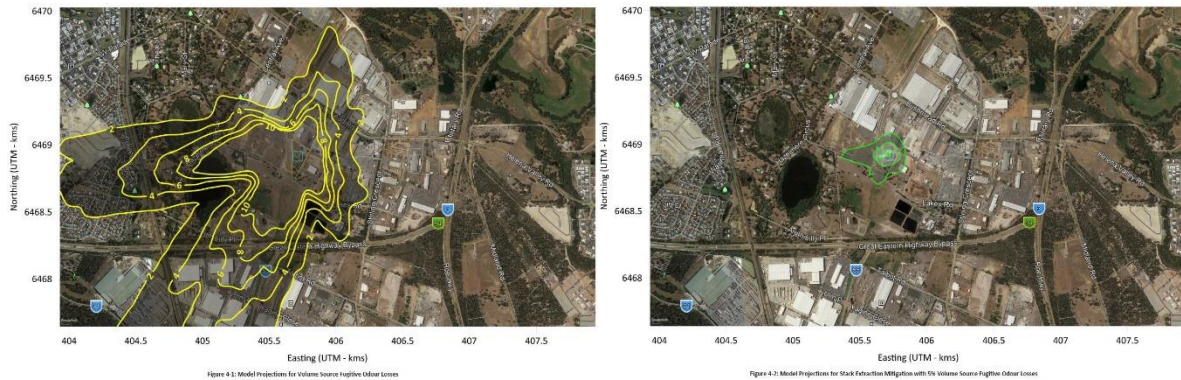
**Table 15: Derived odour emission rates for the proposed WTS**

Operational hours	Total volumetric flow (m <sup>3</sup> /s)	Odour concentration (ou/m <sup>3</sup> )	Total odour emission rate (ou/m <sup>3</sup> /s)	Fugitive loss of 5% of total odour emission rate
7am – 8am	60	306	18,387	919
8am – 9am		386	23,154	1158
9am – 10am		465	27,921	1396
10am – 11am		238	14,301	715
11am – 12pm		11	681	34
12pm – 1pm		11	681	34
1pm – 2pm		204	12,258	613
2pm – 3pm		227	13,620	681
3pm – 4pm		267	16,003.5	800
4pm – 5pm		267	16,003.5	800

As the WTS is proposing to maintain negative pressure through roof stack extraction, a fugitive loss of 5% was assumed for operational hours. Fugitive emissions outside of operational hours were considered to be minimal as under normal conditions all waste should be removed from the WTS each day and not stored overnight.

The determined odour emission rates, along with meteorological and topographical data, were then processed through the CALPUFF dispersion model. The model compared the proposed WTS with stack extraction to a scenario with no extraction and only fugitive emissions. The ground level odour concentrations for the two scenarios are shown in Figure 8 below.





**Figure 8: Projected odour contours at ground level for the fugitive scenario (left) compared to the proposed stack extraction scenario (right)**

The model projected that odour concentrations reduced to approximately 2 ou at 300 m from the Premises boundary under the proposed stack extraction scenario. Under the fugitive scenario a reduction of odour concentration to 2 ou was not projected until approximately 1.5 km from the premises boundary. The assessment concluded that the risk of odour impacts at the nearest sensitive receptor is low under the proposed stack extraction scenario. It was then stated that for the WTS to support the outcomes of the model any design modifications must still achieve a final stack height of 16 m above ground level (equates to 2m above the WTS roof apex), exit velocity of 15 m/s and four air changes per hour at a minimum.

### 9.1.2 Technical review

The odour impact assessment (EAQ Consulting, 2019) was reviewed for technical validity by the Air Quality Branch of DWER, with the following key findings determined:

- DWER concurs with the report's assessment that the CRC is unlikely to be a significant source of odour emissions and is low risk.
- There appears to be issues with the hybrid meteorological data used in the model, with meteorological observations for the Perth Airport differing substantially from the hybrid Calmet 2016 wind data. This has less effect for comparative modelling.
- There is no discussion of cumulative impacts from other odour emitting facilities located near to the premises. This is warranted given the premises' proximity to both a rendering and asphalt manufacturing plant.
- There are a number of assumptions made in the assessment which are not transparent enough. The assessment refers to the consultant's experience when listing odour concentrations within the facility and air flow losses from doorways, however no further background information is provided in support of these assumptions.
- Odour criterion modelling has been provided in support of the low risk determination of impacts at the nearest receptors. Criterion modelling is not accepted by DWER for this purpose owing to the large uncertainties in emission rates and impact criteria. Accordingly DWER considers the model to be useful only as a comparative tool showing that impacts from the facility will be lower with the proposed ventilation system in place and not that impacts are low risk.
- The WTS has a projected throughput of approximately 1000 tonnes of waste stream each operational day, most of which is putrescible waste and FOGO. Processing this waste stream is an activity likely to generate large volumes of odorous air. The proposed stack extraction achieving 4 air exchanges per hour is likely to have some positive effect on off-site odour impacts through a combination of dilution and elevated release of odorous air. Concern remains regarding whether this mitigation option is by itself

sufficient to eliminate impacts at the nearest receptors. This is due to the potential for elevated plumes to be brought to ground via building downwash and vertical plume dispersion processes.

Subsequent to the review of the odour impact assessment AQB suggested the following regarding final determination of the works approval:

- Staging approval for FOGO throughput, with approval of higher throughput levels dependent upon acceptable environmental performance to the satisfaction of DWER; or
- Incorporating scrubber technology to treat emissions prior to emitting odorous air to the ambient environment; or
- Starting operations at a later time of day to avoid the worst case dispersion conditions of light wind and stable atmospheric conditions that may be present at 7am.

### Key findings

1. The Delegated Officer, through consultation, considers that staging approval for FOGO throughput is the most appropriate regulatory mechanism for potential odour emissions from the Premises. Accordingly any issued licence amendment following compliance with the works approval will have a lower acceptable FOGO throughput than the intended design of the facility. The Applicant will be able to increase their FOGO throughput by a further amendment to the licence when required.
2. Section 59B(1)(c) of the EP Act requires applications for a licence amendment to be accompanied by plans and information required by the CEO. The Delegated Officer considers that a licence amendment application to increase FOGO throughput at the premises should be accompanied by an Odour Field Assessment.
3. The Odour Field Assessment will determine actual odour impacts during operation of the Premises and will provide validation of the assumptions and conclusions from the odour impact model. The requirements of an Odour Field Assessment are contained in the DWER document *Guideline: Odour emissions*.

## 9.2 Noise impact assessment

### 9.2.1 Overview

The Applicant undertook a noise impact assessment (Talis, 2019) to determine whether operation of the proposed works, in combination with current activities undertaken on the site, will be compliant with the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations). The assessment utilised predictive noise modelling created by the SoundPlan v8 software program.

The assessment determined that four noise sensitive receptors were present around the Premises. In accordance with the Noise Regulations, assigned levels for the receptors were calculated using the base levels in the Noise Regulations, in addition to an influencing factor. The influencing factor determined for each receptor is shown in Table 16 below and the calculated assigned levels are shown in Table 17.

**Table 16: Derivation of influencing factors for surrounding noise sensitive receptors**

Receiver	Land use	Industrial land within 100m radius (%)	Industrial land within 450m radius (%)	Major road	Influencing factor (dB)
R1	Special use – light industry	100	84	-	18
R2	Special use – light industry	97	64	-	16
R3	Rural residential	31	50	-	8
R4	Rural residential	15	46	2	8

**Table 17: Calculated assigned noise levels**

Receiver	Time of day	Influencing factor (dB)	Assigned level (dB)		
			L <sub>A10</sub>	L <sub>A1</sub>	L <sub>A max</sub>
R1	0700 to 1900 hours Monday to Saturday	18	63	73	83
R2		16	61	71	81
R3		8	53	63	73
R4		8	53	63	73

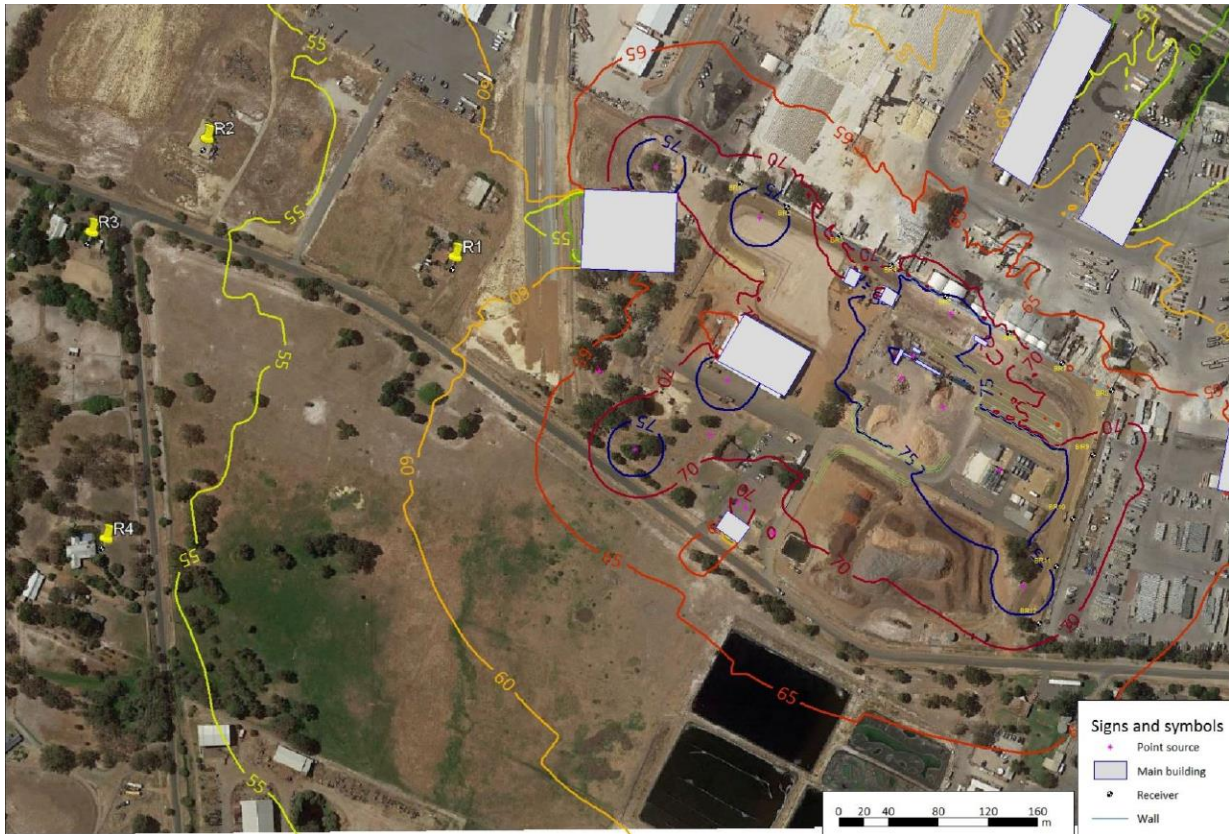
Two daytime scenarios were modelled during the assessment using expected worst case operations and meteorological conditions. Scenario 1 considered the current operations only and Scenario 2 considered the current operations, WWTE and operation of the proposed works. Only the Scenario 2 model will be discussed further.

Noise emissions from the Premises were considered to possess tonality and an additional 5dB was applied to the predicted levels. The result of the noise model are shown in Table below and graphically in Figure 9.

**Table 18: Scenario 2 noise modelling results**

Receiver	Assigned level (L <sub>A10</sub> )	Model prediction (L <sub>A10</sub> )
R1	63	57.5
R2	61	53.5
R3	53	53
R4	53	54
Boundary	65	55 - 76





**Figure 9: Scenario 2 noise contours**

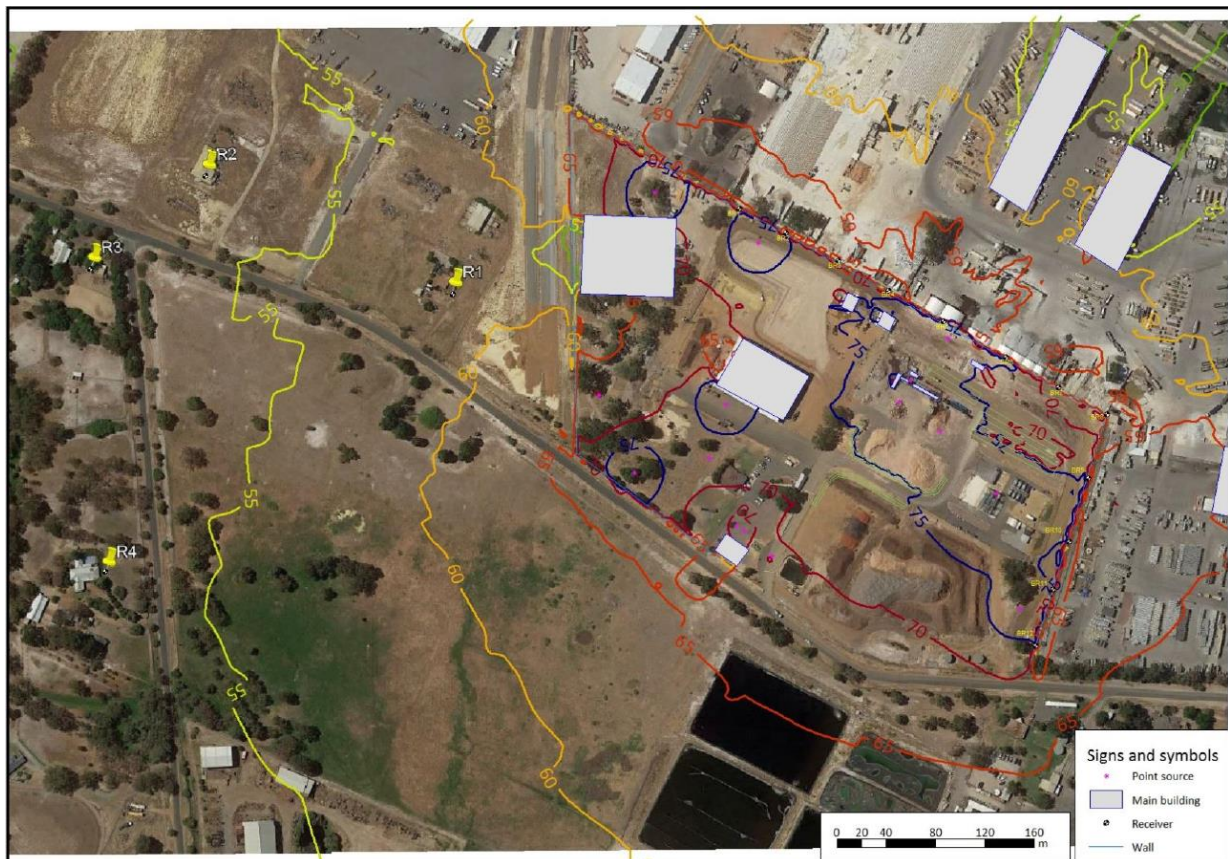
The model indicated that noise emissions received at sensitive receptor 4 and at the boundary would exceed the assigned levels. As a result further noise controls were proposed which included;

- a 3 m high acoustic boundary wall to be constructed on the north and east boundary;
- a 2.2 m high acoustic boundary wall to be constructed on the south and west boundary;
- design sound power level for the WTS to be 95 dB(A) with a 67dB(A) at 1 m from the WTS structure;
- fast action insulated doors for the WTS with an open and shut cycle of 15 seconds;
- ventilation within the WTS to be designed using a low noise mechanical system; and
- internal speed limits of 20 km/h with B-double trucks certified to ADR 83/00 or European Regulation ECE R51.

Scenario 2 was then remodeled with consideration of the above noise controls. The post control model results are shown in Table 19 below and graphically in Figure 10. The proposed controls were determined as reducing the noise emissions received at receptor R4 by 1dB and the range of emissions at the Premises boundary reduced to 55 – 65 dB. It was concluded that if the proposed controls were implemented correctly, operation of the Premises following the completion of the proposed works would be able to achieve compliance with the Noise Regulations.

**Table 19: Pre and post control noise modelling results**

Receiver	Assigned level (LA10)	Model prediction without controls (LA10)	Model prediction post controls (LA10)
R1	63	57.5	57
R2	61	53.5	53
R3	53	53	53
R4	53	54	53
Boundary	65	55 - 76	55 - 65



**Figure 10: Modelled noise contours following application of controls**

### 9.2.2 Technical review

The noise impact assessment (Talis, 2019) was reviewed for technical validity by the Environmental Noise Branch of DWER, with the following key findings determined:

- The methodology employed in the assessment is correct, with inputs and assumptions used in the model also being reasonable.
- The closest noise sensitive receptors, R1 and R2, are derelict houses which are no longer occupied. In accordance with the current zoning of the two land parcels it is unlikely for these receptors to be used for residential purposes in the future.
- The assigned levels calculated for the noise sensitive receptors appear consistent with the Noise Regulations.



- The modelled results indicate that the proposed CRC and WTS would significantly increase the overall noise emission levels at all four neighbouring residences by 2 to 5 dB. As a result, the overall noise emissions from HRRP would exceed the assigned noise level at one of the four neighbouring residences. Although the modelled noise levels seem to be overestimated, they are accepted.
- The proposed mitigation measures of 3 m high north and east boundary walls and 2.2 m high west and south boundary walls seem effective. It is likely that these measures will ensure that operation of the Hazelmere Resource Recovery Park will comply with the Noise Regulations following completion of the proposed works.
- The noise assessment has been based on noise modelling only. Noise modelling is appropriate for predicting noise emissions from future operations. Site noise measurement is a more appropriate and direct method of assessing the noise emissions from an existing operation.

### Key findings

1. The Delegated Officer considers it is likely that noise from the HRRP operations (including the proposed WTS and CRC) can be managed to comply with the Noise Regulations. However, noise measurements at the commencement of full operations should be conducted on the Premises boundary and at the four closest residences to confirm this. Accordingly, any issued licence amendment following compliance with the works approval is likely to contain noise validation requirements.

## 10. Applicant controls

The Applicant has proposed the following management measures and controls as part of the application:

**Table 20: Summary of construction emissions and applicant controls**

Source	Emission (as identified above)	Proposed controls
Vehicle and machinery operation Compaction Construction activities	Noise	<ul style="list-style-type: none"> <li>• Construction hours between 7am – 7pm Monday to Saturday excluding public holidays.</li> </ul>
Vehicle and machinery movements Earthworks	Dust	<ul style="list-style-type: none"> <li>• 9 kL and 15 kL watercarts will be used for dust control as needed.</li> </ul>



Source	Emission (as identified above)	Proposed controls
Oxidation of PASS by excavation for stormwater drainage pipework and underground infiltration cells	Acidic groundwater containing elevated concentrations of dissolved metals	<ul style="list-style-type: none"> <li>• Soil excavated from the location of existing sediment pond 1 will be considered as ASS/PASS material and removed to a pad for treatment.</li> <li>• Treatment pad comprised of crushed limestone with a minimum base thickness of 300mm and a minimum bund thickness of 150mm. The pad will include a leachate collection system.</li> <li>• Excavated ASS/PASS will be neutralised through lime treatment at a rate of 4.17 kg CaCO<sub>3</sub>/m<sup>3</sup> within 18 hours of excavation.</li> <li>• Treated material will only be reused as backfill after validation to following the specification: <ul style="list-style-type: none"> <li>○ Soil and neutralising agent will look visually well blended.</li> <li>○ 6.0 – 8.5 pH<sub>F</sub></li> <li>○ &gt; 5 pH<sub>FOX</sub></li> <li>○ Excess ANC is present.</li> </ul> <p>Treated material which fails validation will be retreated until the above specifications are met.</p> </li> <li>• Leachate collected from the treatment pad will be monitored for pH and total acidity. Leachate will be treated to the following specification: <ul style="list-style-type: none"> <li>○ 6.5 – 8.5 pH</li> <li>○ &lt;40 mg/L CaCO<sub>3</sub> total acidity.</li> </ul> </li> <li>• Excavation at the location of sediment pond 1 will be lined with 100mm of alkaline material.</li> <li>• Monitoring and testing of leachate from suspected PASS or ASS material.</li> <li>• Visual assessment of excavated material for indicators of ASS (yellow, orange, or brown precipitates, clay/peat like materials, or pale grey sands seen in Bassendean sand units)</li> <li>• Decommissioning and disposal of the treatment pad will be informed through validation sampling.</li> <li>• Baseline groundwater monitoring prior to excavations. 3 times per week in-field monitoring and fortnightly laboratory analysis of groundwater</li> </ul>

**Table 21: Summary of operational emissions and applicant controls**

Source	Emission (as identified above)	Proposed controls
<b>Community Recycling Centre</b>		
Acceptance, sorting and temporary storage of waste Vehicle and machinery movements	Dust	<ul style="list-style-type: none"> <li>• 9 kL and 15 kL watercarts will be used for dust control as needed.</li> <li>• Internal road sweeping will be undertaken twice weekly.</li> <li>• Internal speed limit of 10 km/hr on unsealed roads.</li> <li>• Covering of all waste loads during transport to and from.</li> <li>• All areas of the CRC to be sealed.</li> </ul>
Cardboard baler Vehicle and machinery movements Waste receptacle lifts and placements	Noise	<ul style="list-style-type: none"> <li>• Multi-tier drop off facility orientated so that waste is placed on the opposite side of a concrete retaining wall acting as a noise bund.</li> <li>• Waste acceptance and equipment operations restricted to operational hours only.</li> <li>• Slow unloading of material from the lowest height possible.</li> <li>• Broadband reversing alarms on trucks and mobile plant servicing the CRC.</li> <li>• Acoustic boundary wall:               <ul style="list-style-type: none"> <li>○ 3 m high on the north and east boundary</li> <li>○ 2.2 m high on the west boundary and a portion of the southern boundary</li> </ul> </li> <li>• Regular maintenance of equipment and machinery.</li> </ul>
Acceptance, sorting and temporary storage of household hazardous waste	Liquid waste	<ul style="list-style-type: none"> <li>• Fully enclosed and bunded shed for HHW acceptance and storage present above an impermeable hardstand.</li> <li>• Enclosed containment receptacles for outdoor storage of car batteries.</li> <li>• Segregation of incompatible waste types</li> </ul>
Stormwater interaction with temporary stored waste	Contaminated stormwater	<ul style="list-style-type: none"> <li>• Canopy above the hooklift bins and waste deposition area at the MTDOF.</li> <li>• Temporary bin covers to be used at the Recycling Area during rainfall periods.</li> <li>• Enclosed containment receptacles for waste paint and car batteries.</li> <li>• Regular inspection and maintenance of stormwater drainage and containment infrastructure.</li> </ul>

Source	Emission (as identified above)	Proposed controls
Acceptance, sorting and temporary storage of putrescible waste material	Odour	<ul style="list-style-type: none"> <li>• General waste to be removed within 24 hours to the WTS.</li> <li>• Odorous waste will be removed when identified to the WTS or directly offsite.</li> <li>• Regular cleaning of the area.</li> <li>• Regular maintenance of waste containment receptacles.</li> <li>• Complaints register.</li> <li>• Odour monitoring.</li> </ul>
Waste storage fire	Noxious fumes and fire washwater	<ul style="list-style-type: none"> <li>• Segregation of incompatible waste types in the HHW shed</li> <li>• 9 kL and 15 kL watercarts.</li> <li>• 9 kg fire extinguishers located at various points of the facility.</li> <li>• Fire extinguishers within plant and vehicles servicing the CRC.</li> <li>• Staff training to respond to fire incidents.</li> <li>• Regular maintenance and checking of equipment.</li> </ul>
Temporary storage of putrescible waste material	Pest and Vermin	<ul style="list-style-type: none"> <li>• Regular cleaning of the area.</li> <li>• Covering of all waste loads during transport to and from.</li> <li>• Regular litter collections at the Premises.</li> <li>• Perimeter fencing regularly monitored and maintained.</li> <li>• Suspected or known shelters and breeding locations will be exterminated.</li> <li>• General waste removed frequently from the MTDOF to the WTS.</li> </ul>
Acceptance, sorting and temporary storage of waste	Windblown waste	<ul style="list-style-type: none"> <li>• Covering and containment of all waste loads during transport to and from the premises.</li> <li>• Use of containment receptacles such as hooklift bins, cages and enclosed sheds for waste storage.</li> <li>• Regular litter collections at the Premises.</li> <li>• Perimeter fencing to capture windblown waste.</li> <li>• Temporary bin covers to be used at the Recycling Area during strong wind conditions.</li> </ul>
<b>Waste Transfer Station</b>		
Acceptance, sorting and temporary storage of waste Vehicle and machinery movements	Dust	<ul style="list-style-type: none"> <li>• 9 kL and 15 kL watercarts will be used for dust control as needed.</li> <li>• Internal road sweeping will be undertaken twice weekly.</li> <li>• Internal speed limit of 10 km/hr on unsealed roads.</li> <li>• Covering of all waste loads during transport to and from.</li> <li>• All areas of the WTS to be sealed.</li> </ul>

Source	Emission (as identified above)	Proposed controls
<p>Mechanical sorting of waste</p> <p>Vehicle and machinery movements</p> <p>Waste receptacle lifts and placements</p> <p>Operation of the ventilation system</p>	<p>Noise</p>	<ul style="list-style-type: none"> <li>• Acoustic boundary wall: <ul style="list-style-type: none"> <li>○ 3 m high on the north and east boundary</li> <li>○ 2.2 m high on the west boundary and a portion of the southern boundary</li> </ul> </li> <li>• B-double trucks to be certified to ADR 83/00 or ECE R51.</li> <li>• Internal speed limit of 20 km/hr.</li> <li>• Fully enclosed building designed to a full operational target of: <ul style="list-style-type: none"> <li>○ 95 dB(A) SWL; and</li> <li>○ 67 dB(A) SPL at 1 m</li> </ul> </li> <li>• Sound insulated fast action doors.</li> <li>• Fabric insulation installed under roof sheeting.</li> <li>• Broadband reversing alarms to be used on machinery and vehicles.</li> <li>• Waste acceptance and equipment operation restricted to operational hours only.</li> <li>• Slow unloading of material from the lowest height possible.</li> <li>• Material handling confined to designated areas.</li> <li>• Regular maintenance of equipment and machinery.</li> </ul>
<p>Decomposition of putrescible material</p> <p>Washdown of waste collection vehicles, tipping floor and storage bunkers</p>	<p>Leachate</p>	<ul style="list-style-type: none"> <li>• Grading of the WTS floor to fall to a spoon drain.</li> <li>• 20 kL below ground leachate containment tank with high level alarm.</li> <li>• Pump out of the leachate tank for offsite removal as required.</li> <li>• Bunding or intercept drain at vehicle access points to prevent stormwater ingress.</li> </ul>
<p>Stormwater interaction with temporary stored waste</p>	<p>Contaminated stormwater</p>	<ul style="list-style-type: none"> <li>• Bunding or intercept drain at vehicle access points to prevent stormwater ingress.</li> <li>• Uncontaminated stormwater outside the WTS to be diverted to a drainage system.</li> <li>• Regular inspection and maintenance of stormwater drainage and containment infrastructure.</li> </ul>



Source	Emission (as identified above)	Proposed controls
Acceptance, sorting and temporary storage of putrescible waste material	Odour	<ul style="list-style-type: none"> <li>• Fully enclosed building.</li> <li>• Fast action roller doors with a 15 second open and shut cycle.</li> <li>• Air exchange rate of 4 cycles per hour.</li> <li>• 4 x extraction stacks with ceiling mounted axial flow fans: <ul style="list-style-type: none"> <li>○ 15 m/s exit velocity.</li> <li>○ Automated rain louvres</li> </ul> </li> <li>• Two day storage capacity in case of emergency in the distribution network.</li> <li>• Integrated building management system: <ul style="list-style-type: none"> <li>○ Controls ventilation, lighting, fire prevention, etc.</li> <li>○ Regularly tested</li> <li>○ Annual maintenance schedule.</li> </ul> </li> <li>• 24 hour waste removal to minimise putrefication.</li> <li>• Sweeping and washdown of the WTS floor.</li> <li>• Covering of all waste loads during transport to and from.</li> <li>• Odour monitoring.</li> <li>• Complaints management system.</li> </ul>
Waste storage fire	Noxious fumes and fire washwater	<ul style="list-style-type: none"> <li>• 9kL and 15 kL watercarts.</li> <li>• 9kg fire extinguishers located at various points of the facility.</li> <li>• Three mobile 1kL firefighting units.</li> <li>• Two fire suppression water storage tanks adjacent to the southern wall of the WTS.</li> <li>• Two 157kL water storage tanks connected to a FESA certified ring main.</li> <li>• Four 63mm x 30 m lay flat hoses with BIC couplings.</li> <li>• One 38mm x 30m lay flat hose with BIC coupling.</li> <li>• Two ground monitors.</li> <li>• One fire branch nozzle.</li> <li>• Water from the stormwater pond can also be used where needed.</li> <li>• Fire extinguishers within mobile plant and vehicles.</li> <li>• Fire alarm system incorporated into the BMS to detect smoke, fire and carbon monoxide levels and linked to the building sprinkler system.</li> <li>• Staff training to respond to fire incidents.</li> <li>• Regular maintenance and checking of equipment.</li> </ul>

Source	Emission (as identified above)	Proposed controls
Temporary storage of putrescible waste material	Pest and Vermin	<ul style="list-style-type: none"> <li>• Anti-perch bird stripping installed on building trusses.</li> <li>• Covering of all waste loads during transport to and from.</li> <li>• Regular litter collections at the Premises.</li> <li>• Perimeter fencing regularly monitored and maintained.</li> <li>• Suspected or known shelters and breeding locations will be exterminated.</li> </ul>
Acceptance, sorting and temporary storage of waste	Windblown waste	<ul style="list-style-type: none"> <li>• Fully enclosed WTS.</li> <li>• Covering of all waste loads during transport to and from.</li> <li>• Regular litter collections at the Premises.</li> <li>• Perimeter fencing to capture windblown waste.</li> </ul>

## 11. Risk assessment

The identification of the sources, pathways and receptors to determine Risk Events are set out in Table and Table below, consistent with the *Guidance Statement: Risk Assessments*. Risk ratings have been assessed for each key emission source and take into account potential source-pathway-receptor linkages. The mitigation measures / controls proposed by the Applicant have been considered in determining the risk rating. Emissions during construction and operation have been assessed separately to allow clear delineation of activity phases.

The works approval that accompanies this report authorises construction and time-limited operations. A licence is required to operate the premises following the time-limited operations phase authorised under the works approval.

The conditions in the issued Works Approval, as outlined in Table 22 and Table 23, have been determined in accordance with the *Guidance Statement: Setting Conditions*.

## 11.1 Risk assessment – construction

**Table 22: Identification of emissions, pathway and receptors during construction**

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Earthworks and site preparation Facility construction	Dust	Air/windborne pathway causing impacts to health and amenity of closest human receptors: <ul style="list-style-type: none"> <li>Residential property (360m west)</li> <li>Industrial receptors surrounding premises</li> </ul>	Refer to Section 10	Minor	Rare	Low	There are no major soil moving activities or excavations proposed during construction of the works. Construction works are not expected to generate significant dust emissions and the proposed use of a water cart is likely to be sufficient at mitigating dust emissions.	N/A
	Noise	Air/windborne pathway causing impacts to amenity of closest human receptors: <ul style="list-style-type: none"> <li>Residential property (360m west)</li> <li>Industrial receptors surrounding premises</li> </ul>		Minor	Rare	Low	Although the closest human receptors are situated within the morning prevailing wind direction, due to the short term nature of the proposed works it is expected that receptors will not be significantly impacted by noise emissions.  Construction work is exempt from the requirements of the Noise Regulations provided it is undertaken between the hours of 7am to 7pm Mon – Sat. Construction work undertaken outside of these hours will require the submission of a Noise Management Plan for approval by DWER.	<i>Environmental Protection (Noise) Regulations</i>
Oxidation of PASS by excavation for stormwater drainage pipework and underground cells	Acidic groundwater containing elevated concentrations of dissolved metals	Oxidation of PASS resulting in increased groundwater acidity and mobilisation of heavy metals causing a potential loss of beneficial use.		Moderate	Possible	Medium	The Premise is located within a Class 1 and Class 2 ASS risk area. Disturbance of PASS or ASS has historically occurred at the Premises resulting in a classification under the <i>Contaminated Site Act 2003</i> . This occurred due to excavation for a stormwater pond at the location of the proposed CRC.  The Applicant has provided an acid sulfate soil management plan detailing the actions to be undertaken during excavations to prevent impacts from the oxidation of PASS or ASS. This plan was internally referred for comment by the department's Contaminated Sites Branch. The plan was considered to be appropriate to address the risks associated with potential disturbance of PASS or ASS during the proposed works.  As the oxidation of PASS or ASS material has previously occurred at the premises and the applicant proposes similar works, the Delegated Officer considers that oxidation of PASS or ASS material could occur. Key actions from the Applicant's acid sulfate soil management plan have been included in the issued Works Approval as regulatory controls. A further condition requiring the submission of a Closure Report will be included in the issued Works Approval as a regulatory control.	Condition 1: ASS treatment pad requirements Condition 3 - 9: ASS management Condition 10 - 11: Treatment pad decommissioning Condition 12: Closure reporting

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

## 11.2 Risk assessment – operation

Table 23: Identification of emissions, pathway and receptors under time-limited operation and during full operation

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Acceptance, sorting and temporary storage of putrescible material	Odour	<p>Air/windborne pathway causing impacts to health and amenity of closest human receptors:</p> <ul style="list-style-type: none"> <li>Residential property (360 m west)</li> <li>Industrial receptors surrounding premises</li> </ul>	Refer to Section 10	Moderate	Possible	Medium	<p>Sufficient uncertainty still exists in the Applicant's assessment of potential odour impacts. This uncertainty is due to the reliance on modelling combined with a lack of comparable FOGO receiving facilities at this scale within the State. Notwithstanding these uncertainties, the Delegated Officer recognises that further infrastructure controls for odour emissions may not be needed. The requirement for further infrastructure controls should be determined by monitoring actual odour emissions from the Premises once FOGO wastes are present.</p> <p>FOGO waste acceptance will be limited below the design capacity of the premises to allow for confirmatory field testing of odour emissions, prior to an increase in odour sources. The Applicant may seek to increase FOGO acceptance at a later date through a licence amendment supported by odour field assessment data. FOGO waste acceptance during time limited operations will be limited to 40,000 tonnes per annum and this limit will also be considered at the licencing stage.</p>	<p>Condition 1 - 2: <i>Design and construction requirements</i></p> <p>Condition 13 – 15: <i>Construction compliance reporting</i></p> <p><u>Time limited operation</u></p> <p>Condition 17: <i>Waste acceptance</i></p> <p>Condition 22: <i>Waste processing</i></p> <p>Condition 23: <i>Infrastructure requirements</i></p> <p>Condition 24 - 25: <i>Spill recovery</i></p> <p><u>Operation</u></p> <p>To be determined at licencing assessment stage, however FOGO waste acceptance will be limited to 40,000 tonnes per annum.</p>
<p>Decomposition of putrescible material</p> <p>Washdown of waste collection vehicles, tipping floor and storage bunkers</p> <p>Stormwater interaction with temporary stored waste</p>	Leachate / Contaminated stormwater	<p>Overland runoff potentially causing ecosystem disturbance or impacting surface water quality:</p> <ul style="list-style-type: none"> <li>Hazelmere Lake South (475m west)</li> </ul>	Refer to Section 10	Minor	Rare	Low	<p>The Premises is not connected to the local stormwater drainage network, stormwater falling within the premises is disposed via below ground infiltration tanks or an infiltration pond. The Applicant has proposed controls which both exclude stormwater runoff from contacting stored wastes and isolates leachate from mixing with stormwater.</p> <p>Due to the receptor's distance and absence of a connecting drainage network, overland flow of leachate or contaminated stormwater towards the identified receptor is expected to occur only in exceptional circumstances.</p> <p>The Delegated Officer considers that the proposed Applicant controls sufficiently mitigate the potential for overland flow of leachate from the Premises. Related Applicant controls will be specified in the Issued Works Approval as regulatory controls for time-limited operation. Applicant controls for inclusion in the issued licence will be determined at the licencing assessment stage.</p>	<p>Condition 1 - 2: <i>Design and construction requirements</i></p> <p>Condition 13 – 15: <i>Construction compliance reporting</i></p> <p><u>Time limited operation</u></p> <p>Condition 17: <i>Waste acceptance</i></p> <p>Condition 22: <i>Waste processing</i></p> <p>Condition 23: <i>Infrastructure requirements</i></p> <p>Condition 24 - 25: <i>Spill recovery</i></p> <p>Condition 26: <i>Stormwater control</i></p> <p><u>Operation</u></p> <p>To be determined at licencing assessment stage.</p>



Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
<p>Decomposition of putrescible material</p> <p>Washdown of waste collection vehicles, tipping floor and storage bunkers</p> <p>Stormwater interaction with temporary stored waste</p>	Leachate / Contaminated stormwater	Infiltration through soil to groundwater causing deterioration of water quality and potential impacts to down-gradient non-potable groundwater users and Hazelmere Lake South	Refer to Section 10	Moderate	Unlikely	Medium	<p>The premises will be predominately comprised of sealed hardstand that limits the opportunity for leachates or contaminated stormwater to seep through soil. Acceptance and storage of putrescible material likely to produce a leachate takes place mostly in the WTS where an impermeable hardstand and leachate containment system prevents seepage through soil to groundwater. Vehicle and equipment wash down take place above this same hardstand.</p> <p>Small quantities of putrescible waste may be accepted at the CRC, however this material is stored within hooklift bins providing containment of leachate and precluding interaction with stormwater. These bins are removed to the WTS frequently so only minor volumes of leachate would be generated in-situ.</p> <p>With the proposed Applicant controls in place, seepage of leachate to groundwater is most likely to occur due to defects in the leachate holding tank and associated pipework. Integrity of the holding tank and pipelines will be confirmed through compliance reporting associated with the Issued Works Approval. Subject to the integrity of the installed leachate containment system being confirmed, the Delegated Officer considers that seepage of leachate to groundwater will probably not occur in most circumstances.</p> <p>The Delegated Officer considers that the proposed Applicant controls sufficiently mitigate the potential for leachate seepage to groundwater at the Premises. Related Applicant controls will be specified in the Issued Works Approval as regulatory controls for time-limited operation. Applicant controls for inclusion in the issued licence will be determined at the licensing assessment stage.</p>	<p>Condition 1 - 2: <i>Design and construction requirements</i></p> <p>Condition 13 – 15: <i>Construction compliance reporting</i></p> <p><u>Time limited operation</u></p> <p>Condition 17: <i>Waste acceptance</i></p> <p>Condition 22: <i>Waste processing</i></p> <p>Condition 23: <i>Infrastructure requirements</i></p> <p>Condition 24 - 25: <i>Spill recovery</i></p> <p>Condition 26: <i>Stormwater control</i></p> <p><u>Operation</u></p> <p>To be determined at licensing assessment stage.</p>
Acceptance, sorting and temporary storage of household hazardous waste	Spillage of liquid waste or loss of containment	<p>Overland runoff potentially causing ecosystem disturbance or impacting surface water quality:</p> <ul style="list-style-type: none"> <li>Hazelmere Lake South (475m west)</li> </ul>	Refer to Section 10	Moderate	Rare	Medium	<p>Overland flow of liquid waste towards the identified receptor following a containment loss or spill event is expected to occur only in exceptional circumstances. This is due to the receptor's distance, absence of a connecting drainage network and low quantity of HHW stored at one time.</p> <p>The Delegated Officer considers that the proposed Applicant controls sufficiently mitigate the potential for overland flow of liquid waste from the Premises. Related Applicant controls will be specified in the Issued Works Approval as regulatory controls for time-limited operation. Applicant controls for inclusion in the issued licence will be determined at the licensing assessment stage.</p>	<p>Condition 1 - 2: <i>Design and construction requirements</i></p> <p>Condition 13 – 15: <i>Construction compliance reporting</i></p> <p><u>Time limited operation</u></p> <p>Condition 17: <i>Waste acceptance</i></p> <p>Condition 21: <i>HHW container inspection</i></p> <p>Condition 22: <i>Waste processing</i></p> <p>Condition 23: <i>Infrastructure requirements</i></p> <p>Condition 24 - 25: <i>Spill recovery</i></p> <p><u>Operation</u></p> <p>To be determined at licensing assessment stage.</p>

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Acceptance, sorting and temporary storage of household hazardous waste	Spillage of liquid waste or loss of containment	Infiltration through soil to groundwater causing deterioration of water quality and potential impacts to down-gradient non-potable groundwater users and Hazelmere Lake South	Refer to Section 10	Moderate	Unlikely	Medium	<p>Acceptance and temporary storage of HHW will predominately occur in an enclosed shed above a bunded and sealed hardstand. This hardstand will limit the ability for liquid waste to seep through soil to groundwater.</p> <p>Car batteries (HHW) will be accepted at the CRC and stored outside the HHW shed. The batteries will be stored on self bunded receptacles above a bitumen sealed hardstand. Liquid waste spills from compromised batteries will be collected in the bunded container and prevented from infiltrating through soil.</p> <p>The Delegated Officer considers that spillage of liquid waste is most likely to occur where HHW is delivered to the Premises in containers with questionable integrity.</p> <p>The Delegated Officer considers that the Applicant's proposed infrastructure controls sufficiently mitigate the potential for liquid waste spills to impact receptors surrounding the Premises. However, it is noted that the Applicant has not specified any explicit procedural controls relating to acceptance and storage of HHW, electing instead that management will follow the HHW Guidelines. Accordingly procedures relating to waste classification and container inspection outlined in the HHW Guideline will be specified in the Issued Works Approval as regulatory controls for time-limited operation. In the absence of specific applicant controls at the licensing assessment stage these will likely be considered for the issued licence.</p>	<p>Condition 1 - 2: <i>Design and construction requirements</i></p> <p>Condition 13 – 15: <i>Construction compliance reporting</i></p> <p><u>Time limited operation</u></p> <p>Condition 17: <i>Waste acceptance</i></p> <p>Condition 21: <i>HHW container inspection</i></p> <p>Condition 22: <i>Waste processing</i></p> <p>Condition 23: <i>Infrastructure requirements</i></p> <p>Condition 24 - 25: <i>Spill recovery</i></p> <p><u>Operation</u></p> <p>To be determined at licensing assessment stage.</p>
Acceptance, sorting and temporary storage of waste	Windblown waste	<p>Air/windborne pathway causing impacts to amenity of closest human receptors:</p> <ul style="list-style-type: none"> <li>Residential property (360 m west)</li> <li>Industrial receptors surrounding premises</li> </ul> <p>Air/windborne pathway potentially causing ecosystem disturbance:</p> <ul style="list-style-type: none"> <li>Banksia dominated woodlands of the Swan Coastal Plain TEC</li> <li>Shrublands of Woodlands of the eastern side of the Swan Coastal Plain</li> </ul>	Refer to Section 10	Minor	Unlikely	Medium	<p>Waste acceptance, sorting and storage will take place predominately using an enclosed warehouse and covered waste delivery vehicles. The enclosed warehouse and vehicle coverings will preclude waste from becoming windblown or reaching the identified receptors.</p> <p>Waste proposed for outdoor acceptance and storage is derived from the community recycling centre. Daily waste quantities in this area are low and waste is stored within containment equipment. Waste material stored outside and directly on hardstand is considered too large to become windblown.</p> <p>The Delegated Officer considers that the Applicant's proposed controls sufficiently mitigate the potential for windblown waste to impact receptors surrounding the Premises. Related Applicant controls will be specified in the Issued Works Approval as regulatory controls for time-limited operation. Applicant controls for inclusion in the issued licence will be determined at the licensing assessment stage.</p>	<p>Condition 1 - 2: <i>Design and construction requirements</i></p> <p>Condition 13 – 15: <i>Construction compliance reporting</i></p> <p><u>Time limited operation</u></p> <p>Condition 22: <i>Waste processing</i></p> <p>Condition 23: <i>Infrastructure requirements</i></p> <p>Condition 27: <i>windblown waste collection</i></p> <p><u>Operation</u></p> <p>To be determined at licensing assessment stage.</p>

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Temporary storage of putrescible waste material	Disease vectors (vermin and pests)	Disease vectors potentially causing impacts to health and amenity: <ul style="list-style-type: none"> <li>Residential property (360m west)</li> <li>Industrial receptors surrounding premises</li> <li>Banksia dominated woodlands of the Swan Coastal Plain TEC</li> <li>Shrublands of Woodlands of the eastern side of the Swan Coastal Plain</li> </ul>	Refer to Section 10	Minor	Unlikely	Medium	Putrescible waste acceptance, sorting and storage will take place predominately using an enclosed warehouse, covered waste delivery vehicles and enclosed waste receptacles. The Delegated Officer considers that the Applicant's proposed controls are likely to be sufficient at mitigating emissions of potential disease vectors from the Premises. Related Applicant controls will be specified in the Issued Works Approval as regulatory controls for time-limited operation. Applicant controls for inclusion in the issued licence will be determined at the licensing assessment stage.	Condition 1 - 2: <i>Design and construction requirements</i> Condition 13 – 15: <i>Construction compliance reporting</i> <u>Time limited operation</u> Condition 22: <i>Waste processing</i> <u>Operation</u> To be determined at licensing assessment stage.
Waste acceptance, sorting and storage Vehicle movements	Dust	Air/windborne pathway causing impacts to health and amenity of closest human receptors: <ul style="list-style-type: none"> <li>Residential property (360m west)</li> <li>Industrial receptors surrounding premises</li> </ul>	Refer to Section 10	Minor	Rare	Low	The Premises activities are not likely to generate substantial volumes of dust due to the type of waste, storage within an enclosed facility and presence of sealed vehicle access ways. The Delegated Officer considers that the Applicant's proposed dust controls are likely to be sufficient at mitigating dust emissions. Further regulatory control is not required.	<u>Operation</u> To be determined at licensing assessment stage.
	Noise	Air/windborne pathway causing impacts to amenity of closest human receptors: <ul style="list-style-type: none"> <li>Residential property (360m west)</li> <li>Industrial receptors surrounding premises</li> </ul>	Refer to Section 10	Minor	Unlikely	Medium	The proposed operational hours for the premises are mainly within the 'daytime' hours of the Noise Regulations where a higher assigned decibel level is afforded to potential receptors. The exception to this is operation of the community recycling centre between 8am - 2pm on Sunday. Noise emissions from the community recycling centre are expected to be minimal, as waste deliveries will occur from small residential light vehicles and waste handling volumes will be relatively low. The Applicant has provided modelling information to demonstrate that operation of the works, in conjunction with the proposed controls, is likely to comply with the EP Noise Regulations. Accordingly the Delegated Officer considers that the Applicant's proposed controls are likely to be sufficient at mitigating potential noise impact on receptors surrounding the Premises. However, the results of the model will require verification by field measurements once full operation of the works commences. Related Applicant controls will be specified in the Issued Works Approval as regulatory controls for time-limited operation. The requirement for a noise verification assessment will be included in the conditions for the issued licence. Applicant controls for inclusion in the issued licence will be determined at the licensing assessment stage and will be informed by the results of the noise verification study.	<i>Environmental Protection (Noise) Regulations</i> Condition 1 - 2: <i>Design and construction requirements</i> Condition 13 – 15: <i>Construction compliance reporting</i> <u>Time limited operation</u> Condition 22: <i>Waste processing</i> <u>Operation</u> To be determined at licensing assessment stage.

Risk Event				Consequence rating <sup>1</sup>	Likelihood rating <sup>1</sup>	Risk <sup>1</sup>	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Abnormal operations (waste storage fire)	Particulates and noxious gases from waste combustion	<p>Air/windborne pathway causing impacts to health and amenity of closest human receptors:</p> <ul style="list-style-type: none"> <li>Residential property (360m west)</li> <li>Industrial receptors surrounding premises</li> </ul>	Refer to Section 10	Major	Rare	Medium	<p>Although impacts to receptors are considered major, the likelihood of an adverse event occurring would only be in exceptional circumstances.</p> <p>The Delegated Officer considers that the Applicant's proposed infrastructure controls are suitable for mitigating fire incident risks. The requirement for an internal sprinkler and monitoring system at the WTS will be listed in the issued Works Approval as a regulatory control.</p> <p>The Applicant has supplied their current Fire and Emergency Management Plan for the Premises. As this is a live document, operation of the proposed works are not discussed in the plan. The Delegated Officer considers the Fire and Emergency Management Plan should be updated on completion of each stage of works and provided with the licence amendment application for that stage. Applicant controls for inclusion in the issued licence will be determined at the licensing assessment stage and will be informed by the content of the updated Fire and Emergency Management Plan.</p>	<p>Condition 1 - 2: <i>Design and construction requirements</i></p> <p>Condition 13 – 15: <i>Construction compliance reporting</i></p> <p><u>Time limited operation</u></p>
		<p>Overland runoff potentially causing ecosystem disturbance or impacting surface water quality:</p> <ul style="list-style-type: none"> <li>Hazelmere Lake South (475m west)</li> </ul>		Moderate	Rare	Medium	<p>Overland flow of fire washwater towards the identified receptor following a fire event is expected to occur only in exceptional circumstances. This is due to the receptor's distance and absence of a connecting drainage network.</p> <p>The Delegated Officer considers that the proposed Applicant controls sufficiently mitigate the potential for overland flow of fire washwater from the Premises. Related Applicant controls will be specified in the Issued Works Approval as regulatory controls for time-limited operation. Applicant controls for inclusion in the issued licence will be determined at the licensing assessment stage.</p>	<p>Condition 17: <i>Waste acceptance</i></p> <p>Condition 22: <i>Waste processing</i></p> <p>Condition 23: <i>Infrastructure requirements</i></p> <p>Condition 24 - 25: <i>Spill recovery</i></p>
	Washwater and leachate generation from extinguishing a fire	<p>Infiltration through soil to groundwater causing deterioration of water quality and potential impacts to down-gradient non-potable groundwater users and Hazelmere Lake South</p>		Moderate	Possible	Medium	<p>The Applicant has not proposed any specific controls relating to control of fire washwater generated by extinguishing a fire. Washwater generated at the facility when extinguishing a fire would be directed to two places; the leachate holding tank (20 kL) for fires within the WTS warehouse and the stormwater network for washwater outside the warehouse. Due to the inherent design of the stormwater network the Delegated Officer considers that infiltration of fire washwater could occur during a fire event.</p> <p>The Delegated Officer considers that the Applicant proposed controls are not sufficient and further regulatory controls are required. As the stormwater drainage system relies on on-site infiltration rather than disposal to a drainage network, the Delegated Officer considers that all below ground stormwater disposal cells must be fitted with a pump out point for a vacuum tanker provided in locations that would reasonably be accessible during a fire event. Access for a vacuum tanker should also be provided if traditional stormwater ponds are used.</p> <p>The Applicant has not supplied any procedure for the containment and collection of fire washwater. As this is an operational document the Delegated Officer considers this is more appropriately supplied with the licence amendment application following completion of the work stages.</p>	<p>Condition 28: <i>HHW signage</i></p> <p>Condition 29: <i>Site security</i></p> <p>Condition 30: <i>Fire controls</i></p> <p><u>Operation</u></p> <p>To be determined at licensing assessment stage.</p>

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)



## 12. Consultation

**Table 24: Summary of consultation**

Method	Comments received	DWER response
Application advertised on DWER website (06/03/2020)	None received	N/A
Local Government Authority advised of proposal (06/03/2020)	The City of Swan replied on 06/04/2020 confirming that EMRC is exempt from requiring planning approval under the <i>Planning and Development Act 2005</i> as the application related to public works. No further comments were provided.	N/A
Hazelmere Progress Association advised of proposal (06/03/2020)	None received	N/A
Department of Fire and Emergency Services advised of proposal (06/03/2020)	None received	N/A
Applicant referred draft documents (13/07/2020)	Refer to Appendix 1.	

## 13. Conclusion

Based on the assessment in this decision report, the Delegated Officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

A/MANAGER WASTE INDUSTRIES  
INDUSTRY REGULATION

*An officer delegated by the CEO under section 20 of the EP Act*

## Appendix 1: Key documents

Document title	Availability
Works Approval (W6360/2020/1) application form and supporting documentation (February, 2020)	DWER records (DWERDT253553)
Talis, 2019. <i>Hazelmere Resource Recovery Park Environmental Noise Impact Assessment</i> . Prepared for Eastern Metropolitan Regional Council, unpublished report.	DWER records (A1873415)
DWER, 2020a. Technical Advice Memorandum <i>Noise Assessment for Works Approval Application – Eastern Metropolitan Regional Council Waste Transfer Station and Community Recycling Centre (Category 62) – 77 Lakes Road, Hazelmere</i> .	DWER records (A1879010)
EAQ Consulting, 2019. <i>Odour assessment of waste transfer facility – CALPUFF design modelling</i> . Prepared for Eastern Metropolitan Regional Council, unpublished report.	DWER records (A1873415)
DWER, 2020b. Air Quality Branch (AQB) technical advice <i>EMRC Waste Transfer Station Hazelmere</i> .	DWER records (A1886828)
EMRC, 2020. <i>Hazelmere Resource Recovery Park Acid Sulfate Soil Management Plan</i> . Unpublished report.	DWER records (A1901950)
DWER, 2020c. Contaminated Sites technical advice <i>Review of ASSMP for excavation at 77 Lakes Rd, Hazelmere</i> .	DWER records (A1909469)
DER, August 2013. <i>Guidelines for the design and operation of facilities for the acceptance and storage of household hazardous waste</i> . Department of Environment Regulation, Perth	accessed at <a href="http://www.wastenet.net.au">www.wastenet.net.au</a>
DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	accessed at <a href="http://www.dwer.wa.gov.au">www.dwer.wa.gov.au</a>
DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	
DER, February 2017 <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	
DWER, June 2019a. <i>Guideline: Decision Making</i> . Department of Water and Environmental Regulation, Perth.	
DWER, June 2019b. <i>Guideline: Odour Emissions</i> . Department of Water and Environmental Regulation, Perth.	

## Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
<p>Infrastructure and equipment, Condition 1, Table 1</p> <p>Stage 1 – Community Recycling Centre</p> <p>Reuse Shed</p> <p>Multi-Tiered Drop-off Facility (MTDOF)</p>	<p>Sealed concrete surfacing is considered to be impermeable for the purpose of containment with respect to hardstands and assessing its permeability is not a standard test that is typically required in civil engineering works. The concrete will be placed in accordance with AS3600: Concrete Structures, to ensure proper installation of the sealed surface.</p> <p>There are several DWER guidelines and manuals which characterise concrete as an impermeable surface. According to the DWER's Stormwater Management Manual for Western Australia (May 2007), "Bitumen, concrete and other hard surface areas (such as paving surrounding buildings) are typically impermeable", and in the DWER's Guideline: Treatment and management of soil and water in acid sulfate soil landscapes (June 2015), "diaphragm walls are impermeable (e.g. using concrete, bentonite or synthetic polymers) sub-surface structures."</p> <p>Therefore, a permeability requirement should not be specified, and it is requested that the text highlighted in yellow is omitted.</p>	<p>Noted. DWER considers that generally concrete hardstands are impermeable. A requirement specifying that the hardstand will be constructed from concrete is sufficient.</p>
<p>Infrastructure and equipment, Condition 1, Table 1</p> <p>Stage 1 – Community Recycling Centre</p> <p>Waste Receptacles</p>	<p>The acquisition and subsequent placement of the receptacles will not be part of the construction works for the Project.</p> <p>Therefore, this is not relevant to the Works Approval. Talis anticipates that this may be more relevant to the operational phase of the project and therefore, the licence. However, the number for each type of waste receptacle will be dependent on demand and the unloading times, and it is anticipated to be variable throughout the operational lifespan of the CRC. In addition, it may be that the EMRC contract out the operations of the CRC and therefore the contractor will be required to provide the relevant receptacles. Talis anticipates that it would be more appropriate to stipulate in a licence the type of receptacles required for each waste stream and not the actual number of bins.</p> <p>Therefore, it is requested that the text highlighted in yellow is omitted.</p>	<p>DWER recognises that the receptacles do not require construction and are more related to the operational phase of the works. The waste receptacles have only been listed in this section as they relate to conditions enabling time limited operations through the works approval. The number of receptacles will be omitted.</p>

Condition	Summary of applicant's comment	Department's response
<p>Infrastructure and equipment, Condition 1, Table 1</p> <p>Stage 1 – Community Recycling Centre</p> <p>Acid Sulphate Soils (ASS) treatment pad</p>	<p>The ASS Management Plan was drafted in accordance with the DWER's Guideline: Treatment and management of soil and water in acid sulfate soil landscapes (June 2015). As per the ASS guideline recommendation, the treatment pad will be constructed with crushed limestone as it is the most commonly used neutralising agent for the treatment of ASS. The strategy for the construction of the treatment pad will be in line with the DWER ASS guideline, which stipulates the following in Section 2.5.5:</p> <p>"The treatment pad should consist of a minimum 300-millimetre thickness of compacted crushed limestone, or other appropriate neutralisation material. The treatment pad should be bunded with a minimum 150-millimetre high perimeter of compacted, crushed limestone to contain potential leachate runoff within the treatment pad area and prevent surface water runoff from entering the treatment pad area. The level of compaction used should produce an appropriately low permeability to prevent infiltration of leachate."</p> <p>Therefore, a permeability requirement should not be specified as the DWER ASS Guideline does not require or specify one, and it is requested that the text highlighted in yellow is omitted.</p>	<p>Noted. DWER considers that the treatment pad is required to be constructed with an appropriately low permeability to prevent infiltration of leachate. The wording of the condition has been updated.</p>
<p>Infrastructure and equipment, Condition 1, Table 1</p> <p>Stage 2 – Waste Transfer Station</p> <p>Transfer Station Warehouse</p>	<p>The viability of this design feature will be determined during the Detailed Design stage of the Waste Transfer Station, which has yet to commence. Whether the bunker walls are moveable or not does not directly impact the environment risk profile of the Waste Transfer Station.</p> <p>Therefore, it is requested that this construction requirement is omitted to EMRC with design flexibility depending on the Detailed Design phase of the Project.</p>	<p>The reference to moveable bunker walls will be removed.</p>
<p>Infrastructure and equipment, Condition 1, Table 1</p> <p>Stage 2 – Waste Transfer Station</p> <p>Unloading area and waste storage bunker hardstand</p>	<p>It is unclear why the 'southward' direction has been specified and it is unclear how the EMRC are meant to validate this Condition. The Detailed Design stage of the Waste Transfer Station has not commenced and so it is not possible to know the exact direction the leachate will flow at this stage of the Project.</p> <p>Therefore, it is requested that the construction requirement be amended as follows:</p> <p>"(c) Graded to fall at 1% towards a leachate collection sump"</p>	<p>The southward direction is based on the location of the leachate holding tank and descriptions given in the application and supporting plans. The flow direction will be removed as it does not change the outcome of the condition.</p>



Condition	Summary of applicant's comment	Department's response
<p>Infrastructure and equipment, Condition 1, Table 1</p> <p>Stage 2 – Waste Transfer Station</p> <p>Air Extraction System</p>	<p>There is a small error in the construction requirements for the Air Extraction System. As per the Odour Assessment, the air extraction stacks are to be 2 m above the maximum roof height (i.e. the roof apex).</p> <p>Therefore, it is requested that the construction requirement be amended as follows:</p> <p>“(a) Must be comprised of four air extraction stacks that are 2m above the maximum roof height (i.e. roof apex) and that are capable of:</p> <p>(i) maintain negative pressure within the transfer station</p> <p>(ii) four air exchanges per hour; and</p> <p>(iii) a stack exit velocity of 15m/s”</p>	<p>Noted. The condition will be changed to the following:</p> <p>(a) Must be comprised of four air extraction stacks with a minimum height of 2 m above the warehouse roof apex; and</p> <p>(b) Capable of:</p> <p>(i) maintaining negative pressure within the transfer station;</p> <p>(ii) achieving four air exchanges per hour; and</p> <p>(iii) a stack exit velocity of 15 m/s.</p>
<p>Infrastructure and equipment, Condition 1, Table 1</p> <p>Stage 2 – Waste Transfer Station</p> <p>Noise Walls</p>	<p>The construction requirement has been placed in the correct stage. By the completion of the Stage 2 - Waste Transfer Station construction works, the 2.2m high and 3m high acoustic boundary walls will be erected as per Figure 4 of the Works Approval.</p>	<p>Noted.</p>
<p>Time limited operations phase Condition 17, Table 2</p> <p>Stage 1 – Community Recycling Centre</p>	<p>It is unclear why the Acceptance Specification is highly restrictive. It is standard practice both nationally and internationally that community recycling centres accept waste and recycling materials from a range of sources, including the community and small commercial operators, to maximise diversion from landfill.</p> <p>Therefore, it is requested that the following amendment be made to the Acceptance Specification:</p> <p>(a) Limited to inert waste delivered by the householder and small commercial customers directly to the premises</p>	<p>The intent of the conditions are to prevent significant quantities of commercial waste being received at the CRC, when more appropriate controls are located at the WTS.</p> <p>Given that throughput at the CRC is already limited through the waste acceptance table, these specifications will be removed. DWER considers that small commercial customers is too subjective of a term to be used in the condition.</p>

Condition	Summary of applicant's comment	Department's response
<p>Time limited operations phase</p> <p>Condition 17, Table 2</p> <p>Stage 2 – Waste Transfer Station</p>	<p>It is unclear why the Acceptance Specification is highly restrictive. In order to maximise diversion from landfill, it is anticipated that the FOGO waste stream will be accepted from a range of sources, including kerbside (community) collections, commercial collections, and clean greenwaste collections or drop-off from the Site's Community Recycling Centre. All of these source materials will be consolidated within the WTS and for efficient and financially sustainable transfer offsite for processing.</p> <p>Therefore, it is requested that the following amendment be made to the Acceptance Specification:</p> <p>(a) Must only be sourced from FOGO kerbside collection, commercial FOGO collection and clean greenwaste streams.</p>	<p>The supporting document to the application does not list FOGO waste as coming from the range of sources as indicated in the comment. The application only lists the FOGO source as public places and kerbside collection.</p> <p>The intent of the condition was to delineate FOGO waste from putrescible waste rather than limit commercial FOGO acceptance. The specification will be modified through the following:</p> <ul style="list-style-type: none"> <li>• The acceptance specification will be removed</li> <li>• A definition for FOGO will be added: <i>means a source separated mixture of food organics and garden organics collected from bins designated for this purpose.</i></li> <li>• Putrescible waste will be clarified as excluding FOGO</li> </ul> <p>No modifications are required to allow acceptance of a clean greenwaste stream. Greenwaste should not contain food organics and would not be considered FOGO. The stream would therefore already be acceptable at the WTS as putrescible waste.</p>
<p>Time limited operations phase</p> <p>Condition 22, Table 3</p> <p>Stage 2 – Waste Transfer Station</p>	<p>It is unclear why the storage of inert waste is limited to 48 hours when longer storage times for these waste types pose no additional environment, health, or amenity risks.</p> <p>Therefore, it is requested that no storage timeframe is specified for Inert Waste Type 1 and Inert Waste Type 2.</p>	<p>Noted. The intent was for the 48 hour limit to apply to FOGO and putrescible waste only. The specification will be modified to <i>Storage of FOGO and putrescible waste is limited to 48 hours from the time of receipt.</i></p>

Condition	Summary of applicant's comment	Department's response
<p>Definitions Table 6, Civil engineer</p>	<p>There are several universities that offer a Bachelor of Science in engineering and subject to a thorough assessment by trained engineering professionals, these degrees can be recognised by the Institution of Engineers Australia (commonly known as Engineers Australia), which is the principal engineering association in Australia. To the best of our knowledge there is no organisation called "Institute of Engineers" in Western Australia or Australia.</p> <p>Therefore, it is requested that the following amendment be made to the definition for a Civil Engineer:</p> <p>a) holds a Bachelor's degree recognised by Engineers Australia;</p>	<p>Noted. The definition will be changed as requested.</p>
<p>Decision Report Section 6.2 Proposed Infrastructure, Table 6</p>	<p>On 8 June 2020, Talis on behalf of the EMRC provided a response to the DWER's Request for Information prior to the provision of the DRAFT Works Approval documentation to EMRC for review. An updated Site layout plan without the stormwater retention ponds was attached to the letter. It has been attached again for easy reference.</p>	<p>DWER notes that the provided figure and the one requested for update are different figures.</p> <p>DWER requested an updated version of the CRC layout plan, while the image previously provided is an overall layout of the premises which does not show the same level of detail at the CRC.</p> <p>A footnote will be added to this section of the Decision Report indicating that the figure is outdated.</p>