



# Hume Food Organics and Garden Organics Facility

## Environmental impact statement

The City and Environment Directorate

13 November 2025

→ The Power of Commitment



|                           |                                                                                                                                   |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Block identifier</b>   | Block 5, Section 26, Hume                                                                                                         |
| <b>Street address</b>     | Off John Cory Road, Hume                                                                                                          |
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| <b>Proposal name</b>   |          | FOGO Hume ACT PMCA                                                               |              |                |                    |                |          |
|------------------------|----------|----------------------------------------------------------------------------------|--------------|----------------|--------------------|----------------|----------|
| <b>Document title</b>  |          | Hume Food Organics and Garden Organics Facility   Environmental impact statement |              |                |                    |                |          |
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## Acknowledgement of Country

GHD acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the land, water and sky throughout Australia on which we do business. We recognise their strength, diversity, resilience and deep connections to Country. We pay our respects to Elders of the past and present, as they hold the memories, knowledges and spirit of Australia. GHD is committed to learning from Aboriginal and Torres Strait Islander peoples in the work we do.



# Executive summary

## Overview

ACT NoWaste is proposing to develop a food organics and garden organics (FOGO) facility on Block 5, Section 26 Hume, off John Cory Road with capacity to receive and process up to 70,000 tonnes per year of FOGO waste.

The proposal would divert organic waste from landfill and produce various grades of FOGO-derived products such as mulch, compost and soil conditioners.

## Need for the proposal

The ACT is working towards a target of reducing emissions by 50 to 60 percent by 2025 and reaching net zero emissions by 2045 (ACT Government, 2019a). To meet this target, and play its part in tackling climate change, the ACT Government needs to address all sources of emissions.

In the ACT around 26,000 tonnes of household food waste goes to landfill each year. When FOGO decomposes in landfill it produces methane – a powerful greenhouse gas emission contributing to climate change. Diverting FOGO from landfill will reduce greenhouse gas emissions and turn organic waste into valuable compost.

The ACT Government is also working to minimise organic waste going to landfill and recover organic waste resources. It has set a target of increasing the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill (ACT Government, 2011).

The future FOGO service and proposed new FOGO processing facility will help the ACT deliver on these targets and commitments by reducing the amount of organic waste disposed in landfill and lowering greenhouse gas emissions.

## Statutory and planning framework

The proposal must be assessed in the impact track and Section 127 of the *Planning and Development Act 2007* (PD Act) requires that development applications for proposals in the impact track must include an Environmental Impact Statement (EIS) unless an EIS Exemption under Section 211 is in force for the proposal.

## The proposal

The proposal would be located on Block 5, Section 26 Hume, off John Cory Road. The proposal is defined as the construction and operation of a FOGO facility with capacity to receive and process up to 70,000 tonnes per year of FOGO waste using in-vessel composting technology.

In-vessel composting technologies have been successfully implemented in other Australian locations for FOGO waste processing, and a variety of technology providers and site configurations are possible. They all broadly involve an enclosed and odour-controlled waste receival area, enclosed composting vessels or tunnels with forced aeration and process control, and maturation areas for compost.

The proposal would involve the following key features, subject to detailed design:

- Receival hall.
- Primary composting tunnels and tunnel hallway.
- Maturation and refining hall.
- Product storage shed.
- Odour management system.

Ancillary supporting infrastructure including:

- Administration building.
- Machinery shed/workshop.
- Weighbridges.



- Access roads and pavements.
- Hardstand parking.
- Stormwater and leachate management.

Construction and delivery timeframes will be subject to the procurement of the contractor responsible for the detailed design, construction and ongoing operation and maintenance of the facility. Construction is expected to take up to two years, to be confirmed with the contractor.

## Proposal objectives

The proposal would play a key part in achieving the emissions reduction target of 50 to 60 percent by 2025 and reaching net zero emissions by 2045 (ACT Government, 2019a).

Key objectives of the proposal are to:

- Provide critical organic waste processing infrastructure for the Territory.
- Divert FOGO waste from landfill and reduce greenhouse gas emissions.
- Recover organic waste resources to create valuable mulch, compost and soil conditioner products, and thereby strengthen the Territory's circular economy.
- Support key Territory and Federal Government resource recovery and landfill diversion targets including:
  - The National Waste Policy Action Plan target of halving the amount of organic waste sent to landfill for disposal by 2030.
  - The ACT Waste Management Strategy 2011-25 target of increasing the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill.

## Risk assessment

A risk assessment framework has been used to assess the key impacts of the proposal and identify any residual risk following implementation of mitigation prescribed in the EIS (see Chapter 4 for a detailed description of the approach taken).

The early identification of proposal risks allowed for design features and commitments for management during construction and operation to be identified and included. The risk assessment incorporated risks identified from the preliminary environmental assessment, the ACT Government Environment, Planning and Sustainable Development Directorate's (EPSDD) Scoping Document dated 19 July 2022, as well as other risks identified during the preparation of the EIS. Likelihood and consequence were evaluated and risks rated in consideration of the approach included in the 'Proponent's Guide to Environmental Impact Statements' (ACT Government, 2017a).

A summary of the inherent (unmitigated) and residual (mitigated) risk rating for hazards rated medium or greater are included in Table E.1. All hazards were rated to be medium or lower when mitigation measures were implemented.

Table E.1 Medium or higher risk summary (inherent and mitigated)

| Subject             | Hazard                                                                                                                                             | Inherent risk | Mitigated risk |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
| Traffic             | Increase in heavy vehicle movement and the potential for limited road/lane closures during construction works / the delivery of primary equipment. | High          | Very Low       |
|                     | Changes in existing traffic access                                                                                                                 | Medium        | Very Low       |
| Biodiversity        | Spread of weeds and pest species (invasive flora and fauna, insect pests)                                                                          | Medium        | Very Low       |
| Heritage            | Direct impact to Aboriginal archaeological potential or places with high Aboriginal cultural values.                                               | High          | Low            |
| Materials and waste | Waste generated during construction                                                                                                                | High          | High           |
|                     | Waste generated during operation                                                                                                                   | High          | Very Low       |



| Subject                     | Hazard                                                                                                                                                                                               | Inherent risk | Mitigated risk |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|
| Landscape and visual        | Visual impacts during construction                                                                                                                                                                   | Medium        | Very Low       |
|                             | Additional visual impacts of the new facility to the existing landscape                                                                                                                              | Medium        | Very Low       |
| Soils and geology           | Erosion and sedimentation causing pollution of waterways during construction                                                                                                                         | Medium        | Low            |
|                             | Encountering contaminated land                                                                                                                                                                       | High          | Low            |
| Water quality and hydrology | Dirty runoff from construction works into waterways.                                                                                                                                                 | Medium        | Low            |
| Air quality and odour       | Increase odour emission from operation of FOGO facility.                                                                                                                                             | High          | Medium         |
| Greenhouse gas              | Generation of greenhouse gas emissions                                                                                                                                                               | Low           | Medium         |
| Climate change              | Drought affects near surface ground movement, potentially causing differential settlement and expansion/contraction of soils, resulting in movement of infrastructure.                               | Medium        | Medium         |
|                             | Extreme heat effects concrete temperature management for early age crack risk and for concrete curing resulting in reduce reliability and design life of concrete foundations.                       | Medium        | N/A            |
|                             | Increase in extreme heat days resulting in 'stop work' days, and greater delays to the construction program than accounted for.                                                                      | Medium        | N/A            |
|                             | Increase in extreme heat days resulting in 'stop work' days during operations.                                                                                                                       | Medium        | Low            |
|                             | Extreme rainfall leading to flooding of the site and facilities leading to impact on open processing recyclables and contamination of flood water leaving the site (water quality compliance issues) | High          | Medium         |
|                             | Extreme rainfall leading to flooding of the site and facilities leading to damage of facility components.                                                                                            | High          | Medium         |
|                             | Increased frequency, severity, and duration of significant storm events including hail cause damage to the sites exposed components such as roofs and uncovered equipment.                           | Medium        | Medium         |
|                             | Extreme heat generated by bushfires (greater than 300 degrees Celsius) comes in direct contact with site components causing damage.                                                                  | Medium        | Medium         |
| Socioeconomic and health    | Reduction in amenity during construction (noise, visual, and dust impacts)                                                                                                                           | High          | Very Low       |
|                             | Reduction in amenity during operation (noise, visual, and dust impacts)                                                                                                                              | Medium        | Very Low       |
|                             | Increase in complaints from the community for the FOGO facility (relating to odour, noise and visual impacts)                                                                                        | High          | Low            |
| Noise and vibration         | Noise and vibration impact during construction activities (increased in vehicles and machinery)                                                                                                      | Medium        | Very Low       |
|                             | Noise and vibration impact during operation                                                                                                                                                          | Medium        | Very Low       |

## Impact assessment

Assessment was undertaken of potential impacts to matters identified in the Scoping Document as well as other matters potentially relevant to the proposal.

For each matter, the following were detailed:

- Environmental conditions and values
- Investigations
- Potential impacts
- Mitigation measures
- Residual risk

Technical studies were undertaken to support the EIS as described.

### **Planning and land status**

The potential risk identified from a land use perspective is the sterilisation of surrounding land uses, that is, the impact the proposal would have on surrounding uses and whether it would limit existing or future uses for the surrounding businesses or residences.

The proposal site is zoned IZ1 General Industrial. The proposal is permissible and consistent with the objectives of this zone.

The proposal would be located within the Hume Resource Recovery Estate, an existing industrial area which is separated by over one kilometre from sensitive uses and established to house recovery, reprocessing and material resale industrial facilities. The FOGO facility would implement '*Best Available Technology Economically Achievable*' for the development. This would include management and mitigation measures to address potential hazards, noise and air quality impacts. It is considered that the facility would be compatible with the surrounding uses and should not result in impacts that would limit current or future uses in the surrounding area.

Therefore, from a land use context the proposal is considered to respond to the planning and land use objectives and requirements within the Territory Plan.

### **Traffic and transport**

The construction and operation of the proposal is expected to generate minimal increase in vehicle traffic when compared to the existing traffic already in the road network. Additional traffic generated by the proposal is not expected significantly change the vehicle composition in the road network and is not anticipated to cause changes to road safety risks.

Parking for all vehicles associated with construction and operation of the proposal would be contained on-site within the proposal site. As such, vehicle parking demand generated by the proposal would have no impact on parking spaces or roads surrounding the proposal site.

### **Utilities**

Temporary power, water supply, sewer and telecommunications connections for site sheds and associated amenities would be required during construction of the proposal.

Electricity, communications, water supply, gas and sewer connections would be required for the operation of the proposal. The installation of any additional utilities would have appropriate controls in place to minimise potential for contamination.

### **Biodiversity and nature conservation**

The proposal footprint would be approximately 2.3 hectares in area. This area is mostly exotic grassland and includes up to six immature Eucalyptus trees, however these are considered to have low habitat value given their size and the disturbed nature of the site. One mature tree is proposed to be removed with the remaining three mature trees on the proposal site to be retained. The proposal is unlikely to have an impact on any listed threatened ecological community or species.

No threatened flora or fauna were observed in the proposal site and there are also limited records in the immediate surrounding area.

It is unlikely that the proposal would have a significant impact on biodiversity and ecological integrity provided the mitigation measures within this report are implemented.

### **Heritage**

Three previously recorded Aboriginal heritage sites with potential archaeological deposit PAD (NW2/PAD 2, HID1391, HID1391) and two areas of archaeological potential have been previously identified within the proposal site.

Two Aboriginal artefact scatters (HFF01 and HFF02) were recorded during the site surveys. These were located four and 20 metres from the proposal site boundary respectively.



A PAD (HFFPAD01) was recorded during the site surveys and further investigation were undertaken. A total of 142 artefacts were recovered during the test excavations. The density of the HFFPAD01 is approximately ten artefacts per square metre.

The construction of the proposal would directly impact site HFFPAD01. Salvage within HFFPAD01 around high density deposits prior to construction would mitigate the risk to heritage values within this PAD by allowing a greater sample of artefacts to be recovered from these locations. There are no other reasonably practicable ways to reduce the risk to heritage values.



### **Materials and waste**

All waste generated during demolition, construction and operation would be managed using the waste hierarchy approach of avoidance and re-use before consideration is given to disposal.

Waste management activities are not expected to have a significant impact on the environment or human health provided that the identified controls, waste handling and management measures are implemented.

### **Landscape and visual**

The proposal would be located within the 'Hume Industrial Estate landscape character zone'. Impacts on landscape character of this zone were deemed to be low. Impacts to other landscape character zones within the study area for the landscape and visual assessment were assessed to be negligible.

Visual impacts at the selected viewpoint locations were generally assessed to be low to negligible due to their low sensitivity and views being commonly screened or filtered by surrounding built form, topography and/or vegetation.

The concept design for the proposal is consistent with the requirements of Development Control Plan 171/09/0001. Subject to detailed design, the building height requirement may be exceeded. Preliminary discussions with the National Capital Authority (NCA) indicated that a biofilter stack of up to three metres would not adversely impact the character of the approach route between the ACT border and the Central National Area.

The proposal is similar to other existing developments in the area and would offer no significant extra lighting or have lighting that differs from other industrial buildings. The lighting design for the proposal is not expected to conflict with runway lighting in its configuration or pattern and therefore the risk of pilot distraction would be minimal/rare.

### **Soils and geology**

A Preliminary Site Investigation (PSI) was undertaken as part of the proposal under Phase 1 of the Contaminated Land Environment Protection Policy. As part of the recommendations in the PSI, a targeted site investigation (TSI) was undertaken to ascertain whether contamination on site was present and whether it posed a risk to human health.

The outcomes of the TSI indicated the proposal site was low risk to human health during construction. The TSI identified measures to mitigate potential contamination risks during demolition and construction works.

### **Water quality and hydrology**

Water quality modelling confirms that the proposed treatment strategy would achieve the requirements of the ACT Water-sensitive Urban Design Code (ACT Government, 2017b) and meet ACT regulations for water quality.

The proposal site is located within a floodplain and is anticipated be impacted within the extreme probability maximum flood (PMF). Flood modelling identified that the proposal site is not likely to be significantly impacted by a 1 in 100 Annual Exceedance Probability (AEP) flooding event, with flood waters generally confined to the

northern and eastern extent side of the proposal site away from the proposed works. Upstream flood waters would be diverted around the existing operations. No off-site impacts during this event are anticipated.

### **Air quality and odour**

The air quality assessment included consideration of dust and operational impacts from odour.

With implementation of appropriate dust mitigation and management measures during construction of the proposal, the potential for cumulative dust impacts is considered to be low.

The selected composting technology (in-vessel) and the design of the proposal includes a number of key air quality and odour impact mitigation features:

- The facility would be totally enclosed with a ventilation system that maintains negative pressure, with opening roller doors for truck access in and out of the waste receival area.
- All process air (including from the receival hall, primary composting tunnels and hallway, and the maturation and refining building) would be treated by an odour control system prior to discharge in the environment. The proposed odour control system would likely consist of a number of wet scrubbers and biofilter fitted with monitoring equipment capable of measuring airflow and moisture content. The odour control system would have an emissions guarantee from the supplier.
- Activities outside the fully enclosed processing building includes matured compost product storage only. These stockpiles would be located within a semi-enclosed and covered product storage shed and managed via controlled application of water for dust suppression when required such as on windy days.

Dispersion modelling determined that a typical open or ground biofilter would not be sufficient to maintain odour levels below the odour criteria at the nearby industrial area and Tralee suburb. Therefore, a stack was considered to aid in the dispersion and dilution of odour emissions. Three stacks of 15 metres, 13 metres and 12 metres in height were assessed. The predicted impacts from all assessed stack configurations complied with the odour criteria at all sensitive receptors.

### **Greenhouse gas**

The total greenhouse gas emissions during construction of the proposal are estimated at 1,420 t CO<sub>2</sub>-e. At full scale operation, operational emissions are estimated to be on average 8,900 t CO<sub>2</sub>-e per year. The majority of operational emissions (73 percent) come from feedstock contaminants in landfill and FOGO composting emissions.

Opportunities to reduce emissions would be investigated and considered during detailed design and planning. Ways to lower demand of diesel use and substitution with less emission intensive fuels would also be investigated.

### **Climate change**

The climate change risk assessment identified four climate hazards and associated risks which were applicable to the proposal: extreme heat, extreme rainfall, storms and bushfires. Adaptation measures to address risks would be identified and considered in the design or to be adopted during the construction and operation of the proposal.

### **Socio-economic and health**

Biosecurity risks would be managed during construction with the development and implementation of a construction biosecurity management plan as part of the CEMP for the proposal.

The operational phase would involve the transportation of FOGO waste to the facility for processing via in-vessel tunnel composting (including pasteurisation) in accordance with the requirements of AS 4454-2012 Compost, soil conditioners and mulches (Standards Australia, 2012).

The FOGO waste would be delivered directly into the receival hall through automated fast acting roller/shutter doors and unloaded in the designated delivery areas within the building. As the operations (including receival and processing) would take place within enclosed buildings the likelihood birds, wildlife, pests and vermin being attracted to the proposed facility is minimal.

Grape phylloxera (*Daktulosphaira vitifoliae*) is a plant pest of grapevines in parts of New South Wales (NSW) and Victoria. Phylloxera is a serious threat to Australia's grape and wine industry. As the proposal is located within a



Phylloxera Exclusion Zone, no organic material from a Phylloxera inclusion zone would be permitted to be transported to the proposal.

The proposal is anticipated to result in socio-economic benefits to the community through the diversion of waste from landfill which supports a variety of ACT Government net zero emission goals. With less waste being disposed of to landfill means that there would be a reduction in the costs need to extend the capacity of landfills.

### **Noise and vibration**

The noise and vibration impact assessment found that noise emission from the proposal would be compliant with the relevant noise standard limit of 65 dBA in the Noise Environmental Protection Policy (EPA, 2010). No specific mitigation measures are recommended for this proposal.

### **Hazard and risk**

Chemical supply details are not yet finalised and are subject to detailed design. None of the expected hazardous chemicals would trigger a requirement to have a manifest. Nonetheless, a register of all chemicals used on-site during construction and operation would be kept on-site.

FOGO and composting can attract pest animals, which may impact native wildlife and promote the spread of pathogens. Pathogens in wastewater can also be spread if they reach waterways. Undertaking of all processing indoors reduces risk of attracting pest species. Additionally, run-off from internal processes would be collected through a network of sealed pipes and drained into a sealed process water tank. Process water would be recycled back through the tunnel composting process to maintain optimal moisture content in the organic material.

Given that the risk of wildlife strike at the proposal site is not increasing the risk in relation to an existing airport, further risk mitigation measure such as Wildlife Management Programs are not considered to be required under Guideline C of National Airports Safeguarding Framework (NASF), Managing the Risk of Wildlife Strikes in the Vicinity of Airports (Guideline C). A Wildlife Management Plan has been prepared regardless.

### **Bushfire**

Asset protection zone (APZ) dimensions for the proposal were determined to be 12 metres for all aspects in accordance with the ACT Bushfire Management Standards (ESA, 2023). Based on the proposed concept layout and the APZs, the indicative construction standard Bushfire Attack Levels for the proposal were also identified.

The proposal site would be serviced by reticulated water supply to meet acceptable solutions of the ACT Bushfire Management Standards (ESA, 2023) and comply with *Utilities Act 2000*.

Fuel management practices in line with the ACT Bushfire Management Standards 2023 (ESA, 2023) would be implemented by the proposal site operator within the APZ (both within the licence area and outside to the west and northeast).

In addition, emergency management plans would be prepared prior to construction, operation, and occupancy of the facility.

### **Mitigation measures**

A range of mitigation measures have been developed to avoid or reduce potential impacts of the proposal. These include planning and design features, construction management commitments, and ongoing management measures during operation. The mitigation measures for the proposal have been summarised in Chapter 22.

### **Community and stakeholder consultation**

Consultation was undertaken with relevant stakeholders, including the ACT Government, relevant landowners, the local community, nearby businesses, community groups, volunteer conservation, landscape management or landcare groups active in the area and Representative Aboriginal Organisations, during the preparation of the EIS. Matters raised by these stakeholders have been considered when assessing potential impacts and developing management measures.

## **Display of the EIS**

The EIS was publicly available on the ACT Planning and Land Authority's website for 20 days from 24 April and closed on 5 June 2023 (see

[https://www.planning.act.gov.au/development\\_applications/da\\_assessment/environmental\\_assessment/environmental\\_impact\\_statements](https://www.planning.act.gov.au/development_applications/da_assessment/environmental_assessment/environmental_impact_statements)). The EIS will also be referred to relevant entities during this time.

## **Justification and conclusion**

This EIS has considered matters raised in the Scoping Document (Application Number 202200016) prepared by the ACT Government to identify and assess potential environmental impacts of the proposal.

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| Appendix P | Climate Change Risk Assessment          |
| Appendix Q | Noise and Vibration Impact Assessment   |
| Appendix R | Preliminary hazard assessment           |
| Appendix S | Bushfire Risk Assessment                |
| Appendix T | Engagement Report                       |

# Glossary and abbreviations

| Term                    | Definition                                                              |
|-------------------------|-------------------------------------------------------------------------|
| ACAT                    | ACT Civil and Administrative Tribunal                                   |
| ACT                     | Australian Capital Territory                                            |
| ADG                     | Australian Dangerous Goods                                              |
| AEP                     | Annual Exceedance Probability                                           |
| AMP                     | Asset Management Plan                                                   |
| AQIA                    | Air Quality Impact Assessment                                           |
| AQMS                    | Air Quality Monitoring Station                                          |
| BSUD                    | Biodiversity Sensitive Urban Design                                     |
| CEMP                    | Construction Environment Management Plan                                |
| Climate Change Strategy | ACT Climate Change Strategy 2019-2025                                   |
| DA                      | Development Application                                                 |
| DAWE                    | Department of Agriculture, Water and the Environment                    |
| dBA                     | A-weighted decibels                                                     |
| DCCEEW                  | Department of Climate Change, the Environment, Energy and Water         |
| DCP                     | Development Control Plan                                                |
| EIS                     | Environmental Impact Statement                                          |
| EP Act                  | <i>Environment Protection Act 1997</i>                                  |
| EPA                     | Environment Protection Authority                                        |
| EP Regulation           | <i>Environmental Protection Regulation 2005</i>                         |
| EPBC Act                | <i>Environmental Protection and Biodiversity Act 1999 (Cth)</i>         |
| EPSDD                   | Environment, Planning and Sustainable Development Directorate           |
| ESD                     | Ecologically Sustainable Development                                    |
| ESCP                    | Erosion Sediment Control Plan                                           |
| FOGO                    | food organics and garden organics                                       |
| GHD                     | GHD Pty Ltd                                                             |
| GHG                     | Greenhouse Gas                                                          |
| GHS                     | Globally Harmonized System of Classification and Labelling of Chemicals |
| ha                      | hectare                                                                 |
| Heritage Act            | <i>Heritage Act 2004</i>                                                |
| HRR                     | Hazard and Risk Report                                                  |
| Infrastructure Plan     | Canberra's Living Infrastructure Plan: Cooling the City                 |
| ML                      | Megalitres                                                              |
| MNES                    | Matters of National Environmental Significance                          |
| NASF                    | National Airport Safeguarding Framework                                 |
| NCA                     | National Capital Authority                                              |
| NC Act                  | <i>Nature Conservation Act 2014</i>                                     |
| NCP                     | National Capital Plan                                                   |
| NSW                     | New South Wales                                                         |

| Term                      | Definition                                                                  |
|---------------------------|-----------------------------------------------------------------------------|
| OMP                       | Operational Management Plan                                                 |
| OWMP                      | Operational Water Management Plan                                           |
| PD Act                    | <i>Planning and Development Act 2007</i>                                    |
| PD Regulation             | <i>Planning and Development Regulation 2008</i>                             |
| PFAS NEMP                 | Per- and poly-fluoroalkyl substances National Environmental Management Plan |
| Planning Strategy         | ACT Planning Strategy 2018                                                  |
| PHA                       | Preliminary Hazard Analysis                                                 |
| PPE                       | Personal Protective Equipment                                               |
| RRP                       | Rehabilitation and revegetation plan                                        |
| Schedule 11               | Schedule 11 to the Work Health and Safety Regulations 2011                  |
| SDS                       | Safety Data Sheet                                                           |
| SWMP                      | Soil and Water Management Plan                                              |
| TaMS                      | Territory and Municipal Services Directorate                                |
| Territory Plan            | <i>Territory Plan 2008</i>                                                  |
| TP Act                    | <i>Tree Protection Act 2005</i>                                             |
| tpa                       | tonnes per annum                                                            |
| TSI                       | Targeted site investigation                                                 |
| Waste Management Strategy | ACT Waste Management Strategy 2011-2025                                     |
| WIA                       | Water Impact Assessment                                                     |
| WM Act                    | <i>Waste Management and Resource Recovery Act 2016</i>                      |
| WR Act                    | <i>Water Resources Act 2007</i>                                             |
| WWL                       | Waterways Works License                                                     |

# 1. Introduction

## 1.1 Background

The Australian Capital Territory (ACT) Government is working to reduce waste to landfill and increase resource recovery. The strategic direction for the management of waste in the Territory is set out in the 'ACT Waste Management Strategy 2011-25' (ACT Government, 2011). The strategy requires a culture shift from thinking of unwanted materials as waste, to thinking of them as resources. The strategy commits the ACT Government to minimising organic waste going to landfill and recovering organic waste resources. It also sets a target of increasing the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill.

The Federal Government also has a target of halving the amount of organic waste sent to landfill for disposal by 2030, as set out in the 'National Waste Policy Action Plan' (DEE, 2019).

A waste feasibility study was established in mid-2015 to identify a pathway towards achieving the ACTs waste management targets and examine options to drive better resource recovery. In 2018, the ACT Government released the final recommendations from the study as the 'Waste Feasibility Study: Roadmap and Recommendations Discussion Paper' (ACT NOWaste, 2018). Key recommendations from this were to identify a site and establish an organics progressing facility to process food organics and garden organics (FOGO) and the implementation of a kerbside FOGO collection.

The 'ACT Climate Change Strategy 2019 to 2025' (ACT Government, 2019a) also identifies FOGO collection for all households and the investigation of organic waste processing as key priorities. An opt-in FOGO collection pilot is currently underway in the ACT (Belconnen), which has so far diverted more than 480 tonnes of material from landfill (ACT Government, 2022).

There is currently no processing facility within the Territory which can accept and process significant quantities of FOGO material. ACT NoWaste is therefore proposing to develop a new FOGO facility (the 'proposal') in Hume to strengthen the Territory's circular economy and help meet Territory and Federal Government landfill diversion and resource recovery targets.

## 1.2 Proposal overview

The proposal would be located on Block 5, Section 26 Hume, off John Cory Road (see Figure 1.1).

The proposal is defined as the construction and operation of a new FOGO facility with capacity to receive up to 70,000 tonnes per year of FOGO for in-vessel composting, including:

- Receiving hall
- Primary composting hall with tunnel modules
- Maturation and refining hall
- Product storage shed
- Odour management system
- Ancillary supporting infrastructure including:
  - Administration/control room building
  - Machinery shed/workshop
  - Weighbridges
  - Access roads
  - Hardstand parking
  - Stormwater and leachate management

The proposal would divert organic waste from landfill and produce various grades of FOGO-derived products such as mulch, compost and soil conditioners.

Construction and delivery timeframes will be subject to the procurement of the contractor responsible for the detailed design, construction and ongoing operation and maintenance of the facility. Construction is expected to take up to two years, to be confirmed with the contractor. Key objectives of the proposal are to:

- Provide critical organic waste processing infrastructure for the Territory.
- Divert FOGO waste from landfill and reduce greenhouse gas emissions.
- Recover organic waste resources to create valuable mulch, compost and soil conditioner products, and thereby strengthen the Territory's circular economy.
- Support key Territory and Federal Government resource recovery and landfill diversion targets including:
  - The National Waste Policy Action Plan target of halving the amount of organic waste sent to landfill for disposal by 2030.
  - The ACT Waste Management Strategy 2011-25 target of increasing the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill.

## 1.3 The proponent

The proponent is ACT NoWaste.

ACT NoWaste is a Business Unit of the City and Environment Directorate (CED<sup>1</sup>) that manages contracts and services agreements for domestic waste and recycling activities (ACT Government, 2015).

ACT NoWaste's role is to implement the ACT Government's Waste Strategy (ACT Government, 2011) through effective programs that engage the community as well as facilitate and encourages the resource recovery industry to maximise the recovery and recycling of wastes in the ACT and surrounding region. Other responsibilities of ACT NoWaste include provision of domestic garbage and recyclables collection services, sorting and reprocessing of recyclable materials, and management of waste acceptance and disposal facilities (ACT Government, 2015).

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<sup>1</sup> Formerly Transport Canberra and City Services (TCCS), any reference to TCCS within this EIS and appendices should be assumed to mean CED.





**Legend**

Proposal site

Cadastre

— Watercourses

Paper Size ISO A4

0 25 50

Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540460  
Revision No. 0  
Date 29/08/2023

Proposal location

**FIGURE 1.1**



## 1.4 Purpose of this report

This report documents the Environmental Impact Statement (EIS) for the proposal which is required due to the assessment track triggers under the *Planning and Development Act 2007* (the PD Act).

The PD Act and the Territory Plan 2008 are the main legislative instruments that govern the ACT development assessment and approval process and determine under which approval pathway track a development will be assessed.

The proposal falls under the impact track, as it meets the requirements listed in Schedule 4, Part 4.2, Item 10 of the PD Act (see Application Number 202200016) requiring an EIS to be prepared. This applies to lands within the ACT Government jurisdiction.

This EIS has been prepared by GHD Pty Ltd (GHD) on behalf of ACT NoWaste to assess environmental and social impacts associated with the proposal and address matters specified within the ACT Government Environment, Planning and Sustainable Development Directorate's (EPSDD) scoping document requirements dated 07 June 2022 (Application Number 202200016), in accordance with Section 212 of the PD Act and other relevant legislation.

Table 1.1 identifies the section of this EIS where the requirements of the Scoping Documents are addressed.

**Table 1.1** Section of the EIS where assessment requirements are addressed

| Scoping Document reference  | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Location in EIS            |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>General requirements</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |
| 1. Cover Page               | The cover page must clearly display the following: <ul style="list-style-type: none"> <li>– The name of the proposal (proposal title)</li> <li>– The block identifier(s) and street address for the proposal</li> <li>– The date of the preparation of the document</li> <li>– Full name and postal address of the designated proponent</li> <li>– Full name and postal address of the designated applicant</li> <li>– Name and contact details of the person/organisation who prepared the documents (if different to the above)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |
| 2. Glossary                 | Provide a glossary of technical terms, acronyms and abbreviations used in the EIS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Glossary – page ix         |
| 3. Executive Summary        | Provide a non-technical summary of the EIS including a description of the proposal, key findings and recommendations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Executive Summary – page i |
| 4. Introduction             | Summarise the proposal background and justification for the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 1                  |
| 5. Proposal Details         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |
| 5.1 Proposal Description    | Provide a description of the proposal, including: <ul style="list-style-type: none"> <li>a) The objectives and justification for the proposal;</li> <li>b) The location of the land to which the proposal relates, including detailed maps;</li> <li>c) The division and/or district names and block and/or section numbers of the land under the <i>Districts Act 2002</i>;</li> <li>d) If the land is leased – the lessee's name;</li> <li>e) If the land is unleased or public land – the custodian of the land;</li> <li>f) The purposes for which the land may be used;</li> <li>g) A clear identification of all lands subject to direct disturbance from the proposal and associated infrastructure and geomorphic features such as waterways and wetlands. This is to be supported by a map showing all affected lands;</li> <li>h) An outline of any developments that have been, or are being, undertaken by the proponent, or other person(s) or entities, within the proposal area and broadly in the region. Describe how the proposal relates to these developments;</li> </ul> | Chapter 2                  |



| Scoping Document reference           | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Location in EIS     |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                      | <p>i) A description of all the components of the proposal, including the proposal specifications, the predicted timescale for implementation (design, approvals, construction and decommissioning) and proposal life;</p> <p>j) A plan/description of the precise location of any works to be undertaken, structures to be built or elements of the proposal that may have relevant impacts; and</p> <p>k) A description of the construction methodologies for the proposal.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |
| 5.2 Alternatives to the proposal     | <p>Provide details of any alternatives to the proposal considered in developing the proposal including a description of:</p> <p>a) Any alternatives to the proposal and provide reasons for selecting the preferred option with an analysis of site selection as an attachment to the EIS;</p> <p>b) The criteria used for assessing the performance of any alternative to the proposal considered;</p> <p>c) Any matters considered to avoid or reduce potential impacts prior to the selection of the preferred option; and</p> <p>d) Details of the consequences of not proceeding with the proposal.</p>                                                                                                                                                                                                                                                                                                                                                                                                  | Section 2.7         |
| 6. Legislative and Strategic Context | A description of the EIS process including any statutory approvals obtained or required for the proposal, and how the proposal is aligned with strategic priorities for the ACT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 3           |
| 6.1 Statutory Requirements           | <p>The description must include information on statutory requirements for the preparation of an EIS:</p> <ul style="list-style-type: none"> <li>– <i>Planning and Development Act 2007</i> (including confirmation of relevant Schedule 4 triggers based on impacts identified in the scoping document and any studies undertaken in preparing the EIS)</li> <li>– <i>Planning and Development Regulation 2008</i></li> <li>– <i>Waste Management and Resource Recovery Act 2016</i></li> <li>– Related statutory approvals</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Section 3.1 and 3.2 |
| 6.2 Climate Change                   | <p>The EIS must include information on how the proposal will reduce the risks from climate change impacts and include proposed adaptation measures to reduce vulnerability and increase resilience of the community and the Territory, particularly the extreme events of heatwaves, droughts, storms with flash flooding and bushfires. The information must address impacts on the local microclimate and how it will avoid contribution to urban heat and positively contribute to urban cooling measures.</p> <p>Additionally, the EIS must address the contribution the proposal will make to reducing greenhouse gas emissions and meeting the legislated target for a net zero emissions Territory (by 2045 at the latest).</p> <p>Preparation of the EIS must consider the relevant sections of ACT Government's following policies:</p> <ul style="list-style-type: none"> <li>– ACT Climate Change Strategy 2019-2025</li> <li>– Canberra's Living Infrastructure Plan: Cooling the City</li> </ul> | Section 3.3         |
| 6.3 Other requirements               | <p>The description must also include information on how each of the following has been considered in the preparation of the EIS and the development of the proposal:</p> <ul style="list-style-type: none"> <li>– Territory Plan 2008</li> <li>– ACT Planning Strategy</li> <li>– National Capital Plan</li> <li>– Sustainability Policies</li> <li>– Relevant Environment Protection Policies and Separation Distance Guidelines for Air Emissions (<a href="https://www.environment.act.gov.au/environment/legislation_and_policies">https://www.environment.act.gov.au/environment/legislation_and_policies</a>)</li> <li>– Environment Protection Act</li> <li>– ACT Waste Management Strategy 2011-2025</li> <li>– ACT Waste Feasibility Study</li> </ul>                                                                                                                                                                                                                                                | Section 3.4         |



| Scoping Document reference                | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Location in EIS         |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
|                                           | – Other relevant planning and environmental guidelines and management plans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |
| 6.3.1 Ecological sustainable development  | Provide a description of how the proposed development demonstrates Ecologically Sustainable Development (ESD). This is to include long term and short-term considerations related to economic development, social development and environmental protection at local, regional and national scales. The proponent should ensure that the EIS adequately addresses the ESD principles as defined by Section 9 of the PD Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Section 3.4.8           |
| 6.3.2 Territory Plan strategic directions | A statement must be provided regarding the proposal's compatibility with the principles in the Statement of Strategic Directions in the Territory Plan 2008 (Section 2.1 - Strategic Direction)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Section 3.4.1           |
| 7. Risk Assessment                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         |
| 7.3.1 Risk Assessment Methodology         | Provide a risk assessment in accordance with the Australian and New Zealand Standard for risk management AS/NZS ISO 31000:2009 <i>Risk management – Principles and guidelines</i> . The proposed criteria for determining which risks are potentially significant impacts must be described.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Chapter 4               |
| 8. Assessment of impacts                  | Sufficient information is required to provide the Authority with an adequate understanding of the environmental impacts associated with the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 6 to Chapter 21 |
|                                           | Standard Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                         |
| 8.1.1 Environmental conditions and values | Describe the environmental conditions and identify the environmental values for the environmental themes identified in Table 1 of the Scoping Document. This section should discuss the baseline conditions for the area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |
| 8.1.2 Investigations                      | Identify the findings and results of any environmental investigation in relation to the land to which the proposal relates.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |
| 8.1.3 Impacts                             | Describe the effects of the environmental impact as a result of construction and operation of the proposed development for the environmental themes identified in Table 1 (including those in the proponent's risk assessment) (including cumulative, consequential and indirect effects) on physical and ecological systems and human communities. Particular emphasis should be placed on the potentially significant impacts identified in the risk assessment and this scoping document. Include a discussion of the timeframes of impacts i.e. short or long term, their nature and extent and whether they are reversible or irreversible, unknown or unpredictable. Include an analysis of the significance of the relevant impacts. Information must include any technical data and other information used or needed to make a detailed assessment of the relevant impacts.                                                                                                                                                                                                                                                                                                                              |                         |
| 8.1.4 Mitigation                          | Discuss the safeguards and mitigation measures proposed to be taken for the environmental management of the land to which the proposal relates for the environmental themes identified in Table 1 (including those in the proponent's risk assessment). This is to include:<br>a) A description and an assessment of the proposed impact prevention, mitigation or offsetting measures to deal with the environmental impact of the proposal, along with which stage the mitigation measures will be adopted.<br>b) Any statutory or policy basis for the mitigation measure.<br>c) An outline of an environmental management plan (EMP) that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing.<br>d) The frequency, duration and objectives of monitoring proposed.<br>e) The name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.<br>f) A description of the cost effectiveness of environmental mitigation or rehabilitation measures proposed and the expected or predicted effectiveness of those measures. |                         |
| 8.1.5 Residual risk                       | Provide a table that details the residual risk for the potentially significant impacts identified for the environmental themes in Table 1 and the proponent's risk assessment. A residual risk assessment is only required where the significance of impact is determined as medium or above. The calculation of the residual risk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |



| Scoping Document reference                 | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Location in EIS |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|                                            | should take into account the influence of implementation of mitigation or offsetting measures on the impacts identified by the risk assessment. A discussion of how the calculations were determined should also be included, including the expected or predicted effectiveness of the mitigation measures.                                                                                                                                                                                                                                                                                                                                                                          |                 |
| <b>8.2 Detailed requirements</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |
| 8.2.1 Planning and land status             | <ul style="list-style-type: none"> <li>– Include a description of the planning context of the area where the proposal will be located.</li> <li>– Describe the planning and development status of any land or proposal relevant to the proposal.</li> <li>– Describe the land use of the proposed land and any land to be affected (including, but not limited to, zoning, lessee(s) or custodian of the land, the permissibility of the proposed use defined in the Territory Plan).</li> <li>– Investigate the impact the proposal will have on surrounding uses and whether the proposal will limit existing or future uses for the surrounding businesses/residences.</li> </ul> | Chapter 5       |
| 8.2.2 Traffic and transport                | <ul style="list-style-type: none"> <li>– Investigate the traffic impacts of the construction and operation of the facility on Mugga Lane and the Monaro Highway including consideration of whether continued safe and efficient movement of vehicles accessing the facility, relating to other activities such as the Mugga Landfill or the materials recycling facility, is not impeded by road network arrangements.</li> <li>– Undertake a Transport Impact Assessment (TIA) in accordance with Transport Canberra and City Services (TCCS) Transport Impact Assessment Guidelines.</li> <li>– The TIA must include intersection analysis of the nearby roads.</li> </ul>         | Chapter 6       |
| 8.2.3 Utilities                            | <ul style="list-style-type: none"> <li>– Describe current utilities on and surrounding the site.</li> <li>– Provide details of new connections and any proposed relocation.</li> <li>– Provide details of any proposed discharge of liquid trade waste required.</li> <li>– Information must be provided regarding utility works that are required as part of the proposal and mitigation measures proposed to avoid contamination.</li> </ul>                                                                                                                                                                                                                                       | Chapter 7       |
| 8.2.4 Biodiversity and nature conservation | <ul style="list-style-type: none"> <li>– Provide a description of ecological values on and adjacent to the site.</li> <li>– Identify whether the development is within the Built-Up Urban Area determined by the Tree Protection Act.</li> <li>– Provide a Tree Assessment and Tree Management Plan if the development is determined to be within the Built-Up Urban Area. If the development is outside the Built-Up Urban Area, then the Tree Protection Act requirements don't apply.</li> <li>– Include consideration of whether the removal of trees will be a key threatening process under the Nature Conservation Act</li> </ul>                                             | Chapter 8       |

| Scoping Document reference | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Location in EIS |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 8.2.5 Heritage             | <p>[REDACTED]</p> <p>[REDACTED]</p> <ul style="list-style-type: none"> <li>– Provide a Cultural Heritage Assessment (CHA) to assist in determining any possible heritage impacts from the development proposal. The CHA must: <ul style="list-style-type: none"> <li>• Be undertaken by a suitably qualified archaeologist</li> <li>• Include the information as required by the Heritage Council's Cultural Heritage Reporting policy</li> <li>• Include consultation with Representative Aboriginal Organisations (RAOs) about the heritage significance of any identified Aboriginal places and objects, and the impacts of the proposed development or activity on Aboriginal places and objects.</li> </ul> </li> <li>– If the CHA identifies that proposed works will cause damage or diminish the significance of heritage places, recommendations must be presented to comply with <i>Heritage Act 2004</i> provisions. This must include consideration of alternatives to avoid heritage impacts, and if these alternatives are not reasonably practicable, measures that could be adopted to minimise heritage impacts.</li> </ul>                                          | Chapter 9       |
| 8.2.6 Materials and waste  | <ul style="list-style-type: none"> <li>– Describe the nature, location and quantities of all materials (including hazardous wastes) to be handled on the site, including the assessment, storage, stockpiling, processing and disposal of materials and waste.</li> <li>– Provide details of expected finished compost volumes and export rates.</li> <li>– Outline management procedures in case of oversupply and/or stockpiling of waste and any consideration to the measures implemented when/if the facility ceases operation.</li> <li>– Prepare an Operational Waste Management Plan in accordance with TCCS Waste Code.</li> <li>– Describe any hazardous materials and dangerous chemicals to be used or stored on site during construction and operation.</li> <li>– Identify any Schedule 11 hazardous chemical, as per Work Health and Safety Regulation 2011 (WHS Regulation).</li> <li>– Provide details of maximum storage capacities for any hazardous chemicals.</li> <li>– Provide safety data sheets for any hazardous chemicals.</li> <li>– Identify whether any Schedule 11 hazardous chemicals meet the placard quantity as per the WHS Regulation.</li> </ul> | Chapter 10      |
| 8.2.7 Landscape and visual | <ul style="list-style-type: none"> <li>– Undertake a visual assessment of the site and surrounds to describe the current landscape character of the area.</li> <li>– Describe the predicted impacts the facility and its operations (such as incoming wastes, composting material, and potential stockpiling) may have on the landscape character of the site and surrounds.</li> <li>– Provide perspectives and/or a visual analysis of the proposal from local vantage points.</li> <li>– Consider visual impact to the Monaro Highway and consistency with Development Control Plan 171/09/0001.</li> <li>– Consider lighting impacts in relation to pilot distraction.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 11      |



| Scoping Document reference            | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Location in EIS |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 8.2.8 Soils and geology               | <ul style="list-style-type: none"> <li>Describe the soil and geology features of the area.</li> <li>Provide an environmental assessment of potential existing contamination from previous and adjacent land uses at the development site undertaken by a suitably qualified environmental consultant.</li> <li>An assessment of potential PFAS (per- and poly-fluoroalkyl substances) contamination for the site is required.</li> <li>Discuss any contamination impacts that are present at the site (soil and groundwater), and how the site will be remediated (if required).</li> <li>Describe the potential impacts of leachate/contaminant spills on the local soils.</li> </ul>                                                                                                                                                                                                                                                                                                                            | Chapter 12      |
| 8.2.9 Water quality and hydrology     | <ul style="list-style-type: none"> <li>Describe the surface water and groundwater features of the area.</li> <li>Investigate the impact the proposal will have on erosion in the Dog Trap Creek and investigate the need for erosion and sediment control structures in the creek to mitigate this impact.</li> <li>Provide an assessment of peak stormwater discharge and stormwater discharge volume from the facility and consideration of the impact of stormwater discharges to the Dog Trap Creek.</li> <li>Describe how runoff from the development site will be treated before entering the receiving environment.</li> <li>Provide information on stormwater retention and reuse capabilities at the development site.</li> <li>Describe the potential impacts of leachate/contaminant spills on local groundwater and surface water.</li> <li>Provide information on measures to manage leachate/contaminants emanating from the facility to avoid impacts on groundwater and surface water.</li> </ul> | Chapter 13      |
| 8.2.10 Climate change and air quality | <ul style="list-style-type: none"> <li>Provide an air quality and odour impact assessment completed by a suitably qualified environmental consultant which considers the air discharges from the facility and their impact on the surrounding environment. The assessment must take into consideration cumulative impacts from surrounding land uses. The assessment must be carried out in accordance with the "NSW EPA Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales".</li> <li>The assessment must consider dust impacts on the surrounding developments.</li> <li>The air quality and odour assessment must identify suitable mitigation measures.</li> <li>The assessment must include an Air Quality Management Plan which describes proposed mitigation and monitoring of air quality impacts and preventative controls such as maintenance measure and process management.</li> </ul>                                                                            | Chapter 14      |
|                                       | <ul style="list-style-type: none"> <li>Provide evidence showing net emissions from the operation of the facility.</li> <li>Provide quantitative estimates of the Scope 1 and 2 greenhouse gas emissions that will be generated by the proposed development during operation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 15      |
| 8.2.11 Socio-economic and health      | <ul style="list-style-type: none"> <li>Provide an assessment of impacts from the operation harbouring vermin and pest animals.</li> <li>Outline vermin and pest control measures encompassing both the transport and storage of organic waste on site.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 17      |
| 8.2.12 Noise and vibration            | Provide a noise and vibration impact assessment regarding the operation of the facility prepared in accordance with the "Guidelines for the preparation of Noise Management Plans for development applications Environment Protection Authority, February 2014"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 18      |



| Scoping Document reference          | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Location in EIS |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 8.2.13 Hazard and risk              | <ul style="list-style-type: none"> <li>– Provide an assessment of the potential threat of fire occurring at the facility, such as risk in relation to fire in stockpiled material, any effect on the surrounding area that a fire may have, and the protection measures necessary to address the potential threat of fire.</li> <li>– Outline management procedures to be followed should critical infrastructure failure occur.</li> <li>– Describe any hazardous materials and dangerous chemicals to be used or stored on site during construction and operation.</li> <li>– Provide assessment and mitigation measures against the requirements of the “National Airport Safeguarding Framework (NASF)” and airport operations including “Guideline C - Managing the Risk of Wildlife Strikes in the Vicinity of Airports.”</li> <li>– Provide a Wildlife Management Program in accordance with the NASF Guidelines.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 19      |
|                                     | – A bushfire assessment must be undertaken by a suitably qualified person.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Chapter 20      |
|                                     | – A climate change risk assessment is required addressing the risk from increased events from flood, bushfire or extreme heat risk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 16      |
| <b>8.3 Entity requirements</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |
| 8.2.1 Heritage Council              | <p>The Council requires that a CHA be undertaken to assist in determining any possible heritage impacts from the proposal. This CHA must:</p> <ul style="list-style-type: none"> <li>– Be undertaken by a suitably qualified archaeologist;</li> <li>– Include the information as required by the Council’s <i>Cultural Heritage Reporting</i> policy available at <a href="https://www.environment.act.gov.au/heritage/publications-and-resources">https://www.environment.act.gov.au/heritage/publications-and-resources</a>;</li> <li>– Include consultation with Representative Aboriginal Organisations (RAOs) about the heritage significance of any identified Aboriginal places and objects, and the impacts of proposed development or activity on Aboriginal places and objects; and</li> </ul> <p>If the CHA identifies that proposed works will cause damage or diminish the significance of heritage places, recommendations must be presented to comply with <i>Heritage Act 2004</i> provisions. This must include consideration of alternatives to avoid heritage impacts, and if these alternatives are not reasonably practicable, measures that could be adopted to minimize heritage impacts. Statutory approvals under the <i>Heritage Act 2004</i> will be required if any subsurface testing is proposed or if the works will damage or diminish the significance of heritage places.</p> | Chapter 9       |
| 8.3.1 ACT Emergency Services Agency | <p>ACTF&amp;R has reviewed the Application for Environment Impact Statement Scoping documents. These documents acknowledge the proposed development is located within bushfire prone area, and that bushfire risk would be considered during the EIS process.</p> <p>ACTF&amp;R require a bushfire assessment to be completed and submitted for review for this development. Due to the nature of the facility, ACTF&amp;R recommend the assessment includes provision of shielding (non-combustible fencing) to the perimeter of the block to assist with prevention of fire travel into facility from grassland hazard in the event of a bushfire.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 20      |
| 8.3.2 Canberra Airport              | <p>We acknowledge the application document references the NASF Guidelines and the proponent will undertake a Bird and Wildlife Assessment (Guideline C). The site is just under 9km away from the airport and so it lies between the Area B and Area C of the NASF Guideline C, this details a Mitigate and Monitor action plan for dealing with birds and wildlife. A thorough investigation is required by the proponent. We are happy to provide contact details of preferred consultants if required.</p> <p>We also request that Guideline E- lighting and pilot distraction be regarded to, we acknowledge that this would be addressed under the NCA Outdoor Lighting policy.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 19      |



| Scoping Document reference              | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Location in EIS                       |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 8.3.3 Climate Change and Energy (EPSDD) | <p>The documentation provided suggests that there are overall environmental benefits of processing organic waste in a FOGO facility, compared to sending that waste to landfill. However, it is not clear from the available information whether the proposed development will result in an overall reduction in net greenhouse gas emissions. Climate Change and Energy Division recommends that the proponent is required to provide evidence that gives assurance there will be a reduction in net emissions by diverting waste from landfill.</p> <p>If the proposal has the potential to be a significant emitter and may impact on the ACT's greenhouse gas emissions targets, the proponent will need to provide quantitative estimates of the Scope 1 and 2 greenhouse gas emissions that will be generated by the proposed development during operation. Mitigation and/or offsetting measures proposed and the extent to which they reduce emissions must also be quantified. Estimates must be calculated in a way that is comparable to the greenhouse gas emissions targets in the Climate Change and Greenhouse Gas Reduction Act 2010.</p> <p>The Climate Change and Energy Division notes the proximity of the proposed development to the Mugga Lane Solar Park. The Division recommends the proponent is required to consider the potential impacts (e.g. dust) of the development on the solar facility.</p> <p>If the proponent is assessing flood, bushfire or extreme heat risk, the Division advises that the impacts of climate change also need to be considered in the EIS, ideally through a climate change risk assessment. The Division encourages the use of NARClm regional downscaled climate projections for any reference to the ACT's future climate. More information can be found here:<br/> <a href="https://www.climatechange.environment.nsw.gov.au/climate-proposals-usedadaptnew?elqTrackId=f72f9814d12b4d16ba7df19f02bf31e5&amp;elqaid=83&amp;elqat=2">https://www.climatechange.environment.nsw.gov.au/climate-proposals-usedadaptnew?elqTrackId=f72f9814d12b4d16ba7df19f02bf31e5&amp;elqaid=83&amp;elqat=2</a>.</p>                               | Chapter 14, Chapter 15 and Chapter 16 |
| 8.3.4 Conservator of Flora and Fauna    | <p>Terrestrial biodiversity impacts of the development are likely to be negligible and additional assessment is not required. However, there are several major concerns regarding potential impacts to Dog Trap Creek which are required to be included in the Scoping Document and addressed in the EIS process. In particular, the EIS will need to incorporate potential impacts of the future operation of the facility in addition to the impacts during construction. The specific items for inclusion are:</p> <p><b>1. Increased erosion</b></p> <p>The degraded state and active erosion of Dog Trap Creek is a major concern. Increased development adjacent to the creek will increase the hydrologic stress on this system, leading to further erosion. Ideally, creek stabilisation works are needed in conjunction with increasing development in the catchment. The EIS should consider the need for erosion and sediment control structures in the creek.</p> <p><b>2. Stormwater control</b></p> <p>The EIS should include assessment of peak discharge and discharge volume and demonstrate that the facility will have no impact.</p> <p>In addition, the EIS should demonstrate how all runoff from the development site will be treated before entering the receiving environment and consider retention of stormwater and stormwater reuse on-site.</p> <p><b>Bushfire Risk</b></p> <p>Whilst the proposal has identified that it will consider bushfire risk in the EIS, I suggest the following should be the minimum elements that should be considered:</p> <ul style="list-style-type: none"> <li>– Risk of bushfire impacting the facility. Particularly addressing any required asset protection zones, the construction standards of any buildings, the siting of any stockpiles and windrows of flammable materials.</li> <li>– Fire originating on the site affecting other lands. Construction, and Operational phases. Measures to reduce the likelihood of fire ignition and spread, including conditions around the safety of plant and equipment to minimise risk of ignition, and on when construction or operations should cease for safety.</li> </ul> | Chapter 13                            |
|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Chapter 20                            |



| Scoping Document reference                     | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Location in EIS |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|                                                | <p>– Asset protection zones. These must be located within the site boundary and maintained by the operator. Any impacts of APZ on the environment to be assessed as part of the EIS.</p> <p>Irrespective of the above the proponent should conduct a full risk assessment of potential natural hazards and risks, including flooding.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |
|                                                | <p><b><u>Impacts to connectivity</u></b></p> <p>The proposal is adjacent to undeveloped land and, as identified in the preliminary assessment, there are a range of potential conservation values present. The habitat connectivity mapping prepared by the ACT Government notes that the site is located in an area of Moderate to High value for its potential to improve habitat connectivity. As part of the biodiversity assessment, the proposal should assess the risk associated with the development from the perspective of habitat connectivity.</p>                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 8       |
|                                                | <p><b><u>Impacts to biodiversity</u></b></p> <p>The type of facility being proposed for this development holds a risk for attracting vermin and associated predators, which can then impact on adjacent lands and biodiversity. The EIS should consider this risk in the operational phases.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Chapter 8       |
|                                                | <p><b><u>Potential presence of Striped Legless Lizard</u></b></p> <p>The Scoping Document refers to an inspection performed by my team in 2020 that determined the vegetation on the site was too degraded to support Striped Legless Lizard (SLL).</p> <p>Prior to European settlement, this section of Dog Trap Creek was natural temperate grassland or open woodland which was primary habitat for this species. Recent surveys (post 2020) in the Jerrabomberra area have recorded SLL in degraded vegetation. Advice received from an expert in this species is that the site does have potential to support a population. Possible SLL habitat in this vicinity is subject to a number of development proposals which represent a cumulative threat to the conservation of this species. For this reason, I require a targeted SLL survey to be undertaken on the site as part of the EIS. This is required to ensure that the proposal does not pose a threat to SLL.</p> | Chapter 8       |
| 8.3.5 Environmental Protection Authority (EPA) | <p><b>Air Emissions:</b></p> <p>A quantitative assessment of the potential air quality and odour impacts on the surrounding area and details of all proposed mitigation, management and monitoring measures. This assessment must be carried out in accordance with the NSW EPA Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Chapter 14      |
|                                                | <p><b>Noise Emissions:</b></p> <p>A noise impact assessment prepared in accordance with the "Guidelines for the preparation of Noise Management Plans for development applications Environment Protection Authority, February 2014"</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Chapter 18      |
|                                                | <p><b>Water:</b></p> <p>An assessment of surface water and leachate management must be included in the EIS documentation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Chapter 13      |
|                                                | <p><b>Contamination:</b></p> <p>An environmental assessment of the site to determine whether it is suitable for the proposed uses from a contamination perspective. Whilst the proponent can be made aware of this requirement it can be covered off in the DA process rather than the EIS.</p> <p>An assessment of potential PFAS (per-and poly-fluoroalkyl substances) contamination at the site and in the product is required, taking account of research undertaken by the Australian Packaging Covenant Organisation, Australia's PFAS National Environmental Management Plan and ACT initiatives to ban single use plastic packaging.</p>                                                                                                                                                                                                                                                                                                                                  | Chapter 12      |
|                                                | <p><b>Advice</b></p> <p>It should be noted that if approved, the proponent will be required to hold an Environmental Authorisation (EA) granted by the EPA. The EA will be required to be obtained following approval of a Development Application and prior to</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Appendix C      |



| Scoping Document reference | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Location in EIS   |
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|                            | operations commencing on the site. The EPA will set a range of conditions in the EA including setting limits on emissions and managing and monitoring emissions and impacts on the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |
| 8.3.6 ACT Health           | <p>Odour impacts associated with the facilities' operation on surrounding receptors should be identified and assessed and mitigation measures should be discussed within the EIS.</p> <p>The applicant is advised that The HPS supports the implement standard mitigation measures, actions and studies in table 8 of the EIS scoping document (refer to page 45-49).</p> <p>The HPS supports that a contamination assessment should be undertaken as part of the EIS as indicated in the ACT FOGO waste facility EIS Scoping Document 4.5 Soils and contamination.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 12 and 14 |
| 8.3.7 ACT Heritage         | <p>[REDACTED]</p> <p>[REDACTED]</p> <p>3. A Cultural Heritage Assessment (CHA) of the potential Aboriginal heritage impacts of the proposal, which must:</p> <ul style="list-style-type: none"> <li>a. Be undertaken by a suitably qualified archaeologist;</li> <li>b. Be informed by consultation with Representative Aboriginal Organisations (RAOs) about: the cultural and heritage significance of any identified Aboriginal places and objects; the potential heritage impacts of proposed development; and proposed management outcomes;</li> <li>c. Meet the information requirements of the Council's Cultural Heritage Reporting policy, which is available at <a href="https://www.environment.act.gov.au/heritage/publications-andresources">https://www.environment.act.gov.au/heritage/publications-andresources</a>;</li> <li>d. If the CHA identifies that proposed works will cause damage or diminish the significance of heritage places, recommendations must be presented to comply with <i>Heritage Act 2004</i> provisions; and</li> <li>e. This CHA is to be submitted directly to the Council for review, and for advice on any additional <i>Heritage Act 2004</i> requirements.</li> </ul> <p>[REDACTED]</p> <ul style="list-style-type: none"> <li>a. Preparation of an Excavation Permit application by suitability qualified specialists, and including a Research Design and Methodology;</li> <li>b. Where the application relates to Aboriginal places and objects, consultation with RAOs regarding the proposed investigation, its methods and the management of any objects recovered;</li> <li>c. Submission of the application to the Council under section 61E of the <i>Heritage Act 2004</i>; and</li> <li>d. Following approval of the application under section 61F of the <i>Heritage Act 2004</i>, completion of the investigation in accordance with the conditions of that approval.</li> </ul> <p>5. If the above assessment actions identify that the proposal may have detrimental heritage effects, all alternatives to heritage impacts must be considered and adopted where reasonably practicable. Where alternatives are not reasonably practicable, measures to minimise heritage impacts must also be considered and adopted.</p> <p>Note: The EIS must redact information on some heritage places and objects, including in attached heritage reports, as:</p> <p>[REDACTED]</p> <ul style="list-style-type: none"> <li>– Information on Aboriginal places and objects is culturally sensitive, and should not be made public in accordance with Traditional Custodians views.</li> </ul> | Chapter 9         |



| Scoping Document reference                         | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Location in EIS          |
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|                                                    | <p>It is also an offence under section 55 of the <i>Heritage Act 2004</i> to make information on some Aboriginal places at Hume publicly available.</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |
| 8.3.8 Icon Water                                   | <p><b>Trade Waste</b></p> <p>All connections to sewer that are classified as Liquid Trade Waste (any non-domestic sewage) must apply to Icon Water's Liquid Trade Waste team for approval before connection to sewer. This will include any discharge to sewer from this facility. Further information on acceptance requirements for liquid trade waste can be found on the Icon Water website <a href="http://www.iconwater.com.au/tradewaste">www.iconwater.com.au/tradewaste</a>.</p> <p>In this circumstance at a minimum the ACT FOGO waste facility will need a current Icon Water Approval to discharge to sewer. A new trade waste application must be submitted. A consultation may be required to ascertain the likely discharge and discuss any pre-treatment requirements or if some waste must be collected for off-site disposal. The ACT FOGO waste facility will also need to consider how they are going to manage their liquid wastewater during construction and any potentially contaminated ground or surface water. This water must not be discharged to sewer without approval from Icon Water.</p> <p>Icon Water Liquid Trade Waste team contact information is Email: <a href="mailto:trade.waste@iconwater.com.au">trade.waste@iconwater.com.au</a><br/>Phone 02 6248 3222.</p> | Chapter 7 and Chapter 13 |
|                                                    | <p><b>Environment</b></p> <p>The site is potentially contaminated with Heavy Metals / Hydrocarbons / Asbestos overlay. The EIS notes that a contamination study will be done. This will need to take into account Icon Water assets and ensuring that any connections and movement of pipelines done through the proposal are done ensuring contamination does not occur to the pipeline.</p> <p>The contamination study should be provided to Icon Water to help us future manage the infrastructure we have in the area as well.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Chapter 7 and Chapter 12 |
| 8.3.9 National Capital Authority (NCA)             | The site is identified as an urban area in the National Capital Plan (the Plan) and the proposed land use is permitted under the Plan. Any future development application on this site will need to consider visual impact to the Monaro Highway and be consistent with Development Control Plan 171/09/0001.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 5                |
| 8.3.10 Transport Canberra and City Services (TCCS) | TCCS had no comments for the EIS scoping stage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NA                       |
| 9. Community and stakeholder consultation          | The intention of the consultation in this scoping document is to ensure significant proposals include meaningful engagement with the community in the early stages of the proposal and provide clear expectations and an understanding of the actual development proposed. Consultation also provides an opportunity for the community to contribute to the design of the proposal and to resolve any major concerns early in the planning stages.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 23               |
| 9.1 Consultation must be undertaken with:          | – Lease holders and land managers of land potentially impacted by the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 23               |



| Scoping Document reference                                              | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Location in EIS |
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|                                                                         | <ul style="list-style-type: none"> <li>Any recreational groups which may be affected by the proposal</li> <li>Any volunteer conservation, landscape management or land care groups active in the area to be affected by the proposal, such as the Molonglo Conservation Group and the Isaacs Ridge Mount Molonglo Conservation Group and the Isaacs Ridge Mount Mugga Mugga ParkCare Group.</li> <li>The local community and businesses owners and employees. This includes local community groups such as the Tuggeranong Community Council, the Jerrabomberra Residents Association and other community groups in the Southern Central Canberra area.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |
| 9.2 Provide a consultation report that includes:                        | <ul style="list-style-type: none"> <li>A description of the methodology and criteria for identifying stakeholders and how they were identified. Details and plans must be provided showing potential impacts on the local and wider community to justify how stakeholders were identified.</li> <li>An outline of the communication methods used. A variety of communication methods must be adopted to ensure all stakeholders are engaged appropriately, such as face to face, email/letters, community meetings and information sessions and website notifications.</li> <li>Details on the information provided during the community consultation process. Note: A plain English statement explaining the proposal and conceptual drawings must be made available to the community and stakeholders.</li> <li>A summary of the responses and the main comments raised. Evidence must be provided demonstrating that consultation has been undertaken with each relevant group/person and provide specific detail on how these concerns were addressed.</li> <li>A description on how any concerns have been considered and identify any changes that have been made to the proposal.</li> </ul> <p>Consultation must occur as early as possible and avoid, or make allowances for public holidays, school holidays and the summer holiday (Christmas) shutdown period. The level of engagement must be comparable with the size, location and nature of the development and potential impact on the wider community.</p> | Chapter 23      |
| 9.3 Consideration of public representations from Draft EIS notification | The revised EIS must include a consultation report outlining the representations received, issues raised in the representations and a response to the issues and values identified. The summary response must clearly identify the representation(s) to which the responses relate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter 23      |
| 10. Recommendations                                                     | Provide a summary of any commitments to impact prevention, mitigation measures, offsetting measures and other actions within the EIS.<br>Describe the monitoring parameters, monitoring points, frequency, data interpretation and reporting proposals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chapter 22      |
| 11. Other relevant information                                          | The proponent may wish to include issues outside the scope of the EIS as a separate section of the EIS. This allows the proponent to identify matters not required to be addressed in the EIS, but that would be subject to development assessment consideration and notification. This can provide additional context for members of the public regarding management of environmental issues, by ensuring that the public is aware that these issues will be addressed in the detailed design of the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 21      |
| 12. References                                                          | A reference list using standard referencing systems must be included.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Chapter 25      |
| 13. Required Appendices                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Appendices      |
| 13.1 Scoping document for the EIS                                       | A copy of the scoping document should be included in the EIS. Where it is intended to bind appendices in a separate volume from the main body of the EIS, the scoping document should be bound with the main body of the EIS for ease of cross-referencing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Appendix A      |
| 13.2 Scoping document reference                                         | Include a table that cross-references the EIS to the scoping document. If the EIS addresses the scoping document in multiple places, then this must be also referenced.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Appendix B      |



| Scoping Document reference             | Assessment requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Location in EIS          |
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| 13.3 Proponent's environmental history | <p>Provide details of any proceedings under a Commonwealth or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:</p> <ul style="list-style-type: none"> <li>– The person proposing to take the action</li> <li>– For an action for which a person has applied for a permit, the person making the application.</li> </ul> <p>If the person proposing to take the action is a corporation, then provide details of the corporation's environmental policy and planning framework. Enough information is required to satisfy s136(4) of the EPBC Act.</p> | Appendix C               |
| 13.4 Information Sources               | <p>For information given the following must be stated:</p> <ul style="list-style-type: none"> <li>– The author or any reports or studies</li> <li>– The publication date</li> <li>– The source of the information</li> <li>– How recent the information is (i.e. when a study was conducted or when primary sources were produced)</li> <li>– How the reliability of the information was tested</li> <li>– What uncertainties (if any) are in the information</li> </ul>                                                                                                                                                       | NA                       |
| 13.5 Study team                        | The qualifications and experience of the study team and specialist sub-consultants and expert reviewers must be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Appendix D               |
| 13.6 Specialist studies                | All reports generated based on specialist studies undertaken as part of the EIS are to be included as appendices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Appendix E to Appendix T |
| 13.7 Research                          | Any proposals for researching alternative environmental management strategies or for obtaining any further necessary information should be outlined in an appendix.                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NA                       |

## 1.5 Scope and limitations

This report has been prepared by GHD for The City and Environment Directorate and may only be used and relied on by The City and Environment Directorate for the purpose agreed between GHD and The City and Environment Directorate as set out in Section 1.4 of this report.

GHD otherwise disclaims responsibility to any person other than The City and Environment Directorate arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by The City and Environmental Directorate and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

### Accessibility of documents

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

## 2. Proposal description

### 2.1 Regional context

The proposal would be located within the current bounds of the Hume Resource Recovery Estate (HRRE) on Block 5, Section 26 Hume, off John Cory Road (see Figure 2.1). The proposal site is surrounded by industrial facilities including:

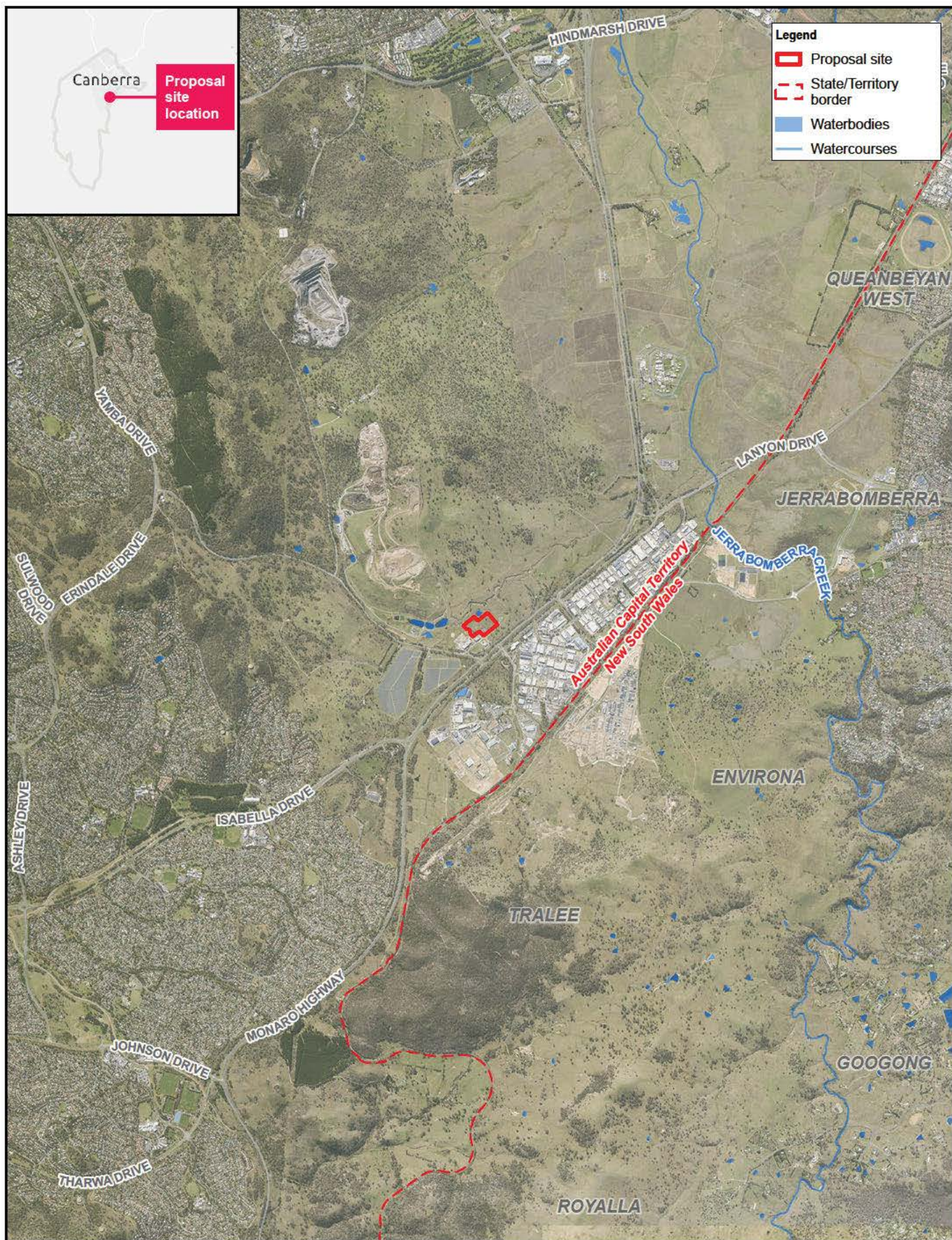
- ACT Skip Hire on the adjacent block to the south
- Soft Landing Mattress Recycling located further south, across John Cory Road
- Hume Industrial Estate located to the south and east across Monaro Highway
- Proposed new Hume Materials Recovery Facility located to the west, across Recycling Road
- Mugga Lane Resource Management Centre (MLRMC) and Landfill located approximately 200 metres to the north-west

The nearest residential receiver, Tralee NSW, is located approximately two kilometres to the west of the proposal site.

Table 2.1 Proposal locality and description

| Item                  | Details                                      |
|-----------------------|----------------------------------------------|
| Location              | Block 5, Section 26 Hume, off John Cory Road |
| Lessee/Land Custodian | ACT NoWaste                                  |
| Existing land use     | Vacant block                                 |
| Zone                  | IZ1: General Industry                        |
| Block area            | 42,957 m <sup>2</sup>                        |
| Proposal footprint    | 27,130 m <sup>2</sup>                        |
| Buildings area        | 18,745 m <sup>2</sup>                        |
| Proponent             | ACT NoWaste (as part of CED)                 |





Paper Size ISO A4  
0 0.5 1  
Kilometres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540464  
Revision No. 0  
Date 29/08/2023

Regional context

FIGURE 2.1



## 2.2 Proposal justification and objectives

The ACT is working towards a target of reducing emissions by 50 to 60 percent by 2025 and reaching net zero emissions by 2045 (ACT Government, 2019a). To meet this target, and play its part in tackling climate change, the ACT Government needs to address all sources of emissions.

In the ACT around 26,000 tonnes of household food waste goes to landfill each year. When FOGO decomposes in landfill it produces methane – a powerful greenhouse gas emission contributing to climate change. Diverting FOGO from landfill will reduce greenhouse gas emissions and turn organic waste into valuable beneficial product.

The ACT Government is also working to minimise organic waste going to landfill and recover organic waste resources. It has set a target of increasing the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill (ACT Government, 2011).

The future FOGO service and new FOGO processing facility would help ACT deliver on these targets and commitments by reducing the amount of organic waste disposed in landfill and lowering greenhouse gas emissions.

The key objectives of the proposal are to:

- Provide critical organic waste processing infrastructure for the Territory.
- Divert FOGO waste from landfill and reduce greenhouse gas emissions.
- Recover organic waste resources to create valuable mulch, compost and soil conditioner products, and thereby strengthen the Territory's circular economy.
- Support key Territory and Federal Government resource recovery and landfill diversion targets including:
  - The National Waste Policy Action Plan target of halving the amount of organic waste sent to landfill for disposal by 2030.
  - The ACT Waste Management Strategy 2011-25 target of increasing the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill.

## 2.3 Key features

### 2.3.1 Overview and layout

The proposal involves the construction and operation of a new FOGO facility with capacity to receive and process up to 70,000 tonnes per year of FOGO waste using in-vessel composting technology.

In-vessel composting technologies have been successfully implemented in other Australian locations for FOGO waste processing, and a variety of technology providers and site configurations are possible. They all broadly involve an enclosed and odour-controlled waste receipt area, enclosed composting vessels or tunnels with forced aeration and process control, and maturation areas for compost.

The proposal would involve the following key features, subject to detailed design:

- Receipt hall.
- Primary composting tunnels and tunnel hallway.
- Maturation and refining hall.
- Product storage shed.
- Odour management system.

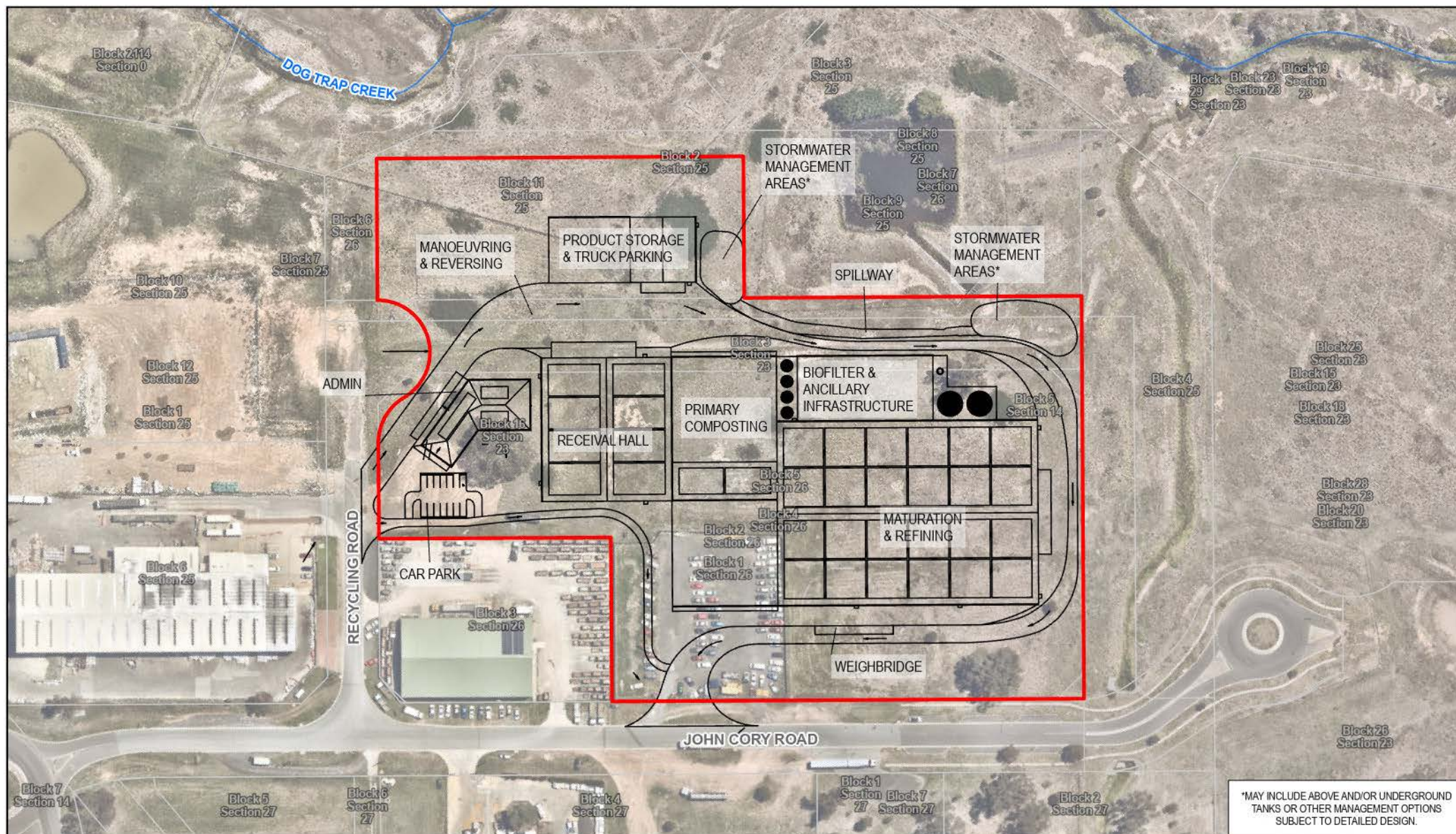
Ancillary supporting infrastructure including:

- Administration building.
- Machinery shed/workshop.
- Weighbridges.
- Access roads and pavements.
- Hardstand parking.

- Stormwater and leachate management.

Figure 2.2 shows the indicative concept design for the proposal, including a preliminary configuration and approximate area requirements to accommodate these features (subject to detailed design and final vendor process selection).





\*MAY INCLUDE ABOVE AND/OR UNDERGROUND TANKS OR OTHER MANAGEMENT OPTIONS SUBJECT TO DETAILED DESIGN.

# Legend

- Proposal site
- Proposal site layout
- Cadastre
- Watercourses

Paper Size ISO A4  
0 20 40  
Metres  
Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540460  
Revision No. 0  
Date 4/07/2025

Proposal layout

FIGURE 2.2



## 2.3.2 Receiving hall

The proposed layout incorporates an enclosed organic waste receiving hall nominally 2,750 square metres and 12 metres high.

The building would be of predominantly steel framed and metal-clad construction and may incorporate concrete tilt panels and cast-in-situ concrete structural elements, subject to detailed design.

The design would consider incorporating features that maximise the use of natural light without contributing significantly to heat build-up within the buildings.

Separate bays would be provided within the receiving hall for:

- All organic wastes accepted at the facility
- Rejected loads of waste
- Contaminants removed from input materials

The receiving hall would nominally provide at least two days' storage capacity for the incoming FOGO waste.

## 2.3.3 Primary composting tunnels and tunnel hallway

The primary composting area would incorporate a series of tunnel modules arranged side by side, with a large door at one end for loading and unloading. A tunnel hallway would be provided in front of the tunnel block which would also be of predominantly steel framed and metal-clad construction and a maximum of 12 metres high.

Each tunnel would be self-operating and comprise an air duct system, blowers, process water collection and recycling systems and various process control features (temperature, pressure etc.). The tunnel floor would allow the inflow of leachate and outflow of air into the composting material. Air extracted from the tunnels would be directed via ducting to a biofilter with integrated humidifier, and process water collection, storage and recycling facilities.

The quantity and size of composting tunnels would be determined during detailed design, however the following preliminary design configuration has been adopted in developing the site conceptual layout:

- 10 tunnel modules for 70,000 tonnes per year
- Tunnel module size (nominal): eight metres wide, 40 metres long, five metres high

The final tunnel configuration and operating protocols would be subject to detailed design and vendor process selection, and therefore quantity of tunnels, and their individual dimensions, may vary from those depicted in the conceptual layout drawings.

## 2.3.4 Maturation and refining building

The maturation and refining building would comprise an enclosed building of up to, nominally 7,000 square metres. This building would be located adjacent to the primary composting hall to minimise travel distances for material via wheel loader and/or other mobile machinery.

The maturation and refining building would have a maximum height of 12 metres and minimum clear internal height of 10 metres.

## 2.3.5 Product storage shed

A semi-enclosed and covered product storage shed, nominally 2,000 square metres and a maximum of 12 metres in height, would provide additional capacity for the temporary storage of product ready for load out. This area could also be used for truck parking.

## 2.3.6 Odour management system

All air exhausted from the composting tunnels, as well as extracted air from the main building and receiving hall, would be ducted to the odour management system for treatment and final discharge of treated air. The odour management system is intended to treat offensive odours and avoid impacts on neighbouring sensitive receptors.

It is intended that the primary odour treatment technology is biofiltration. Odorous air would be drawn through an air humidifier via ducting and an appropriately sized extraction fan. The purpose of the humidifier is to ensure air introduced to the biofilters is moist and does not dry out the biofilter media, such that optimal conditions can be maintained for the biological odour treatment process that occurs in the biofilter.

Sizing of the biofilter/s would consider required treatment volume, extraction rates and performance requirements. The need for wet scrubbers would be considered in the detailed design phase and if deemed necessary, would be incorporated in the odour management system for airstream conditioning prior to treatment in the biofilter.

Additional odour management options were investigated as part of the EIS. A stack of up to three metres high (above the roof height) could be used to improve odour dispersion and further mitigate any odour effects to nearby receivers. This option is subject to detailed design.

## 2.3.7 Ancillary supporting infrastructure

Other ancillary supporting infrastructure would include the following:

- An administration building, nominally 690 square metres, would be provided near the site entrance and adjacent to the incoming weighbridge
- A machinery shed/workshop building, nominally 625 square metres, would be provided adjacent to the product storage shed
- Incoming and outgoing weighbridges would be provided to enable the weighing and recording of all incoming material and outgoing product or residual wastes
- Access roads and pavements
- Hardstand parking near the site entrance for small vehicles of staff and visitors
- Stormwater and leachate management.

Hardstands and aprons would be engineered for durability and low permeability. Concrete apron areas would be installed in high impact zones and areas where trucks manoeuvre or turn regularly. All other areas would be appropriately graded for drainage and paved with asphalt.

## 2.4 Construction

### 2.4.1 Overview

Subject to final vendor tender submission, construction activities are expected to include:

- Site investigations (e.g. geotechnical) and early works required to inform the detailed design
- Site preparation and establishment of temporary ancillary construction infrastructure including
  - site offices and amenities
  - fencing
  - a temporary main switchboard and electrical riser to provide power during construction
- Bulk earthworks for site shaping and surface water drainage and underground tanks
- Detailed excavation for lift and stair raft pads
- Pouring concrete foundation slab, footings, hardstand and suspended slabs for the main buildings
- Construction of pavement areas for car park, hardstand and access roads
- Construction of weighbridges and weighbridge office
- Installation of steel truss frameworks for structures
- Erection of pre-cast concrete panels for external and internal partition walls and metal roof for site buildings
- Installation of tunnels, processing and odour control equipment
- Installation of firewater tanks
- Installation of fencing and signage
- Commissioning



Construction and delivery timeframes will be subject to the procurement of the contractor responsible for the detailed design, construction and ongoing operation and maintenance of the facility. Construction is expected to take up to two years to be confirmed with the contractor.

## 2.4.2 Construction workforce

The construction workforce is likely to include a maximum of 200 staff working across the entire span of the proposal delivery. The peak workforce is expected during major concrete pours up to 25 people.

Heavy vehicles would enter and exit the site through the main site entrance located along the western boundary. Staff light vehicles would enter and exit via the carpark entrance.

## 2.4.3 Construction hours

Construction working hours would be undertaken during the periods specified in the Environment Protection Regulation 2005 and abide by noise zones outlined in the Territory Plan 2008. This may include hours up to:

- 7 am to 6 pm Monday to Friday
- 8 am to 6 pm Saturdays
- 8 am to 6 pm on Sundays or Public Holidays

## 2.4.4 Construction traffic

Vehicles associated with construction of the proposal would include staff light vehicles and heavy vehicles delivering construction plant and equipment and materials to site.

Construction of the proposal is expected to generate up to 80 vehicle trips during both the AM and PM peaks. This would comprise 50 light vehicle trips as well as 10 inbound and 10 outbound heavy vehicle movements as shown in Table 2.2.

Table 2.2 Indicative construction traffic

| Vehicle type  | AM peak (vtph) |          | PM peak (vtph) |          |
|---------------|----------------|----------|----------------|----------|
|               | Inbound        | Outbound | Inbound        | Outbound |
| Heavy vehicle | 10             | 10       | 10             | 10       |
| Light vehicle | 60             | -        | -              | 60       |

Note: vtph = vehicle trips per hour

It is noted that the traffic impact assessment considered a worst-case scenario of the proposal and the proposed MRF being constructed at the same time. Further details are provided in Chapter 6 and Appendix E.

## 2.4.5 Plant and equipment

Typical plant and equipment required for construction of the proposal is expected to include:

- 5 tonne excavator
- 20 tonne excavator
- Dozers
- Trucks, including concrete trucks
- Compaction equipment
- Graders
- Asphalt mixers
- Paver machine
- Bobcats
- Mobile concrete pump
- Concrete vibrators
- Concrete saw
- Welders
- Boom lifts
- Mobile crane
- Elevated working platform
- Mini loader
- Forklifts

## 2.4.6 Construction environmental management

The construction of the proposal would be undertaken in accordance with the construction environmental management plan (CEMP) to be developed for the proposal. The plan would detail mitigation measures to manage risks associated with generation of dust, noise, and other environmental impacts during construction as identified in the EIS and conditions of approval.

## 2.5 Operation

### 2.5.1 Feedstock and product output quantities and types

The proposal would have capacity to receive up to 70,000 tonnes per year of FOGO feedstock. The primary feedstock stream would be municipal kerbside collected FOGO, however the facility may also receive:

- Commercial organic waste including food organics
- Pre-shredded bulk municipal garden organic material from waste transfer stations.

The facility would produce various grades of FOGO-derived products.

### 2.5.2 Process overview

The process would comprise the following main elements:

- Waste receipt and decontamination
- Shredding, mixing and moistening
- Pasteurisation and composting in enclosed tunnels with forced aeration and moisture control
- Maturation in static piles and product refinement within the enclosed maturation building
- Product load-out.

### 2.5.3 Waste receipt and decontamination

#### Waste receipt

All incoming loads would be received via a dedicated weighbridge located at the site access road within the site boundary. Vehicle identification, load description (material type), source and mass details would be recorded.

Kerbside collection trucks and articulated waste transfer vehicles would deliver the organic waste into the receipt hall through automated fast acting roller/shutter doors and unload in the designated delivery area.

Provision would also be made in design for acceptance of organic waste deliveries via articulated transfer vehicles, such as 19 metre long semi-trailer vehicles and short combinations.

The facility would only accept waste delivered in large commercial heavy vehicles (trucks). It would not accommodate public or domestic drop-off of waste.

Feedstock deliveries would occur daily on weekdays.

#### Decontamination

A decontamination system would be incorporated into the facility to effectively remove physical contaminants and prepare the incoming organic waste via a combination of shredding and screening. As the level of physical contamination in the FOGO stream can vary by season and collection area, the process would be expected to include initial screening of fine material, magnets, and a picking line (enclosed climate-controlled cabin) and discharge bay. The allowable contamination rate is expected to be three percent.

Subject to detailed design, the initial treatment step would involve visual inspection of each load by the wheel loader operator and/or mobile material handler, removal of gross contaminants into a bin, before loading onto the conveyor to the sorting line and then the shredder.

The final processing sequence and methodology would be subject to detailed design and vendor process selection.

## **Odour containment and management**

The receival hall and maturation building would be enclosed and operated under negative pressure to contain odour, dust and bio-aerosols. Vehicle access to the facility would be via rapid acting automated doors. The receival hall and corridor would be ventilated via an air extraction and ducting system which would be connected to the odour treatment system (refer to Section 2.3.6).

The air volume exchange ratio for the receival hall would be at least two air changes per hour, subject to detailed design and vendor process selection. Air extracted from the receival hall would be used to aerate the tunnels and some would also be used to cool spent air extracted from the composting tunnels before it is introduced to the odour treatment system.

## **2.5.4 Shredding, mixing and moistening**

### **Shredding**

Kerbside FOGO and pre-shredded bulk garden organic material transferred to the facility from waste transfer stations for processing, as well as other bulking agents such as untreated timber would be visually assessed, decontaminated (sorted), screened and the coarse component further shredded in preparation for composting.

The shredder would be operated by the wheel-loader or material handler operator by means of a remote-control device. Shredded non-FOGO material would be accumulated in a dedicated storage bay inside the receival hall.

### **Pre-processing**

FOGO material that has been prepared for composting (i.e. following visual inspection, decontamination, shredding, composting and screening), would be placed in an active compost tunnel to commence the controlled biological decomposition process. Where necessary, coarse oversize material recovered from composted product refining may be returned to the start of the process to provide structure and porosity in the compost pile within the tunnels.

The mixing procedure would provide for initial processing (including placement in tunnels) of high-odour and high-moisture wastes within 24 hours of delivery.

Moisture conditioning of the blended tunnel inputs would be carried out in the tunnels via an internal overhead water distribution system.

## **2.5.5 Pasteurisation and composting**

### **Tunnel composting (pasteurisation) process**

Composting would take place within the enclosed primary composting tunnels with forced aeration and moisture control. The composting would be a controlled, thermophilic process wherein the FOGO material would degrade by microbiological activity. The heat from the composting process would pasteurise and dry the material, reducing its volume and weight significantly.

It is expected that the composting (pasteurisation) process within the tunnels would take up to four weeks (indicative timeframe only).

Process controls in all tunnels would be integrated, operated and controlled via a central process control system that consists of a PLC, SCADA system and a process control computer.

Via a control computer, the operator would view the current status of the composting process, evaluate trend data and adjust process parameters as required. The control system would acquire and record process data, enabling verification of processing time, temperature profile and other data for each batch as necessary for demonstrating conformance with AS 4454-2012 (including pasteurisation) (Standards Australia, 2012).



## **Process water management**

As organic waste is composted, the process would emit carbon dioxide, heat and water vapour. Leachate and condensate produced during composting would be collected by piping mounted in the floor of the tunnels. Leachate from the tunnels and condensate from odour extraction ductwork is collected through a network of sealed pipes and gravity drained into a sealed process water tank. Process water would be recycled back through the tunnel composting process to maintain optimal moisture content in the organic material.

A pump system would draw water from the process water tank and deliver it through a network of pipes and automatically controlled valves (mounted outside the tunnel) to a series of spray nozzles along the ceiling within each tunnel. The sprays would evenly distribute the water over the entire compost surface area within the tunnel.

Subject to detailed design, make-up water may be required during summer to supplement the water demand for the composting process. This is expected to come from on-site stormwater tanks or supplementary water supply pipework.

### **2.5.6 Static pile maturation and refinement**

Following pasteurisation and active composting in the enclosed tunnels, further passive composting via static pile maturation would occur in the maturation and refining building.

Movement of static piles undergoing compost maturation would be via a combination of wheel loader and other mobile machinery (e.g. excavator). During maturation the composted material would further reduce in volume, mass and moisture.

The static pile compost maturation process would adhere to a quality management system and register of compost batches would be maintained for quality control and traceability.

Compost maturation piles within the maturation and refining building would be generally trapezoidal in shape; nominally eight metres wide at the base, 40 metres long and up to 3.5 metres high (subject to detailed design, vendor process selection and regulatory approval).

After a maturation period of approximately two to six weeks, the compost would be mechanically screened and further refined into separated products. These would include mulch, compost and soil conditioners in accordance with final market requirements. Physical contaminants would be placed into bins for landfill disposal.

### **2.5.7 Product load-out**

Products would be loaded out from either the compost maturation and refining building, or from the semi-enclosed and covered product storage area and removed from site by articulated transfer vehicles (such as single semi, short combination or truck and dog combinations). Loading of trucks would be via mobile plant (for example wheel loader or excavator), from product stockpiles in either the maturation and refining building, or the semi-enclosed hardstand storage area.

Dust that may be generated from product handling and load-out from the semi-enclosed hardstand storage area would be managed via controlled application of water for dust suppression during windy conditions and during periods of hot, dry weather.

## **Weighing of products and residual waste**

Trucks leaving site would exit via the dedicated weighbridge where vehicle identification, material type and load mass would be recorded and logged.

### **2.5.8 Staffing and equipment**

The staffing requirements are expected to be relatively low, given the high degree of automation of the tunnel composting process and fast acting entry doors to the main process building. Selection and use of reliable equipment and remote monitoring and control ability via the SCADA system further reduce supervision requirements and effort required for repairs and maintenance. Proactive maintenance schedules would assist with efficient operation and management of the plant.

Indicative staffing for the FOGO facility is approximately 15 direct employees (operations and maintenance, management and supervision), subject to detailed design and the final vendor process selection.

## 2.5.9 Operating hours

It is intended that the facility would operate on a single shift basis with waste acceptance (opening hours) to coincide with and accommodate deliveries from municipal kerbside collection trucks, as well as bulk product load-out to wholesale offtake. Operating hours would be confirmed at Development Application (DA) stage by the successful contractor in accordance with any DA approvals. Weekends would be available for carrying out planned (and unplanned) repairs and maintenance, thereby providing a high level of processing continuity assurance.

Active operation times for various mobile and fixed plant and equipment would be around six to seven hours per day. This includes decontamination and feedstock preparation, tunnel loading/unloading, compost maturation pile maintenance, product screening and refinement, and finished product load-out. Night-time operation and movements of mobile plant is not required.

Tunnel composting is a 24-hour continuous process enabling effective pasteurisation and rapid active composting cycles. Accordingly, blowers, fans and pumps are operating (or cycling) continuously, including nights and weekends. Fans and pumps are selected and/or configured as low noise emitting equipment such that noise emissions from the facility will comply with regulatory requirements.

## 2.5.10 Transport and access

In the proposed concept design, trucks would enter the site at the entrance off Recycling Road and exit via a single exit point onto John Cory Road. John Cory Road and Recycling Road connect to the Monaro Highway to the south of the site. The Monaro Highway is a major B-double arterial road.

Once within the proposal site, traffic would be separated between small and large vehicles, as well as waste delivery and product transfer vehicles. The facility layout would allow one-way traffic flow around the site for safe and efficient vehicle movement.

Employees at the facility would enter via the main entrance off Recycling Road and park small vehicles in a dedicated small vehicle carpark adjacent to the administration building. This would be sized according to the number of staff employed at the proposal and refined during detailed design. Small vehicles exiting the carpark would leave the site via the dedicated exit point onto John Cory Road.

Household FOGO waste would be delivered by kerbside waste collection trucks. If commercial food waste is accepted at the facility, it would also potentially be delivered by food waste collection vehicles. Smaller vehicles such as staff and visitor cars and maintenance vehicles would also need to access the site. No public drop off would be envisaged or required at the facility.

It has been assumed that collection vehicles delivering FOGO waste to the facility would have an average payload of five to six tonnes. It has been further assumed that vehicles removing FOGO-derived product from the site would have an average payload of 24 tonnes, however this would vary depending on vehicle configuration used. Other trucks entering and exiting the site during normal operations would include trucks removing residual waste removed from the FOGO feedstock and from compost refining activities. It has been estimated that the proposal would generate up to 96 heavy vehicles movements per day and 20 light vehicles movements per day, Monday to Friday.

Peak truck traffic times are expected to be between 9:30 am and midday, and 1:30 pm to 5:00 pm Monday to Friday.

## 2.5.11 Services

### Electricity

There is currently no electrical connection to the proposal site. The proposal would be provided with electricity access via overhead powerlines. The proposal would require an electrical connection to run machinery and lighting associated with the operation.

## Communications

The proposal would require telephone, computer and data cable access. Standard telephone cabling and two-way radio / mobile telephones would provide the required telecommunication services. Internet access would be provided via NBN or Wi-Fi. None of these services are currently connected to the site.

## Water supply

The proposal would require a water supply. It is expected that stormwater and rainwater would be captured into tanks via rooftop collection to be used at the site. Additional water would be transported to the site and re-used on site.

## Wastewater management

The proposal would produce wastewater associated with the composting of FOGO material. This would be collected, filtered and treated on site for re-use. No run-off wastewater is expected to enter nearby waterways as a part of the proposal operation. A trade waste connection may be required subject to detailed design.

## 2.6 Decommissioning

The proposed FOGO facility has an estimated life of 25 years, subject to detailed design. At the end of the operational contract, the contractor would return the asset to the ACT Government.

Should a decision be made to decommission the facility sometime thereafter, a decommissioning EMP would be prepared prior to any decommissioning works commencing. The plan would include details on all relevant legislative and regulatory requirements, potential environmental risks associated with decommissioning and measures to mitigate and manage risks. The plan would also include details of the proposed waste classification, demolition waste stockpiling, storage, handling and re-use, recycling and disposal requirements.

Any demolition work would be undertaken by a suitably qualified and experienced contractor in accordance with contemporary legislation.

## 2.7 Consideration of the alternatives

### 2.7.1 Technology options

There are many ways to process FOGO. The ACT Government conducted a detailed research feasibility study into processing methods to find out which method is best suited to the type of waste, and the proposed location in the ACT. A range of high-level options for processing technology were considered (TCCS, 2022):

- Open windrow composting - the simplest form of composting where organic waste is composted in 'piles' known as windrows with aeration to promote maturation provided through occasional mixing or via a blower with perforations under the windrows.
- In-vessel composting - the composting process is contained within a vessel or building and aeration and temperature is controlled to optimise the composting process.
- Anaerobic digestion (AD), with energy offtakes in the form of electricity, injection to the natural gas grid or gas compression as transport fuel. AD occurs in the absence of oxygen in a fully enclosed vessel with controlled temperature to produce biogas (rich in methane). 'Wet' AD is most common and is suitable for liquid or slurry organic feedstocks, whereas 'dry' AD is less common and can treat a proportion of solid organic content.
- Co-processing of ACT FOGO material with other feedstocks such as commercial food waste, wastewater treatment sludge, agricultural residues or FOGO feedstocks from neighbouring local government areas, using any of the technology options outlined above.

Analysis in the feasibility study identified in-vessel composting as the best option for the ACT's FOGO waste. Composting using an in-vessel system was found to be the best and most cost-effective option for the ACT because:



- Food and garden waste can be composted together and collected in the same bin. This option reduces transport emissions and is more cost effective than using two bins and different technologies to process waste.
- Odour can be controlled easily in an enclosed facility.
- This type of facility requires less land than open composting methods.

In-vessel composting for organic waste is a mature technology which has been proven to work effectively over many years. More and more councils are moving towards using composting technology for FOGO.

## 2.7.2 Alternative design options

ACT NoWaste considered two major design options for the maturation and two additional iterations (A and B) for the site layout and odour management:

- Option 1 proposed in-vessel composting with undercover maturation. This included an enclosed and odour-controlled waste receival area, enclosed composting vessels or tunnels with forced aeration and process control, and maturation areas for compost under cover. This design involved the removal of a mature Eucalypt tree (the one closest to Recycling Road, west of the Site).
- Option 1A had the same maturation process as Option 1 but a different layout. The administration building and entry road were moved to avoid removal of the mature Eucalypt tree (aforementioned).
- Option 1B had the same maturation process and layout as Option 1A however Option 1B considered a stack of up to three metres above the building height to assist with the dispersion of air to minimise odour impacts to nearby receivers.
- Option 2 proposed in-vessel composting with open-air maturation. This included an enclosed and odour-controlled waste receival area, enclosed composting vessels or tunnels with forced aeration and process control, and open-air maturation area.

Initial stakeholder analysis identified odour as an existing issue in the Hume general vicinity as well as concerns about the potential for contaminated run-off from the organic waste to run in the nearby Dog Trap creek. As such, Option 1A or 1B, with under cover maturation, were selected as the preferred options.

### Heritage considerations in design layout

The proposal has been sized to accommodate the projected future growth of FOGO feedstock from the Territory over the life of the facility. The Territory's new circular economy reform package will mandate FOGO waste collection from commercial businesses in the ACT making it critical to accommodate growth in feedstock, size the facility appropriately and maximise use of the site. This avoids the need to establish another facility elsewhere in the Territory in the future. The facility will also likely take material from neighbouring NSW council areas and act as a regional hub. Ensuring sufficient capacity is important to fulfill this role.

The proposal footprint (area requirement) and arrangement (layout) has been driven by multiple factors including the operational requirements for the required full processing capacity, the planning requirements for site coverage and odour mitigation required to secure an Environmental Authorisation and hence a completely enclosed facility. The design incorporates modular elements to enable the capacity and operating parameters of the tunnel composting system to be cost-effectively expanded to achieve the full processing capacity. This approach helps avoid the need for more extensive works in the future (when the additional capacity is required), thereby reducing the potential for environmental disturbance and more prolonged shut-down periods while upgrade works are undertaken (requiring alternative storage and transport arrangements and associated costs).

The proposal footprint and arrangement/layout are required to provide sufficient areas for indoor waste receival, primary composting in tunnels, odour control infrastructure (such as the biofilter), enclosed maturation and product refinement, product storage and the necessary ancillary infrastructure such as circulation roadways, office/administration, parking, weighbridges, and water management. The proposal components (such as the waste receival, primary composting (tunnels) maturation and refining areas) that are required to be arranged adjacent to each other to allow material to be sequentially moved from receival through the process and to minimise the internal haulage of material. Ancillary infrastructure such as odour control infrastructure needs to be connected to the main building and tunnels in order to capture and treat odorous air. Separation or re-arrangement of these proposal components would increase the distances and frequency of movement of material by mobile

plant and likely introduce potential traffic conflicts/safety issues. The proposal design incorporates one main processing building to cost-effectively ensure the process from receipt to final product refinement can be enclosed and therefore mitigate odour.

To maintain appropriate moisture content during composting, all leachate and condensate produced during composting would be collected into a sealed process water tank and recycled back through the tunnel composting process. As such, the tunnels, water tanks and water treatment are all required to be within proximity to each other. Locating these outside of the identified area of potential archaeological deposit HFFPAD01 is likely to require additional water infrastructure such as pipes and pumps to move water around the proposal site which would be impractical and unfeasible. Dedicated stormwater management infrastructure (stormwater tanks or equivalent storages) would also capture rainwater falling on the proposal site for reuse. The composting process will require more water than what is anticipated can be captured through these measures. All of these requirements are critical to managing the potential environmental and community impacts.

The footprint has been minimised and facility components located on the site to minimise potential heritage and biodiversity impacts as far as practicable. For example, the facility retains significant trees where possible. HFFPAD01 occupies a significant portion of the proposal site. An area of HFFPAD01 to the south of the proposed internal roadway is expected to be conserved, subject to detailed design. However further conservation of HFFPAD01 through design amendment is not considered practicable without compromising the feasibility of the proposal.

### 2.7.3 Alternative location options

ACT NoWaste has conducted numerous investigations to identify suitable sites across the ACT that are appropriate for waste infrastructure, in particular the location of a FOGO facility.

In January of 2021, Infrastructure Delivery Group engaged consultants to undertake a feasibility study into upgrades to the Mitchell Resource Management Centre (MRMC) and identification of future waste sites in north Canberra. The study reviewed six sites in north Canberra, all of which were assessed as having a moderate to very high constraints rating based on a multi-criteria assessment which considered environmental and engineering values.

All studies concluded that finding appropriate land for waste uses, in particular FOGO which has to specifically manage potential odour impacts on the community, is extremely challenging. The FOGO Feasibility Study details the consideration for locating the FOGO facility and recommended for it to be located within the Hume Resource Recovery Estate (HRRE), which is a purpose built and zoned area for waste uses.

The HRRE is considered a suitable location for the proposal. HRRE an existing industrial area which has been established specifically to house recovery, reprocessing and material resale industrial facilities. The ACT Waste Management Strategy 2011-2025 identifies that there are benefits from the co-location of waste facilities in the HRRE, including the synergies between different parts of the recycling industry which could result in increased resource recovery, reduced costs and reduced traffic movements. The HRRE is also a sufficient distance (over one kilometre) from sensitive receptors as opposed to other industrial sites within the ACT (namely, Mitchell). Additionally, the current Household Collection contractor in Hume is in close proximity to the proposal site, hence minimising carbon emissions and efficiencies in the collection and drop off of FOGO material.

Locating the proposal outside of the HRRE would likely require a site situated in closer proximity to dense communities. This would increase the risk of significant impacts on the community such as odour and traffic movements. It would also impact the operator by increasing cost and vehicle emissions due to transporting feedstock contaminants from the process off-site.

### 2.7.4 'Do nothing' option

The option to do nothing would mean that the ACT Government would not meet the objectives of the ACT Waste Management Strategy 2011-2025 (ACT Government, 2011), the Draft ACT Circular Economy Strategy or the ACT Climate Change Strategy 2019-2025 (ACT Government, 2019a) which would result in the following:

- FOGO continues to be landfilled and thereby produce emissions in landfill.

- The ACT does not reach the Federal objective to halve the amount of organic waste sent to landfill for disposal by 2030.
- The ACT Government is unable to meet its commitment under the Draft ACT Circular Economy Strategy to Draft Circular Economy legislation to introduce a citywide FOGO collection service to all Canberra households.
- Organics will take up valuable space in the Mugga Lane landfill which will reduce the landfill design life. This would ultimately mean more money is directed towards creating landfills.

The do nothing option is therefore not considered acceptable.



### 3. Legislation and strategic context

The proposal would occur on land under the ACT Government jurisdictions. Accordingly, this chapter provides an overview of the relevant legislative context for the proposal, including the EIS triggers, statutory requirements and assessment against relevant strategic priorities for the ACT, as summarised below:

- **Territory Plan** – is not inconsistent with the strategic directions or zone objectives and is permissible within the Impact Track.
- **Environmental legislation** – has considered all appropriate approvals associated with noise, vibration and water resources.
- **Strategic** – consistent with the objectives of the ACT Planning Strategy.
- **Climate Change** – acknowledges the ACT Climate Change Strategy and the role the proposal can play in minimising emissions and minimising emissions generated from landfill.
- **Waste** – consistent with the objectives of the ACT Waste Management Strategy (ACT Government, 2011) and supporting Federal government waste reduction targets.
- **Ecologically Sustainable Development** – is consistent with the precautionary, intergenerational equity, conservation of biological diversity and ecological integrity.

#### 3.1 Commonwealth

##### 3.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Commonwealth Government's primary legislation for the protection of matters of national environmental significance (MNES). It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places. The EPBC Act also regulates actions on or impacting on Commonwealth land, or actions by Commonwealth agencies.

Parts 7, 8 and 9 of the EPBC Act consider and assess the potential impacts of individual actions on MNES. Part 10 of the EPBC Act provides for assessment of impacts of actions over a larger area, such as a landscape scale, or longer timeframe.

Approvals under the EPBC Act are additional to any approvals required under Territory Legislation.

If the proposal is not likely to have a significant impact on any MNES, no action is required. Where there is potential for a significant impact, then referral to the Commonwealth is required. The Commonwealth will determine whether the proposal is:

- Clearly unacceptable (deemed unacceptable impacts and cannot proceed),
- Not a controlled action (maybe subject to particular conditions) and hence no further Commonwealth assessment is required, or
- Is a controlled action and the nature of the assessment that is appropriate.

An ecological assessment was undertaken as part of this EIS (see Chapter 8) which concluded that the proposal is not expected to have impacts to any MNES. Additionally, a Striped legless lizard (SLL) survey was undertaken at the proposal site and found no evidence of SLLs (see Appendix G). The EPBC Act is therefore not triggered.

## 3.2 ACT Government Statutory requirements

### 3.2.1 Planning and Development Act 2007

The *Planning and Development Act 2007* (PD Act) is the key legislation informing planning and development on Territory land in the ACT.

The PD Act sets out requirements that include, but are not limited to, the provision of offsets and an offsets policy to compensate for impacts that have significant adverse impacts on protected matters. It also provides the formal process for development approvals, the management of public land, and complaints and enforcement.

Section 7 relates to development approvals and sets out the assessment track for development. Part 4.3 addresses the assessment track for a development. The impact track applies to a development proposal if any of the items identified in Table 3.1 apply.

Table 3.1 Impact track triggers

| Item                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Applicability                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The relevant development table states that the impact track applies.                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Not applicable.                                                                                                                                                                              |
| The proposal is a kind mentioned in Schedule 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Applicable – the proposal is of a kind mentioned in Schedule 4.                                                                                                                              |
| The Minister makes a declaration under Section 124 in relation to the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                       | Not applicable - The Minister has not made a declaration that impact track applies to the proposal.                                                                                          |
| Section 125 (Declaration by Public Health Act Minister affects assessment track) or Section 132 (Impact track applicable to development proposals not otherwise provided for) provides that the impact track applies to the proposal.                                                                                                                                                                                                                                                                                 | Not applicable - The Minister for Health has not made a declaration that impact track applies to the proposal.<br>The development is not a development that is 'not otherwise provided for'. |
| The Commonwealth Minister responsible for administering the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwlth) advises the Minister in writing that the development proposed—<br>(i) is a controlled action under that Act, Section 76; and<br>(ii) does not require assessment under that Act, part 8 (Assessing impacts of controlled actions) because a bilateral agreement between the Commonwealth and the Territory under that Act allows the proposal to be assessed under this Act. | Not applicable.                                                                                                                                                                              |



## Requirement for an EIS

There are 11 EIS triggers under Part 4.2 for specific activities, the proposal triggers one of these. There are nine triggers under Part 4.3 which are for areas and processes, these areas paraphrased in Table 3.2 with a response on the basis of this proposal.

Table 3.2 Schedule 4 triggers

| Part                       | Trigger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Comment                                                                                                                                                                                                                                                                                     |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Activities</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                             |
| Part 4.2 item 10           | <p>Proposal for a waste transfer station or recycling facility that sorts, consolidates or temporarily stores solid waste (including municipal waste) for transfer to another site for disposal, storage, reprocessing, recycling, use or reuse, if the transfer station—</p> <p>(a) is intended to handle more than 30kt of waste each year; or</p> <p>(b) will be less than 1km from the boundary of a residential block or unit in a residential or commercial zone; but</p> <p>(c) is not a small-scale waste management facility, on or near a residential block or near a residential unit, consisting of wheelie bins, small hoppers, or other small waste management bins or enclosures for the use of people living on the residential block or in the residential unit</p>                                          | <p>Applies as the proposal is for a FOGO waste composting facility which fits under the definition of recycling facility in the Territory Plan.</p> <p>The facility would compost up to 70,000 tonnes per annum.</p>                                                                        |
| Part 4.2 item 11           | <p>Proposal that involves storage of the placard quantity of a Schedule 11 hazardous chemical on land, or in a building or structure on the land, that, immediately before the commencement day, was not registered as premises in the placard quantity register, unless the authority produces an environmental significance opinion indicating that the proposal is not likely to have a significant adverse environmental impact.</p>                                                                                                                                                                                                                                                                                                                                                                                      | <p>This may apply if an ammonia scrubber is determined to be required as part of the odour control system. Sulphuric acid is required as part of the ammonia scrubbing process. The need for an ammonia scrubber will be determined during detailed design.</p> <p>Refer to Chapter 19.</p> |
| <b>Areas and Processes</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                             |
| Part 4.3 item 1            | <p>Proposal that is likely to have a significant adverse environmental impact on 1 or more of the following, unless the conservator of flora and fauna provides an environmental significance opinion indicating that the proposal is not likely to have a significant adverse environmental impact:</p> <p>(a) a critically endangered species;</p> <p>(b) an endangered species;</p> <p>(c) a vulnerable species;</p> <p>(d) a conservation dependent species;</p> <p>(e) a regionally threatened species;</p> <p>(f) a regionally conservation dependent species;</p> <p>(g) a provisionally listed threatened species;</p> <p>(h) a listed migratory species;</p> <p>(i) a threatened ecological community;</p> <p>(j) a protected native species;</p> <p>(k) a Ramsar wetland;</p> <p>(l) any other protected matter</p> | <p>Not applicable.</p> <p>The Biodiversity Assessment Report determined that the proposal would not have a significant impact on any protected species, communities or matters.</p> <p>Refer to Chapter 8.</p>                                                                              |
| Part 4.3 item 2            | <p>Proposal involving—</p> <p>the clearing of more than 0.5ha of native vegetation in a native vegetation area, other than on land that is designated as a future urban area under the territory plan, unless the conservator of flora and fauna produces an environmental significance opinion that the clearing is not</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Not applicable.</p> <p>The proposal would not involve clearing of more than 0.5 hectares of native vegetation</p>                                                                                                                                                                        |



| Part            | Trigger                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Comment                                                                                                                                                                                     |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | likely to have a significant adverse environmental impact; or<br>the clearing of more than 5.0ha of native vegetation in a native vegetation area, on land that is designated as a future urban area under the territory plan, unless the conservator of flora and fauna produces an environmental significance opinion that the clearing is not likely to have a significant adverse environmental impact                                                              |                                                                                                                                                                                             |
| Part 4.3 item 3 | Proposal for development in a reserve, unless—<br>the conservator of flora and fauna produces an environmental significance opinion that the proposal is not likely to have a significant adverse environmental impact; or<br>the proposal is for minor public works to be carried out by or for the Territory in accordance with a minor public works code approved by the conservator of flora and fauna under the <i>Nature Conservation Act 2014</i> , section 318A | Not applicable.<br>The proposal site is not within a reserve.                                                                                                                               |
| Part 4.3 item 4 | Proposal that is likely to have a significant adverse environmental impact on—<br>(a) a domestic water supply catchment; or<br>(b) a water use purpose mentioned in the territory plan (water use and catchment general code); or<br>(c) a prescribed environmental value mentioned in the territory plan (water use catchment general code) of a natural waterway or aquifer                                                                                           | Not applicable.                                                                                                                                                                             |
| Part 4.3 item 5 | Proposal that is likely to result in environmentally significant water extraction or consumption, other than a proposal for an urban lake, pond or retardation basin or a wastewater reuse scheme—<br>(a) in an existing urban area or on land that has been designated as a future urban area; and<br>(b) that is designed in accordance with the water sensitive urban design general code under the territory plan                                                   | Not applicable.                                                                                                                                                                             |
| Part 4.3 item 6 | Proposal that is likely to have a significant adverse impact on the heritage significance of a place or object registered under the <i>Heritage Act 2004</i> .                                                                                                                                                                                                                                                                                                          | Not applicable.<br>The heritage council has assessed the Statement of Heritage Effects (SHE) and the CHA as discussed in Chapter 9.                                                         |
| Part 4.3 item 7 | Proposal involving land included on the register of contaminated sites under the Environment Protection Act 1997 unless the authority produces an environmental significance opinion indicating that the proposal is not likely to have a significant adverse environmental impact                                                                                                                                                                                      | Not applicable.                                                                                                                                                                             |
| Part 4.3 item 8 | Proposal, other than on land in an existing urban area or land that is designated under the territory plan as a future urban area, with the potential to adversely affect the integrity of a site where significant environmental or ecological scientific research is being conducted by a government entity, a university or another entity prescribed by regulation                                                                                                  | Not applicable.                                                                                                                                                                             |
| Part 4.3 item 9 | Proposal for which the annual expected greenhouse gas emissions from operating the development is more than the amount prescribed by regulation                                                                                                                                                                                                                                                                                                                         | Applicable.<br>The expected scope 1 operational emissions would average 8,900 tCO <sub>2</sub> -e each year and the amount prescribed is 1000 t CO <sub>2</sub> -e.<br>Refer to Chapter 15. |

The proposed development must be assessed in the impact track and Section 127 of the PD Act requires that development applications for proposals in the impact track must include a completed EIS unless an EIS exemption is in force for the proposal.

### 3.2.2 Planning and Development Regulation 2008

The *Planning and Development Regulation 2008* (PD Regulation) supports the PD Act and Part 4.1 outlines the requirements that must be included in an EIS and EIS Scoping Document (see Appendix A).

The Scoping Document for the proposal requires that the EIS be prepared in accordance with Clause 50 of the Regulation. The response to the requirements under Clause 50, as well as other requirements of the Scoping Document) in the EIS is summarised in the checklist in Appendix B.

Schedule 3 Part 3.3 identifies impact track matters exempt from third party ACAT review, this matter is not exempt and could therefore be subject to third party appeals.

### 3.2.3 Planning Act 2023

The ACT Government undertook planning reform during the preparation and consultation for this EIS in 2023.

### 3.2.4 Waste Management and Resource Recovery Act 2016

The *Waste Management and Resource Recovery Act 2016* (WM Act) provides the regulatory framework to manage waste, support innovation and investment in waste management, promote responsibility for waste reduction and promote best-practice waste management. The WM Act is responsible for setting out conditions for the licencing of the facility.

Under this, the operator of the proposed facility must hold a waste facility licence.

The objects of the WM Act are to manage waste according to the hierarchy of minimisation, recovery and re-use of resources, to support innovation and investment in waste management and to promote responsibility for waste reduction and best practice management.

This Act was designed to help the ACT meet the longer-term resource recovery objectives of the ACT Waste Management Strategy 2011-2025 of minimising the generation of waste and maximising the recovery of resources. It responds to a range of concerns about the Territory's capacity to manage waste and resource recovery, and to reduce the amount of waste going to landfill.

The FOGO facility would assist in meeting the three key objectives of the WM Act:

- a. manage waste according to the following hierarchy:
  - i. minimise the generation of waste;
  - ii. maximise the recovery and re-use of resources;
  - iii. minimise the amount of waste that goes to landfill; and
- b. support innovation and investment in waste management; and
- c. promote responsibility for waste reduction; and
- d. promote best-practice waste management.

The WM Act establishes a comprehensive regulatory framework for waste industry operators and provides clear guidance for the industry and broader community on the appropriate storage, treatment and disposal of waste. The regulatory framework established by the Act is intended to facilitate and reward good practice in waste collection, transportation, recovery and reuse, and to discourage the disposal of waste into landfill.

This Act defines a number of key terms for its purpose including waste, waste management business, waste transporter, waste facility and waste facility licence.

The Act defines *waste* to include the following:

- a. *any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment;*

- b. *any discarded, rejected, unwanted, surplus or abandoned substance, whether or not intended for sale, recycling, reprocessing, recovery or purification by a separate operation from that which produced it;*
- c. *any other substance declared by regulation to be waste.*

Therefore, FOGO would be considered waste by this definition.

The WM Act also defines waste management business, which includes:

- a. *any of the following carried on, by a person or a group of people acting together, with the purpose of providing services in relation to the handling of waste:*
  - i. *a trade, industry, business or profession;*
  - ii. *an activity carried on for a fee, benefit or reward; and*
- b. *a person or activity prescribed by regulation.*

In the WM Act a waste facility:

- a. *means a site used by a waste management business for the storage, sorting, treatment, processing, or disposal of waste; but*
- b. *does not include a reverse vending machine.*

The FOGO collection and composting may be considered a waste management business and waste management facility which would require a licence under section 22 of the WM Act. Waste transporters are also required to be registered under the WM Act.

### 3.2.5 Environment Protection Act 1997

The *Environment Protection Act 1997* (EP Act) provides the regulatory framework to protect and enhance the environment, to prevent environmental degradation and reduce and eliminate the discharge of pollutants to the air, land and water. The EP Act also provides for the identification and remediation of contaminated land, management of waste and pesticides.

The EP Act establishes the Environment Protection Authority (EPA) as the statutory decision maker for environmental regulation and policy.

Parts 7 and 8 outline requirements for Environmental Protection Agreements and Environmental Authorisations. Certain activities that pose environmental risk require an environmental authorisation issued by the EPA.

An Environmental Authorisation or Environmental Protection Agreement is required under the EP Act for the conduct of Class A activities or Class B activities identified in schedule 1 of the EP Act or certain other situations determined by the EPA.

The proposal would meet the definition of a Class A activity under Schedule 1 Item 37 of the EP Act for

- *‘the operation of a facility that composts or is intended by the operator to compost more than 200t of animal waste, or 5000t of plant waste, per year’.*

Under this Act there will be requirements for the facility to be managed in accordance with an environmental authorisation (EA). The contractor will be required to obtain an EA and operate in accordance with the issued EA.

It is an offence under sections 137, 138 and 139 of the Act to cause environmental harm, likely serious environmental harm, material environmental harm, likely material environmental harm, or likely environmental harm.

This EIS has been prepared to assess the environmental impacts of the proposal, which include impacts to the air, noise, land and water and identify the management and mitigations measures to avoid impacts to the environment.

Refer to Chapters 5 to 21 of the EIS for the assessment of impacts for the proposal.

### 3.2.6 Environmental Protection Regulation 2005

The Environmental Protection Regulation 2005 supports the EP Act. Part of the regulation identify offences relating to emissions to air, noise and water.



Part 8A details the requirements for Erosion and Sediment Control measures for development sites. An approved erosion and sediment control plan (ESCP) will be required to manage and prevent impacts during construction.

Schedule 2 provides noise zones and standards which have been considered in the noise assessment. The proposal will meet the regulatory targets set out under the *Environment Protection* regulation (refer to information in Section 17.4).

The Regulation does not specify guidelines or criteria for odour or air impacts, but an Air Quality and Odour Impact Assessment has been prepared in accordance with relevant NSW Guidelines and frameworks and the National Environment Protection Measures (NEPM) (see Chapter 14).

### 3.2.7 Heritage Act 2004

The *Heritage Act 2004* (Heritage Act) applies to any heritage objects in the ACT, and to any places located on Territory land. The Heritage Act establishes a system for the recognition, registration and conservation of natural and cultural heritage places and objects, including Aboriginal places and objects, the ACT Heritage Council, provides for Heritage Agreements and establishes enforcement and offence provisions to provide greater protection for heritage places and objects. It provides a system integrated with land planning and development to consider development applications having regard to the heritage significance of places and to Heritage Guidelines.

Where development may diminish the heritage significance of a registered place or object, or damage an Aboriginal place or object, approval under the Heritage Act from the ACT Heritage Council is required.

Chapter 9 of the EIS addresses heritage and considers the requirements within the Heritage Act.

### 3.2.8 Tree Protection Act 2005

The *Tree Protection Act 2005* aims to protect trees and the urban forest values within the urban area of the ACT. This Act applies to trees on land in built-up urban areas. The built-up urban area is an area declared by the Minister and the proposal is not within an area declared to be a built-up urban area for the purpose of this Act (as identified in NI2021-233). This Act identifies protected trees as either registered trees (a tree that is registered under part 7) or regulated trees, which is a tree that is located on leased land and meets certain criteria in size.

As the land is not identified as part of the built-up urban area, and the proposal site is not currently leased land, any trees in the proposal area are not currently regulated by this Act.

### 3.2.9 Urban Forest Bill 2022

The *Urban Forest Bill 2022* (UFB) is intended to repeal and replace the *Tree Protection Act 2005* with the aim of improving tree protection on both public and private land and encourage shared care of trees by the ACT Government, industry and the community. It is expected to commence in July 2023.

The Bill will include built-up urban areas, industrial zoned land and the associated road verges, and include protected trees such as those on public unleased land. Trees on this site will be protected under the Act once commenced and will require the approval of the Conservator to remove or damage.

### 3.2.10 Nature Conservation Act 2014

The object of the *Nature Conservation Act 2014* (NC Act) is to protect, conserve and enhance the biodiversity of the ACT. It establishes a formal process for the identification and protection of threatened species and ecological communities and biodiversity in the ACT. The NC Act requires the Conservator of Flora and Fauna to prepare an action plan in response to each declaration of a threatened species, ecological community or threatening process.

The NC Act identifies offences under the Act to protect native species and the requirement for approvals or licences to authorise activities that would otherwise be an offence under this Act, such as to injure or endanger a native animal or plant, or to clear native vegetation or plants in a reserve.

Chapter 8 addresses ecology and the natural environment.

### 3.2.11 Water Resources Act 2007

The *Water Resources Act 2007* (WR Act) aims to ensure the use and management of the Territory's water resources are sustainable while protecting the ecosystems that depend on the waterways. It is also designed to protect waterways and aquifers from damage.

The WR Act requires the following works to be licensed:

- work in a waterway
- construction of a water structure with a capacity of more than 2 megalitres (regardless of whether it is located on or off a waterway).

If the work is approved by an Environmental Authorisation or Environment Protection Agreement under the EP Act, an additional waterway work license is not required.

Given the proposal would require an Environmental Authorisation, a waterway work licence is not required. The proposal gives due attention to management of wastewater, flood risk and water management areas in order to minimise impacts, and protect and maintain waterways at the proposal site in particular Dog Trap creek (see Chapters 13 and 16).

## 3.3 Climate change

### 3.3.1 ACT Climate Change Strategy 2019-2025

The ACT Climate Change Strategy 2019-2025 (Climate Change Strategy) brings together emission reduction, resilience and adaptation measures as part of a holistic response to climate change and together with Canberra's Living Infrastructure Plan, replaces the Climate Change Adaptation Strategy.

The strategy identifies how the ACT will transition to a net zero emission city by 2045 and to prepare and adapt to the global challenge of climate change. The strategy has a focus on reducing emissions from transport and gas following the achievement of a 100 percent renewable electricity supply in 2020.

The priorities of the strategy include:

- Support community leadership and a just transition of programs for the community.
- Government leadership through emissions reduction and zero emissions passenger vehicle fleet.
- Increases in public transport use and active travel.
- Waste avoidance and management.
- Energy use, buildings and urban development improvements, through improved energy performance, climate change resilience and living infrastructure.
- Land use and biodiversity improvements.

The strategy highlights the crucial role that waste avoidance and management plays towards achieving a successful transition to net zero emissions.

This proposal will play an important role in assisting the ACT Government goals around waste and emissions reductions by diverting up to 70,000 tonnes per annum of FOGO waste from landfill and converting it to new compost products. Goal 6B in the Strategy is to Reduce emissions from waste treatment. Actions under this goal include:

- 6.3 Introduce a food and garden waste collection for all households (including multi-unit dwellings) from 2023, and support with an education program from 2020.
- 6.4 Develop and consult on a scheme for requiring large organic waste producers such as hospitality and food retail businesses to have a separate organic waste collection.
- 6.5 Identify opportunities to reduce emissions from organic waste treatment including sewage such as through the use of anaerobic digestion and composting, and investigate potential sites for organic waste processing.

The value of diverting organic materials from landfill is identified in the strategy as the main way to reduce emissions from waste, and these can be used to create quality compost products. This proposal directly aligns with the goals and actions identified in the Climate Change Strategy and will be a significant contributor to assist the ACT Government in reducing emissions and reducing waste to landfill.

Additionally, the proposal will be required to implement ACT Government leadership goals under the strategy including obtaining a Greenstar rating (action 5.6) and requirements for new facilities to be all-electric and climate-wise where fit for purpose (action 5.13).

The EIS has considered the likely climate change and air quality impacts and the reductions and contributions to emissions resulting from the proposal in Chapter 15 and measures are provided to reduce emissions during construction where possible.

### 3.3.2 Canberra's Living Infrastructure Plan: Cooling the City

Canberra's Living Infrastructure Plan: Cooling the City was released on 16 September 2019. This Plan sets out the ACT Government's commitment to increase community resilience and adaptiveness to the effects of climate change by sustaining and enhancing living infrastructure on public and private land. Living infrastructure includes trees, wetlands and soil systems which can help keep Canberra cool and liveable in the changing climate. Living infrastructure provides a range of additional benefits including lower building energy demand, improved stormwater management and improved health and amenity. The Plan includes targets to achieve 30% tree canopy cover (or equivalent) and 30% permeable surfaces by 2045 within the urban footprint.

The plan identifies 15 actions to meet the goals set in the Plan and these are being introduced through a variety of mechanisms including the review of the Territory Plan, review of the ACT Tree Protection Act, development of a landscape guide and variations to the Territory Plan.

Industrial land has not been targeted in recent changes to the Territory Plan, such as through Variation 369 Living Infrastructure. However, it is expected that further changes to the Territory Plan will be proposed as part of the Planning review process that may include expectations for green infrastructure in all zones.

Development on the site would be required to have landscaping incorporated into development and there is a maximum 50% site coverage requirement in the Development Control Plan (DCP) which limits overall coverage of development on the site to provide for green space.

### 3.3.3 Climate Change and Greenhouse Reductions Act 2010

This act promotes the development of policies and practices to address climate change, sets targets to reduce greenhouse gas emissions and provides for monitoring and reporting in relation to the targets.

The Climate Change Council is established under this act (s16).

The main function of the council is to advise the Minister on matters relating to reducing greenhouse gas emissions; and addressing, and adapting to, climate change.

Matters on which the council may advise the Minister also include:

- Strategies to achieve energy efficiencies,
- Strategies to increase renewable energy use,
- Strategies to achieve the targets set under the Act,
- Community and business views on climate change,
- Strategies to encourage private entities to take action to reduce greenhouse gas emissions,
- Actions taken or strategies implemented by private entities to reduce greenhouse gas emissions and address climate change,
- Commercial, regional, national and international practices or policies, including technological developments, to address climate change that may be used in the ACT.

This Act supports the development of relevant policy that is encouraging the better management of waste, but it does not provide waste specific regulations.



Relevant impacts of climate change and their perceived impacts have been considered in the preparation of this report through production of a climate change assessment and hazard and risk assessment report (see Chapter 16).

## 3.4 Other requirements

### 3.4.1 Territory Plan 2008

The Territory Plan is the key statutory planning document for Territory land in the ACT, providing the policy and statutory framework for the administration of planning in the ACT. The purpose of the Territory Plan is to manage land use change and development in a manner consistent with strategic directions set by the ACT Government, Legislative Assembly and the community. It must not be inconsistent with the National Capital Plan.

The site is wholly located on Territory land and is under the planning and development jurisdiction of the ACT Government and development will be assessed in accordance with the requirements within the Territory Plan (and the special requirements identified by the NCA in DCP 171/09/0001 Hume West Industrial Area). A detailed discussion on the Territory plan and land use context is provided in Chapter 5.

#### Territory Plan Strategic Directions

The Statement of Strategic Directions in the Territory Plan sets out the principles for giving effect to the main object of the Territory Plan, to ensure that in a manner, not inconsistent with the National Capital Plan, the planning and development of the ACT provides an attractive, safe and efficient environment for Canberrans in which to live, work and have their recreation.

The Statement includes the principles for sustainable development as well as the spatial planning and urban design principles that are intended to guide the more specific policy content of the Territory Plan. The principles for sustainable development follow a 'triple bottom line' approach with specific principles relating to environmental, economic and social sustainability.

Section 128 of the PD Act requires that a proposal in the impact track must be consistent with the Statement of strategic directions. Relevant principles and how the proposal responds to these are addressed below.

Relevant principles include general principle 1.1 which provides that planning processes and decisions are to be focused on environmental quality and community involvement, this principle has been met through the EIS process and community engagement undertaken as part of the process.

Principle 1.3 relates to intergenerational equity and ensuring that environmental objectives are met and there is no serious or irreversible loss of resources or damage to the environment. The EIS process is part of the planning process to understand and mitigate risks to the environment and inform planning decisions.

Principle 1.4 is that the broader global and regional context along with potential cumulative impacts of decisions are taken into account. This principle takes in the precautionary principle in that where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for failing to prevent environmental degradation. This EIS has included consideration of cumulative impacts Chapter 21 and the precautionary principle in the assessment of the various potential impacts.

Principles 1.5 to 1.11 relate to environmental sustainability which include considerations for the efficient use of resources, and to encourage waste minimisation, reuse, recycling and management, and that development is planned to reflect the land capability and constraints, with a need to conserve soil, water and vegetation, maintain biological diversity and safeguard ecosystems.

The EIS has addressed traffic and transport in Chapter 6, water quality and hydrology in Chapter 13, soils and geology in Chapter 12, ecology and the natural environment are addressed in Chapter 8.

Principle 1.5 is:

*Planning policies will seek to ensure the efficient use of all resources and to reduce consumption of non-renewable resources. Waste minimisation, reuse and recycling will be encouraged, whilst energy-rating and conservation measures will be applied wherever appropriate, particularly in transport, subdivision planning, and building design and construction.*

This proposal particularly responds to this principle and policies supporting waste reuse and emissions reduction, as it is a key project to create a new facility which will divert up to 70,000 tonnes per year of FOGO waste from landfill and through composting would provide reuse opportunities.

Principles 1.12 to 1.17 relate to Economic Sustainability to ensure that planning policies provide a wide range of economic activities to promote new investment and a more diversified economy, to provide industrial land, and that in planning development emphasis is placed on cost effective infrastructure and services, which look at whole-of-life and whole of systems costs, including the ecological footprint. This project is designed to assist the ACT reduce its ecological footprint by diverting FOGO waste from landfill to this facility for composting and creating other products. This will result in an estimated 30 percent reduction in overall waste emissions (ACT Government, 2022) substantial waste and emissions reduction. This EIS also assesses the expected impacts of the project during construction and operation.

Principles 1.18 to 1.26 relate to social sustainability and require that development is planned in a safe and accessible manner, considering the needs of all and to promote active living and to safeguard and protect heritage and cultural values. This EIS includes a heritage assessment (refer to Chapter 9) and the development will be subject to relevant parts of the Territory plan to ensure that it provides end of trip facilities for active travel, and accessibility for employees.

Principles 2.1 to 2.10 are directions for broader spatial planning and urban design for urban areas, principles for urban design (2.14 to 2.17) include that policies promote high quality, creating design development, particularly along principal approach routes and emphasis placed on spaces around buildings as well as part of individual developments. This proposal site is within an area subject to a DCP under the NCP and therefore there are particular requirements for the building form and landscaping that must be provided as part of DA.

The design has been developed with the aim to minimise visual impacts. The FOGO facility would be consistent with other industrial buildings in the HRRE with regards to height, colour and fencing. The design has been guided by the relevant DCP for the proposal site. This is further discussed in Chapter 11.

## 3.4.2 Draft Territory Plan 2022

The draft Territory Plan was released for public consultation in November 2022. It is intended to be finalised for interim implementation, along with the new Planning Act in mid-2023 and will replace the Territory Plan 2008.

The draft Territory Plan introduces a different structure to the plan with an outcomes focus for development assessment. Supporting material, such as design guides, technical specifications and other material do not form part of the Territory Plan but may be “called up” by policies within the Territory Plan. It proposes District and Zone Policies that will incorporate maps and a land use table that specifies the uses permitted in each zone or district. The policies will include Policy Outcomes, Assessment Requirements and Assessment Outcomes that are required to be met for all development applications. Further details are included in Chapter 5.

## 3.4.3 ACT Planning Strategy 2018

The ACT Planning Strategy 2018 is the ACT Government’s strategic planning document that provides guidance on the development of Canberra towards the years 2045 and 2060. The vision for Canberra under the Strategy is:

*“to be a sustainable, competitive and equitable city that respects Canberra’s unique legacy as a city in the landscape and the National Capital, while being responsive to the future and resilient to change.”*

The Strategy identifies five themes with accompanying strategic directions, supported by actions that the government would report against annually. These themes are as follows:

- Compact and Efficient City
- Diverse
- Sustainable and Resilient
- Liveable
- Accessible

As a sustainable and resilient Territory, the Strategy commits to net zero emissions by 2045 with a series of interim targets. Strategic direction 3.6 is to Reduce waste, improve resource efficiency and decrease our

ecological footprint. This proposal will support this direction, while the actions in the Strategy do not directly relate to this proposal, more recent policy such as the Climate Change Strategy identified this proposal as a key action in emissions and waste reduction.

The proposal is consistent with the ACT Planning Strategy, given that it will support a more sustainable and resilient Territory by diverting up to 70,000 tonnes per annum of FOGO waste from landfill, and reducing overall waste emissions by approximately 30%.

### 3.4.4 National Capital Plan

The National Capital Plan (NCP) is the Commonwealth Government's strategic Plan for Canberra and the Territory and is administered by the National Capital Authority (NCA). The NCP maintains broad oversight of planning in the Territory and importantly an interest in the planning, design and development of those areas having the special characteristics of the National Capital.

At its broadest level the NCP prescribes land use controls across the whole of the Territory and includes more detailed planning provisions for areas where the Commonwealth has a specific interest. These are identified in the NCP as Designated Areas. It also has jurisdiction over areas of National Land and may set out special requirements for development of any area. The NCP takes precedence over the Territory Plan where any inconsistencies arise.

The General Policy Plan within the NCP sets the broad framework for land use in the Territory and shows the areas which are planned for urban development and those that are not to be developed for urban use. Under the General Policy Plan and the National Capital Open Space System (NCOSS) of the NCP the proposal area is identified as urban area. The range and nature of uses permitted in Urban Areas includes those uses compatible with residential, commercial, community, cultural, recreational and industrial activity, other than uses not permitted in the Territory Plan.

In the NCP the Designated areas include the Main Avenues and Approach Routes between the ACT border and the Central National Area.

The Monaro Highway from the ACT border through to Morshead Drive is an Approach route and the road reserve is designated area. Special requirements apply to development on all land (not included within Designated Areas) which fronts directly onto the Approach Routes AND is not more than 200 metres from their middle lines. Development in these areas is expected to conform to DCP. While the site does not meet the requirements for special conditions (as it does not directly front an approach route), the NCA has prepared DCP Number 171/09/0001 Hume West Industrial Area which applies to Part section 23, sections 25, 26 and 27 Hume and the proposal site is in the area subject to the DCP.

Details of the Special Requirements in the DCP are provided in Chapter 5 and the landscape and visual impacts associated with the proposal are discussed in Chapter 11.

The proposal site is identified under DCP 171/09/0001 for section 23, 25, 26 and 27 Hume. The DCP establishes planning and urban design provisions including building scale, setback, landscape character, access and parking for the site. Under the DCP, land use on the site shall be consistent with the Territory Plan.

The concept design has been prepared in accordance with the DCP requirements. Consultation has been undertaken with the NCA to consider any departures from the DCP requirements such as the inclusion of a three metre stack to mitigate odour impacts. This is subject to detailed design.

### 3.4.5 Separation Distance Guidelines for Air Emissions (2018)

The *Separation Distance Guidelines for Air Emissions* (November 2018) is the primary ACT document which considers and guides land use interface in the ACT for air emissions.

These guidelines provide recommended separation distances between various emitters and sensitive land uses. They are applied to ensure incompatible land uses are located in a way that minimises the impacts of odour and polluting air emissions in the assessment of new development applications. While these guidelines assist in the siting of new developments, they may also be used to ensure industrial activities in appropriate zones are protected from encroachment by residential and other sensitive land uses that would have a negative effect on the viability of industry.



These guidelines apply to new industries/activities and redevelopment of existing industries/activities for which a development application is required under the PD Act.

The guidelines demonstrate how separation distances should be applied to development and provide indicative recommended separation distances which should be applied between certain activities and sensitive land uses. The Separation distance guidelines for air emissions (ACT Government, 2018b) have been considered as part of the air quality impact assessment, refer to Section 13.2 of this EIS and Appendix O.

### 3.4.6 ACT Waste Management Strategy 2011-2025

The ACT Waste Management Strategy 2011–2025 (WM Strategy) (ACT Government, 2011) sets the direction for the management of waste in the ACT towards 2025. It encompasses wastes from a range of sources, household, commercial construction and demolition. The goal of the WM Strategy is to ensure that the ACT leads innovation to achieve full resource recovery and a carbon neutral waste sector. This goal is supported by four key outcomes, and it identifies 29 strategies that will enable the achievement of these outcomes. The outcomes are:

- Outcome 1: less waste generated
- Outcome 2: full resource recovery
- Outcome 3: clean environment
- Outcome 4: carbon neutral waste sector

The WM Strategy identifies that approximately 10 to 20 percent of commercial waste and 40 to 50 percent of household waste is organic waste that together could be managed. Under Outcome 2 of the Strategy the government commits to recover organic and residual waste from the household and commercial waste sectors. One of the targets in the strategy is to increase the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill. Strategy 2.2 is to recover organic and residual wastes, and Strategy 2.3 is to Develop markets for organic and residual waste resources. This proposal is a direct investment by the ACT Government to deliver on the strategies and outcomes identified in this Strategy to recover and create products and markets for organic waste.

Strategy 3.3 is for the development of the HRRE, the strategy identifies that new major waste infrastructure will primarily be located in the Hume Resource Recovery Estate beside the Mugga Lane Resource Management Centre. Again, the proposal intends to deliver a direct response to this part of the strategy through development of a significant new FOGO facility within the HRRE.

In reducing the amount of organic waste to landfill, the proposal will reduce greenhouse gas emissions created by decomposing organic waste and therefore this project also responds to outcome 4 of the WM Strategy through a reduction in methane generation. Chapter 15 addresses greenhouse gases and the quantum of generation and reduction expected as a result of the proposal.

### 3.4.7 ACT Waste Feasibility Study

The Waste Feasibility Study (ACT Government, 2018a) identifies how waste management in the ACT can be improved to align with best practice. The Study proposed initiatives that respect the ‘waste hierarchy’ principle. The key output from the Study is a Roadmap of initiatives designed to take the ACT closer to its 90 percent resource recovery target through best practice waste management. The study estimated that the initiatives proposed could divert over 170,000 tonnes of waste from landfill and lift the resource recovery rate from 70 percent to 87 percent.

Recommendations in Group 1 of the roadmap were to implement a kerbside FOGO collection service aligned with the existing green bin rollout program and identify a site and establish an organics processing facility to process both food and garden organics.

The study recommended establishing a composting facility that can process both food and garden organics as a proven technology that is relatively simple, scalable, practical and quick to develop and operate. This proposal for a new FOGO facility is a key deliverable in implementing the legislative and policy objectives for both reusing waste products and reducing emissions.

### 3.4.8 Ecologically sustainable development

Section 9 of the PD Act outlines the key consideration for ESD principles applicable to development in the ACT. The proposal has been assessed against these below.

#### **The precautionary principles**

The precautionary principle deals with reconciling scientific uncertainty about environmental impacts with certainty in decision-making. It provides that where there is a threat of serious or irreversible environmental damage, the absence of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation.

The precautionary principle has guided the assessment of environmental impacts for this EIS and the development of mitigation measures. With implementation of the proposed measures, it would be unlikely that the proposal would cause serious or irreversible damage.

#### **Inter-generational equity**

Social equity is concerned with the distribution of economic, social and environmental costs and benefits. Inter-generational equity introduces a temporal element with a focus on minimising the distribution of costs to future generations.

The proposed FOGO facility allows composting to be accessible to more members of the community, will reduce organics sent to landfill and assist in reaching a carbon neutral waste sector. As such, it would be unlikely that the proposal would result in any impacts that are likely to adversely impact on the health, diversity or productivity of the environment for future generations.

#### **Conservation of biological diversity and ecological integrity**

A Biodiversity Assessment Report was undertaken to understand the existing values of the proposal area and identify appropriate measures to avoid or manage potential impacts of the proposal on biodiversity. A range of proposal and location specific design and mitigation measures would be implemented to minimise impacts upon biodiversity and maintain ecological integrity. An assessment of the impact of the proposal on biodiversity values is provided in Chapter 8.

It is unlikely that the proposal would have a significant impact on biodiversity and ecological integrity provided the mitigation measures within this report are implemented.

#### **Improved valuation, pricing and incentive mechanisms**

The principle of internalising environmental costs into decision making requires consideration of all environmental resources which may be affected by the carrying out of a proposal, including air, water, land and living things. Environmental issues were considered as key matters in the development of the proposal design and mitigation measures for the avoidance, reuse, recycling and management of waste during construction and operation are to be implemented. The value of the proposal to the community is accessibility to FOGO composting. The value to the proponent is the capability to reach territory strategies.

### 3.4.9 National Airport Safeguarding Framework

The NASF aims to enhance the current and future safety, viability and growth of aviation operations, improve community amenity by minimising aircraft noise-sensitive developments near airports; and improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions through guidelines being adopted by jurisdictions on various safety-related issues.

Guideline C provides information on managing the risk of wildlife strikes in the vicinity of airports.

Under Guideline C of the NASF, 'managing the risk of wildlife strikes in the vicinity of airports'

Under the National Airports Safeguarding Framework, the site is within a 10 kilometre radius of the airport (Area B). The proposal would need to include considerations for the mitigation against wildlife hazard. An assessment

and preparation of mitigation measures would be undertaken in consultation with the airport operator, and qualified bird and wildlife management experts during the EIS process. Measures that should be considered include:

- A requirement for a Wildlife Management Program
- The establishment of wildlife management performance standards
- Allowance for changes to design and/or operating procedures at places/plants where land use has been identified as increasing the risk of wildlife strike to aircraft
- Establishment of appropriate habitat management at incompatible land uses
- Creation of performance bonds to ensure clean-up and compensation should obligations not be met
- Authority for airport operators to inspect and monitor properties close to airports where wildlife hazards have been identified
- Consistent and effective reporting of wildlife events in line with Australian Transport Safety Bureau (ATSB) guidelines.

FOGO can attract native and exotic bird species as well as ground-dwelling fauna, which has potential to pose a risk to the nearby airport due to the potential increase in transient bird species and likely a risk to local traffic. This is assessed in Chapter 19.

### 3.4.10 Transport for Canberra Policy 2012-2031

The *Transport for Canberra: Transport for a sustainable city* is the foundation for transport planning in the Territory from 2012 to 2031. Transport is a vital component of responding to the challenges facing all major Australian cities: air quality, traffic volumes and congestion, ambient noise, greenhouse gas emissions, social exclusion, urban sprawl and infrastructure that is reaching capacity

The following six principles guide the policy and the action items required to implement them, creating a transport system that:

1. is integrated with land use planning
2. makes active travel like walking and cycling the easy way to get around
3. provides sustainable travel options and reduces transport emissions
4. is safe for moving people however they get around
5. is accessible for everybody whatever their level of mobility at any time or place
6. is efficient and cost effective, providing value for money for the government, business and the community by managing travel demand across the whole transport system.

The proposal is aligned with the guiding principles as follows:

- The proposal will utilise existing arterial roads and freight routes, (see Chapter 6), will benefit from Monaro Highway Upgrades and have minimal impacts on congestion as demonstrated in the Traffic Impact Assessment (principle 1).
- The proposal will avoid impacts to active travel by utilising existing vehicle routes and utilise existing active travel networks to support riding to work (principle 2).
- Procurement for the proposal will look at how low emission vehicles and plant can be incorporated (principle 3).
- The proposal will incorporate safe access points to ensure a safe network (principle 4).
- The proposal will be located within the HRRE, which is an area nominated for waste uses and integrated with the land use planning framework (being an industrial use located in this precinct tie land use planning and Transport for Canberra Policy) (principles 1 and 3).



## 4. Risk assessment

### 4.1 Preliminary risk assessment for the Scoping Report

A Preliminary Risk Assessment (PRA) was undertaken to determine the unmitigated significance of the impacts of the proposal as part of the Scoping Report (Arup, 2021) submitted with the request for the Scoping Document. The PRA was conducted to provide a consistent framework to identify, assess and mitigate potential environmental and social impacts associated with the proposal. The PRA is reproduced in Table 4.1.

Table 4.1 PRA undertaken for the scoping document

| Identified risk                                                                                                                                                      | Likelihood | Consequence | Risk rating <sup>2</sup> | Where addressed in this EIS |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|--------------------------|-----------------------------|
| <b>Planning and land status</b>                                                                                                                                      |            |             |                          |                             |
| Sterilisation of surrounding land uses                                                                                                                               | N/A        | N/A         | *                        | Chapter 5                   |
| <b>Traffic and transport</b>                                                                                                                                         |            |             |                          |                             |
| Increase in heavy vehicle movement and the potential for limited road/ lane closures during construction works / the delivery of primary equipment.                  | Likely     | Moderate    | High                     | Chapter 6                   |
| Changes in existing traffic access                                                                                                                                   | Likely     | Minor       | Medium                   | Chapter 6                   |
| Traffic impacts from the operation                                                                                                                                   | N/A        | N/A         | *                        | Chapter 6                   |
| <b>Utilities</b>                                                                                                                                                     |            |             |                          |                             |
| Impacts on existing infrastructure.                                                                                                                                  | N/A        | N/A         | *                        | Chapter 7                   |
| <b>Biodiversity and nature conservation</b>                                                                                                                          |            |             |                          |                             |
| Impact to threatened listed native vegetation communities (Yellow Box – Blakely's Red Gum Grassy Woodlands)                                                          | Unlikely   | Moderate    | Low                      | Chapter 8                   |
| Impact to threatened fauna and habitat (Striped Legless Lizard, Gang Gang Cockatoo)                                                                                  | Unlikely   | Moderate    | Low                      | Chapter 8                   |
| Direct impact to significant or large trees                                                                                                                          | Possible   | Minor       | Low                      | Chapter 8                   |
| Spread of weeds and pest species (invasive flora and fauna, insect pests)                                                                                            | Likely     | Minor       | Medium                   | Chapter 8                   |
| Impacts on flora and fauna                                                                                                                                           | N/A        | N/A         | *                        | Chapter 8                   |
| <b>Heritage</b>                                                                                                                                                      |            |             |                          |                             |
| Direct impacts on existing historic non-Aboriginal heritage places or objects (including physical, visual and potential vibration impacts) (identified by authority) | Unlikely   | Minimal     | Negligible               | Chapter 9                   |
| Direct impact to Aboriginal archaeological potential or places with high Aboriginal cultural values                                                                  | Likely     | Moderate    | High                     | Chapter 9                   |
| <b>Waste</b>                                                                                                                                                         |            |             |                          |                             |

<sup>2</sup> \* denotes a risk identified by the authority within Table 1 of Scoping Document (Appendix A). As such, it has no preliminary risk but has been listed.

| Identified risk                                                                    | Likelihood | Consequence | Risk rating <sup>2</sup> | Where addressed in this EIS |
|------------------------------------------------------------------------------------|------------|-------------|--------------------------|-----------------------------|
| Waste generated during construction                                                | Likely     | Moderate    | High                     | Chapter 10                  |
| Waste generated during operation                                                   | Likely     | Moderate    | High                     | Chapter 10                  |
| Impacts from hazardous waste and or chemical received/stored at the facility       | N/A        | N/A         | *                        | Chapter 10                  |
| Impacts from excess stockpiling of waste or recyclable)                            | N/A        | N/A         | *                        | Chapter 10                  |
| Impacts from spread of waste (                                                     | N/A        | N/A         | *                        | Chapter 10                  |
| <b>Landscape and visual</b>                                                        |            |             |                          |                             |
| Visual impacts during construction                                                 | Likely     | Minor       | Medium                   | Chapter 11                  |
| Additional visual impacts of the new facility to the existing landscape            | Likely     | Minor       | Medium                   | Chapter 11                  |
| <b>Soils and geology</b>                                                           |            |             |                          |                             |
| Site contamination (such as liquid contaminant spills) from construction machinery | Possible   | Minor       | Low                      | Chapter 12                  |
| Erosion and sedimentation causing pollution of waterways during construction       | Unlikely   | Moderate    | Low                      | Chapter 12                  |
| Encountering contaminated land                                                     | Likely     | Moderate    | High                     | Chapter 12                  |
| Impacts from soil contamination from the operation                                 | N/A        | N/A         | *                        | Chapter 12                  |
| Impacts from the disturbance of existing contaminated soil.                        | N/A        | N/A         | *                        | Chapter 12                  |
| <b>Water quality and hydrology</b>                                                 |            |             |                          |                             |
| Dirty runoff from construction works into waterways                                | Possible   | Moderate    | Medium                   | Chapter 13                  |
| Impacts to groundwater from the operation                                          | N/A        | N/A         | *                        | Chapter 13                  |
| Impacts on stormwater and surrounding waterways, such as Dog Trap Creek            | N/A        | N/A         | *                        | Chapter 13                  |
| <b>Air quality and odour</b>                                                       |            |             |                          |                             |
| Increase in air pollution during construction (e.g. dust, hydrocarbon fumes)       | Possible   | Minor       | Low                      | Chapter 14                  |
| Generation of greenhouse gas emission.                                             | Possible   | Minor       | Low                      | Chapter 15                  |
| Increase odour emission from operation of FOGO facility                            | Likely     | Moderate    | High                     | Chapter 14                  |
| <b>Socio-economic and health</b>                                                   |            |             |                          |                             |
| Reduction in amenity during construction (noise, visual, and dust impacts)         | Likely     | Moderate    | High                     | Chapter 17                  |
| Reduction in amenity during operation (noise, visual, and dust impacts)            | Likely     | Minor       | Medium                   | Chapter 17                  |



| Identified risk                                                                                               | Likelihood | Consequence | Risk rating <sup>2</sup> | Where addressed in this EIS |
|---------------------------------------------------------------------------------------------------------------|------------|-------------|--------------------------|-----------------------------|
| Increase in complaints from the community for the FOGO facility (relating to odour, noise and visual impacts) | Likely     | Moderate    | High                     | Chapter 17                  |
| Impacts from operation harbouring vermin and pest animals.                                                    | N/A        | N/A         | *                        | Chapter 17                  |
| Noise and vibration                                                                                           |            |             |                          |                             |
| Noise and vibration impact during construction activities (increased in vehicles and machinery)               | Likely     | Minor       | Medium                   | Chapter 18                  |
| Noise and vibration impact during operation                                                                   | Likely     | Minor       | Medium                   | Chapter                     |
| Hazard and risk                                                                                               |            |             |                          |                             |
| Potential risk of bushfire during construction                                                                | Possible   | Minor       | Low                      | Chapter 20                  |
| Potential impact of bushfires affecting operation of the facility                                             | Unlikely   | Minor       | Very low                 | Chapter 20                  |
| Impacts from fires at the facility                                                                            | N/A        | N/A         | *                        | Chapter 20                  |
| Impact on aircraft from bird strike                                                                           | N/A        | N/A         | *                        | Chapter 20                  |

## 4.2 Risk assessment for the EIS

### 4.2.1 Approach

Risks have been evaluated by likelihood of occurrence and magnitude of consequence to determine the risk level and impact significance. The matrixes are from the Proponent's Guide to Environmental Impact Statements (ACT Government, 2017a) and comply with *AS/NZS ISO 31000:2018 Risk Management - Principles and guidelines*.

Any residual risks associated with the proposal are identified in the relevant sections in Chapter 5 to 21 of this EIS.

### 4.2.2 Evaluating likelihood

Likelihood is best described as the probability of an impact occurring that affects the environment. It ranges in scale from remote, where an event occurs only in exceptional circumstances, to almost certain, where an event is expected to occur (Table 4.2). Best practice dictates where there is scientific uncertainty, a precautionary approach is warranted and a higher level of risk should be assigned.

Table 4.2 Evaluating likelihood (ACT Government, 2017a)

| Likelihood     | Description                                 | Probability (%) | Community attitude       |
|----------------|---------------------------------------------|-----------------|--------------------------|
| Remote         | May occur in exceptional circumstances      | <1              | Few people interested    |
| Unlikely       | Not expected to occur in most circumstances | 1-20            | Some people affected     |
| Possible       | May occur                                   | 21-49           | Many people affected     |
| Likely         | Probably will occur                         | 50-85           | Most people affected     |
| Almost certain | Expected to occur                           | >85             | Almost everyone affected |

### 4.2.3 Evaluating consequence

Risk consequence refers to the outcome of an event or situation expressed in terms of its potential or actual impact, ranging from minimal to catastrophic. Risk consequence has been evaluated in the EIS using the elements



of magnitude, temporal, ecological, social and economic against general criteria (Table 4.3) and proposal specific criteria (Table 4.4).

**Table 4.3** Evaluating consequence – general criteria (ACT Government, 2017a)

| Elements   | Criteria         | Description                                                                                                                                                                                                                 |
|------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Magnitude  | Spatial          | The area over which the impact will occur, from square metres to square kilometres.                                                                                                                                         |
|            | Intensity        | The level of impact within the spatial area, from minor disruption to total destruction. A low intensity impact over a large area could be worse than a high intensity impact in a small area, depending on other elements. |
| Temporal   | Duration         | The length of time of the impact, from a single event to a permanent change.                                                                                                                                                |
|            | Timing           | Short term events may create significant impacts if they occur often. They may also coincide with particularly sensitive times in the receiving environment such as breeding cycles.                                        |
| Ecological | Values           | The quality of the receiving environment, generally identified through the declaration of conservation areas, identification of protected species and other features of natural conservation value.                         |
|            | Sensitivity      | The capacity of the receiving environment to regenerate or adapt to the impact (resilience). The sensitivity of an environment to a potential impact will require informed judgement.                                       |
| Social     | Number of people | The number of people directly or indirectly affected through lost opportunities for enjoyment or other values such as equity or existence values.                                                                           |
|            | Heritage         | The impact on known or possible items of heritage or cultural value.                                                                                                                                                        |
|            | Political        | The measure of the likely political implications or level of community interest.                                                                                                                                            |
| Economic   |                  | The financial cost of the impact through lost productivity or the cost of remediation.                                                                                                                                      |

**Table 4.4** Evaluating consequence – proposal specific (ACT Government, 2017a)

| Consequence | Minimal                                             | Minor                                          | Moderate                                                  | Major                                                                               | Catastrophic                                                                                     |
|-------------|-----------------------------------------------------|------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Magnitude   |                                                     |                                                |                                                           |                                                                                     |                                                                                                  |
| Spatial     | A single pool                                       | A reach of river or part of a catchment        | Multiple reaches or whole catchment                       | Multiple catchments                                                                 | Whole of basin                                                                                   |
| Intensity   | Low level behavioural, lifespan or condition effect | Acute impacts on some species                  | Moderate impacts on growth, recruitment or survival rates | Lethal impacts on some species                                                      | Lethal for individuals or communities                                                            |
| Temporal    |                                                     |                                                |                                                           |                                                                                     |                                                                                                  |
| Duration    | Single incident or transient event                  | Short term impact, single generation           | Medium term                                               | Long term, multiple generations                                                     | Permanent                                                                                        |
| Timing      | Occurs outside breeding times                       | Occasional interruption of feeding or breeding | Interrupts one life cycle                                 | Regularly interrupts life cycle                                                     | Permanent interruption of life cycle                                                             |
| Ecological  |                                                     |                                                |                                                           |                                                                                     |                                                                                                  |
| Values      | Previously disturbed areas                          | Previously disturbed areas/Parkland            | Nature conservation area                                  | Conservation area, listed species or other conservation feature of ACT significance | Wilderness, nationally threatened species or other conservation feature of national significance |

| Consequence      | Minimal                                | Minor                                                      | Moderate                                                  | Major                                                    | Catastrophic                                                 |
|------------------|----------------------------------------|------------------------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|
| Sensitivity      | Will recover completely                | Will recover with some changes                             | Moderate change to ecosystem functioning                  | Significant change to ecosystem functioning              | Will not recover                                             |
| Social           |                                        |                                                            |                                                           |                                                          |                                                              |
| Number of people | Some people indirectly impacted        | Some people directly impacted or several indirectly        | Several people directly impacted or many indirectly       | Large number of people directly impacted                 | Loss of life                                                 |
| Heritage         | Impact on item of minimal significance | Impact on multiple items of low significance               | Impact on significant item                                | Impact on multiple significant items                     | Major impact on protected item                               |
| Political        | Single negative press article          | Multiple negative press articles                           | Significant public interest                               | Leads to an inquiry                                      | Change of government                                         |
| Economic         |                                        |                                                            |                                                           |                                                          |                                                              |
| Economic         | Minimal losses                         | Several thousand dollars lost revenue or remediation costs | Half million dollars in lost revenue or remediation costs | One million dollars in lost revenue or remediation costs | Several million dollars in lost revenue or remediation costs |

## 4.2.4 Risk rating level

The risk rating level is determined by cross-referencing the likelihood and consequence of each risk as shown in Table 4.5.

Table 4.5 Risk rating matrix (ACT Government, 2017a)

| Likelihood     | Consequence |            |            |           |             |              |
|----------------|-------------|------------|------------|-----------|-------------|--------------|
|                | Positive    | Minimal    | Minor      | Moderate  | Major       | Catastrophic |
| Remote         | Beneficial  | Negligible | Negligible | Very Low  | Low         | Medium       |
| Unlikely       | Beneficial  | Negligible | Very Low   | Low       | Medium      | High         |
| Possible       | Beneficial  | Very Low   | Low        | Medium    | High        | Very High    |
| Likely         | Beneficial  | Low        | Medium     | High      | Very High   | Significant  |
| Almost certain | Beneficial  | Medium     | High       | Very High | Significant | Significant  |

## 4.2.5 Residual risk

Chapter 5 to 21 of this EIS assesses the impacts of the proposal on the risks identified in Table 4.1. Mitigation and management measures are provided for each theme assessed in Chapter 22. An additional assessment of residual risk has also been undertaken (as required in the Scoping Document) to assess the risk for each theme with the implementation of proposed mitigation. A residual risk rating of medium or higher will be subject to further consideration during the development of the detailed design.

## 5. Planning and land status

### 5.1 Requirements

This chapter addresses the following planning requirements of the Scoping Document:

- Include a description of planning context of the area where the proposal will be located.
- Describe planning and development status of any land or proposal relevant to the proposal.
- Describe land use of the proposed land and any land to be affected (including, but not limited to, zoning, lessee(s) or custodian of the land, the permissibility of the proposed use defined in the Territory Plan).
- Investigate the impact the proposal will have on existing and future uses in relation to the surrounding uses.

### 5.2 Environmental conditions and values

#### 5.2.1 Planning context

The proposal would be located wholly on Territory land which is under the planning and development jurisdiction of the ACT Government. Development is to be assessed in accordance with the requirements of the *Planning and Development Act 2007* and the Territory Plan (ACT Government, 2008).

The NCA has identified Special Requirements for this area in the DCP Number 171/09/000 Hume West Industrial Area (Australian Government National Capital Authority, 2009). These are addressed below.

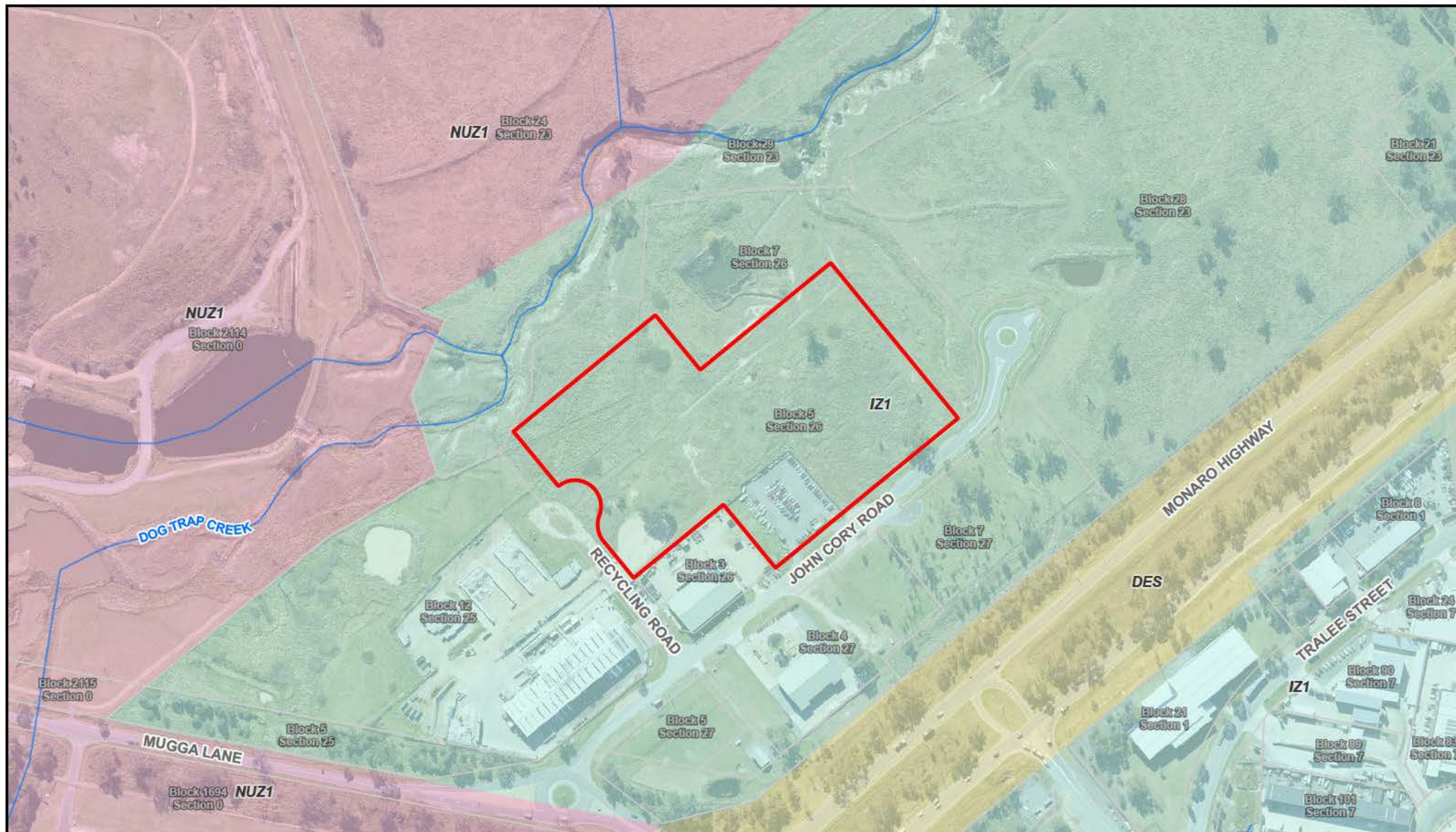
#### 5.1.1 Site location and custodianship

The proposal would be located on Block 5 Section 26 Hume which fronts Recycling Road and John Cory Road. The block is unleased Territory land in the custodianship of CED ACT NoWaste. Recycling Road and John Cory Road are unleased road reserves in the custodianship of CED Roads ACT.

#### 5.1.2 Zoning

The proposal site is zoned IZ1 General Industrial in the Territory Plan and the immediately surrounding area is also zoned IZ1. The wider Hume industrial precinct is also zoned IZ1. Non-Urban NUZ1 Broadacre areas are located to further to the north and west and on the southern side of Mugga Lane as shown in Figure 5.1.



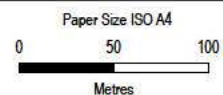


#### Legend

- Proposal site
- Cadastre
- Watercourses

#### Land use zones

- DES - DESIGNATED
- IZ1 - GENERAL INDUSTRY
- NUZ1 - BROADACRE



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540460  
Revision No. 0  
Date 29/08/2023

Territory plan zones

**FIGURE 5.1**



The objectives of the IZ1 General Industrial Zone are provided in Table 5.1, along with how the proposal would respond to the objectives.

Table 5.1 IZ1 General Industrial Zone Objectives

| Objectives                                                                                                                                             | Proposal response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Support the diversification and expansion of the ACT's industrial base and employment growth                                                           | <p>The proposal involves the development of a new FOGO facility using in-vessel composting technologies. The proposal would divert up to 70,000 tonnes per year of FOGO waste from landfill. It would provide a new type of large-scale composting facility, expand the industrial activities in the ACT and contribute to employment growth.</p> <p>Indicative staffing for facility is expected to be in the order of 60 direct employees when in full operation (operations and maintenance, management and supervision), subject to detailed design and final vendor process selection. Initial staffing is expected to be in the order of 15 employees, which would increase as more FOGO material is received.</p> |
| Facilitate investment in a wide range of industrial and related activities, with efficient land utilisation and provision of infrastructure            | <p>The proposal represents a substantial investment in a facility designed to divert waste from landfill as a key action to achieve resource recovery and emissions reduction targets in the ACT.</p> <p>The proposal would facilitate a network of associated FOGO waste collection infrastructure at source across the ACT.</p>                                                                                                                                                                                                                                                                                                                                                                                        |
| Provide convenient access for ACT and regional residents to industrial goods, services and employment opportunities                                    | The proposal site is located within the HRRE with convenient access to major transport routes with the ACT and the surrounding region via the Monaro Highway and Mugga Lane.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Make provision for transport-related businesses in locations accessible to major road, rail and air links                                              | The proposal is not a transport related business.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Encourage the clustering of industrial activities according to the principles of industrial ecology                                                    | <p>The facility would be co-located with other waste and recycling infrastructure within the HRRE which includes the materials recycling facility, mattress recycling facility, and the Mugga Lane Waste Management Facility.</p> <p>Additionally, municipal depot's such as the depot at 11 Alderson Place which house the waste collection trucks are located within the Hume Industrial area.</p>                                                                                                                                                                                                                                                                                                                     |
| Ensure that industrial development achieves high environmental standards of cleaner production, waste disposal, noise and air quality                  | <p>The concept design for the facility is based on in-vessel composting and a fully enclosed building. All waste receipt, pasteurisation, maturation and product refinement would be undertaken within the enclosed building and vessels which would be kept under negative pressure and ducted to an odour management system.</p> <p>The plant incorporates air quality management via extraction and biofiltration, and a high level of process monitoring and control of critical process parameters. This is considered to be best practice.</p> <p>This EIS includes assessments of noise and air quality to ensure that it meets relevant standards and appropriate mitigation measures are proposed.</p>          |
| Encourage the design and construction of industrial and commercial buildings that are energy efficient, functional and flexible                        | <p>As well as meeting the functional requirements, the buildings and facility would be designed to include solar photovoltaic technology to support energy requirements and reduce reliance on the grid supply electricity.</p> <p>The design would consider incorporating features that maximise the use of natural light without contributing significantly to heat build-up within the buildings.</p> <p>Stormwater collected from building rooftops would be captured for storage in onsite rainwater tanks and would be available for reuse within the facility.</p>                                                                                                                                                |
| Ensure that development along major approach routes and major roads meets appropriate standards of urban design                                        | While the proposal site does not directly front a major approach route, development would be subject to the requirements of the NCA DCP Number 171/09/0001 as described below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Make provision for manufacturing, warehouse and transport land uses requiring large land areas accessible to main interstate road and rail connections | The facility is not for manufacturing, warehouse or transport uses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



| Objectives                                                                                                                                                                            | Proposal response                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ensure that the use of the land for predominantly industrial purposes is not jeopardised by the uncontrolled development of higher rent commercial uses such as retailing and offices | The proposed use is not for a commercial or higher order retail or office use. The facility has been co-located with other waste and recycling infrastructure within the HRRE. |
| Provide small-scale services to meet the needs of the local workforce                                                                                                                 | The proposal does not include other small-scale services.                                                                                                                      |

The proposal is considered to be consistent with the objectives of the IZ1 General Industrial zone.

The draft Territory Plan includes new policies and outcomes against which development will be assessed once the new Act commences.

The policy outcomes to be achieved for both industrial zones are:

- The industrial zones are primarily for industrial developments but permit other development that complements and supports industrial uses and development.
- Development should be of a scale and nature that recognises and responds to the zone hierarchy.

The other important outcomes to be achieved in the IZ1 zone are very similar to the current zone objectives.

## 5.2.2 Overlays and special requirements

The proposal site is in an area subject to special requirements under the National Capital Plan as it is within the area subject to the NCA DCP Number 171/09/0001 for Hume West Industrial Area. This applies to Part Section 23, Sections 25, 26 and 27 Hume, as shown in the DCP Drawing No. 171/09/0001 reproduced as Figure 5.2 below.

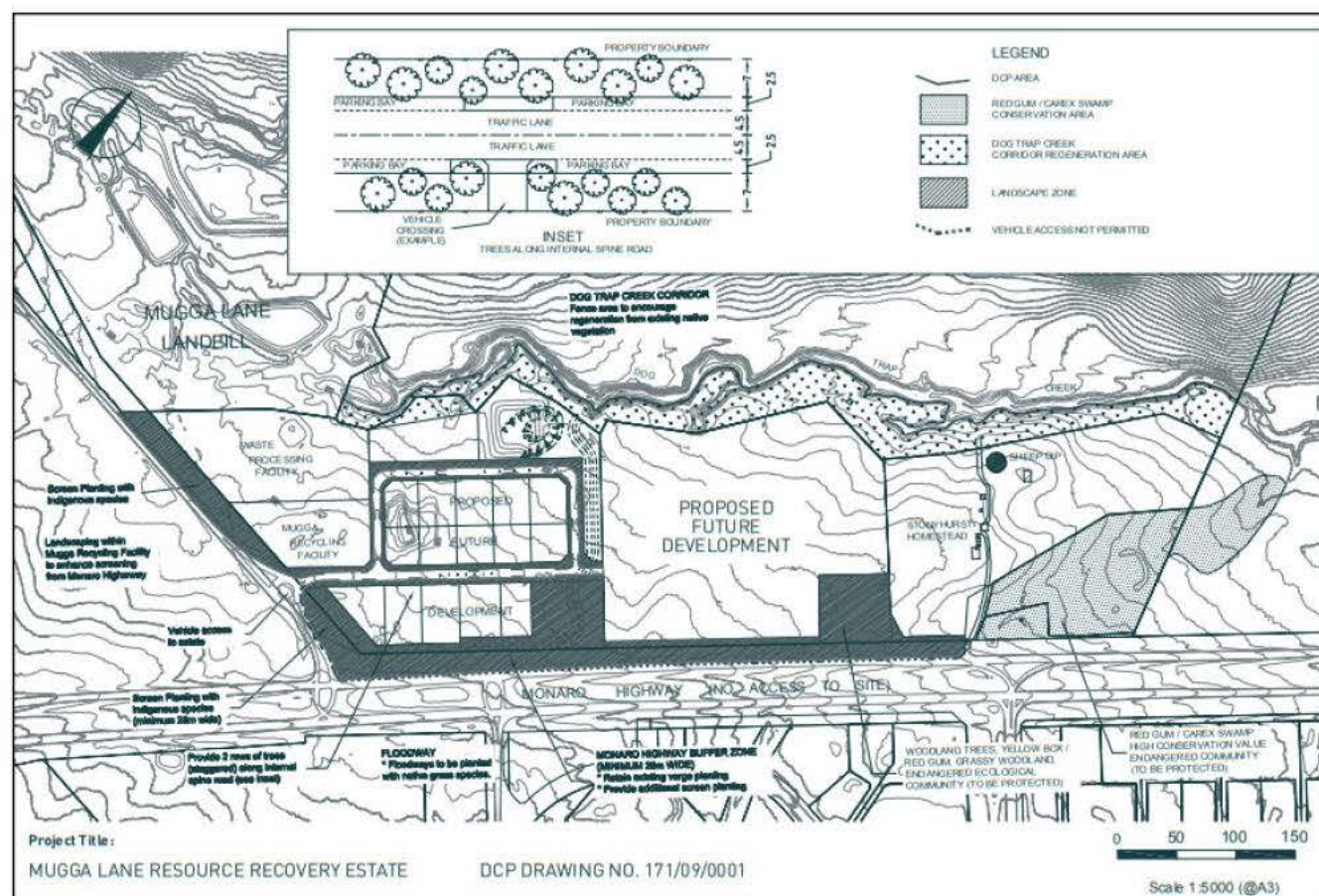


Figure 5.2 DCP Drawing No. 171/09/0001



Section 2.2 of the DCP states that the National Capital Authority's primary interest in the area is to ensure that an appropriate landscape character will be established on the Monaro Highway frontage, including extensive landscaping at the corner of the Highway and Mugga Lane. This will require effective landscaping both within the verge and on the sites of adjacent developments. Landscaping of roads and public spaces within the HRRE is also required to both reinforce the Highway landscaping and break up the visual expanse of the HRRE.

The DCP contains a number of objectives and requirements for development within the area subject to the DCP. The development application for the facility will be assessed against the requirements in the DCP. Key requirements and the proposal's responses are provided in Table 5.2 below.

Table 5.2 DCP Number 171/09/0001 Requirements

| No. | Objective/Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Proposal response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5   | <p>Planning and Urban Design</p> <p>5.1 Development along the Monaro Highway is required to contribute to the architectural quality and amenity of the industrial estate.</p> <p>5.2 Buildings shall be of a high standard in terms of building form, material and finishes.</p> <p>5.3 Building envelopes will be designed to enhance the visual amenity of the estate, particularly through the provision of generous landscaped external spaces.</p> <p>5.4 A consistency in architectural styles, colours and materials in required throughout the industrial estate.</p>                                                                             | <p>The architectural concept design is for an industrial building which would be compatible with other development in the area. The detailed design will incorporate details on materials and finishes and complement the existing industrial precinct.</p> <p>Detailed design will provide further details of the building and landscaping.</p> <p>Significant trees have been retained which provide landscape and visual amenity on the site (i.e. those on the southern site boundary).</p> <p>The proposal will consider new tree planting per ACT Government <i>Tree Planting Detail - Street Tree</i> (Revision 0 September 2016) at the Development Application (DA) stage.</p>                                                                                                                                                                                       |
| 6   | <p>Building Height</p> <p>6.1 Building height should be appropriate for building function. To minimise visual impact of buildings on the highway, buildings will be limited to a maximum height of 30 metres (to the top of the roof line) above natural ground level and to a maximum height of 12 metres above natural ground level on blocks less than 5 hectares in area.</p> <p>6.2 Minor building elements (such as lift overruns) extending above the roof line will only be permitted where a visual impact assessment demonstrates that these elements do not have an adverse impact on the surrounding character and landscape of the area.</p> | <p>The proposal site is less than 5 hectares and therefore the maximum building height permitted is 12 metres above natural ground level.</p> <p>If higher building elements (above the 12 metre height limit) are proposed, a visual assessment would be required to demonstrate that these do not have an adverse impact on the surrounding character and landscape of the area.</p> <p>Initial discussions have been undertaken with the NCA through the development of the EIS and visual assessment has been undertaken (refer to Chapter 11) which demonstrates that small elements above the 12 metre height limit (such as a stack) have a negligible effect on the overall visual impact of the facility. A variation to the height control may be sought dependent on the detailed design. The NCA will be consulted with during DA stage upon detailed design.</p> |
| 7   | <p>Setbacks</p> <p>7.1 Buildings should be located to reinforce the significance of the Monaro Highway, with a minimum setback of 10 metres from the property boundaries along the Monaro Highway. Building shall also be setback a minimum of 10 metres from the property boundaries along Mugga Lane.</p>                                                                                                                                                                                                                                                                                                                                               | <p>The proposal site does not front Mugga Lane or Monaro Highway so this requirement does not apply.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8   | <p>Site coverage</p> <p>The area to be covered by building on any block created within the estate is not to exceed 50 per cent of the total block area.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>Site coverage based on the concept design is currently at 50 per cent.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 9   | Materials/colours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



| No. | Objective/Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Proposal response                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | <p>9.1 External walls should be generally masonry or pre-coated metal-cladding of low reflectivity.</p> <p>The roof should be of pre-coated metal of low reflectivity.</p> <p>9.2 Reflective window glass and coatings will not be permitted. Exposed air conditioning equipment will not be permitted unless screened to the satisfaction of the Territory.</p> <p>9.3 All graphics and external colours are to be considered as an integral part of the appearance of the development, and should be sympathetic to the area's rural landscape setting.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Materials and colours would be determined at development application stage, but the design would be developed to meet these requirements.                                                                                                                                                                                                                                                                                                                                              |
| 10  | <p>Fences</p> <p>10.1 Fences built along the external road frontage are to be set back behind landscape screens. A consistent standard of fencing of black wire mesh, with a minimum height of 1.8 metres, is to be provided along the Monaro Highway and Mugga Lane frontages.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>The proposal site does not front either Monaro Highway or Mugga Lane.</p> <p>Fence design would be considered at development application stage but would likely reflect these requirements to secure the proposal site.</p>                                                                                                                                                                                                                                                         |
| 11  | <p>Signs</p> <p>11.1 Signs are to be in accordance with the Signs General Code of the Territory Plan. Signs are to address internal roads only. A single main entry sign, of high quality design, may be erected adjacent to the Mugga Lane entry to the site. No other signs will be permitted in road verges. Roof signs visible from Monaro Highway will not be permitted.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Any signage would be considered at the development application stage to address these and the Territory Plan requirements.                                                                                                                                                                                                                                                                                                                                                             |
| 12  | <p>Storage, Service Areas and Car Parking</p> <p>12.1 Storage and service areas are to be suitably screened and in particular are not to be visible from the Monaro Highway.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | The proposal site would not be readily visible from Monaro Highway, and the concept design does not include any unscreened storage areas.                                                                                                                                                                                                                                                                                                                                              |
| 13  | <p>Access</p> <p>13.1 The major access and estate entry is to be from Mugga Lane in the locations identified on DCP Drawing No. 171/09/0001. Vehicular access from the Monaro Highway is not permitted.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Site access would be from Recycling Road and John Cory Drive.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 14  | <p>14 Landscape</p> <p>14.1 The National Capital Plan identifies the Monaro Highway corridor, which bisects the Hume Industrial Area, as a Designated Area. Development along this route should enhance the rural character and landscape of land adjoining the area before the road enters the urban area.</p> <p>Landscape of a high standard is to be designed and constructed as an integral part of the development, and is to conform with the principles shown on Drawing No. 171/09/0001. A Landscape DCP Master Plan is to be submitted to the Territory for approval as part of the Development Application documentation.</p> <p>14.2 The objectives of the Landscape Master Plan are to:</p> <ul style="list-style-type: none"> <li>– minimise the visual impacts of buildings, car parking, open activities and storage areas viewed from the Monaro Highway and Mugga Lane;</li> <li>– retain existing trees wherever possible, in particular the yellow box and red gum communities and individual trees considered to have moderate to high conservation value;</li> <li>– ensure consistency of street planting and landscaping;</li> </ul> | <p>A detailed Landscape Plan would be required to be submitted as part of the Development Application in accordance with these DCP requirements (as relevant to the site). This will consider new tree planting per ACT Government <i>Tree Planting Detail - Street Tree</i> (Revision 0 September 2016) and maximise street tree coverage where viable.</p> <p>Only one mature tree is marked for removal and other existing mature trees on the site are proposed for retention.</p> |



| No. | Objective/Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Proposal response |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
|     | <ul style="list-style-type: none"> <li>– encourage appropriate on-site landscaping; and</li> <li>– revegetate the edges to Dog Trap Creek.</li> </ul> <p>14.3 Landscaping on blocks fronting the Monaro Highway is to be carried out in accordance with an approved Landscape Master Plan. Existing trees, in particular the yellow box, red gum and other mature native trees are to be retained where possible. The areas between the buildings and the Monaro Highway and Mugga Lane are to be used generally for planting, as a part of an integrated on-site and off-site landscape screen. The minimum width of the combined on-site and off-site buffer is to be 25 metres.</p> <p>14.4 Effective screen planting is required along the north eastern boundary, and along the Dog Trap Creek corridor, consistent with principles shown on DCP Drawing No. 171/08/0009.</p> <p>14.5 Existing screen planting in the Monaro Highway and Mugga Lane verges is to be supplemented by additional planting, both within the estate and in the road verges, in accordance with DCP Drawing No. 171/09/0001 and an approved Landscape Master Plan. The purpose of the landscaping is to provide an effective screen along external road frontages.</p> <p>14.6 A double row of eucalyptus trees is to be planted along the spine road in accordance with DCP Drawing No. 171/09/0001.</p> <p>14.7 Comprehensive implementation of the landscape screening and spine road plantings, as per the master plan, must be completed in conjunction with individual block developments.</p> |                   |

The concept design for the EIS demonstrates that the proposal would be able to appropriately respond to these requirements, with further detail to be provided and addressed as part of the development application. The proposal would be able to be developed in accordance with NCA's special requirements and would therefore be consistent with the NCP.

### 5.2.3 Use

The proposed use as defined in the Territory Plan is for a **recycling facility** which means:

*the use of land for depositing, storing, separating, dismantling, salvaging, treating, renovating or redistributing discarded materials and scrap goods for use as recycled materials, such as paper, glass, plastics, timber, garden and food waste, metals, manufacturing off-cuts, household goods and oils.*

Common terminology for a recycling facility includes composting facility.

Recycling facility is a permissible use in the IZ1 General Industrial zone.

### 5.2.4 Territory Plan Codes

The Jerrabomberra District Precinct Code applies to the proposal site, but there are no controls in this code which are applicable. Development would be assessed against the current Territory Plan at the time of assessment<sup>3</sup>. Relevant codes are currently the Industrial Zones Development Code and other relevant General Codes in the Territory Plan including:

- Parking and Vehicular Access Code
- Waterways: Water Sensitive Urban Design General Code.

<sup>3</sup> This EIS was prepared and submitted under the *Planning and Development Act 2007*.



The proposal site is located in the East Canberra district, and therefore the East Canberra District Policy would apply. There are no mandatory assessment requirements for the proposal site in this Policy. There are 13 assessment outcomes against which development will be assessed. These reflect a range of outcomes including consideration of the urban design guide, functionality and usability of the development, site constraints, accessibility, services, Water Sensitive Urban Design etc.

The Industrial Zones Policy would also apply which includes 20 assessment outcomes against which development proposals in industrial zones will be assessed.

## 5.2.5 Surrounding uses and development

The proposal site is within the western part of the Hume Industrial area which is all zoned IZ1 General Industry. Table 5.3 identifies the surrounding blocks and the current uses and developments.

Table 5.3 Surrounding uses

| Block and Section                          | Use                                                   | Tenure                                                       | Development                                             |
|--------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------------|
| Blocks 6 & 10 Section 25 Hume <sup>4</sup> | Recycling facility or Recyclable materials collection | Private Lease                                                | Materials Recycling Facility                            |
| Block 3 Section 26 Hume                    | Municipal depot                                       | Private Lease                                                | ACT Skip Hire                                           |
| Block 7 Section 26 Hume                    | NA                                                    | Unleased<br>Custodianship of ACT NoWaste                     | Currently undeveloped                                   |
| Block 4 Section 27 Hume                    | Recycling Facility                                    | Private Lease                                                | Mattress recycling facility                             |
| Block 7 Section 27 Hume                    | NA                                                    | Unleased<br>Custodianship of ACT NoWaste                     | Currently undeveloped                                   |
| Block 28 Section 23 Hume                   | NA                                                    | Leased to Canberra Data Centres<br>Proprietary Limited       | Currently undeveloped                                   |
| Block 29 Section 23 Hume                   | NA                                                    | Unleased<br>Custodianship of EPSDD Parks and<br>Conservation | Currently undeveloped                                   |
| Block 21 Section 23 Hume                   | NA                                                    | Unleased<br>Custodianship of City Presentation               | Currently undeveloped                                   |
| Block 2114 Jerrabomberra                   | Landfill site, recycling facility                     | Leased to ACT NoWaste                                        | Developed for the Mugga Lane Resource management Centre |
| Block 1694 Jerrabomberra                   | Mugga Lane Solar Park                                 | Leased                                                       | Developed as a Solar farm                               |

Block 12 Section 25 to the southwest is the proposal site of ACT NoWaste's proposed new MRF. Following the fire at this facility in December 2022, it is not currently operating, but the facility was receiving mixed recyclables from ACT households, paper and cardboard from ACT regional drop off centres, for separation and treatment. The proposed new MRF is expected to provide for an average of 115,000 tonnes per year capacity. The use would be described as either a Recycling facility or Recyclable materials collection under the Territory Plan.

Other uses in the western part of the Hume Industrial area are private leases for ACT Skip Hire (municipal depot) on Block 3, Section 26, and a mattress recycling facility on Block 4, Section 27. Block 28, Section 23 Hume, to the north east is leased to Canberra Data Centres but is currently undeveloped.

Further afield, the Mugga Lane Resource Management Centre and Landfill is located on Block 2114 Jerrabomberra approximately 70 metres to the west and north. The Mugga Lane Solar Park (solar farm) is located approximately 220 metres to the southwest.

<sup>4</sup> *Planning and Development Act 2007* previously listed these as Majura. The *Planning Act 2023* identifies the area as Jerrabomberra Hume. Hume has been used for consistency,

The eastern side of the Hume Industrial area contains a variety of industrial or related uses and services and include a storage warehouse for the National Library of Australia, scaffolding hire company, automotive businesses, construction businesses, a petrol station, transport businesses and the like.

The closest residential development is located in Tralee, NSW approximately 1.1 kilometres to the east. Other residential developments include MacArthur approximately 2 kilometres to the south, Fadden approximately 2.6 kilometres to the west and Gilmore approximately 2.3 kilometres to the south. There are four private residences within two kilometres of the proposal area.

## 5.3 Investigations

A desktop review of the existing and future land uses, statutory requirements, planning policy and management plans was undertaken to consider the potential planning and land use impacts associated with the construction and operation of the proposal.

## 5.4 Impacts

The intention and one of the key objectives of the proposal is to provide a new facility to divert FOGO waste from landfill as a key action to achieve both resource recovery and emissions reduction targets in the ACT.

The potential risk identified from a land use perspective is the sterilisation of surrounding land uses, that is, the impact the proposal would have on surrounding uses and whether it would limit existing or future uses for the surrounding businesses or residences.

As described in the sections above, the proposal site and facility has been co-located with other waste and recycling infrastructure within the HRRE which is zoned IZ1 General Industrial. The HRRE was established to enable a range of recycling and resource recovery activities for the ACT. This use is consistent with the nature of the Estate. The use for recycling facility is a permissible use in the zone, and the proposal is considered to be consistent with the objectives of this zone, as described in Table 5.1.

This area also includes other related uses such as the materials recycling facility, mattress recycling facility, the Mugga Lane Waste Management Facility and other waste a recycling infrastructure. On this basis the proposed use is appropriately located with other similar and related uses.

The Jerrabomberra District Precinct Code includes additional rules which mandate a clearance zone of approximately 350 metres around the Mugga Lane Landfill block, this prohibits any use under the umbrella terms COMMUNITY USE (which includes sensitive uses such as childcare centre, educational establishment, health facility and hospital) and RESIDENTIAL USE (any form of residential development). So, there are already restrictions in the area on development for sensitive uses and therefore areas cannot currently permit these uses. The clearance zone comprises land zoned NUZ1 Broadacre, IZ1 General Industrial and Designated Area (under the NCP). The proposal therefore does not change or increase the restrictions on the nature of uses in the precinct or broader area.

Outside this clearance zone, residential uses are prohibited in the industrial zones (IZ1: General Industrial and IZ2 Industrial Mixed use) but COMMUNITY USE is currently permitted. So, while residential use cannot be proposed within Hume, there is potential that development for more sensitive uses could be proposed in the Industrial Zones outside the clearance zone, such as childcare for example. However, the new draft Territory Plan (expected to be implemented in late 2023 or early 2024) proposes to prohibit childcare use from the industrial zones to avoid this as a potential land use conflict. Sensitive uses are also generally prohibited in the NUZ1 Broadacre zone, but residential care accommodation is permitted, and some leases may provide for residences or caretakers residences that are ancillary or associated with other uses on broadacre land.

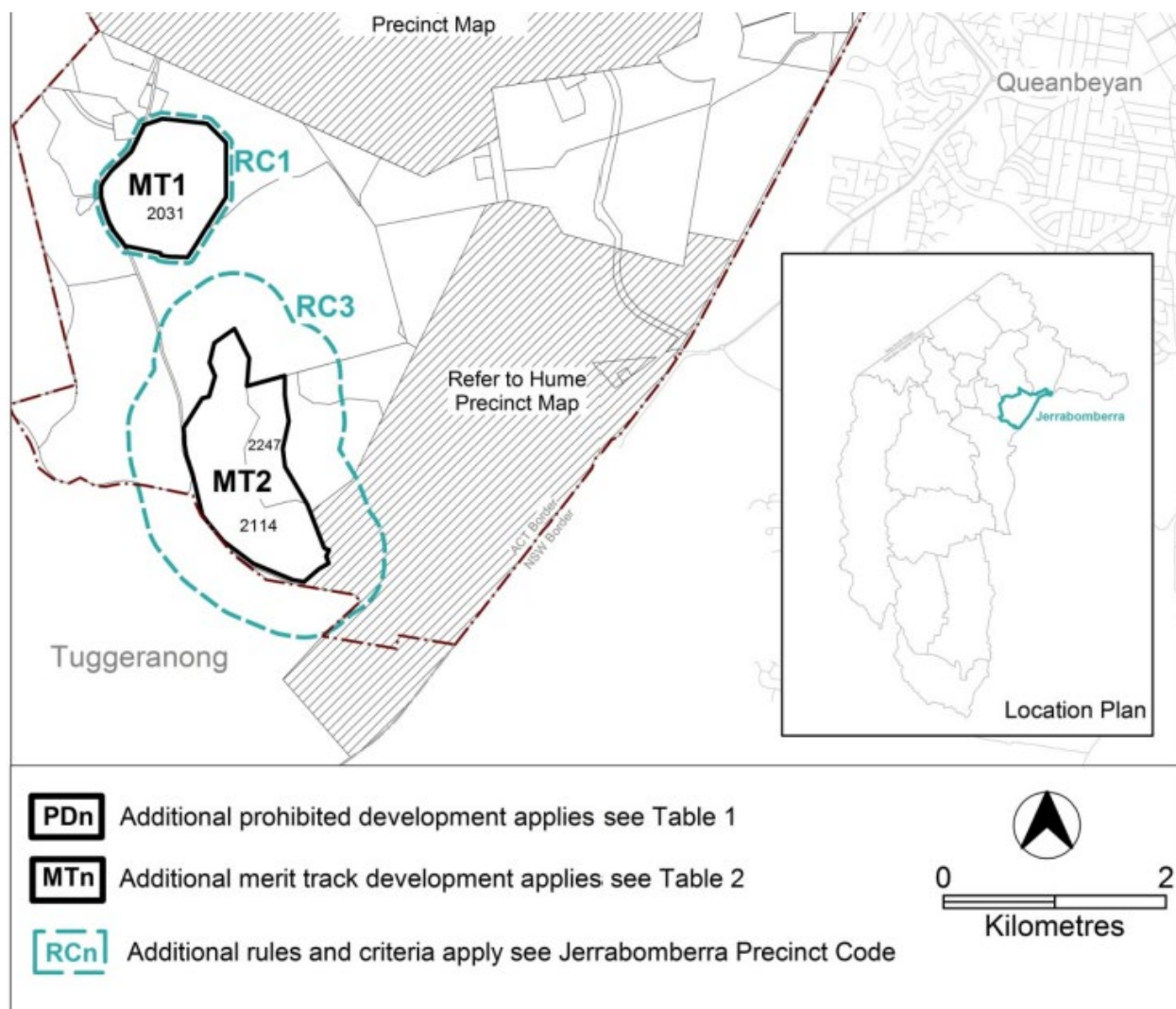


Figure 5.3 Extract from Jerrabomberra District Precinct Map (ACT Government, 2008)

This EIS assesses the range of potential issues and impacts that might affect other uses in the surrounding area from construction and operation, and assessments have been undertaken to address key impacts.

The hazard assessment (Chapter 19) has identified and rated potential hazards and considered likely off-site impacts. Medium ranked hazards in the assessment, with management measures and safeguards in place that could impact surrounding uses were: fires, hazardous chemicals spill, failure of critical infrastructure, odour, pest infestation and spread of pathogens and disease. The assessment suggests that these potential hazards can be appropriately managed to an appropriate level of risk.

The noise assessment (Chapter 18) found that in general, the noise levels generated at the property boundary for the facility would be compliant with the relevant noise standard limit of 65 dBA in the Noise Environmental Protection Policy.

The air quality assessment (Chapter 14) included consideration of separation distance and assessment for the construction stage (dust) and atmospheric dispersion modelling was undertaken to evaluate worst case operational impacts (from odour) for the proposal. This identified proximate receivers, which included the industrial type users within the surrounding area including Mugga Lane Solar Park and within the Hume Industrial area. The most proximate sensitive receivers are greater than one kilometre away and would be future residents within the South Jerrabomberra/Tralelee area approximately 1.2 kilometres southeast of the proposal site. A caretakers residence is located on Block 1596 Tuggeranong (at about 1.2 kilometres) and the nearest existing residential area is the suburb of Macarthur, located approximately two kilometres southwest of the proposal site.

As the nearest sensitive receivers are greater than one kilometre away from the proposed facility this exceeds the recommended appropriate separation distance for a composting facility based on the guidelines (ACT



Government, 2018b) (being 1,000 metres). It is noted that the recommended separation distance from composting works is based on outdoor composting, and the proposed FOGO facility would be fully enclosed therefore a separation distance of 300 metres which applies to materials recovery facilities and waste transfer stations would be more appropriate. The ACT Separation Distance Guidelines state that adequate separation reduces potential for conflict between industrial and sensitive land uses and support the fact that industrial activities cannot be undertaken with optimum emission control conditions all the time. The separation distances recommended in the guidelines are also considered to be more conservative than predictions of impacts made by air pollution modelling.

The air quality assessment included dispersion modelling to predict odour from the facility both under different scenarios and considering the cumulative impact of the FOGO facility and the MLRMC at sensitive receptors. The results of the assessment identified that a biofilter stack would disperse odour resulting in reduced impacts to receptors, with the final height subject to detailed design. The modelling undertaken demonstrated that with a biofilter stack no exceedances of the odour criteria would occur at identified receptors.

The proposal would be located within an industrial area (in the HRRE) which is separated by over one kilometre from sensitive uses. The FOGO facility would implement '*Best Available Technology Economically Achievable*' for the development. This would include management and mitigation measures to address potential hazards, noise and air quality impacts. It is considered that the facility would be compatible with the surrounding uses and should not result in impacts that would limit current or future uses in the surrounding area.

The development application for the proposal will be supported by this EIS along with key management tools such as a Construction Environment Management Plan (CEMP) which will require approval from relevant ACT Government Authorities prior to any construction work commencing along with operational management measures that would be employed to manage and mitigate potential impacts.

Therefore, from a land use context the proposal is considered to respond to the planning and land use objectives and requirements within the Territory Plan.

## **5.5 Mitigation measures**

No mitigation measures are considered to be required given the low risk of the proposal.

## **5.6 Residual impact**

There are no residual impacts associated with planning and land status.

## 6. Traffic and transport

### 6.1 Requirements

This chapter addresses the following traffic and transport requirements of the Scoping Document:

- Investigate the traffic impacts of the construction and operation of the facility on Mugga Lane and the Monaro Highway including consideration of whether continued safe and efficient movement of vehicles accessing the facility, relating to other activities such as the Mugga Landfill or the materials recycling facility, is not impeded by road network arrangements.
- Undertake a Transport Impact Assessment (TIA) in accordance with Transport Canberra and City Services (TCCS) Transport Impact Assessment Guidelines which is available at:  
[https://www.cityservices.act.gov.au/data/assets/pdf\\_file/0009/991989/TCCSTransport-Impact-Assessment-Guidelines.pdf](https://www.cityservices.act.gov.au/data/assets/pdf_file/0009/991989/TCCSTransport-Impact-Assessment-Guidelines.pdf).
- The TIA must include intersection analysis of the nearby roads.
- Describe how hazardous materials will be transported to and from the site.

The transport of potentially hazardous materials is addressed in Chapter 19.

### 6.2 Environmental conditions and values

#### 6.2.1 Road hierarchy

The road classifications used in the ACT are as follows:

- Arterial Roads: predominantly serve longer distance travel within a district and through traffic from one district to another and form the principal avenues of communication for metropolitan scale traffic movements.
- Major Collector Roads: collect and distribute traffic within residential, industrial, and commercial areas and form the link between the primary network and the roads within local areas and should carry only traffic originating or terminating in the area.
- Minor Collector Roads: collect and distribute traffic from access streets, linking to the major collector roads within the neighbourhood, and provide secondary connections direct to the external arterial road network.
- Local Access Streets: provide access but do not accommodate traffic generated by sites in other streets, excluding rear lanes.

A map of the road classifications in proximity to the proposal site is shown in Figure 6.1. Primary access to the proposal site would be provided via John Cory Road, Mugga Lane, and Monaro Highway. To the southeast of Monaro Highway, Tralee Street and Sheppard Street provide access to the Hume Industrial Estate.



Figure 6.1 Road classification of key roads in proximity to proposal site (from TTIA, (GHD, 2023))

## 6.3 Investigations

A Traffic and Transport Impact Assessment (TTIA) was undertaken to assess the potential traffic impacts during the construction and operation of the proposal. The TTIA included:

- Review of the existing road and transport conditions, adjacent developments, traffic volumes and crash data.
- Assessment of current traffic performance using the SIDRA 9 Intersection modelling software.
- Review of the construction/operation of the proposal and its access arrangements.
- Review of the proposed new MRF operations.
- Assessment of the potential impacts of the proposed construction/operation and the performance of key intersections during construction and operation using the SIDRA 9 intersection modelling software.
- Assessment of the potential impacts of the construction/operation to public transport movement, active transport facilities, parking, property access, and emergency vehicle access.
- Formulation of suitable mitigation measures to minimise the impacts.

This chapter provides a summary of the assessment findings. The full TTIA is provided in Appendix E.

### 6.3.1 Existing road characteristics

#### Monaro Highway

The Monaro Highway is an arterial road that traverses Victoria, NSW, and ACT. In proximity to the proposal site, the Monaro Highway serves as the primary connection between Canberra Central and the ACT's eastern suburbs and provides access to various light industrial areas surrounding the proposal site via Tralee Street and Sheppard Street. The section of Monaro Highway located in Hume also forms part of ACT's Tourist Drive 5, an 83 kilometre tourist loop around the northern ACT. The speed limit is 80 kilometres per hour.

#### Mugga Lane

Mugga Lane is a rural road that provides an alternate link from the Central ACT to the districts of Jerrabomberra and Tuggeranong. Mugga Lane runs approximately 7.4 kilometres across Jerrabomberra, beginning at the



intersection with Hindmarsh Drive in the north and terminating at the intersection with Monaro Highway in the south. The section of Mugga Lane in proximity to the proposal site serves as the southern boundary of Jerrabomberra and the suburb of Hume. The speed limit is 80 kilometres per hour.

### John Cory Road

John Cory Road is a local access (cul-de-sac) street to the northwest of Monaro Highway. It has a length of approximately 500 metres, and its southern end intersects Mugga Lane at a roundabout. John Cory Road provides access to the light industrial areas to the northwest of Monaro Highway, including the site of the previous MRF. The speed limit is 50 kilometres per hour.

### Recycling Road

Recycling Road is a local cul-de-sac that connects with John Cory Road. It has a length of approximately 100 metres. Recycling Road would provide access to the proposal site from John Cory Road.

## 6.3.2 Public and active transport

Route 182 peak service and route 902 AMC shuttle do not have any stops within 800 metres of the proposal site and are not considered as accessible for the FOGO facility.

There is an on-road cycling lane on the Monaro Highway shoulder delineated by lane markings however no pedestrian facilities are located along the Highway.

Mugga Lane and John Cory Road have no pedestrian facilities such as sidewalks or crossings or cycling paths.

## 6.3.3 Freight routes

The ACT Government identifies the Monaro Highway and Mugga Lane as being part of key freight routes (PBS Level 1) and B-double networks.

## 6.3.4 Crash review

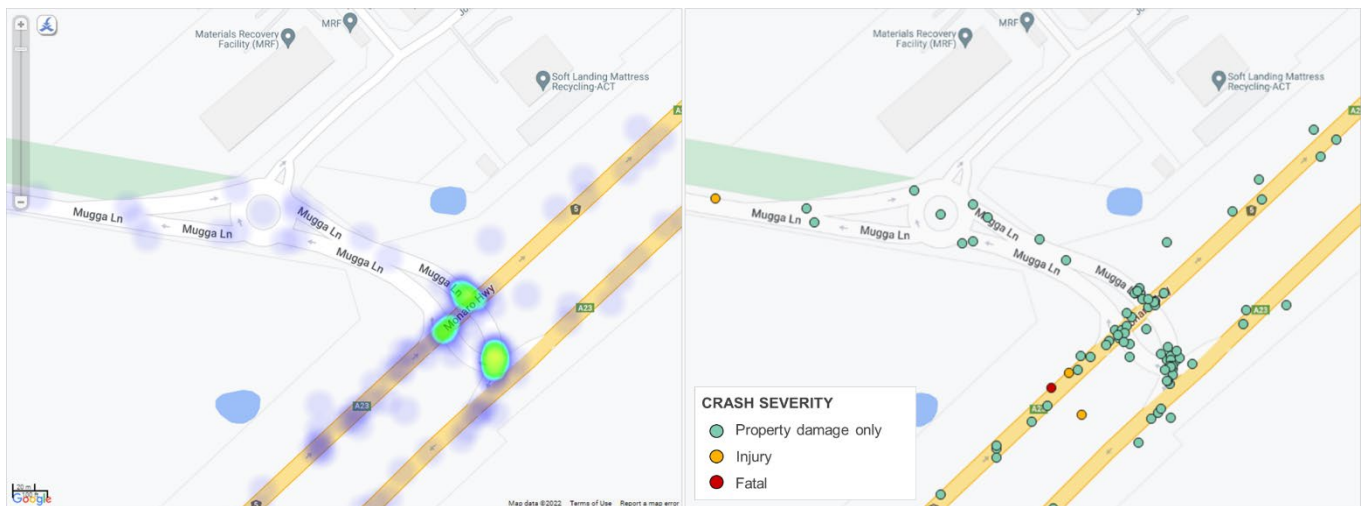
Road crashes and their locations within ACT are recorded based on the reports of the police and the public through the Australian Federal Police (AFP) Crash Report Form. Since January 2016, 445 crashes were reported within a two-kilometre radius of the site, as summarised in Table 6.1 and Figure 6.2. The five-year data indicates that approximately nine per cent of the reported crashes resulted in injuries and fatalities.

Table 6.1 Reported road crashes within 2 km of proposal site

| Year <sup>a</sup> | Total number of crashes reported | of which resulted in 'Fatality' | of which resulted in 'Injury' | of which resulted in 'Property Damage Only' |
|-------------------|----------------------------------|---------------------------------|-------------------------------|---------------------------------------------|
| 2016              | 77                               | -                               | 4                             | 73                                          |
| 2017              | 92                               | -                               | 8                             | 84                                          |
| 2018              | 87                               | 1                               | 10                            | 76                                          |
| 2019              | 79                               | -                               | 9                             | 70                                          |
| 2020              | 72                               | -                               | 6                             | 66                                          |
| 2021 <sup>b</sup> | 38                               | 1                               | 2                             | 35                                          |
| <b>Total</b>      | <b>445</b>                       | <b>2</b>                        | <b>39</b>                     | <b>404</b>                                  |

<sup>a</sup> From 01st January to 31st December of each year, except for 2021

<sup>b</sup> As of end of July 2021



**Figure 6.2** Road crash incidents near proposal site access

### 6.3.5 Road upgrades

The ACT Government has committed funding to upgrade the Monaro Highway to reduce travel times and improve safety (see Figure 6.3). Under this funding, design will be progressed for works in proximity to the proposal site, the proposed upgrades that would impact how vehicles access/egress the FOGO facility include:

- Right turns into and out of Mugga Lane from Monaro Highway would be banned.
- A flyover would be provided on Monaro Highway over Isabella Drive.
- A flyover would be constructed over the Monaro Highway connecting Mugga Lane and Tralee Street.
- A grade separated left turn lane would be provided on Mugga Lane that would connect to the flyover and merge onto northbound traffic lanes on the Monaro Highway.
- Tralee Street would be extended to the southeast, where it would merge onto southbound traffic lanes on the Monaro Highway.
- Sheppard Street (to the north of Tralee Street) of Tralee Street would be left in/left out only.

Under this arrangement:

- Left turns into and out of Mugga Lane from the Monaro Highway would be maintained.
- Vehicles seeking to turn right from Mugga Lane onto Monaro Highway would:
  - Undertake a left turn on the grade separated left turn lane from Mugga Lane,
  - Turn right onto the Tralee Street flyover,
  - Travel southbound on the Tralee Street extension and merge onto the Monaro Highway.
- Vehicles seeking to turn right from Monaro Highway onto Mugga Lane would:
  - Turn left onto Sheppard Street from the Monaro Highway,
  - Turn right onto Tralee Street,
  - Turn right onto the Tralee Street flyover,
  - Use the flyover to access Mugga Lane.



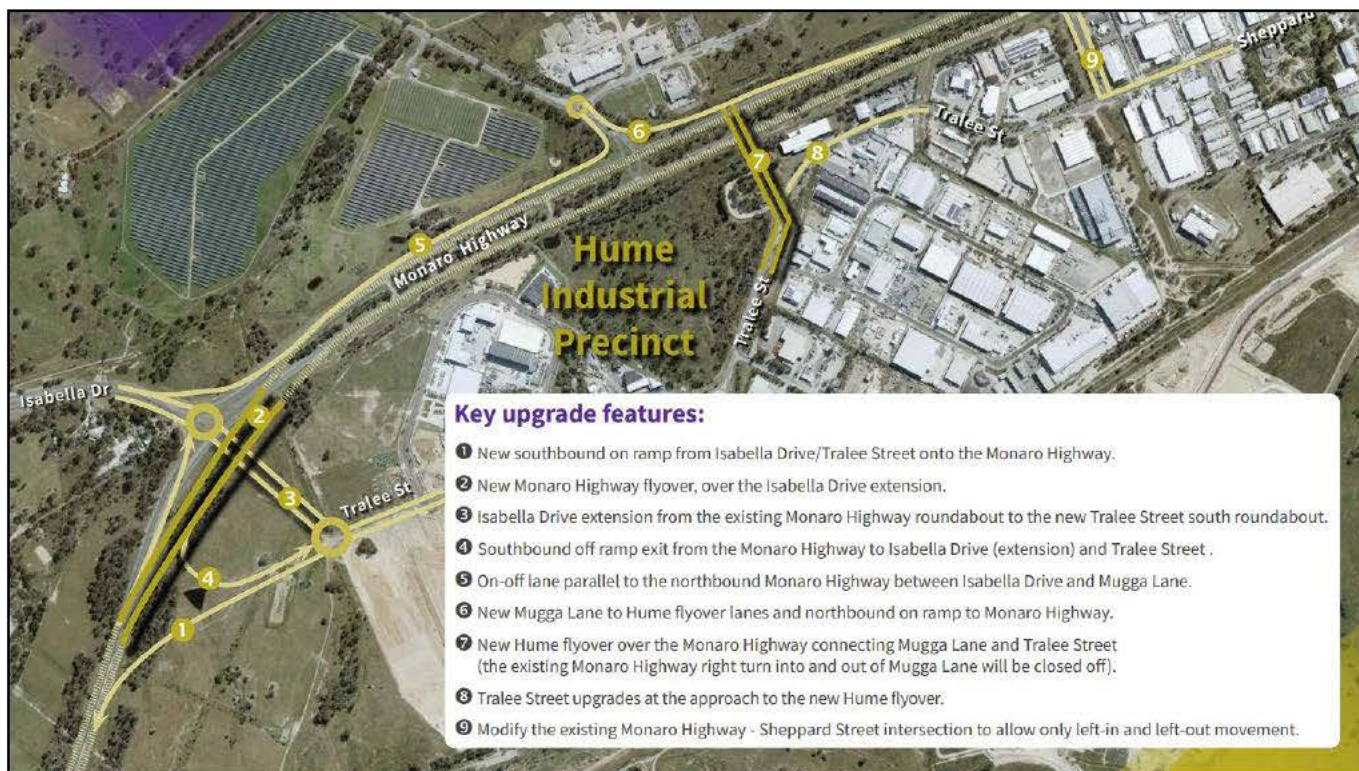


Figure 6.3 Proposed Monaro Highway intersection upgrade (TCCS, 2023)

## 6.3.6 Traffic performance

### Traffic volumes

Existing traffic volumes at key intersections (Monaro Highway / Mugga Lane signalised intersection and Mugga Lane / John Cory Road roundabout) were determined based on peak hour intersection traffic counts conducted on 9 November 2022. The weekday morning traffic volume peaks occurs between 8:00 am to 9:00 am while afternoon traffic volume peak occurs between 4:15 pm to 5:15 pm.

A full summary of the midblock traffic volume count is provided in Table 6.2.

Table 6.2 Traffic summary

| Road name                                                    | Direction  | AM peak (vph) |     |       | PM peak (vph) |     |       |
|--------------------------------------------------------------|------------|---------------|-----|-------|---------------|-----|-------|
|                                                              |            | LV            | HV  | Total | LV            | HV  | Total |
| Monaro Highway<br>(north of intersection<br>with Mugga Lane) | Northbound | 3,257         | 97  | 3,354 | 1,362         | 101 | 1,463 |
|                                                              | Southbound | 1,345         | 136 | 1,481 | 3,303         | 74  | 3,377 |
| Monaro Highway<br>(south of intersection<br>with Mugga Lane) | Northbound | 2,980         | 71  | 3,051 | 1,042         | 55  | 1,097 |
|                                                              | Southbound | 1,103         | 100 | 1,203 | 2,884         | 60  | 2,944 |
| Mugga Lane<br>(west of roundabout)                           | Eastbound  | 582           | 50  | 632   | 532           | 51  | 583   |
|                                                              | Westbound  | 544           | 60  | 604   | 638           | 18  | 656   |
| Mugga Lane<br>(east of roundabout)                           | Eastbound  | 584           | 48  | 632   | 540           | 54  | 594   |
|                                                              | Westbound  | 549           | 58  | 607   | 639           | 22  | 661   |

Notes: LV = light vehicles, HV = heavy vehicles, vph = vehicles per hour



## Mid-block analysis

A midblock assessment is an approach for assessing the road network operations between intersections based on hourly traffic volumes along a road and lane capacity limits. The capacity of the road network to accommodate additional traffic generated by the construction and operation of the proposal was determined based on mid-block volume to capacity ratio (VCR) of the impacted roads before (i.e., existing / baseline conditions) and after the construction and operation of the proposed modifications (see Table 6.3).

This analysis indicates that currently, Mugga Lane is operating within its mid-block capacity during peak periods of road network activity while the Monaro Highway is operating with volumes that exceed its capacity during peak periods of road network activity.

Table 6.3 Existing mid-block VCR – key roads (2022)

| Road name                                                 | Direction  | Number of lanes | Capacity per lane | Existing traffic (2022) (pcu) |         | VCR (2022) |         |
|-----------------------------------------------------------|------------|-----------------|-------------------|-------------------------------|---------|------------|---------|
|                                                           |            |                 |                   | AM peak                       | PM peak | AM peak    | PM peak |
| Monaro Highway<br>(north of intersection with Mugga Lane) | Northbound | 3               | 1,200             | 3,451                         | 1,564   | 0.959      | 0.434   |
|                                                           | Southbound | 3               | 1,200             | 1,617                         | 3,451   | 0.449      | 0.959   |
| Monaro Highway<br>(south of intersection with Mugga Lane) | Northbound | 2               | 1,200             | 3,122                         | 1,152   | 1.301      | 0.480   |
|                                                           | Southbound | 2               | 1,200             | 1,303                         | 3,004   | 0.543      | 1.252   |
| Mugga Lane<br>(west of roundabout)                        | Eastbound  | 1               | 900               | 682                           | 634     | 0.758      | 0.704   |
|                                                           | Westbound  | 1               | 900               | 664                           | 674     | 0.738      | 0.749   |
| Mugga Lane<br>(east of roundabout)                        | Eastbound  | 1               | 900               | 680                           | 648     | 0.756      | 0.720   |
|                                                           | Westbound  | 1               | 900               | 665                           | 683     | 0.739      | 0.759   |

## Intersection performance

The performance of the existing road network is largely dependent on the operating performance of key intersections, which are critical capacity control points on the road network.

The TCCS Draft Guidelines for SIDRA Analysis (TCCS, 2016), indicate Level of Service (LoS) better than “E” as the acceptable level of service. The LoS criteria is provided in Table 6.4.

Table 6.4 LoS criteria for intersections

| LoS | Average delay per vehicle (seconds/veh) | Traffic signals, roundabouts                                                                            |
|-----|-----------------------------------------|---------------------------------------------------------------------------------------------------------|
| A   | <14                                     | Good operation                                                                                          |
| B   | 15 to 28                                | Good with acceptable delays and spare capacity                                                          |
| C   | 29 to 42                                | Satisfactory                                                                                            |
| D   | 43 to 56                                | Operating near capacity                                                                                 |
| E   | 57 to 70                                | At capacity, at signals, incidents will cause excessive delays, roundabouts require other control modes |
| F   | >70                                     | Over capacity, unstable operation                                                                       |

The SIDRA model outputs for the intersections, based on their current road geometry, traffic volumes and signal phasing, are presented in Table 6.5.

Table 6.5 Existing operating conditions – Base Case (2022)

| ID | Intersection name              | AM peak<br>(08:00 - 09:00) |               |     |                              | PM peak<br>(16:15 - 17:15) |               |     |                              |
|----|--------------------------------|----------------------------|---------------|-----|------------------------------|----------------------------|---------------|-----|------------------------------|
|    |                                | DoS                        | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) | DoS                        | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) |
| 1  | Mugga Lane / John Cory Road    | 0.125                      | 11            | B   | 2                            | 0.201                      | 11            | B   | 3                            |
| 2  | Mugga Lane / Monaro Highway NB | 1.109                      | 125           | F   | 832                          | 0.787                      | 21            | C   | 73                           |
| 3  | Mugga Lane / Monaro Highway SB | 0.195                      | 7             | A   | 95                           | 0.392                      | 26            | D   | 5                            |

Notes:

- The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.
- The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.
- The degree of saturation (DoS) is defined as the ratio of the arrival flow (demand) to the capacity of each approach.
- Average delay is given in seconds per vehicle.

The SIDRA analysis of existing intersection performance indicates that:

- The roundabout joining Mugga Lane and John Cory Road, which is the primary access to the proposal site, operates at LoS B with minimal delays and queueing for both AM and PM peak periods.
- During the AM peak, the signalised intersection between Mugga Lane and the northbound carriageway of the Monaro Highway operates over capacity at LoS F. Better operations are observed during the PM peak, with an LoS of C.

## 6.4 Impacts

The proposed construction and operation of the proposal are expected to generate a minimal increase in vehicle traffic when compared to the existing traffic already in the road network. Additional traffic generated by the proposal is not expected significantly change the vehicle composition in the road network.

### 6.4.1 Direct impacts

#### Construction

##### Traffic generation

Construction of the proposal is expected to generate up to 80 vehicle trips in total during both the AM and PM peak. As shown in Table 6.6, this would comprise 60 light vehicle trips as well as 10 inbound and 10 outbound heavy vehicle movements.

Table 6.6 Construction traffic

| Vehicle type  | AM peak (vtph) |           |           | PM peak (vtph) |           |           |
|---------------|----------------|-----------|-----------|----------------|-----------|-----------|
|               | Inbound        | Outbound  | Total     | Inbound        | Outbound  | Total     |
| Heavy vehicle | 10             | 10        | 20        | 10             | 10        | 20        |
| Light vehicle | 60             | -         | 60        | -              | 60        | 60        |
| <b>Total</b>  | <b>70</b>      | <b>10</b> | <b>80</b> | <b>10</b>      | <b>70</b> | <b>80</b> |

Note: vtph = vehicles per hour

For the purpose of the assessment, it was assumed that the proposal and the proposed MRF facility would be constructed at the same time (with construction of both facilities finalised in 2027) and that the MRF would generate the same amount of construction vehicle activity as the proposal.

#### Intersection performance

The traffic impact of construction of the proposal (and proposed MRF) was determined by comparing the future performance of key intersections “with” and “without” the proposal activities. Summaries of the SIDRA results with the proposal are provided in Table 6.7 and Table 6.8.



**Table 6.7** Future intersection performance – 2027 without construction (background growth only)

| ID | Intersection Name              | AM Peak Hour<br>(08:00 - 09:00) |               |     |                              | PM Peak Hour<br>(16:15 - 17:15) |               |     |                              |
|----|--------------------------------|---------------------------------|---------------|-----|------------------------------|---------------------------------|---------------|-----|------------------------------|
|    |                                | DoS                             | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) | DoS                             | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) |
| 1  | Mugga Lane / John Cory Road    | 0.128                           | 11            | B   | 2                            | 0.207                           | 11            | B   | 3                            |
| 2  | Mugga Lane / Monaro Highway NB | 1.145                           | 147           | F   | 929                          | 0.808                           | 22            | C   | 76                           |
| 3  | Mugga Lane / Monaro Highway SB | 0.200                           | 7             | A   | 105                          | 0.417                           | 31            | D   | 5                            |

Notes:

- The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.
- The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.
- The degree of saturation (DoS) is defined as the ratio of the arrival flow (demand) to the capacity of each approach.
- Average delay is given in seconds per vehicle.

**Table 6.8** Future intersection performance – 2027 with construction (proposal and proposed MRF)

| ID | Intersection Name              | AM Peak Hour<br>(08:00 - 09:00) |               |     |                              | PM Peak Hour<br>(16:15 - 17:15) |               |     |                              |
|----|--------------------------------|---------------------------------|---------------|-----|------------------------------|---------------------------------|---------------|-----|------------------------------|
|    |                                | DoS                             | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) | DoS                             | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) |
| 1  | Mugga Lane / John Cory Road    | 0.142                           | 11            | B   | 2                            | 0.154                           | 11            | B   | 2                            |
| 2  | Mugga Lane / Monaro Highway NB | 1.180                           | 197           | F   | 918                          | 0.867                           | 26            | C   | 74                           |
| 3  | Mugga Lane / Monaro Highway SB | 0.337                           | 9             | A   | 183                          | 0.781                           | 75            | F   | 52                           |

Notes:

- The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.
- The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.
- The degree of saturation (DoS) is defined as the ratio of the arrival flow (demand) to the capacity of each approach.
- Average delay is given in seconds per vehicle.

The results of the SIDRA modelling in Table 6.8 indicate:

- During the construction it is expected that up to approximately fifty trucks would access/egress the proposal site per day. Assuming a typical (weekday) workday occurs between 7:00 am and 6:00 pm, on average, this equates to approximately five trucks an hour.
- With construction activities associated with both facilities, the roundabout of Mugga Lane and John Cory Road (proposal site access) is expected to continue operating at LoS B with minimal delays.
- Intersections with the Monaro Highway are expected to operate between LoS A and F in the AM peak, with high delays and long queues in the northbound lane. In the PM peak, both northbound and southbound lanes experience poor levels of service from LoS D to F, with delays ranging from 37 to 75 seconds.
- The LoS for the key intersections are generally expected to remain the same with or without the construction activities associated with the proposal, except for the Monaro Highway at Mugga Lane (southbound) which would experience an LoS increase from D to F during the PM peak.

It should be noted that access routes to and from Monaro Highway are considered to already be operating over capacity during the AM and PM peak periods. This means that the performance of these roads could decrease significantly even with a minimal increase in traffic, as there is no longer enough capacity to accommodate demand.

Traffic generated by the construction activities (for both the proposal and the proposed MRF) are not expected to have a significant impact on the operation of the road network, which is already operating near or over capacity. Additional heavy vehicles generated by the construction activities are not expected to change the composition of the existing traffic already on the road network.

## Parking

Parking for all construction vehicles associated with the proposal would be contained on-site within the proposal site boundary. As such, vehicle parking demand generated by the proposal during construction would have no impact on parking spaces or roads surrounding the proposal site.



## Road safety

The construction of the proposal is expected to generate minimal increase in vehicle traffic when compared to the existing traffic already in the road network. Additional traffic generated by the proposal is not expected significantly change the vehicle composition in the road network and is not anticipated to cause changes to road safety risks.

Notwithstanding this, a Construction Traffic Management Plan (CTMP) would be prepared to maintain road safety and mitigate any potential impacts of the traffic generated by the proposal. Details of the proposed measures to be included in the CTMP are outlined in Section 6.5.

## Operation

### Traffic generation

Based on an annual capacity of 70,000 tonnes per year, the proposal is expected to generate 96 heavy vehicle movements per day due to the delivery of FOGO material and removal of residual material and compost products.

The proposal would employ up to 20 staff (subject to detail design), who would typically access the proposal site in the morning and depart the site in the afternoon.

For the purpose of the assessment, it was conservatively assumed that the proposal would generate up to 40 vehicle trips in the AM and PM peak hours, as shown in Table 6.9.

Table 6.9 Operational traffic

| Vehicle type  | AM peak (vtph) |          | PM peak (vtph) |          |
|---------------|----------------|----------|----------------|----------|
|               | Inbound        | Outbound | Inbound        | Outbound |
| Heavy vehicle | 10             | 10       | 10             | 10       |
| Light vehicle | 20             | -        | -              | 20       |

Note: vtph = vehicle trips per hour

### Intersection performance

The traffic impact of the operation of the proposal and proposed FOGO facility was determined by comparing the future performance of key intersections “with” and “without” the proposal activities.

A summary of the results of the SIDRA modelling for the ten-year horizon (2033) with and without the operation of the proposal (and proposed FOGO facility) are provided in Table 6.12 and Table 6.13 respectively.

Table 6.10 Future intersection performance – 2033 without operation (background growth only)

| ID | Intersection Name              | AM Peak Hour<br>(08:00 - 09:00) |               |     |                              | PM Peak Hour<br>(16:15 - 17:15) |               |     |                              |
|----|--------------------------------|---------------------------------|---------------|-----|------------------------------|---------------------------------|---------------|-----|------------------------------|
|    |                                | DoS                             | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) | DoS                             | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) |
| 1  | Mugga Lane / John Cory Road    | 0.142                           | 11            | B   | 2                            | 0.229                           | 11            | B   | 3                            |
| 2  | Mugga Lane / Monaro Highway NB | 1.327                           | 295           | F   | 1,463                        | 0.883                           | 28            | C   | 98                           |
| 3  | Mugga Lane / Monaro Highway SB | 0.223                           | 7             | A   | 123                          | 0.543                           | 480           | F   | 7                            |

Notes:

- The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.
- The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.
- The degree of saturation (DoS) is defined as the ratio of the arrival flow (demand) to the capacity of each approach.
- Average delay is given in seconds per vehicle.

Table 6.11 Future intersection performance – 2033 with operation

| ID | Intersection Name           | AM Peak Hour<br>(08:00 - 09:00) |               |     |                              | PM Peak Hour<br>(16:15 - 17:15) |               |     |                              |
|----|-----------------------------|---------------------------------|---------------|-----|------------------------------|---------------------------------|---------------|-----|------------------------------|
|    |                             | DoS                             | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) | DoS                             | Ave Delay (s) | LoS | 95 <sup>th</sup> % Queue (m) |
| 1  | Mugga Lane / John Cory Road | 0.151                           | 11            | B   | 2                            | 0.246                           | 11            | B   | 4                            |



| ID | Intersection Name              | AM Peak Hour<br>(08:00 - 09:00) |                  |     |                                 | PM Peak Hour<br>(16:15 - 17:15) |                  |     |                                 |
|----|--------------------------------|---------------------------------|------------------|-----|---------------------------------|---------------------------------|------------------|-----|---------------------------------|
|    |                                | DoS                             | Ave Delay<br>(s) | LoS | 95 <sup>th</sup> %<br>Queue (m) | DoS                             | Ave Delay<br>(s) | LoS | 95 <sup>th</sup> %<br>Queue (m) |
| 2  | Mugga Lane / Monaro Highway NB | 1.309                           | 285              | F   | 1412                            | 0.883                           | 29               | C   | 98                              |
| 3  | Mugga Lane / Monaro Highway SB | 0.231                           | 7                | A   | 139                             | 0.858                           | 519              | F   | 77                              |

Notes:

- The average delay for priority-controlled intersections is selected from the movement on the approach with the highest average delay.
- The level of service for priority-controlled intersections is based on the highest average delay per vehicle for the most critical movement.
- The degree of saturation (DoS) is defined as the ratio of the arrival flow (demand) to the capacity of each approach.
- Average delay is given in seconds per vehicle.

The SIDRA results indicate that:

- With the operation of the proposal and MRF, the roundabout joining Mugga Lane and John Cory Road (proposal site access) is expected to continue operating at LoS B with minimal delays.
- The LoS of key intersections are expected to remain the same with or without the operation of the facilities.

Even without the operation of the proposal and proposed MRF, the Monaro Highway at Mugga Lane is expected to be already operating over capacity during the AM and PM peak periods. This means that the performance of these roads could decrease significantly even with minimal increase in traffic as there is no longer enough capacity to accommodate demand. Capacity upgrades would be necessary to allow the intersections to operate at acceptable levels of service.

In particular, the road upgrades described in Section 6.3.5 would be required to support an acceptable LoS at the intersection of the Monaro Highway and Mugga Lane. The Monaro Highway Upgrade program has undertaken traffic modelling that identified that the proposed upgrades to the Monaro Highway at Mugga Lane would support a good LoS in the 2031 and 2041 horizon years.

The planned Monaro Highway upgrades will improve the existing traffic peaks and improve the level of service. These works will mitigate in the longer term the traffic conditions in this area. The anticipated traffic impacts from the proposal are considered minor and would be unlikely to trigger upgrades in isolation. The results of the SIDRA reflect the underlying traffic condition and the poor existing capacity.

## Parking

Parking for all vehicles associated with the proposal would be contained on-site within the FOGO facility boundaries. As such, vehicle parking demand generated by the proposal would have no impact on parking spaces or roads surrounding the sites. Appropriate number of parks would be available and refined during detailed design.

## Road safety

The proposed construction and operation of the proposal are expected to generate a minimal increase in vehicle traffic when compared to the existing traffic already in the road network. Additional traffic generated by the proposal is not expected significantly change the vehicle composition in the road network and is not anticipated to cause changes to road safety within the vicinity of the proposal site.

## 6.4.2 Indirect impacts

### Public and active transport

The construction and operation of the proposal is not expected to impact public or active transport routes given there are no major stops or facilities located near the proposal site access.

### Emergency vehicle access

Emergency vehicle access would be maintained throughout construction and operation of the proposal.



## 6.5 Mitigation measures

Table 6.12 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential impacts to traffic and transport.

Table 6.12 Traffic and transport mitigation measures

| Potential impact                   | ID  | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Timing                     |
|------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Impacts to site access and parking | T01 | Logistics management will be controlled by the site supervisor to ensure the efficient delivery of equipment and construction materials, and to minimise the number of trips that will need to be taken for all vehicle types.                                                                                                                                                                                                                                                                    | Construction               |
|                                    | T02 | Carpooling opportunities for personnel living in close proximity to one another will be explored where feasible. Opportunities for coach services to shuttle workers from the CBD or nearby public transport stations to the site shall also be explored.                                                                                                                                                                                                                                         | Construction and operation |
|                                    | T03 | All vehicles will comply with road traffic rules, particularly for any local traffic rules.                                                                                                                                                                                                                                                                                                                                                                                                       | Construction and operation |
|                                    | T04 | All parking will be contained within the proposal site premises. Under no circumstance will personnel, company vehicles or heavy vehicles be allowed to use any public road for long-term parking, including leaving parked or unattended vehicles.                                                                                                                                                                                                                                               | Construction and operation |
| Safety                             | T05 | All staff and subcontractors engaged on-site will be required to undergo site induction. The induction will all outline the requirements on the CTMP, including access routes, environmental and occupational health and safety responsibilities, emergency procedures, potential carpooling/shuttle service opportunities, and vehicle height and mass restrictions, among others. Additionally, the Site Manager will discuss CTMP requirements regularly as a part of regular "toolbox talks". | Construction               |
|                                    | T06 | Separation of internal haulage routes for light and heavy vehicle movements within the proposal site will be maintained as far as practicable. There will be no queuing of vehicles off-site.                                                                                                                                                                                                                                                                                                     | Construction               |
|                                    | T07 | All vehicles will move through the proposal site in a single direction, preferably clockwise, to maintain the predictability of vehicle movements and to minimise conflict points.                                                                                                                                                                                                                                                                                                                | Construction               |
|                                    | T08 | Separate entrances and exits for vehicles and pedestrians will be provided. Pedestrians on-site will be directed to utilise clearly defined designated pedestrian paths.                                                                                                                                                                                                                                                                                                                          | Construction               |
|                                    | T09 | Access for emergency vehicles will be maintained at the proposal site during the construction works, in accordance with emergency vehicle requirements. The emergency services, including fire, ambulance, and police, will be advised of all planned changes to traffic arrangements prior to the commencement of works.                                                                                                                                                                         | Construction               |
| Heavy vehicle access               | T10 | Truck drivers will be directed to follow the predetermined haulage routes. Additionally, all drivers will be required to observe posted speed limits on adjoining road networks to comply with Australian Road Rules. Drivers will be required to adjust speeds to suit the road environment and weather conditions appropriately to ensure the safe movement of the vehicles based on the individual vehicle configurations.                                                                     | Construction and operation |
|                                    | T11 | Any oversized or overweight load will be transported in accordance with the requirements of the relevant road authority                                                                                                                                                                                                                                                                                                                                                                           | Construction and operation |



| Potential impact                            | ID  | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Timing                                 |
|---------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Construction traffic management plan (CTMP) | T12 | <p>A CTMP will be developed prior to construction. This will include, at a minimum, the following management measures:</p> <ul style="list-style-type: none"> <li>– Preparation of a Traffic Guidance Scheme, detailing adequate road signage at construction work sites to inform motorists and pedestrians of the work site ahead to ensure that the risk of road accidents and disruption to surrounding land uses is minimised.</li> <li>– Maintain accessibility for pedestrians and cyclists.</li> <li>– Indicate routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and businesses.</li> <li>– Implement measures to manage traffic flows around the area affected by the construction of the proposal, including, as required, regulatory and direction signposting, line marking, and variable message signs and all other traffic control devices necessary for the implementation of the construction traffic management sub-plan.</li> <li>– Undertake consultation with the relevant road authorities during preparation of the sub-plan. Ensure the performance of the proposal traffic arrangements is monitored during construction.</li> <li>– Ensure trucks used for the delivery for the developments on John Cory Road are unimpeded.</li> <li>– Monitor the roads leading to and from the proposal site and take necessary steps to rectify any road deposits caused by site vehicles, to maintain the safety of road users.</li> <li>– Where possible, offset the construction vehicle activity from peak periods of road network activity.</li> <li>– Induct employees and contractors to raise awareness and understanding of traffic and transport mitigation measures to be implemented during construction via the CEMP.</li> </ul> | Prior to construction and construction |

## 6.6 Residual impact

It is considered that the proposal satisfies the planning requirements on traffic engineering grounds and is not anticipated to have adverse traffic impacts on the surrounding road network.

Based on the mitigation measures identified, an assessment of the residual traffic and transport risks associated with the proposal has been considered and these are identified in Table 6.13.

Provided that the mitigation measures are implemented, residual impacts are anticipated to be Low to Very low.

Table 6.13 Traffic and transport – residual risk assessment

| Risks identified                                                                                                                                   | Original risk rating | Residual likelihood | Residual consequence | Residual risk rating |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                                                                                           |                      |                     |                      |                      |
| Increase in heavy vehicle movement and the potential for limited road/lane closures during construction works / the delivery of primary equipment. | High                 | Unlikely            | Minor                | Very Low             |
| Changes in existing traffic access                                                                                                                 | Medium               | Unlikely            | Minor                | Very Low             |

## **7. Utilities**

### **7.1 Requirements**

This chapter addresses the following utilities requirements of the Scoping Document:

- Describe current utilities on and surrounding the site.
- Provide details of new connections and any proposed relocation.
- Provide details of any proposed discharge of liquid trade waste required.
- Information must be provided regarding utility works that are required as part of the proposal and mitigation measures proposed to avoid contamination.

### **7.2 Environmental conditions and values**

#### **7.2.1 Gas**

There are no known gas mains connected to or in the immediate vicinity of proposal site.

#### **7.2.2 Electricity**

There is currently no electrical connection to the proposal site. An abandoned underground service line is located in the north-east corner of the proposal site. Overhead connections can be observed along the proposal site boundary and streetlights along John Cory and Recycling Road.

#### **7.2.3 Telecommunications**

There are currently no communication services provided to the proposal site.

#### **7.2.4 Water supply**

A water reticulation main is located on the southern proposal site boundary, adjacent to John Cory Road.

#### **7.2.5 Stormwater and wastewater management**

A CED-owned stormwater asset is present around the boundary of the proposal site and enters approximately five metres into the proposal site in the north-east. An additional asset is also present with an east to west alignment across the proposal site.

### **7.3 Investigations**

A Before-You-Dig-Australia (BYDA) search was undertaken as part of the preliminary site investigation to identify existing utilities on and surrounding the proposal site. A suitably qualified services locator also conducted a site walkover on 17 April 2023.

### **7.4 Impacts**

#### **7.4.1 Direct impacts**

##### **Construction**

Temporary power, water supply, sewer and telecommunications connections for site sheds and associated amenities would be required during construction.

There is potential for the proposal to damage existing infrastructure not identified in the BYDA search. However, services would be located by a suitably qualified person prior to construction works beginning to verify previous investigations and minimise the potential for impacts to utilities including overhead powerlines.

The stormwater asset noted above is located on-site owned by CED and a small portion by Icon Water. This would be left in-situ unless required to be removed due to geotechnical or water management requirements, in which case removal would be required. Any changes would be communicated to Icon Water during detailed design and prior to construction.

## **Operation**

Electricity, communications, water supply and sewer connections would be required for the operation of the proposal. The installation of any additional utilities, such as trade waste or gas if required, would have appropriate controls in place to minimise potential for contamination. The concept layout is subject to detailed design and the locations of the connections would be confirmed as part of the detailed design.

### **Electricity**

Consultation with Evoenergy would be undertaken during detailed design to ensure the existing overhead power supply has capacity to service the proposed facility.

### **Telecommunications**

Standard telephone cabling and two-way radio / mobile telephones would provide the required telecommunication services. Internet access would be provided via NBN or Wi-Fi. Appropriate planning and works would be undertaken during the detailed design and construction to install these services.

### **Water supply**

The proposal would require a water supply. There is currently no direct water connection to the proposal site. There are surrounding water reticulation mains that could be used for the proposal site.

Subject to detailed design, it is expected that stormwater and rainwater would be captured in tanks or equivalent storages to be reused at the facility and thereby significantly reduce reliance on external sources.

As discussed in Section 13.3.3, it is expected that approximately 75 percent of water demands could potentially be sourced from on-site water collection. During extended dry periods, external supply would need to be relied on to meet water demands in the order of approximately 5 megalitres per year. This would be managed in accordance with authority (Icon Water) requirements.

Subject to detailed design, additional water will be supplied via a new water supply connection to the existing reticulation mains.

### **Wastewater**

The proposal would produce wastewater (trade waste) associated with the composting of FOGO material. Subject to detailed design, trade waste would be collected and treated on-site for reuse or discharged via trade waste connection as appropriate.

Subject to detailed design, wastewater associated with amenities would be discharged via a standard sewer main. This would require a licence from Icon Water.

## **7.4.2 Indirect impacts**

An EPA endorsed erosion sediment and control plan would be required prior to commencing construction (see Chapter 13 (water quality) for further detail).

## **7.5 Mitigation measures**

Table 7.1 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential impacts to utilities.



Provided that the mitigation measures are implemented, residual impacts are not anticipated.

Table 7.1 Utilities mitigation measures

| Potential impact                           | ID  | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Timing                                 |
|--------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Locations of utilities and services        | U01 | The location of existing utility service and any changes required will be confirmed by the construction contractor during the detailed design of the proposal in consultation with the relevant utility provider (if required to be removed)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Detailed design and construction       |
| Impacts to critical services and utilities | U02 | <p>Prior to commencing detailed design, the BYDA will be conducted again and a service locator engaged to verify the locations of the utilities and services (this may be via pot-holing or similar).</p> <p>During the detailed design process necessary clearance distances as per AS standard and Evoenergy standards shall be determined and provided to utility and service providers as necessary.</p> <p>Site supervision by the utility and service providers will be included as required during construction.</p> <p>Where any services are encountered (abandoned or live), the find/s will be managed in accordance with an unexpected finds protocol (UFP) which will be developed as part of the CEMP, and relevant utility provider contacted using details in the BYDA documentation.</p> | Detailed design and construction       |
| Operation of existing utilities            | U03 | <p>Evoenergy (or other electricity provider), Icon Water and telecommunications providers will be consulted during the detailed design phase to ensure the existing utilities have capacity to service the proposal, or otherwise identify any upgrades required support the proposal and/or any licencing requirements.</p> <p>In particular, consultation with the Icon Water liquid trade waste team will occur during detailed design and DA stage.</p>                                                                                                                                                                                                                                                                                                                                               | Detailed design                        |
| Contamination resulting from utilities     | U04 | The CEMP will include appropriate water management and erosion and sediment controls to avoid contamination resulting from utility works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Prior to construction and construction |

## 7.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual utility risks associated with the proposal has been considered and these are identified in Table 7.2.

Table 7.2 Utilities – residual risk assessment

| Risks identified                                  | Original risk rating | Residual likelihood | Residual consequence | Residual risk rating |
|---------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                          |                      |                     |                      |                      |
| NA                                                |                      |                     |                      |                      |
| <b>Additional risks</b>                           |                      |                     |                      |                      |
| Impacts on existing utilities during construction | NA                   | Remote              | Moderate             | Very Low             |
| Impacts on existing utilities during operation    | NA                   | Remote              | Moderate             | Very Low             |



## 8. Biodiversity and nature conservation

### 8.1 Requirements

This chapter addresses the following biodiversity and nature conservation requirements of the Scoping Document:

- Provide a description of ecological values on and adjacent to the site.
- Provide details of whether the proposal will impact the existing connectivity for the area and whether the site will contribute to the future connectivity of the area.
- Consider impact on the area from the facility attracting vermin and associated predators.
- Consider impacts from the spread of weeds.
- A targeted Striped legless lizard survey must be undertaken for the site.
- Any impacts identified in the EIS must also consider avoidance and mitigation measures to ensure impacts are reduced.

### 8.2 Environmental conditions and values

#### 8.2.1 Bioregion

The proposal site occurs within the South-eastern Highlands bioregion and Murrumbateman subregion which is characterised by the properties identified in Table 8.1.

Table 8.1 Properties of the Murrumbateman subregion

| Property                | Within subregion Murrumbateman                                                                                                                                                         |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Geology                 | Fine-grained Palaeozoic sedimentary and metasedimentary rocks, with minor areas of coarse acid volcanics. Tertiary alluvial terraces along main streams.                               |
| Characteristic landform | Undulating plateau with rounded hills and peaks, entrenched meandering streams with chain of ponds tributaries.                                                                        |
| Typical Soils           | Mottled yellow and brown texture contrast soils with strongly bleached topsoils. Dark organic loams and clay loams on valley floors. Saline patches present.                           |
| Vegetation              | Blakely's red gum, yellow box, on lower slopes, red stringybark, bundy and white gum on ridges. Areas of apple box, and mottled gum. Limited swampy flats and valley floor grasslands. |

#### 8.2.2 Surrounding land use and vegetation

The proposal site itself and the land use surrounding the proposal site is characterised by a history of disturbance. Existing industrial developments occur to the east and southwest. The MRF, which is currently used as a transfer station, is directly adjacent to the proposal site and a landfill operates approximately 500 metres to the west. The proposal site and surrounding land would have formerly been used for agricultural purposes. Approximately one kilometre north is a woodland area, and one kilometre northwest is the Isaacs Ridge Nature Reserve.

The vegetation within the proposal site and surrounding area is mostly grassland which has been highly modified and as a result is in poor condition. Patches of native vegetation remain but there is no consistent cover.

#### 8.2.3 Dog Trap Creek

Dog Trap Creek is located to the north of the proposal site. There are no known significant ecological values due to the creek being in a highly degraded state and native vegetation having primarily been cleared (Navin Officer Heritage Consultants, 2022). Dog Trap Creek flows towards Jerrabomberra East Grasslands Nature Reserve.

The proposal site block does not directly border the creek and the proposal would be located more than 30 metres south of the creek at its closest point and up to 70 metres south at its farthest point.

## 8.3 Investigations

### 8.3.1 Overview

The Biodiversity Assessment (refer to Appendix F) undertaken for the proposal was conducted by qualified and experienced ecologists and consisted of the following:

- Desktop review
- Flora and fauna site survey
- Habitat assessment
- Direct and indirect construction and operational impact assessment
- Formulation of mitigation measures

A targeted survey for the Striped legless lizard was conducted from September 2022 to December 2022 and the results are presented in Appendix G.

This chapter provides a summary of the assessment findings. A full copy of the Biodiversity Assessment is provided in Appendix F.

#### Desktop review

The desktop review involved a search of relevant databases to determine potential biodiversity constraints within a 10 kilometre radius of the study area (defined as 'the locality').

#### Terrestrial flora and fauna surveys

Terrestrial flora and fauna surveys were undertaken on 5 May 2022 in order to:

- Ground-truth previously recorded vegetation mapping.
- Ground-truth threatened vegetation community mapping previously recorded in the study area.
- Assess vegetation quality.
- Carry out opportunistic surveying for threatened flora and fauna.
- Describe the potential impacts on threatened flora and fauna species, populations and ecological communities in the study area, and their habitats that could arise from the proposal during construction and operation.

Targeted surveys were also conducted for threatened reptiles associated with grassland communities in the ACT, specifically the SLL between 29 September and 1 December 2022. This involved using 150 artificial tiles placed throughout the study area was also carried out between 29 September and 1 December 2022. This technique uses artificially placed structures to replicate the typical rocky habitat of the species and is the best technique for assessing the presence of the lizard in the ACT (DSEWPac, 2011).

#### Habitat assessment

Habitat assessments were conducted for all fauna groups and observations of fauna signs were recorded. Fauna habitat resources were assessed to identify areas of potential habitat within the study area. Specific resources such as shelter, roosting, basking and foraging sites for birds, arboreal mammals, amphibians, ground-dwelling mammals and reptiles were recorded. Given the absence of woodland or treed habitat in the study area, habitat of this nature was excluded.

### 8.3.2 Vegetation communities and flora species

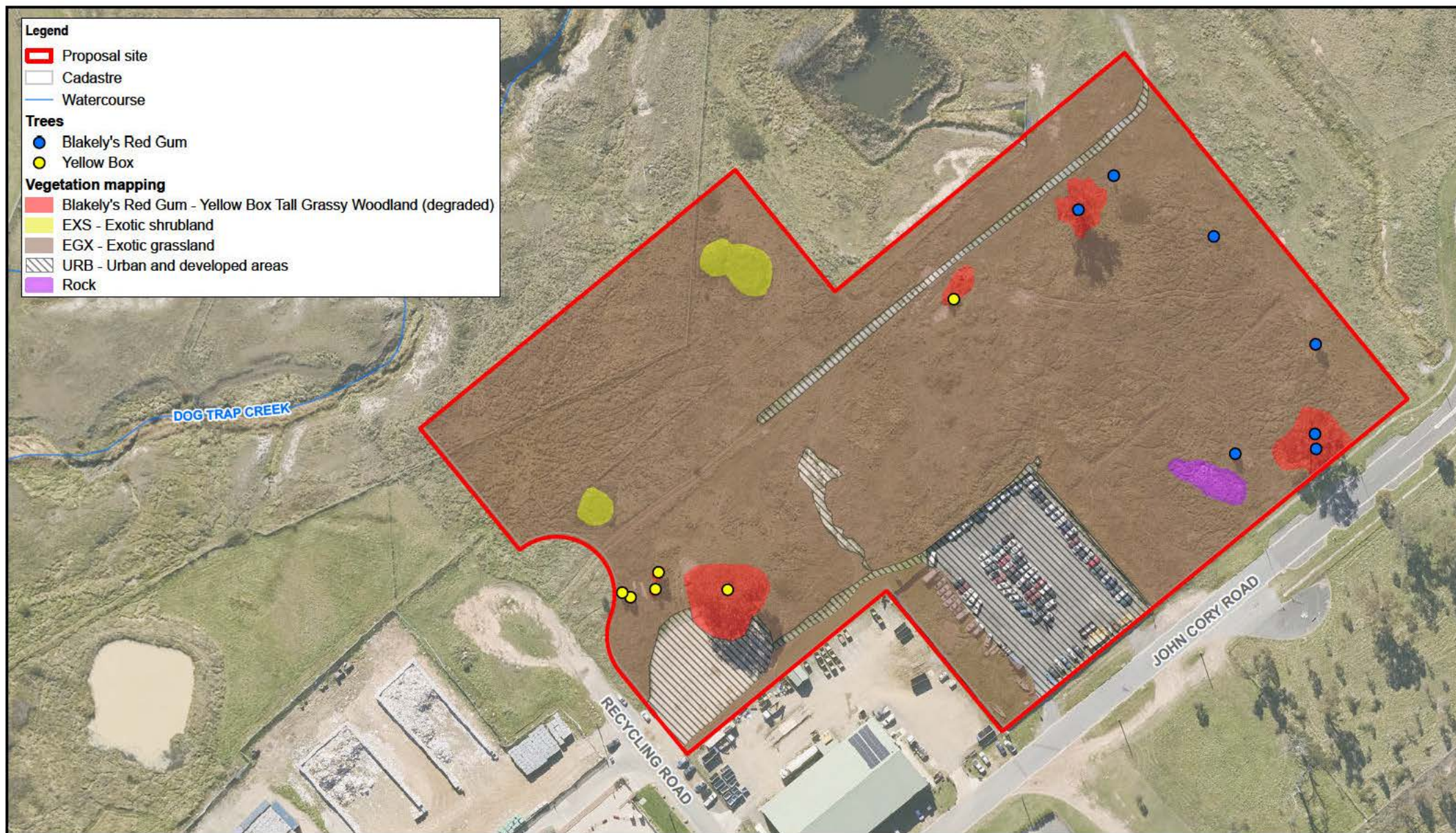
#### Vegetation types

Vegetation in the region is characterised by Eucalypts such as by Blakey's red gum (*Eucalyptus blakelyi*) and yellow box (*Eucalyptus melliodora*) on lower slopes, red stringybark (*Eucalyptus macrorhyncha*), bundy (*Eucalyptus goniocalyx*) and white gum (*Eucalyptus viminalis*) on ridges, areas of apple box (*Eucalyptus bridgesiana*) and mottled gum (*Corymbia maculata*) and limited areas of swampy flats and valley floor grasslands.



The proposal area is predominately cleared and consists of exotic grasses (see Figure 8.2). There are four mature trees and nine saplings located within the proposal site. These comprise seven Blakey's red gum (*Eucalyptus blakelyi*), three of which are mature, and six yellow box (*Eucalyptus melliodora*), one of which is mature. None of the mature trees are hollow bearing and the nine saplings associated with the proposal site are considered of low value habitat for fauna.

The desktop review for the ACTMapi database suggested the Yellow Box/Blakey's Red Gum Grassy Woodland community which is endangered under the NC Act and critically endangered under the EPBC Act may occur in the proposal site. The composition and quality of the habitat in the proposal site is considered degraded and does not fully meet the descriptions.



Paper Size ISO A4  
0 25 50  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540464  
Revision No. 0  
Date 14/09/2023

Vegetation and habitat feature  
mapping of the site

FIGURE 8.1





**Figure 8.2** Typical grassland habitat occurring at the proposal site

## Listed ecological communities

No threatened ecological communities (TECs) were located on the proposal site.

## Flora species

40 flora species were identified during surveys, including 17 native and 23 exotic species. These species were grasses, forbs and small shrubs. Of these, the most common were groundcover species, as most of the proposal site was treeless, open grassland. The assemblage of species in the grassland of the proposal site was dominated by exotic species.

## Listed flora species

No NC Act or EPBC Act listed threatened flora species were identified during the flora survey. It is considered unlikely that any threatened flora, such as the Small Purple Pea, would occur within the proposal site due to the domination of exotic flora and previous disturbance by humans contributing to a lack of potential habitat.

## Weeds

Four of the exotic flora are considered under the ACT *Pest Plants and Animals Act 2005* as 'weeds which must be suppressed', 'weeds which must be contained', and prohibited weeds.

Blackberry (*Rubus fruticosus* sp. Agg.), a weed of national significance, was also observed on the proposal site.

## 8.3.3 Fauna

The desktop review indicated there were no NC Act listed threatened fauna species previously known to occur in the proposal site. Commonly encountered threatened species in the ACT including the Pink-tailed worm-lizard (*Aprasia parapulchella*) and Striped legless lizard (*Delma impar*) were not mapped as possibly occurring in the proposal site, with the nearest locations they are known to occur in over 1.7 kilometres to the east.



Common fauna such as Eastern grey kangaroos and rabbits are expected to be present.

## Species

No threatened fauna was identified during field surveys whilst two invasive species of fauna were identified. Of the species recorded, most of these were common species often found in rural and/or urban areas of the ACT. Birds were the most abundant fauna species that occurred. The following two species are introduced and listed under the *Pest Plants and Animals Act 2005*:

- Common Myna (*Sturnus tristis*)
- Common Starling (*Sturnus vulgaris*).

The only mammal observed was the Eastern Grey Kangaroo (*Macropus giganteus*). No reptiles were found; however, frog calls were heard from *Crinia signifera* and an unidentified *Uperoleia* sp. Neither of these are threatened species.

## Listed fauna species

No NC Act or EPBC Act listed threatened fauna species were identified during fauna survey.

## Striped Legless Lizards

No SLLs were recorded during the 9-week program of tile surveys. The grassland in the proposal site is in degraded condition that is not suitable for the survival of the SLL and other threatened reptiles known in the ACT.

Given the nil survey result from targeted survey and with the distance to the estimated historical extent of naturally occurring temperate grassland, it is unlikely that SLLs occur in the proposal area.

## Habitats

The proposal site provides a small area of rocky habitat in moderate condition that may be suitable for a variety of species, such as the threatened Pink-tailed worm-lizard and Striped legless lizard (see Figure 8.3). However, due to the nil records during the targeted survey, lack of records in the proposal site and its immediate vicinity, the history of human disturbance in the surrounding area as well as isolation from habitat in better condition, it is unlikely these species will occur.



**Figure 8.3**      *Rocky habitat at the proposal site*

The habitat connectivity mapping prepared by the ACT Government notes that the proposal site is located in an area of moderate to high value for its potential to improve habitat connectivity. Due to the scattered nature of the mature and immature trees and the presence of exotic flora species, the proposal site is considered to be highly fragmented and, therefore, is of low connectivity value. There are no hollow bearing trees located on the proposal site that may provide connectivity.

Dog Trap Creek would continue to provide connectivity between the road reserve along Mugga Lane and the surrounding area. The proposal would be set back from the creek and water management measures are proposed which would avoid any impact to the creek.

## **8.4 Impacts**

### **8.4.1 Direct impacts**

#### **Construction**

##### **Vegetation removal**

Approximately 2.3 hectares of vegetation would be cleared as part of the proposal, including up to six immature Eucalyptus trees (subject to detailed design), however these are considered to have low habitat value given their size and the disturbed nature of the proposal site. One mature tree (Blakley's Red Gum) would be cleared as part of the proposal (located in northwest). The mature tree is not of notable ecological significance.

As the majority of the proposal site consists of exotic vegetation, the proposal is unlikely to have an impact on NC Act or EPBC Act listed TECs or species. Efforts have been made through the proposal planning and design process to minimise and mitigate impacts to ecological values. Particularly, retaining mature trees and native vegetation as far as is practicable.

### **Fauna habitat and fragmentation**

The area of rock outcrop present in the proposal site is to be cleared. This is an area of approximately 0.025 hectares. This relatively small area is already isolated from surrounding rocky habitat and is not of high quality. Given the high nature of disturbance and the surrounding activities, the proposal is unlikely to further contribute to any loss in connectivity of habitat. The area is not widely used by fauna and corridors still exist along road reserves (Mugga Lane), Dog Trap Creek and agricultural paddocks to the east.

Dog Trap Creek has no known significant ecological values. The proposal would be setback over 30 metres from Dog Trap Creek and the water management design proposed to avoid erosional impacts of the creek. The proposal is not expected impact the aquatic value of the creek.

### **Disturbance, injury and mortality of fauna**

During construction, death or injury may occur to fauna present during clearing of trees and vegetation. If birds are present but not nesting during construction, they will generally move away from the site to escape disturbance.

## **Operation**

### **Disturbance, injury and mortality of fauna**

Operation of the proposal is unlikely to cause long term impacts to fauna. Noise, light and other disturbance would be short term and temporary, generally from the arrival and departure of trucks carrying waste. This impact would not be likely to greatly exceed disturbance impacts from the existing infrastructure located adjacent to the proposal site.

## **8.4.2 Indirect impacts**

### **Construction**

#### **Runoff, sedimentation and contamination**

The proposal has the potential to cause impacts to native flora and fauna through spills of fuels and chemicals during construction. This may occur during refuelling operations or during preparation and use of chemicals for weed management. Spills could potentially enter nearby waterways and affect water quality, contaminating habitat for species dependent on habitat in creeks and drainage lines. Spills could also have localised impacts on terrestrial fauna.

The potential for these impacts occurring is unlikely to be substantial given the proposed implementation of appropriate safeguards.

#### **Invasion and spread of weeds, pathogens and diseases**

Cover of exotic species was very high throughout the study area. Four of the exotic species identified are ACT declared pest plants, and one (Blackberry) is also a declared Weed of National Significance. The proposal could exacerbate the spread of weeds within the area by increasing conditions conducive to their spread. Construction activities that result in vegetation clearance and ground disturbance have the potential to disturb weed species causing them to drop seeds. Additionally, the movement of machinery, vehicles and people through the study area can spread weeds into the surrounding area.

The transport and processing of FOGO has potential to attract birds, native wildlife and other vermin or facilitate the spread of pathogens and disease, such as Chytrid fungus (*Batrachochytrium dendrobatidis*) to and from the facility if not properly managed. These have the potential to establish in surrounding areas that are currently unaffected by them, possibly causing damage to native fauna and flora.

Further discussion on operational biosecurity, pests and vermin risks including the plant pest Grape phylloxera (*Daktulosphaira vitifoliae*) and associated vermin predators is provided in Chapter 17 (in particular 17.4.2).

Given there are exotic species on-site, measures would need to be implemented to ensure they do not spread from the proposal site to surrounding areas.



## Edge Effects

'Edge effects' can include increased noise and light, weed incursion or erosion and sedimentation at the interface of intact vegetation and cleared areas. Given most of the remnant vegetation has been cleared and the proposal site and surrounding area has been historically modified, it is unlikely the proposal would cause any new edge effects.

## Operation

### Runoff, sedimentation and contamination

No refuelling is expected to occur on the proposal site that could result in spills into nearby waterways. Contaminated water from composting activities would be captured on-site and re-used within the process. Therefore, no impacts to nearby waterbodies from runoff, sedimentation and contamination are expected.

## 8.5 Mitigation measures

Table 8.2 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential impacts to biodiversity and nature conservation.

Table 8.2 Biodiversity and nature conservation mitigation measures

| Potential impact                         | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Timing                                        |
|------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Impacts to native vegetation and habitat | BC01 | <p>A flora and fauna management plan (FFMP) will be developed before the commencement of construction (as part of the CEMP). Measures will be implemented before, during and after construction to avoid and mitigate impacts to flora and fauna within the proposal site. The FFMP will include the following measures:</p> <ul style="list-style-type: none"><li>– Removal of areas of native vegetation and rocky habitat will be minimised wherever possible.</li><li>– No impact to any areas of habitat not marked for removal will occur.</li><li>– No vegetation removal or soil disturbance will occur outside the impact areas.</li><li>– All staff will be inducted and informed of the limits of vegetation clearing and the areas of vegetation to be retained.</li><li>– If any unexpected threatened flora or threatened ecological communities or rocky habitat not assessed in the ecological assessment are identified in the proposal site, work will cease immediately and the environmental manager will be contacted.</li><li>– An ecologist/wildlife carer will be present on-site during clearing activities.</li><li>– Pre-clearance survey of frogs prior to works commencing.</li></ul> | Prior to construction and during construction |
|                                          | BC02 | <p>Trees to be retained will be managed during construction in accordance with <i>Australian Standards 4970-2009 Protection of Trees on Development Sites</i>. No construction, heavy machinery or other disturbance will within the dripline and critical root zone as defined in AS 4970-2009. Consultation with an arborist will be undertaken if proposed work may impact this.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Construction                                  |
|                                          | BC03 | <p>The rocky habitat present on-site will be relocated during clearance. These rocks will be moved to an area outside of the construction impact zone and, preferentially, to a location where they will not undergo further human modification. Consultation with Parks ACT will be undertaken to determine this action, as this authority may help facilitate moving this habitat to a reserve or other area it will benefit conservation of biodiversity.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Prior to construction                         |



| Potential impact                              | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Timing                |
|-----------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Habitat connectivity                          | BC04 | Principles of Biodiversity Sensitive Urban Design will be integrated into the detailed design at DA stage and include planting of native grasses in the undeveloped area to the west.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Detailed design       |
| Invasion and spread of pathogens              | BC05 | <p>A weed and pest management plan (WPMP) will be developed before the commencement of construction (as part of the CEMP). Measures will be implemented before, during and after construction to prevent the establishment and/or spread of weeds within and beyond the study area. The WPMP will include the following measures:</p> <ul style="list-style-type: none"> <li>– Weed management may include the following measures: <ul style="list-style-type: none"> <li>• Use of herbicides</li> <li>• Integrated weed management throughout the site such as use of herbicides</li> <li>• Implementing exclusion zones</li> <li>• Weed removal and disposal prior to construction.</li> </ul> </li> <li>– The weed management plan will include: <ul style="list-style-type: none"> <li>• A description of the weed for identification purposes, including a description of its relevance to the site</li> <li>• Specific function of the weed, including flowering and seeding periods</li> <li>• Identified risk of spread</li> <li>• Identification of specific management measures for individual weed control</li> <li>• Limits of movement during construction to reduce spread to areas of high-quality habitat.</li> </ul> </li> <li>– Declared pest plants and WoNS will be identified and controlled prior to any earthworks commencing to assist in minimising spread of pest plants and WoNS.</li> <li>– Vehicle and machinery wash/brush downs will be required to ensure that weed species are not spread to non-infested areas. No construction vehicles or staff should enter surrounding areas to minimise weed spread.</li> <li>– Washing/brushing of workers shoes upon entry/exit of the proposal site.</li> <li>– Sediment control, such as silt fences, will assist in reducing the potential for spreading weeds downstream.</li> <li>– Soil disturbance will be avoided as much as possible to minimise the potential for erosion and spread of weeds.</li> <li>– The spread of exotic plant species within and adjacent to the proposal site will be monitored. Weed control will be undertaken if it is determined that the proposal is causing significant spread of weed species.</li> <li>– No machinery, light vehicle, or construction staff access to adjacent areas will occur, to minimise the risk of spread of weeds to sensitive areas.</li> <li>– When transporting weed waste from the proposal site to the waste facility, trucks must be covered to avoid the spread of weed-contaminated material. Disposal must be documented, and evidence of appropriate disposal must be kept.</li> </ul> <p>Other protocols will include:</p> <ul style="list-style-type: none"> <li>– Minimising the removal of vegetation wherever possible.</li> <li>– Having an ecologist/wildlife carer on site during clearing activities.</li> </ul> | Prior to construction |
| Soil erosion, sedimentation and water quality | BC06 | A soil and water management plan (SWMP) will be prepared incorporating an ESCP prior to construction commencement, as part of the CEMP. This will also include the following measures:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Prior to construction |

| Potential impact | ID | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Timing |
|------------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
|                  |    | <ul style="list-style-type: none"> <li>– Refuelling or maintenance of plant and machinery will not be undertaken within 50 metres of waterways or drainage lines.</li> <li>– A rehabilitation and revegetation plan (RRP) will be prepared for areas disturbed during the works. This will identify appropriate methods for stabilising disturbed soils to resist erosion.</li> <li>– Sediment and erosion controls downstream of the proposal site such as the nearby dam) will be implemented before any construction commences and inspected regularly, particularly after a rainfall event, and maintenance works undertaken as needed. These controls will remain in place after construction until sufficient regeneration of vegetation to prevent erosion or sedimentation occurs.</li> <li>– Weather forecasts will be checked daily to ensure high risk soil and erosion activities are not undertaken immediately before or during high rainfall or wind events. Disturbed surfaces will be compacted and stabilised in anticipation of rain events to reduce the potential for erosion.</li> </ul> |        |

## 8.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual biodiversity and nature conservation risks associated with the proposal has been considered and these are identified in Table 8.3.

Table 8.3 Biodiversity and nature conservation – residual risk assessment

| Risks identified                                                          | Original risk rating | Residual likelihood | Residual consequence | Residual risk rating |
|---------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                  |                      |                     |                      |                      |
| Spread of weeds and pest species (invasive flora and fauna, insect pests) | Medium               | Unlikely            | Minor                | Very Low             |
| <b>Additional risks</b>                                                   |                      |                     |                      |                      |
| Impact the existing and future connectivity for the area                  | NA                   | Unlikely            | Minor                | Very Low             |
| Impact to Striped legless lizards habitat or population                   | NA                   | Remote              | Minor                | Negligible           |
| Impacts to fauna during construction and operation                        | NA                   | Unlikely            | Minimal              | Negligible           |
| Impacts to flora during construction and operation                        | NA                   | Likely              | Minimal              | Low                  |



## 9. Heritage

### 9.1 Requirements

This chapter addresses the following heritage requirements of the Scoping Document:

- [REDACTED]
- [REDACTED]

- Provide a Cultural Heritage Assessment (CHA) to assist in determining any possible heritage impacts from the development proposal.
- If the CHA identifies that proposed works will cause damage or diminish the significance of heritage places, recommendations must be presented to comply with *Heritage Act 2004* provisions. This must include consideration of alternatives to avoid heritage impacts, and if these alternatives are not reasonably practicable, measures that could be adopted to minimise heritage impacts.

### 9.2 Environmental conditions and values

A number of archaeological studies have been undertaken within and around the proposal site. The Hume area and Dog Trap Creek valley have been subject to extensive survey and subsurface investigations from the 1990s onward, leading to a great deal of research focused in the area.

#### 9.2.1 Predictive model – Aboriginal heritage

As a result of the archaeological surveys undertaken to date in the local area and ethno-historical data from the local region and south-eastern Australia more broadly, qualitative observations regarding Aboriginal site location parameters may be summarised as follows:

- The most commonly recorded site types are surface and subsurface scatters of stone artefacts.
- Artefact densities in open artefact scatters may vary considerably.
- Open artefact scatters are most likely to occur on relatively level ground in locally well-drained contexts, either spurline crests, terraces or elevated creek banks in valley floor contexts, low gradient crests and streamline banks in mid valley slope contexts, and level crests, shoulders and saddles on major ridgelines and spurs.
- The majority of open artefact scatters, (particularly larger sites), are situated adjacent to, or in close proximity to, creek flats or valley bottom contexts, frequently on low gradient basal slopes adjacent to streams or wetlands.
- Open artefact scatters which contain relatively large artefact assemblages and densities occur most frequently and consistently within 100-150 m of major and relatively permanent drainage lines.
- Open artefact scatters which occur away from the valley basal slopes and major tributaries tend to be small and sparser. A preference for major confluences and valley constrictions may be indicated.
- Subsurface deposits of artefacts will not necessarily be associated with visible surface artefacts
- Most sites located away from major water sources will consist of low density scatters of artefacts, and mostly contain less than ten visible surface artefacts.
- Artefacts may occur wherever surface exposures of exploitable rock occur, rock sources which are known to have been locally exploited include chalcedony, chert, quartz, and fine grained igneous rocks such as fine grained porphyry and fine grained intrusives within granodiorite.
- The occurrence of high grade chert does not necessarily indicate Aboriginal exploitation (Officer & Navin, 1992).
- Aboriginal scarred trees may occur anywhere old-growth trees survive. It is estimated that in the Canberra/Queanbeyan region trees bearing Aboriginal scars would need to be in the order of 140 to 150 years old.

## 9.2.2 Predictive model – historic heritage

Unrecorded historic sites and features of heritage significance that may occur within the proposal site include:

- Old fence lines, such as post and rail fencing; these may occur along road easement boundaries and farmlands.
- Indications of field systems, such as drainage channels and ridge and furrow ploughlands; these are likely to survive in low lying agricultural ground.
- Traces of agricultural and industrial processing or extractive sites, such as dairies, factories, and quarries; these may be found throughout agricultural lands on valley floors and adjacent low ranges.
- Archaeological sites, such as the occupation remains of former dwellings including homesteads, houses and huts; these will be distributed in close association with land settlement patterns, and correlated with favourable agricultural lands, trading nodes and transport corridors.
- Nineteenth-century structures, such as farm dwellings, outbuildings, selecto's and timber-getters huts; these may survive as standing buildings, ruins or archaeological deposits and are most likely to survive on less developed rural properties, on early portion numbers, and in or near established farm building complexes;
- Sites associated with early roads; these will be closely associated with early cadastral road reserves, watershed ridgelines, and related to early river and creek crossing points.
- Structures of historical interest and heritage significance may be standing, ruined, buried, abandoned or still in use.

## 9.2.3 Preservation of archaeological material

Previous land use has resulted in the following impacts to the preservation of archaeological material:

- Removal of native vegetation and tree cover
- Thorough ploughing of paddocks for pasture improvement or cropping, disturbance to soil surface and subsurface
- Erosion on hill crests and upper slopes
- Soil deposition on lower slopes and creek flats
- Areas of stock impact along fence lines, gates and vehicle access roads
- Construction of four house lots with landscaped gardens, tanks and sheds
- Installation of electricity distribution lines across the paddocks and communication lines.

## 9.3 Investigations

A CHA was undertaken for the proposal to assess potential for heritage impacts relating to the proposal. The CHA included:

- A literature and database review
- Developing predictive archaeological models of Aboriginal and historical heritage.
- Field surveys
- Identifying and recording cultural heritage values within the survey areas
- Assessing the likely impacts of the proposal to Aboriginal and historical cultural heritage values
- Providing management recommendations

This chapter provides a summary of the assessment findings. A full copy of the CHA is provided in Appendix H.

### Literature and database review

A literature and database review of heritage registers and schedules, local histories and archaeological reports was undertaken. The review included the Heritage Registers maintained by the Australian Heritage Council, (Federal) Department of Environment and the Heritage Registers and associated reports held by ACT Heritage, and the ACT Department of Environment, Planning and Sustainable Development Directorate.

## Field surveys

Site surveys were undertaken by NOHC staff on the 21 December 2022. This involved a walk over of the area proposed to be impacted by the proposal. All areas subject to direct impact were traversed, with particular focus given to areas with low to moderate levels of disturbance. NOHC was accompanied representatives from Buru Ngannawal Aboriginal Corporation (BNAC), King Brown's Tribal Group Pty Ltd (KBTG) and Mirrabei.

### 9.3.1 Aboriginal heritage

#### Database search results

Three previously recorded Aboriginal heritage sites with PAD (NW2/PAD 2, HID1391, HID1391) and two areas of archaeological potential (recorded by Barber, 2000) have been previously identified within the proposal site.

Four Aboriginal sites with PAD (NW1/PAD1, H/A11, Hume 1, MPAD2) have been previously recorded within 100 metres of the proposal site. During the current investigation one Aboriginal site and one area of PAD was identified. The sites are:

- HFF01
- HFFPAD01



#### Archaeological survey results

##### HFF01 – artefact scatter

This site is an isolated find consisting of a distal quartz flake located within an erosion scald. The site is located on valley flats in an area that has previously been used as an access track for construction to the east of the proposal site.

The potential for there to be additional artefacts is moderate, and there is low-moderate potential for there to be any subsurface archaeological deposit. This site is located four metres from the proposal site boundary.

##### HFF02 – artefact scatter

This site is an isolated find consisting of a quartz flaked piece located in a small erosion scald along a fence line. The site is located on valley flats in an area that has previously been impacted as part of past construction works.

The potential for there to be additional artefacts is low-moderate, and there is low-moderate potential for there to be any subsurface archaeological deposit. This site is located 20 metres outside of the proposal site.

##### HFFPAD01

A total of 142 artefacts were recovered during the test excavations. The density of the HFFPAD01 is approximately ten artefacts per square metre. This places the site in a similar range to those encountered as part of testing for the Mugga Mugga Solar Farm (Navin Officer Heritage Consultants, 2016) which sat between 11-14.5 artefacts per square metre. This is a significantly lower density than was encountered by investigations to the east of the study area as part of investigations for the proposed Hume West and HRRE with artefact densities of up to 46 and 80 artefacts per metre square respectively.

The subsurface testing program at HFFPAD01 mitigates the risk to heritage values as recommendations for the management of these sites can be planned. Salvage within HFFPAD01 around high density deposits prior to construction mitigates the risk to heritage values within this PAD by allowing a greater sample of artefacts to be recovered from these locations. There are no other reasonably practicable ways to reduce the risk to heritage values.

#### Archaeological potential

The presence of surface artefacts is not a reliable indicator of the occurrence of subsurface artefacts within the Dog Trap Creek valley. The large subsurface assemblage at Hume PAD 6 was associated with no visible surface



artefacts, and though small numbers of surface artefacts were noted in the areas around HID1395, HAC2 and HA12, the density and richness of the subsurface assemblage at these sites was much greater. In contrast, similar numbers of surface artefacts were encountered at site NW1/PAD1, however only one subsurface artefact was located during subsurface testing.

## Heritage significance

The *Burra Charter* defines cultural significance in terms of aesthetic, scientific, historic, and social values. Aboriginal cultural heritage is typically assessed according to its social and scientific significance. Other values may also be important. The assessment of significance provides a guideline for determining appropriate mitigation and management strategies.

All Aboriginal sites within the ACT are regarded by the RAOs as having cultural significance as locations that have direct evidence of the past Aboriginal occupation of the area.

### HFF01 – artefact scatter

It is recommended that HFF01 be added to Heritage Register as a site of Aboriginal heritage as it has heritage significance.

### HFF02 – artefact scatter

It is recommended that HFF02 be added to Heritage Register as a site of Aboriginal heritage as it has heritage significance.

### HFFPAD01

The subsurface testing program at HFFPAD01 mitigates the risk to heritage values as recommendations for the management of these sites can be planned. Salvage within HFFPAD01 around high density deposits mitigates the risk to heritage values within this PAD by allowing a greater sample of artefacts to be recovered from these locations. There are no other reasonably practicable ways to reduce the risk to heritage values.

It is recommended that HFFPAD01 be added to Heritage Register as a site of Aboriginal heritage as it has heritage significance.



## Aboriginal consultation

Four local Aboriginal organisations have stated an objective to represent traditional Aboriginal cultural values and interests within the ACT. These groups have been recognised by the Minister as RAOs as defined under the ACT *Heritage Act 2004*. These groups are the:

- Buru Ngunawal Aboriginal Corporation (Buru Ngunawal)
- King Brown's Tribal Group Pty Ltd (KBTG)
- Mirrabei
- Ngarigu Currawong Clan (Ngarigu)

Contact was made by phone and email with the RAOs to inform them of this assessment and to organise representation during the field survey.

The following personnel participated in the initial fieldwork program and represented the interests of their group in the proposal:

- Wally Bell (BNAC)
- Reuben House (Mirrabei)

Following SHE approval by ACT Heritage, the following personnel participated in the collection survey program and represented the interests of their group:

- Kelsie Brown (KBTG)

## 9.3.2 Historic heritage

Historical archaeology refers to the 'post-contact' period and includes domestic, commercial and industrial sites as well as most maritime sites. It is the study of the past using physical evidence in conjunction with historical sources. The two primary types of places or items that may form part of the historical archaeology context include:

1. Below ground evidence, including building foundations, occupation deposits, features and artefacts; and above ground evidence, including buildings, works, industrial structures and relics that are intact or ruined;
2. Areas of land that display evidence of human activity or occupation.

### Database search results

No sites of historic heritage were located during the current survey. An unlisted historic heritage site (H/H4) has been previously recorded within 60 metres of the proposal site.

### Archaeological survey results

No historical heritage sites were recorded during the site surveys.

### Archaeological potential

The proposal site as a whole is considered to have low historic archaeological potential.

## 9.4 Impacts

### 9.4.1 Direct impacts

#### Construction

##### HFFPAD01

The construction of the proposal will directly impact potential archaeological deposit HFFPAD01 (see Figure 9.1) if materials is disturbed or removed without permission. However, the subsurface testing program at HFFPAD01 completed in May-June 2023 provided a better understanding of artefacts scatters and mitigates the risk to heritage value. Artefacts associated with the site would be collected prior to construction and stored until they are able to be returned to country.



#### Operation

No operational impacts are expected.

### 9.4.2 Indirect impacts

#### Construction

##### HFF01 and HFF02

Construction may indirectly impact sites HFF01 and HFF02 (see Figure 9.1). Inadvertent impacts may occur at these sites if workers are unaware of the heritage sites. The construction footprint should not extend outside of the

proposal site boundary in order to avoid impacts. These areas should be fenced for the duration of construction to further mitigate impacts.

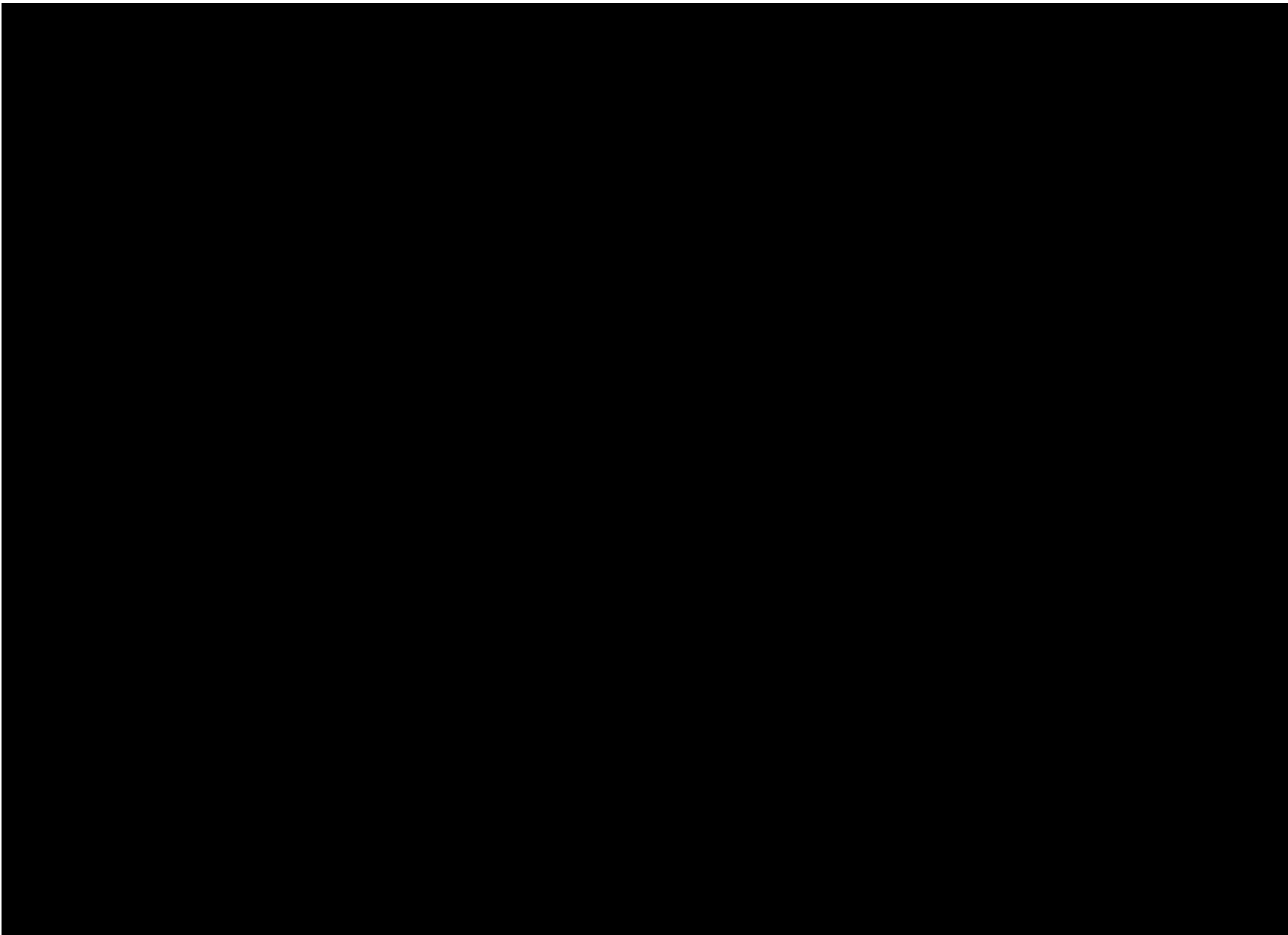
## Operation

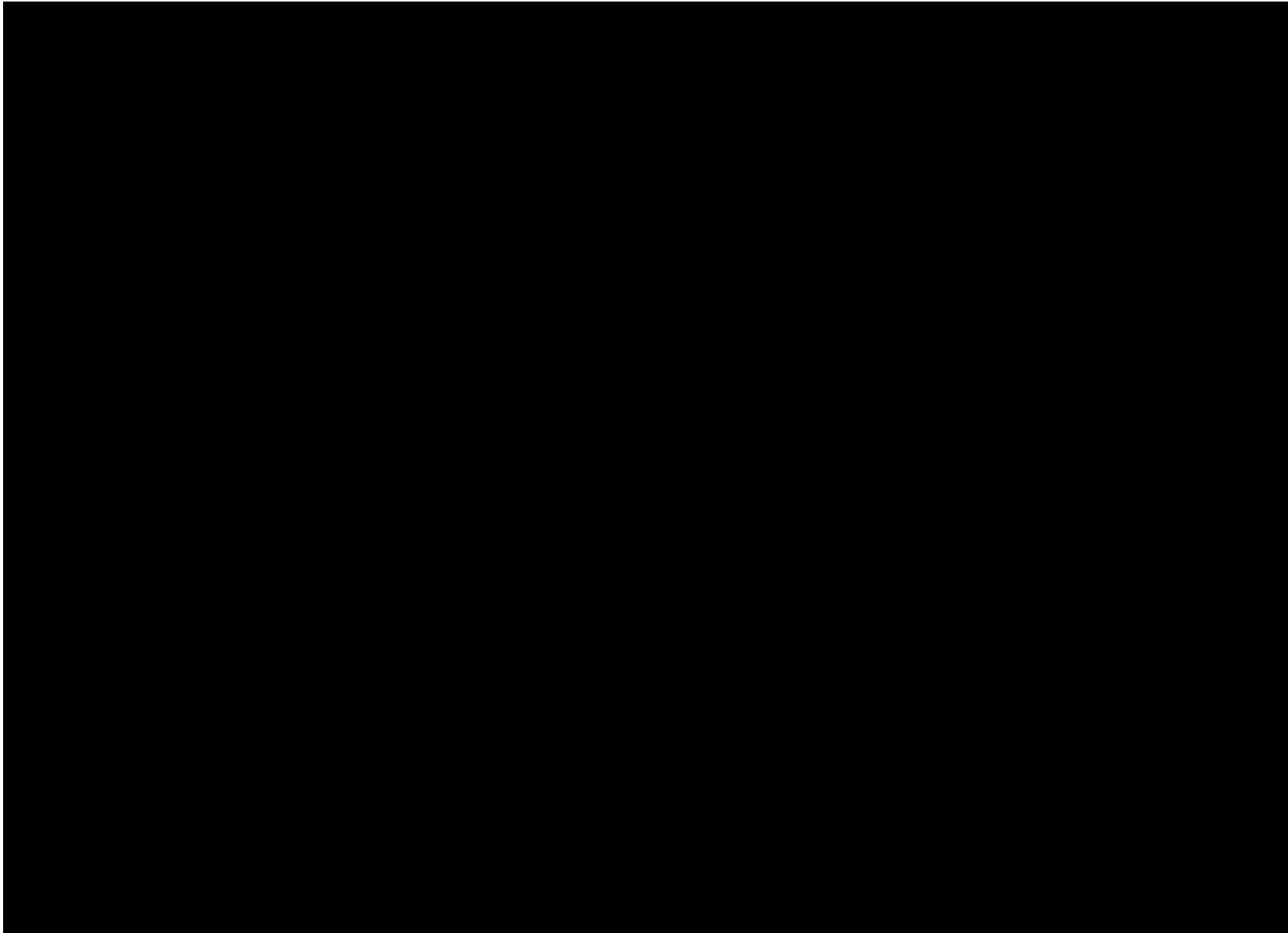


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<sup>5</sup> It is noted that the design was updated in July 2025. As such, this figure (and Appendix H) represents a previous design, but it does not have a material effect on the mitigation measures outlined within this report







## 9.5 Mitigation measures

Table 9.1 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential impacts to heritage.

Table 9.1 Heritage mitigation measures

| Potential impact                                                  | ID  | Mitigation measure                                                                                                                                                                                                                                                                                               | Timing                                 |
|-------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Impacts to known heritage sites                                   | H01 | All proposal personnel, including contractors, will be made aware of the heritage status of the known heritage sites prior to impacts.                                                                                                                                                                           | Prior to construction and construction |
|                                                                   | H02 | Site HFF01 and HFF02 will be fenced during construction to ensure that no machinery can impact the surface artefacts. Site fencing should be installed with the assistance of the RAOs and a suitably qualified archaeologist.                                                                                   | Construction                           |
|                                                                   | H03 | Artefacts within HFFPAD01 around high density deposits will be salvaged in accordance with a salvage methodology approved by ACT Heritage. The timeline for these works will be arranged by Infrastructure Canberra in consultation with ACT Heritage.                                                           | Prior to construction                  |
|                                                                   | H04 | All proposal personnel, including contractors, will be made aware of the heritage status of these sites prior to impacts.                                                                                                                                                                                        | Construction                           |
|                                                                   | H05 | Additional heritage investigations will be undertaken prior to completion of the development application.                                                                                                                                                                                                        | Prior to construction                  |
|                                                                   | H06 | Areas of heritage significance within or outside of the proposal site will be demarcated.                                                                                                                                                                                                                        | Construction                           |
| Impacts to known heritage sites located outside the proposal site | H07 | An UFP will be developed as part of the CEMP. The protocols for the unanticipated discovery of archaeological material and suspected human remains (presented in Appendix 5 of Appendix H) will be adopted and complied with during construction activities involving ground surface disturbance and excavation. | Prior to construction and construction |

## 9.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual heritage risks associated with the proposal has been considered and these are identified in Table 9.1.

Table 9.2 Heritage – residual risk assessment

| Risks identified                                                                                                                            | Original risk rating | Residual likelihood | Residual consequence | Residual risk rating |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                                                                                    |                      |                     |                      |                      |
| Direct impacts on existing historic non-Aboriginal heritage places or objects (including physical, visual and potential vibration impacts). | Negligible           | Remote              | Minimal              | Negligible           |



| Risks identified                                                                                      | Original risk rating | Residual likelihood | Residual consequence | Residual risk rating |
|-------------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| Direct impact to Aboriginal archaeological potential or places with high Aboriginal cultural values   | High                 | Unlikely            | Moderate             | Low                  |
| <b>Additional risks</b>                                                                               |                      |                     |                      |                      |
| Unexpected finds of Aboriginal archaeological potential or places with high Aboriginal cultural value | NA                   | Unlikely            | Moderate             | Low                  |

# 10. Materials and waste

## 10.1 Requirements

This chapter addresses the following materials and waste requirements of the Scoping Document:

- Describe the nature, location and quantities of all materials (including hazardous wastes) to be handled on the site, including the assessment, storage, stockpiling, processing and disposal of materials and waste.
- Provide details of expected finished compost volumes and export rates.
- Outline management procedures in case of oversupply and/or stockpiling of waste and any consideration to the measures implemented when/if the facility ceases operation.
- Prepare an Operational Waste Management Plan in accordance with TCCS Waste Code (Appendix I)

It is noted that materials and waste requirements of the Scoping Document related to hazardous materials and dangerous chemicals are addressed in Chapter 19:

- Describe any hazardous materials and dangerous chemicals to be used or stored on site during construction and operation.
- Identify any Schedule 11 hazardous chemical, as per Work Health and Safety Regulation 2011 (WHS Regulation).
- Provide details of maximum storage capacities for any hazardous chemicals.
- Provide safety data sheets for any hazardous chemicals.
- Identify whether any Schedule 11 hazardous chemicals meet the placard quantity as per the WHS Regulation.

## 10.2 Environmental conditions and values

### 10.2.1 Legislative and policy context

Australian legislation and guidelines applicable to the waste management assessment include:

- *Waste Management and Resource Recovery Act 2016* (WM Act).
- *Environment Protection Act 1997* (EP Act).
- *Planning and Development Act 2007* (PD Act).
- *Environmental Protection Regulation 2005* (EP Regulation).
- *ACT Waste Management Strategy 2011-2025* (WM Strategy).
- ACT Waste Feasibility Study 2015.
- Transport Canberra and City Services Development Control Code for best practice waste management in the ACT 2019.
- Environmental Standards: Assessment and classification of liquid and non-liquid waste (2021).

A summary of what is covered by the relevant ACT legislation is presented in Table 10.1.

Table 10.1 Waste management legislation summary

| Instrument                                                      | Description                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Waste Management and Resource Recovery Act 2016</i> (WM Act) | Regulatory framework to manage waste, support innovation and investment in waste management, promote responsibility for waste reduction and promote best-practice waste management. The WM Act is responsible for setting out conditions for the licencing of the facility.<br>Under this, the operator of the proposed facility must hold a waste facility licence. |
| <i>Environment Protection Act 1997</i> (EP Act)                 | Regulatory framework to protect and enhance the environment, to prevent environmental degradation and reduce and eliminate the discharge of pollutants to the air, land and water.                                                                                                                                                                                   |



| Instrument                                                                                                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Environmental Protection Regulation 2005 (EP Regulation)</i>                                                               | The EP Regulation supports the EP Act, and sets provisions on emissions into the air, noise, water-controlled waste and sampling and analysis of pollutants.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <i>Planning and Development Act 2007 (PD Act)</i>                                                                             | Under Section 212 of the PD Act, the planning and land authority prepared the scoping document dated 19 July 2022. The document outlines the matters that are to be addressed by an EIS in relation to the development proposal. Relevant requirements for waste management included: <ul style="list-style-type: none"> <li>– Describe the nature, location and quantities of all materials (including hazardous wastes) to be handled on the site, including the assessment, storage, stockpiling, processing and disposal of materials and waste.</li> <li>– Provide details of expected finished compost volumes and export rates.</li> <li>– Outline management procedures in case of oversupply and/or stockpiling of waste and any consideration to the measures implemented when/if the facility ceases operation.</li> <li>– Prepare an operational Waste Management Plan in accordance with TCCS Waste Code.</li> </ul> |
| <i>ACT Waste Management Strategy 2011-2025 (WM Strategy)</i>                                                                  | The <i>ACT Waste Management Strategy 2011-2025</i> (Waste Management Strategy; ESD, 2011) outlines the strategic direction of the ACT Government on waste issues and sets targets for improving waste management. These include achieving more than 90 per cent resource recovery by 2025 and a carbon neutral waste sector by 2020.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <i>ACT Waste Feasibility Study 2015</i>                                                                                       | The Waste Feasibility Study was established in mid-2015 to identify a pathway towards achieving the ACT's waste management targets. A key output of this study was a roadmap approach to waste management with the objective of increasing waste diversion from landfill quickly, reliably, and efficiently, and in a relatively low risk, cost effective manner.<br><br>The proposal supports the Waste Feasibility Study as the site has been identified as a suitable location for a FOGO facility, and it would be designed to have capacity to collect FOGO from ACT and surrounding area.                                                                                                                                                                                                                                                                                                                                   |
| <i>Transport Canberra and City Services Development Control Code for best practice waste management in the ACT 2019 (DCC)</i> | The code outlines mandatory requirements for demolition, excavation and construction as well as for commercial, public and industrial developments. The goals of the DCC are to ensure: <ul style="list-style-type: none"> <li>– Waste infrastructure is designed to provide the effective storage and collection of waste and recyclable material for all residential, commercial and industrial premises.</li> <li>– Developments are constructed to accommodate the appropriate levels of waste and recyclable material and meet standardised servicing requirements.</li> <li>– Construction and demolition activities result in the maximum recycling of recyclable material and minimum possible waste to landfill.</li> </ul>                                                                                                                                                                                              |
| <i>ACT Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes 2021</i>                        | Guidance document to classify waste within the ACT. The document is modelled on the NSW EPA 2014, <i>Waste Classification Guidelines Part 1: Classifying waste</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

Material use and waste management would be undertaken in accordance with the *ACT Waste Management Strategy 2011-2025* and *Waste Management and Resource Recovery Act 2016*. The objectives of the Act that are applicable to the proposal are:

- To manage waste according to the following hierarchy:
  - Minimise the generation of waste.
  - Maximise the recovery and re-use of resources.
- Minimise the amount of waste that goes to landfill.
- Support innovation and investment in waste management.
- Promote responsibility for waste reduction, and
- Promote best practice waste management.



## 10.3 Investigations

This waste management assessment has been prepared to quantify the waste generated by the proposed project during construction and operation and address the potential environmental impacts associated with waste handling, storage and disposal. The assessment considers the target of more than 90 per cent resource recovery by 2025 and a carbon neutral waste sector by 2020 as outlined in the *ACT Waste Management Strategy 2011-2025*.

The waste management assessment involved:

- Desktop review of proposed demolition, construction and operational activities and materials to identify the key waste generating activities and key waste streams.
- Review of the regulatory framework for waste management as it applies to the demolition, construction and operation of the proposal.
- Development of a description of the sources, classes, quantities, and composition of incoming and residual waste streams.
- Identification of appropriate management, recycling, recovery and disposal options for the key waste streams.
- Development of mitigation measures to manage any potential impacts from the storage and processing of waste and supply of contingency measures to be implemented if inappropriate waste material are identified in the incoming waste stream, if the facility ceases operation or in the case of oversupply of incoming materials.
- Development of details on how compliance with the EPA's record keeping and reporting requirement would be met.
- Quantification and classification of all outgoing waste material streams.
- Development of management measures and disposal for all outgoing waste material streams.
- Preparation of an Operational Waste Management Plan in accordance with TCCS Waste Code (2019) describing the outcomes of the construction and operational waste management assessment (Appendix I).

This chapter provides a summary of the assessment findings. Further details are provided in the Operational Waste Management Plan, which is provided in Appendix I.

### 10.3.1 Construction and demolition waste generating activities and quantities

#### Demolition waste

A summary of the expected waste that would be generated during demolition is provided in Table 10.2. The likely waste classifications are also identified. The classification of any demolition waste requiring off-site disposal or recycling would be confirmed in accordance with ACT EPA Waste Classification Guidelines (2021) prior to being transported to a suitable licensed waste facility.

**Table 10.2** Demolition waste quantities, classifications and potential destinations

| Waste stream          | Likely waste classification           | Unit           | Estimated quantity | Storage            | Potential destination                          | End use            |
|-----------------------|---------------------------------------|----------------|--------------------|--------------------|------------------------------------------------|--------------------|
| Asphalt waste         | General solid waste (non-putrescible) | m <sup>3</sup> | 55                 | Stockpiled         | Canberra Concrete Recyclers                    | Recycled           |
| Excess spoil          | General solid waste (non-putrescible) | m <sup>3</sup> | Nominal            | Stockpiled         | Reused on-site for shaping/landscaping / MLRMC | Recycled/ disposed |
| Green waste / topsoil | General solid waste (non-putrescible) | m <sup>3</sup> | 45                 | Stockpiled         | MLRMC                                          | Recycled/ disposed |
| Stockpile materials   | Hazardous waste                       | m <sup>3</sup> | 440                | Covered stockpiles | MLRMC                                          | Disposed           |



| Waste stream | Likely waste classification           | Unit | Estimated quantity | Storage            | Potential destination | End use            |
|--------------|---------------------------------------|------|--------------------|--------------------|-----------------------|--------------------|
| Sewer main   | General solid waste (non-putrescible) | m    | 130                | Covered stockpiles | MLRMC                 | Recycled/ disposed |

An indicative area for storage of demolition waste (approximately 750 square metres) is shown in red below in Figure 10.1. The area would be confirmed by the demolition contractor prior to works commencing.



Figure 10.1 Potential demolition waste storage area

## Construction waste quantities

The estimated quantities and proposed destinations of construction waste is shown in Table 10.3. Over 90 percent of construction waste would be recycled which exceeds the target in the ACT Waste Management Strategy 2011-2025 (ACT Government, 2011). The likely waste classifications are also identified. The classification of any construction waste requiring off-site disposal or recycling would be confirmed in accordance with ACT EPA Waste Classification Guidelines (2021) prior to being transported to a suitable licensed waste facility. The construction workers would also generate wastes such as food wrappings, gloves, waste food, packaging, and so on. It is estimated that over the construction period (up to 24 months), this would result in about 19.5 cubic metres of general waste and 36.5 cubic metres of recyclables.

Table 10.3 Waste classifications and potential destinations

| Waste stream | Likely waste classification                | Estimated waste quantity (m <sup>3</sup> ) | Storage   | Potential destination                      | End use  |
|--------------|--------------------------------------------|--------------------------------------------|-----------|--------------------------------------------|----------|
| Timber       | General solid waste (non-putrescible)      | 7.1                                        | Stockpile | The Green Shed, ACT Recycling              | Recycled |
| Concrete     | General solid waste (non-putrescible)      | 47.3                                       | Stockpile | ACT Recycling, Canberra Concrete Recyclers | Recycled |
| Bricks       | General solid waste (non-putrescible)      | 33.9                                       | Stockpile | ACT Recycling, Canberra Concrete Recyclers | Recycled |
| Gyprock      | General solid waste (non-putrescible)      | 12.5                                       | Stockpile | REGYP Canberra                             | Recycled |
| Sand/soil    | VENM/General solid waste (non-putrescible) | 90.5                                       | Stockpile | Reuse on-site for shaping/landscaping      | Recycled |



| Waste stream        | Likely waste classification                         | Estimated waste quantity (m <sup>3</sup> ) | Storage            | Potential destination        | End use               |
|---------------------|-----------------------------------------------------|--------------------------------------------|--------------------|------------------------------|-----------------------|
| Metal               | General solid waste (non-putrescible)               | 12.2                                       | Stockpile          | Sims Metal, Access Recycling | Recycled              |
| Other waste         | General solid waste (putrescible / non-putrescible) | 31                                         | Skip bin           | MLRMC                        | Disposed              |
| General recyclables | General solid waste (non-putrescible)               | 36.5                                       | Skip bin           | MLRMC                        | Recycled              |
| Batteries           | Hazardous waste                                     | Nominal                                    | Bunded and covered | MLRMC                        | Recycled/<br>disposed |
| Sewage              | Liquid waste                                        | Nominal                                    | -                  | Discharge to sewer           | Disposed              |

The area for placement and transport of construction waste would be determined by the Contractor prior to construction.

## 10.3.2 Construction waste handling and management

### Approach to waste minimisation and re-use

All waste generated during demolition and construction would be managed using the waste hierarchy approach of avoidance and re-use before consideration is given to disposal. Procurement of excess materials would be avoided in accordance with relevant guidelines and policies, including use of precast building materials.

All wastes would be managed in accordance with the waste provisions contained within relevant legislative and policy requirements, as outlined in Section 10.2.1.

Should waste be found to be unsuitable for re-use or recycling, disposal methods would be selected based on the classification of the waste material in accordance with the 'ACT Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes 2021' (EPSDD, 2021).

The proposed approach to managing the different waste types in accordance with the waste management hierarchy, including measures to facilitate segregation and prevent cross contamination, are provided in Table 10.4.

The contractor would prepare a detailed demolition and construction environmental management plan that addresses key regulatory requirements and environmental management measures and procedures.

Table 10.4 Demolition and construction waste management measures

| Waste                                    | Hierarchy | Management measures                                                                                                                                                                           |
|------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Excess spoil/existing stockpile material | Reduce    | Detailed design would include measures to minimise excess spoil generation. This would include a focus on optimising the design to minimise spoil volumes and the re-use of material on site. |
|                                          | Re-use    | Excess spoil from existing stockpiles and earthworks for the proposal would be stockpiled on site for use as construction fill and landscaping purposed on site if suitable.                  |
|                                          | Recycle   | Any existing stockpiles and excess spoil material would be stockpiled on-site and options to recycle the material would be investigated, where practicable.                                   |
|                                          | Dispose   | Any existing stockpiles and excess spoil that is not suitable for re-use would be disposed of at a suitably licensed facility in accordance with the waste classification.                    |
| Green waste and topsoil                  | Avoid     | The access road and FOGO facility would be sited to minimise disturbance to existing vegetation and utilise already cleared land as far as practicable.                                       |
|                                          | Reduce    | The construction footprint would be set out during site establishment to manage the risk of incidental clearing.                                                                              |



| Waste                         | Hierarchy | Management measures                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               | Re-use    | Cleared vegetation and topsoil material for construction would be segregated and stockpiled for re-use on site for landscaping and finishing works.                                                                                                                                                                                                                                 |
|                               | Dispose   | Weeds would be disposed of in accordance with relevant guidelines and requirements.                                                                                                                                                                                                                                                                                                 |
| General waste                 | Recycle   | Labelled and colour coded receptacles would be provided at the construction site office for general waste from construction personnel to ensure source separation of recyclable materials and residual landfill waste. These wastes would be collected on a regular basis by authorised and appropriately licensed waste collection contractors for off-site recycling or disposal. |
|                               | Dispose   | Residual general solid waste would be transferred off-site for disposal at a suitably licensed facility.                                                                                                                                                                                                                                                                            |
| Food waste                    | Dispose   | Putrescible waste would be stored in designated bins and collected by an authorised contractor for disposal to a suitably licensed facility.                                                                                                                                                                                                                                        |
| Sewage                        | Dispose   | Sewage generated by the staff from the site office would be discharged to sewer.                                                                                                                                                                                                                                                                                                    |
| Excess construction materials | Avoid     | Procurement of surplus materials would be avoided, and precast building components utilised, where practicable.                                                                                                                                                                                                                                                                     |
|                               | Recycle   | Any excess materials generated on site would be segregated using separate bins for different waste and recyclable materials.<br>The recyclable material would be removed from site for further processing or re-use at appropriately licensed facilities.                                                                                                                           |
|                               | Dispose   | Residual waste that cannot be recycled would be collected and removed off-site for disposal at a suitably licensed facility.                                                                                                                                                                                                                                                        |
| Hazardous waste               | Dispose   | Stockpile materials are assumed to be hazardous waste until they are confirmed otherwise. If it is hazardous waste, then the material shall be appropriately disposed of by a licensed contractor.                                                                                                                                                                                  |
| Asphalt waste                 | Recycle   | Any asphalt waste would be stockpiled on-site prior to being taken off-site for reuse.                                                                                                                                                                                                                                                                                              |
| Pipe demolition waste         | Dispose   | Excavated sewer mains would be stored in a covered stockpile and taken off-site for disposal.                                                                                                                                                                                                                                                                                       |

## Waste storage locations

Demolition and construction waste would be temporarily stored on-site in an area of compacted hardstand material that would be graded to facilitate drainage. The storage area would be bunded to contain sediment laden run off in accordance with the sediment and erosion control plan that would be developed for construction. Stockpiles would be segregated according to classification and clearly signposted to maximise the stockpile fitness for use and reduce the risk of cross contamination. Bins would also be in the storage area to temporarily store segregated recyclable materials.

Waste generated by demolition and construction staff would be stored in mobile garbage bins in the construction compound designated storage areas. Signage identifying the waste storage area at the construction site office would be prominently displayed. All waste receptacles would be clearly and correctly labelled to identify which materials are to be placed in which bin and colour-coded in accordance with AS 4123.7-2006: Mobile Garbage Containers (Standards Australia, 2008).

The waste storage area would have stockpiles that are a maximum height of four metres and a maximum width of four metres (for loose materials) in accordance with the Guideline for Stockpile Management (ACT Government, 2019b). Separation distances from structures in this document would be followed.

## Off-site recycling and disposal

Table 10.2 and Table 10.3 identify potential options for off-site disposal and recycling for the key demolition and construction waste streams. The destinations would be confirmed by the construction contractor and included in the construction waste management plan for the proposal prior to construction commencing.

Collection of demolition and construction waste would be on an as needed basis depending on the phase of the project. General waste and recycling from construction staff would be collected at least once per week.

Collection vehicles would access the waste storage area off Recycling Road and proceed through the proposal site to exit at John Cory Road.

### 10.3.3 Operational waste generating activities and quantities

#### Processing capacity and input materials

The facility would be designed to receive up to 70,000 tonnes per year of FOGO waste. It is expected that the facility would have an initial processing capacity of at least 50,000 tonnes per year at commencement of operations.

The design of the facility would incorporate modular elements to enable the capacity and operating parameters of the tunnel composting system to be cost-effectively expanded in future to achieve the design processing capacity of 70,000 tonnes per year.

The primary feedstock stream would be municipal kerbside collected FOGO, however the facility may also receive:

- Commercial organic waste including food organics.
- Pre-shredded 'self-haul' bulk municipal garden organic material from waste transfer stations.

#### FOGO processing

The FOGO processing would comprise the following main elements, subject to detailed design:

- Waste receipt and decontamination.
- Shredding, mixing and moistening.
- Pasteurisation and composting in enclosed tunnels with forced aeration and moisture control.
- Maturation in static piles and product refinement within the enclosed maturation building.
- Product load-out.

A description of each of these key process elements is provided in Section 2.5.

The facility would develop management measures and procedures that manage contingencies such as:

- Oversupply of waste received on-site.
- Stockpiling of waste when/if the operation of the facility is ceased or reduced in capacity.
- Other processing disruption of the facility.

#### Contingency management

The facility would develop management measures and procedures that manage contingencies such as:

- Oversupply of waste received on-site
- Stockpiling of waste when/if the operation of the facility is ceased or reduced in capacity
- Other processing disruption of the facility

The facility would be designed to accommodate weekly, monthly and seasonal variations in feedstock quantities and characteristics and the current design would allow a minimum of two days' storage capacity. These numbers are based on the storage capacity of the receipt hall and processing area. A contingency management plan would be developed during DA stage to outline measures if these timeframes are not met.

The feedstock deliveries would occur daily from Monday to Friday, with occasional processing on weekends, which would reduce the chance of backlog of material if there were any processing disruption. Planned and unplanned works including repairs and maintenance would be able to be carried out during weekends to ensure a high level of processing continuity assurance and reduce the risk of stockpiling from oversupply or backlog of material.

If more than three day's deliveries were accumulated, contingency measures may need to be implemented to reduce the potential environmental impacts associated with extended accumulation of material (i.e. odour and leachate). These would include diverting material to an alternative facility, or to landfill. Use of an alternative facility



may depend upon a prior contractual agreement being in place. This would be considered in contingency management for the facility.

## Waste and product quantities

During operation, the following key wastes and products are expected to be generated:

- Up to 2,100 tonnes per year of feedstock contaminants.
- About 28,000 tonnes per year of FOGO-derived mulch, compost and soil conditioners to AS 4454-2012 (Standards Australia, 2012) (and possibly other standards).
- About 30 cubic metres of waste and 37 cubic metres of recyclables from workers.

Common feedstock contaminants include (Rawtec, 2018):

- Plastic.
- All other organics (leather, rubber, and oils).
- Containerised food.
- Metals.
- Other miscellaneous.

The FOGO-derived product mix would depend on market requirements. Sampling and testing of the product material to confirm compliance with relevant standards would be undertaken prior to export off-site. Operational workers waste would be managed by the operator, which would engage a private waste contractor to collect and transport the waste off site for disposal or reuse.

A summary of the expected operational feedstock inputs, product outputs and waste are shown in Table 10.5.

Table 10.5 Operational waste summary

| Material stream                                          | Likely waste classification (if applicable)       | Estimated annual quantity | Storage                                                                                                        | Potential destination | End use                       |
|----------------------------------------------------------|---------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------|
| <b>Inputs</b>                                            |                                                   |                           |                                                                                                                |                       |                               |
| FOGO feedstock                                           | General solid waste (non-putrescible/putrescible) | 70,000 t                  | Enclosed concrete bay (within receival hall)                                                                   | -                     | -                             |
| <b>Outputs</b>                                           |                                                   |                           |                                                                                                                |                       |                               |
| FOGO-derived products (mulch, compost, soil conditioner) | -                                                 | 28,000 t                  | Enclosed concrete bay (within maturation building); semi-enclosed hardstand area (within product storage shed) | Various               | Landscaping/soil conditioning |
| Contaminants                                             | General solid waste (non-putrescible/putrescible) | 2,100 t                   | Enclosed skip bin (within receival hall)                                                                       | MLRMC                 | Disposed/recycled             |
| <b>Residual waste</b>                                    |                                                   |                           |                                                                                                                |                       |                               |
| Operational workers waste                                | General solid waste (non-putrescible/putrescible) | 30 m <sup>3</sup>         | Skip bins (within/adjacent to administration building)                                                         | MLRMC                 | Disposed/recycled             |
| Operational workers recyclables                          | General solid waste (non-putrescible)             | 37 m <sup>3</sup>         | Skip bins (within/adjacent to administration building)                                                         | MLRMC                 | Recycled                      |
| Batteries                                                | Hazardous waste                                   | Nominal                   | Segregated area on-site (within administration building)                                                       | MLRMC                 | Disposed/recycled             |
| Cleaning products (e.g. lubricants, oils)                | Liquid waste                                      | Nominal                   | Bunded area (within machinery shed)                                                                            | Cleanaway             | Disposed/recycled             |



| Material stream        | Likely waste classification (if applicable) | Estimated annual quantity | Storage                                                                  | Potential destination | End use          |
|------------------------|---------------------------------------------|---------------------------|--------------------------------------------------------------------------|-----------------------|------------------|
| Process water/leachate | Liquid waste                                | Nominal                   | Temporarily stored in a sealed holding tank (within maturation building) | Reused on-site        | Recycled on-site |
| Sewage                 | Liquid waste                                | Nominal                   | -                                                                        | Sewer                 | Disposed         |

### 10.3.4 Operational waste handling and management

#### Approach to waste minimisation and re-use

All waste generated during operation would be managed using the waste hierarchy approach of avoidance and re-use before consideration is given to disposal. Operational waste generated by staff would be source separated to recover recyclable materials and divert wastes from landfill. Process waste including leachate would be reduced as far as practicable through on-site treatment and re-use in processing activities.

All wastes would be managed in accordance with the waste provisions contained within relevant legislative and policy requirements, as outlined in Section 10.2.1.

Should waste be found to be unsuitable for re-use or recycling, disposal methods would be selected based on the classification of the waste material in accordance with the Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes (EPSDD, 2021).

The measures for operational waste proposed to align with the waste management hierarchy are listed in Table 10.6 including disposal or recycling locations. This table also outlines the contingency measures (disposal) for wastes and residues that cannot be avoided, re-used, recycled or treated.

Table 10.6 Operational waste management measures

| Waste                                     | Hierarchy | Management measures                                                                                                                                        | Recycling/disposal options                          |
|-------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Food waste                                | Dispose   | General waste materials would be collected and transferred off-site to a licenced waste management facility                                                | Licenced sites such as MLRMC                        |
| General waste                             | Dispose   | General waste materials would be collected and transferred off-site to a licenced waste management facility                                                | Licenced landfill sites such as MLRMC               |
| Recyclable materials                      | Recycle   | Recyclable materials generated by the office and administration system would be source separated and transferred off site to licenced recycling facilities | Recycling facility such as MLRMC                    |
| Feedstock contaminants                    | Recycle   | Recyclable materials to be separated where possible and transferred off site to licenced recycling facilities                                              | Licenced landfill and recycling sites such as MLRMC |
|                                           | Dispose   | General waste materials would be collected and transferred off-site to a licenced waste management facility                                                |                                                     |
| Batteries                                 | Dispose   | A licenced waste contractor would be engaged for collection and disposal of batteries                                                                      | Licenced landfill and recycling sites such as MLRMC |
| Sewage                                    | Dispose   | Sewage from offices and amenities would be discharged to sewer                                                                                             | Discharge to sewer                                  |
| Cleaning products (e.g. lubricants, oils) | Dispose   | General waste materials would be collected and transferred off site to a licenced liquid waste management facility                                         | Licensed liquid waste management facility           |



| Waste                  | Hierarchy    | Management measures                                                                                            | Recycling/disposal options |
|------------------------|--------------|----------------------------------------------------------------------------------------------------------------|----------------------------|
| Process water/leachate | Reduce/reuse | Process water/leachate generated from the facility would be collected in the tunnels and reused in the process | Reuse on-site              |

## Waste storage locations

Waste generated by operational staff would be stored in interim waste receptacles strategically located throughout the working floors of the offices and workshop and in communal areas for source separation of garbage (general waste) and comingled recyclables. Recycling stations throughout the offices would promote further source separation of plastics and paper and cardboard. The cleaning contractor would empty the receptacles at the end of the day and transfer the waste to a waste bin storage area to await collection. The source separated waste streams would be segregated and placed into appropriate bins.

Incoming FOGO feedstock would be stored at the receival hall with the maximum capacity for three days storage (approximately 550 tonnes).

Contamination from processing would be stored at the receival hall and the maximum storage volumes would nominally be 50 cubic metres. Where possible the material would be separated to allow recovery of recyclable materials.

Adequate signage identifying the waste storage area would be prominently displayed. All waste receptacles would be clearly and correctly labelled to identify which materials are to be placed in which bin and colour-coded in accordance with AS 4123: Mobile Garbage Containers (Standards Australia, 2008).

## FOGO-derived products storage locations

FOGO-derived products would be stored in the enclosed maturation and refining building as well as the semi-enclosed and covered product storage area prior to load-out.

## Waste tracking, record keeping and quality control

Specifications for feedstock materials would be developed as part of commercial agreements with feedstock suppliers to ensure materials received at the FOGO facility are suitable (conforming). All incoming loads would be visually inspected upon unloading and before being moved immediately into designated storage pens.

Non-conforming wastes would include contaminated loads with greater than three percent of contaminants. Small quantities of impurities such as plastics, other organics, containerised food and metals, etc. are expected to be received and feedstock containing these impurities would not constitute a non-conforming load as they can be handled by the sorting and separation processes.

Where a non-conforming load is identified during the initial visual inspection, the load would not be unloaded. If some of the material has been unloaded when it is identified as non-conforming, it would be reloaded onto the vehicle it was delivered in and the full load would be rejected. Records of the date, time, vehicle and reasons for load rejection would be maintained.

The quality control measures proposed during operation to track incoming waste and outgoing products and ensure the quality of outgoing products are listed in Table 10.7.

**Table 10.7** Quality control, record keeping and waste tracking measures

| Aspect                                         | Measures                                                                                                                                                                    |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signage at entrance                            | Signage at the entrance clearly identifying the permitted waste/feedstock types and non-conforming waste types                                                              |
| Specifications for FOGO material               | Agreed specifications for feedstock materials to control the risk of receiving non-conforming materials.                                                                    |
| Rejected loads (non-conforming waste) register | Maintenance of a rejected loads register – including records of date, time of load rejected, registration of vehicle(s), type of waste(s) rejected and reason for rejection |



| Aspect                                                   | Measures                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Feedstock and output/product storage                     | Labelling or signposting of incoming feedstock and outgoing product storage areas in a way which is clearly visible<br>Separation/segregation of individual separated output/product types                                                                                            |
| Inspections                                              | Daily inspections by trained staff of incoming and outgoing waste storage areas to ensure storage is being undertaken in accordance with the operations plan for stockpile management and implementation of any required corrections immediately<br>Maintenance of inspection records |
| Training                                                 | Training of staff in roles which require visual inspection of loads<br>Maintenance of training records                                                                                                                                                                                |
| Specifications, sampling and testing of product material | Where applicable, development of specifications, sampling and testing procedures in conjunction with product/recovery stream customers                                                                                                                                                |
| Incoming and outgoing waste/product records              | Accurate recording of all incoming and outgoing (waste and product outputs) using weighbridge data in accordance with the record keeping requirements of the Environment Protection Licence for the facility.                                                                         |

## 10.4 Impacts

### 10.4.1 Direct impacts

#### Construction

Potential impacts associated with aspects of waste generation during demolition and construction are summarised in Table 10.8.

Table 10.8 Potential impacts associated to waste management during demolition and construction

| Aspect of waste management                                | Potential impacts                                                                                                                                                                                                                                                                                                                              | Mitigation measure |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Generation of excess spoil material during excavation     | <ul style="list-style-type: none"> <li>– Generation and migration of dust during earthworks.</li> <li>– Erosion and sedimentation due to runoff from disturbed areas.</li> <li>– Uncontrolled sediment laden runoff from disturbed areas.</li> <li>– Disturbance of potentially contaminated fill material during excavation works.</li> </ul> | MW01<br>MW02       |
| Stockpile management                                      | <ul style="list-style-type: none"> <li>– Migration of dust from uncovered stockpiles.</li> <li>– Erosion and sedimentation due to runoff from stockpiling areas.</li> <li>– Uncontrolled sediment laden runoff from stockpiling areas.</li> </ul>                                                                                              | MW02               |
| Storage and segregation of waste                          | <ul style="list-style-type: none"> <li>– Cross contamination of wastes due to improper segregation.</li> <li>– Odour from waste storage area.</li> <li>– Attract disease vectors.</li> </ul>                                                                                                                                                   | MW04               |
| Waste transportation                                      | <ul style="list-style-type: none"> <li>– Dust generation from loading and unloading activities.</li> <li>– Migration of wheel generated dust on haul roads.</li> <li>– Litter and tracking waste on local roads.</li> </ul>                                                                                                                    | MW02               |
| Non-compliant waste classification                        | <ul style="list-style-type: none"> <li>– Regulatory non-compliance.</li> <li>– Contamination of receiving facility.</li> </ul>                                                                                                                                                                                                                 | MW04               |
| Unlicensed waste contractors or facilities handling waste | <ul style="list-style-type: none"> <li>– Regulatory non-compliance.</li> <li>– Potential illegal dumping of waste from construction activities.</li> </ul>                                                                                                                                                                                     | MW03<br>MW04       |



Potential impacts associated with water quality are assessed in Chapter 13. Sediment and erosion control measures proposed to be implemented during construction would manage potential environmental impacts to surface water and groundwater quality associated with earthworks and stockpiling. Waste management activities are not expected to have a significant impact on soil and water provided that the control measures identified in the Chapter 13 are implemented.

Chapter 14 provides an assessment of the potential impacts associated with air quality dust generation during construction of the proposal, including earthworks, stockpiling and transport. Management measures identified in the technical report for dust suppression and stockpile management would be implemented to manage environmental impacts to air quality during construction in line with air quality criteria.

Section 10.3.2 describes the proposed handling and management of construction and demolition waste, including waste classification, how waste would be segregate and stored to avoid cross-contamination, maximise re-use and resource recovery and to reduce the potential for odour and attraction of disease vectors.

Waste management activities during demolition and construction are not expected to have a significant impact on the environment or human health provided that the controls measures identified in Sections 13.4.2 and 14.5, the waste handling and management measures described below and mitigation measures outlined in Section 10.5 are implemented.

## Operation

### Potential impacts

Potential impacts associated with aspects of waste generation during operation are summarised in Table 10.9.

**Table 10.9** Potential impacts associated with waste management during operation

| Aspect of waste management                                | Potential impacts                                                                                                                                                                                                                                      | Mitigation measure |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Acceptance of non-conforming waste                        | <ul style="list-style-type: none"> <li>– cross contamination of wastes</li> <li>– attract disease vectors</li> <li>– exposure to potentially hazardous materials</li> <li>– impact to facility performance causing shut-down</li> </ul>                | MW05               |
| Leachate management                                       | <ul style="list-style-type: none"> <li>– uncontrolled release of leachate</li> <li>– contamination of soil or groundwater</li> </ul>                                                                                                                   | See Chapter 13     |
| Storage and segregation of waste                          | <ul style="list-style-type: none"> <li>– cross contamination of wastes due to improper segregation</li> <li>– exceedance of storage capacity</li> <li>– fire risk</li> <li>– excess stockpiling of waste (leading to odour/excess leachate)</li> </ul> | MW05<br>MW06       |
| Waste transportation                                      | <ul style="list-style-type: none"> <li>– dust generation or litter from loading and unloading activities</li> <li>– migration of wheel generated dust on roads</li> <li>– litter and tracking waste on local roads</li> </ul>                          | MW05               |
| Unlicensed waste contractors or facilities handling waste | <ul style="list-style-type: none"> <li>– regulatory non-compliance</li> <li>– potential illegal dumping of waste</li> </ul>                                                                                                                            | MW05               |

All FOGO receipt, unloading, stockpiling, recycling and reprocessing activities and finished product storage would occur inside buildings with roller doors being closed once vehicles enter the building. This would minimise the potential for dust or litter entering the environment. It would also ensure that rainwater would not come into contact with the incoming feedstock or any residual wastes. Therefore, risks to surface water and groundwater quality from waste storage and handling would be negligible.

Fire risks would be managed with appropriate placement of smoke detectors, fire extinguishers, fire blankets, fire hose reels and sprinklers as well as emergency and fire management planning.



An assessment of the potential operational air quality and odour impacts of the proposal has been undertaken and a summary of the results of the assessment is provided in Chapter 14. It considered potential dust during the construction phase and odour during the operational phase. Dust associated with the construction was identified as low risk, and negligible risk due to the small-scale operations required and the distance to the nearest receptors. Predicted odour concentrations comply with the criteria specified in the Technical Framework at all residential sensitive receptors. Odour and dust mitigation measures are outlined in Section 14.5.

Section 10.3.4 describes the proposed approach to the management of operational wastes, waste storage and off-site recycling and disposal. This includes how waste would be segregated and stored to avoid cross-contamination and maximise reuse and resource recovery.

Operational waste management activities are not expected to have a significant impact on the environment or human health provided that the waste handling and management measures described below and mitigation measures outlined in Section 10.5 are implemented.

## 10.4.2 Indirect impacts

No indirect impacts from construction and operations are anticipated.

## 10.5 Mitigation measures

Table 10.10 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential waste management impacts.

Table 10.10 Waste management mitigation measures

| Potential impact                                                       | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Timing                    |
|------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Human health risks due to storage of contaminated materials            | MW01 | A TSI was completed to further identify and classify any contaminated material at the proposal site. The TSI did not find any exceedances in contaminants. A UFP will be in place during construction.                                                                                                                                                                                                                                                                                                                                                                                                                              | Design and planning phase |
| Excessive waste generation                                             | MW02 | Detailed design will include measures to minimise quantities of waste requiring off-site disposal including minimising volume bulk excavations and careful procurement of construction materials to minimise excess waste materials                                                                                                                                                                                                                                                                                                                                                                                                 | Detailed design           |
| Non-classified or incorrectly classified waste transport and disposal  | MW03 | A demolition and construction waste management plan will be prepared and implemented as part of the CEMP for the proposal. The plan should adopt the waste hierarchy principles contained in the <i>Waste Management and Resource Recovery Act 2016</i> and detail processes, responsibilities and measures to manage waste and minimise the potential for impacts. This should include waste separation, handling, storage, transport and off-site reuse, licensed recycling and disposal locations                                                                                                                                | Prior to construction     |
| Regulatory non-compliance and/or contamination at receiving facilities | MW04 | All demolition and construction waste will be classified and recycled or disposed of in accordance with the Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes (EPSDD, 2021) and other relevant legislative and policy requirements                                                                                                                                                                                                                                                                                                                                                             | Construction phase        |
| Improper waste handling                                                | MW05 | A detailed operational waste management plan will be developed and implemented which incorporates the requirements of relevant guidance documents, waste management hierarchy principles contained in the <i>Waste Management and Resource Recovery Act 2016</i> . This will include: <ul style="list-style-type: none"> <li>– All key waste and process residue streams and expected quantities.</li> <li>– Waste and residue handling, management and storage procedures including feedstock receipt and waste loading.</li> <li>– Procedures for identifying and managing unacceptable and non-compliant waste types.</li> </ul> | Prior to operation        |



| Potential impact                       | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Timing             |
|----------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
|                                        |      | <ul style="list-style-type: none"> <li>Waste classification procedures and details of how all waste streams will be recycled or disposal of in accordance with the ACT Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes (EPSDD, 2021) and other relevant legislative and policies.</li> <li>A Contingency Management Plan to be developed during DA stage to manage potential exceedances of storage capacity.</li> <li>Details of off-site recycling and disposal locations.</li> <li>Detailed output product sampling and validation program in accordance with agreed end use specifications to ensure fitness for purpose for each intended end uses.</li> <li>Record keeping and reporting requirements</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |
| Human health risks due to contaminants | MW06 | <p>A FOGO feedstock management plan will be developed and implemented which includes:</p> <ul style="list-style-type: none"> <li>FOGO feedstock specification and contaminant tolerances.</li> <li>FOGO feedstock pre-sort procedures.</li> <li>Detailed feedstock sampling and monitoring program which documents sampling and other quality assurance/quality control procedures based on the allowable contaminant tolerances.</li> <li>Consideration of the per- and poly-fluoroalkyl substances National Environmental Management Plan 3.0 (PFAS NEMP) which will be refined during the DA Stage but may include: <ul style="list-style-type: none"> <li>procedures for sampling and testing of inputs to fully characterise PFAS content of any feedstocks identified as posing a risk of containing PFAS</li> <li>procedures to determine whether feedstocks are suitable to meet the product requirements with respect to PFAS content</li> <li>procedures for the management of product formulation/blending/composition to ensure PFAS content of the product meets any criteria relevant to the products proposed use</li> <li>regular monitoring of product outputs to ensure PFAS content does not exceed any relevant criteria or concentration limits.</li> </ul> </li> <li>Record keeping and reporting requirements</li> </ul> | Prior to operation |

## 10.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual materials and waste risks associated with the proposal has been considered and these are identified in Table 10.11.

Table 10.11 Materials and waste – residual risk assessment

| Risks Identified                    | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|-------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>            |                      |                     |                      |                      |
| Waste generated during construction | High                 | Almost Certain      | Minor                | High                 |
| Waste generated during operation    | High                 | Unlikely            | Minor                | Very Low             |



# 11. Landscape and visual

## 11.1 Requirements

This chapter addresses the following landscape and visual requirements of the Scoping Document:

- Undertake a visual assessment of the site and surrounds to describe the current landscape character of the area.
- Describe the predicted impacts the facility and its operations (such as incoming wastes, composting material, and potential stockpiling) may have on the landscape character of the site and surrounds.
- Provide perspectives and/or a visual analysis of the proposal from local vantage points.
- Consider visual impact to the Monaro Highway and consistency with DCP 171/09/0001.
- Consider lighting impacts in relation to pilot distraction.

## 11.2 Environmental conditions and values

### 11.2.1 Land use and built form

The proposal site is in the ACT, within the light-industrial suburb of Hume. It is zoned as General Industry (IZ1). The proposal site is made up of industrial and open space land uses, with smaller residential areas in the south and west. Residential development includes the existing suburb of MacArthur and the South Jerrabomberra Village development, currently under construction. North of the proposal site, the West Jerrabomberra Nature Reserve covers almost half of the study area and is a popular destination for bushwalkers and birdwatchers.

The Monaro Highway bisects the industrial estate and is zoned as 'designated' land. In the west of the study area, Wanniasa Hill Nature Reserve and Wanniasa Hill Special Purpose Reserve are also zoned as 'designated' land.

Built form in the study area is mostly industrial including large sheds and warehouses within the Hume Industrial Estate. The Mugga Lane Solar Park is located 500 metres south-west of the proposal site and a waste processing facility and landfill site also operate within close proximity. There are a few rural residential dwellings within the study area, most notably the Woden Homestead which is approximately 1.7 kilometres north-east of the proposal site. The homestead was built in 1832 and was one of the earliest rural properties in the Canberra region.

### 11.2.2 Topography and hydrology

The study area is generally characterised by undulating plateaus with rounded hills and peaks. Meandering streams with a chain of ponds and tributaries drain the valley.

The proposal site sits in a two-kilometre-wide, relatively flat valley bounded by Dog Trap Creek to the north and the Monaro Highway to the south. The elevation on the site ranges between 610-615 metres above sea level, and slopes downwards gently towards the north, where Dog Trap Creek has cut a deep but narrow channel along the side of the valley. There are multiple small fens and boggy patches in the proposal site but no larger surface waterbodies.

The terrain rises to form a series of hills and mountains surrounding the area such as Isaac's Ridge, Mt Wanniasa, Tralee Hill and Environa Hills, providing a scenic backdrop to the study area.

### 11.2.3 Vegetation

The study area falls within the South-Eastern Highlands bioregion and has been extensively cleared and disturbed since European settlement due to intermittent livestock grazing. The proposal site features grassland in poor conditions with scattered native trees and no mid-storey vegetation. Four native, mature trees are located on the proposal site, and multiple small saplings. South of the proposal site, rows of young and mature native trees provide a visual buffer along the Monaro Highway.

The West Jerrabomberra Nature Reserve is to the north of the proposal site and is protected due to its endangered status as a remnant Natural Temperate Grassland. It features areas of grassland and woodland in good condition.

## 11.2.4 Indigenous cultural values

The elevated terraces within the study area are known to contain many Aboriginal Places with high artefact densities (ACT Heritage Council, 2020). John Cory Road, on which the proposal is located, marks the start point of the Tuggeranong Heritage Track, where an information plaque informs visitors of the history and Indigenous cultural significance of the area.

The proposal site and the adjacent block of land to the north and east (Block 29, Section 23), have a heritage overlay due to their Indigenous cultural significance. This is further discussed in Chapter 9.

## 11.3 Investigations

### 11.3.1 Overview

A Landscape and Visual Impact Assessment (LVIA) was undertaken for the proposal to assess the landscape character and visual impacts, with particular consideration for sensitive landscape and visual receivers, in the area surrounding the proposal. The LVIA included:

- A review of key planning designations, policies and guidance was undertaken in relation to landscape and visual amenity within the study area.
- Undertaking of desktop analysis and review of visual resources.
- Zone of theoretical visibility mapping, a computer-generated analysis which identifies land from which it is theoretically possible to view the components of the proposal.
- A site inspection undertaken by two suitably qualified GHD representatives.
- An assessment of the existing landscape and visual environment was undertaken to determine the existing natural, cultural, and visual features within the study area.

The LVIA was prepared in accordance with the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (Landscape Institute and Institute of Environmental Management & Assessment, 2013).

The study area for the assessment was approximately two kilometres from the proposal boundary (as shown on Figure 11.1). It was selected based on the proposal description, potential visual catchment of the proposal and a review of similar assessments.

This chapter provides a summary of the assessment findings. The full LVIA report is shown in Appendix J.

### 11.3.2 Assessment of landscape character impacts

Potential impacts on landscape character were determined based on the sensitivity of the existing landscape and the magnitude of change that is likely to occur. The sensitivity and magnitude of landscape effects considers the following specific criteria:

- The landscape value (refer Table 11.1).
- The landscape's susceptibility to change (refer Table 11.2).
- The magnitude of change (refer Table 11.3).

Table 11.1 Landscape value criteria

| Landscape value | Definition                                                                                                                                                                         |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High            | Landscape character elements in good or above average condition and/or that make a strong positive contribution to landscape character. May include nationally important features  |
| Medium          | Landscape character elements in reasonably good condition and/or that make an average contribution to the local character, which may include locally important landscape features. |
| Low             | Landscape character elements in below average condition and/or that are not particularly distinctive local features.                                                               |

Table 11.2 Landscape susceptibility to change criteria

| Landscape susceptibility          | Definition                                                                                                                                                                              |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High susceptibility to change     | The type of development proposed could have a detrimental effect on the landscape character, condition, or value. Mitigation measures are unlikely to reduce the impacts of the change. |
| Moderate susceptibility to change | Any change caused by the type of development would be unlikely to have a significant adverse effect on the landscape character, condition or value that could not be mitigated.         |
| Low susceptibility to change      | Development of this type is unlikely to have an adverse effect on the landscape character, condition, or value. Mitigation measures would be effective in neutralising adverse effects. |

Table 11.3 Magnitude of change criteria (landscape)

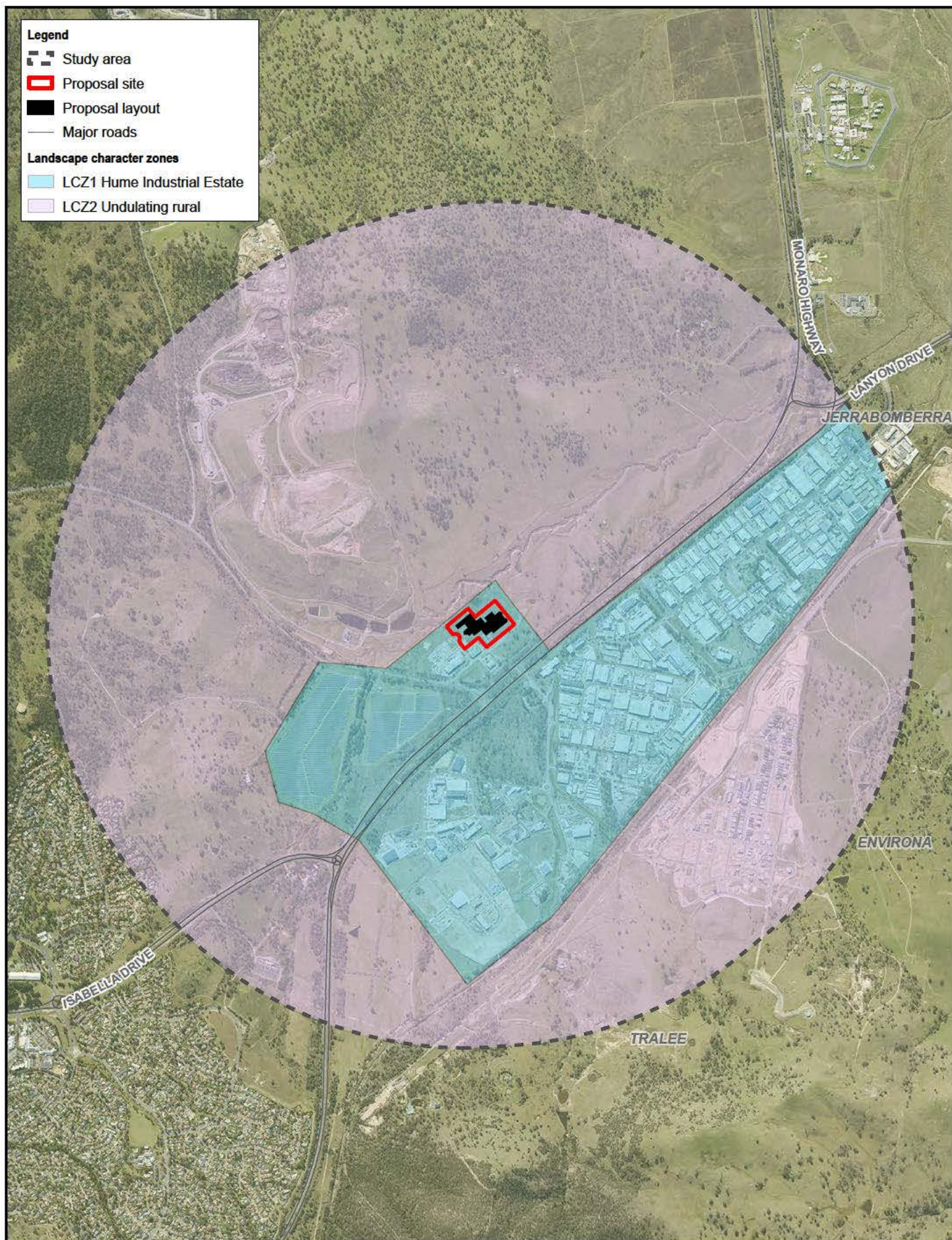
| Rating     | Criteria                                                                                                                                                                                                                                                                                                                                                               |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High       | A substantial/obvious change to the landscape character due to total loss of, or change to, elements, features or characteristics of the landscape. Would cause a landscape to be permanently changed and its quality diminished                                                                                                                                       |
| Moderate   | Discernible changes in the landscape character due to partial loss of, or change to elements, features or characteristics of the landscape, however, has potential to be partly mitigated. The change would be out of scale with the landscape character, and at odds with the local pattern and landform and would leave an adverse impact on the landscape character |
| Low        | Minor loss or alteration to one or more key landscape character elements, features or characteristics, or the introduction of components that may be new but may not be uncharacteristic within the existing landscape character                                                                                                                                       |
| Negligible | Almost imperceptible or no change in the landscape character as there is little or no loss of/or change to the elements, features or characteristics of the landscape                                                                                                                                                                                                  |

The study area has been classified into two Landscape Character Zones (LCZs), as shown on Figure 11.1:

- LCZ1: Hume Industrial Estate
- LCZ2: Undulating farmland

These LCZs have different associated sensitivities to potential changes as a result of the proposal. The LCZs and their sensitivities are described in Table 11.4.





#### Legend

- Study area
- Proposal site
- Proposal layout
- Major roads

#### Landscape character zones

- LCZ1 Hume Industrial Estate
- LCZ2 Undulating rural

Paper Size ISO A4  
0 0.25 0.5  
Kilometres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



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Landscape character zones

FIGURE 11.1



Table 11.4 Landscape character zones

| Landscape character zone                                  | Description                                                                                                                                                                                                                                                                                            | Key characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Associated values                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Landscape value |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Landscape character zone 1: Hume Industrial Estate (LCZ1) | Located in the south-east of the study area. The NSW border forms the south-eastern boundary of LCZ1, and the Monaro Highway runs through the centre.                                                                                                                                                  | <ul style="list-style-type: none"> <li>Built form is characterised by large scale industrial buildings, the Mugga Lane Solar Park, bold signage and advertising, material stockpiles, car parks and loading bays</li> <li>The Monaro Highway runs through the centre of the LCZ in a north-easterly direction</li> <li>Vegetation consists of occasional rows of native and non-native trees on roadsides</li> <li>Within the industrial estate, views are open due to wide roads and wide building setbacks</li> <li>Between the industrial buildings, the surrounding hills and mountains provide a scenic backdrop</li> <li>Businesses are typically building and construction suppliers, vehicle dealers, home furnishing suppliers, goods wholesalers and similar</li> <li>In the centre of the estate is Hill Station Homestead which was built in around 1862 and now abandoned.</li> <li>Dog Trap Gully runs north-to-south through LCZ1 and is partially culverted under roads in sections. It is in a very degraded condition</li> </ul> | <ul style="list-style-type: none"> <li>Hill Station is heritage listed as it is a significant example of a 19th century rural station, with strong links to early settlement in the ACT and its later association with members of parliament. Despite its historical significance it is now in poor condition</li> <li>The Tralee Slab Hut is also on the ACT heritage register as it is an example of a distinctive building technique from the late 1800s characterised by vertical and horizontal slab construction</li> <li>The Monaro Highway is a recognised 'designated area' in the DCP, meaning 'development along this route should enhance the rural character and landscape of land adjoining the area before the road enters the urban area' (ACT Government, 2009)</li> </ul> | Low             |
| Landscape character zone 2: Undulating rural (LCZ2)       | The predominant landscape within study area. It features broad parcels of land which have historically been cleared for livestock grazing, resulting in a degraded landscape. However, its rural features and undulating hills provide a scenic backdrop that is typical on the outskirts of Canberra. | <ul style="list-style-type: none"> <li>Topography is characterised by undulating plateaus with rounded hills and peaks</li> <li>Entrenched meandering streams with a chain of ponds and tributaries flow through the landscape, most significantly Dog Trap Creek which has cut a deep but narrow channel through the landscape</li> <li>The West Jerrabomberra Nature Reserve and Wanniasa Hill Special Purpose Reserve feature grassland and woodland vegetation in good condition</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Nature reserves are protected by the <i>Nature Conservation Act 2014</i></li> <li>The Woden Homestead, Rose Cottage and Tralee and Couranga Homesteads are all heritage-listed sites significant for their cultural history and building styles</li> <li>The Monaro Highway is a recognised 'designated area' in the DCP, meaning 'development along this route should enhance the rural character and landscape of land adjoining the area before the road</li> </ul>                                                                                                                                                                                                                                                                               | Medium          |

| Landscape character zone | Description | Key characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Associated values                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Landscape value |
|--------------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|                          |             | <ul style="list-style-type: none"> <li>– The Gilmore and MacArthur horse holding paddocks are located in the southwest of LCZ2 and host designated riding areas and equestrian trails, which feature distant open views to Isaacs Pines and Wanniasa Hill Nature Reserve</li> <li>– Walking tracks which meander through the nature reserves and provide recreational opportunities, including the Canberra Centenary Trail which passes through the Wanniasa Hills Nature Reserve</li> <li>– Scattered rural residential properties, including Rose Cottage and the heritage-listed Woden Homestead</li> <li>– The Rose Cottage estate is situated approximately 1km southwest of the site on Isabella Drive. It was built in 1870 as part of the Tuggeranong Station. Lately operating as pub and function space, with an outdoor entertainment space</li> <li>– The local road network comprises bi-directional sealed roads, long gravel driveways and the Monaro Highway which runs in a north-easterly direction through the study area towards Canberra</li> <li>– Some large plots are occupied by industrial and commercial activities, including the MLRMC site and the Corkhill Bros landscaping supply store</li> <li>– Fencing is mostly standard post and wire fencing around paddocks and property boundaries</li> </ul> | <ul style="list-style-type: none"> <li>– enters the urban area' (ACT Government, 2009)</li> <li>– In the west of the study area Wanniasa Hill Nature Reserve and Wanniasa Hill Special Purpose Reserve are also recognised as designated areas</li> <li>– Ecological values are associated with riparian vegetation along Dog Trap Creek Gully, as well as grassland and woodland vegetation in nature reserves</li> <li>– A small area of zone 'NUZ3: Hills, ridges and buffer areas' occupies the west of the study area, policy states that such areas 'are to remain substantially undeveloped in order to protect the symbolic role and Australian landscape character of the hills and ridges as the scenic backdrop to the city and to maintain the visual definition and physical containment of the surrounding towns' (ACT Government, 2008)</li> <li>– The area around Dog Trap Creek is on the ACT Heritage Register due to a number of artefacts found here from before and after European settlement, showing early evidence of interaction between Aboriginal and European people. It marks the start of the Tuggeranong Heritage Track</li> </ul> |                 |



### 11.3.3 Assessment of visual impacts

Viewpoint locations were selected for assessment that were representative of sensitive visual receiver locations. To best illustrate the likely visual impacts of the proposal, viewpoint locations chosen for assessment aim to represent a balance of:

- Publicly accessible visual receivers
- The most sensitive visual receivers
- A range of visual receiver types
- A range of distances from the proposal
- A range of view directions towards the proposal within the study area

The evaluation of potential impacts on visual amenity was based on the sensitivity of the viewpoint (and the visual receiver it represents) to change, and the magnitude of change that is likely to occur. The sensitivity and magnitude of visual effects addresses the following specific criteria:

- The sensitivity of the viewpoint to proposed change (refer Table 11.5).
- The magnitude of change to views and visual amenity (refer Table 11.6).

Table 11.5 Sensitivity to change criteria (visual)

| Rating            | Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>High</b>       | <ul style="list-style-type: none"> <li>– Occupiers of residential properties, at home or going to and from, with long viewing periods, within proximity of the proposed development.</li> <li>– Communities that place value upon the landscape and enjoyment of views of their setting.</li> </ul>                                                                                                                                          |
| <b>Moderate</b>   | <ul style="list-style-type: none"> <li>– Outdoor workers who have a key focus on their work who may also have intermittent views of the study area.</li> <li>– Viewers at schools, or similar, when outdoor play and recreation areas are located within proximity but viewing periods are limited.</li> <li>– Occupiers of residential properties with long viewing periods, at a distance from or screened from the study area.</li> </ul> |
| <b>Low</b>        | <ul style="list-style-type: none"> <li>– Road users in motor vehicles, trains or on transport routes that are passing through or adjacent to the study area and therefore have short term views.</li> <li>– Viewers indoor at their place of work, schools or similar.</li> </ul>                                                                                                                                                            |
| <b>Negligible</b> | <ul style="list-style-type: none"> <li>– Viewers from locations where there is screening by vegetation or structures where only occasional screened views are available and viewing times are short.</li> <li>– Road users in motor vehicles, trains or on transport routes that are passing through/adjacent to the study area and have partially screened views and short viewing times.</li> </ul>                                        |

Table 11.6 Magnitude of change criteria (visual)

| Rating            | Criteria                                                                                                                                                                                                                                                                                |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>High</b>       | A substantial/obvious change to the existing view due to total loss of, or change to, elements, features, or characteristics of the view that would cause a view to be permanently changed and its quality diminished.                                                                  |
| <b>Moderate</b>   | Discernible changes in the existing view due to partial loss of, or change to elements, features, or characteristics of the view, however, has potential to be partly mitigated. The change would be out of scale with the existing view and would leave an adverse impact on the view. |
| <b>Low</b>        | Minor loss or alteration to one or more key view elements, features, or characteristics, or the introduction of components that may be visible but may not be uncharacteristic within the existing view.                                                                                |
| <b>Negligible</b> | Almost imperceptible or no change in the view as there is little or no loss of/or change to the elements, features, or characteristics of the view.                                                                                                                                     |

### 11.3.4 Key visual features

Based on the desktop review and site inspection, the key visual features in the study area were identified as:

- The Hume Industrial Estate is prominent within the landscape, characterised by many large sheds, warehouses, large buildings, storage areas and car parks.
- Extensive open plains and undulating hills containing native grassland and woodland vegetation.
- An information plaque at the start of the Tuggeranong Heritage Track on John Cory Road.
- Dog Trap Creek, which has cut a deep and narrow gully through the landscape.
- Meandering streams with chain of ponds tributaries.
- The Monaro Highway, a dual-lane asphalt road which is a key access route to Canberra from the south.
- The Mugga Lane Solar Park, with many rows of solar panels covering a large area.

Key views are typically achieved from elevated areas within the study area. Of particular note are the following:

- Views from the West Jerrabomberra Nature Reserve across the surrounding landscape and distant ridgelines.
- Views from John Cory Road towards the gentle hills of the West Jerrabomberra Nature Reserve, rising to the north beyond Dog Trap Creek.
- Framed views of surrounding hills and mountains through trees and industrial buildings throughout the study area.
- Views from MacArthur towards the Hume Industrial Estate, surrounding broadacre land and distant ridgelines.

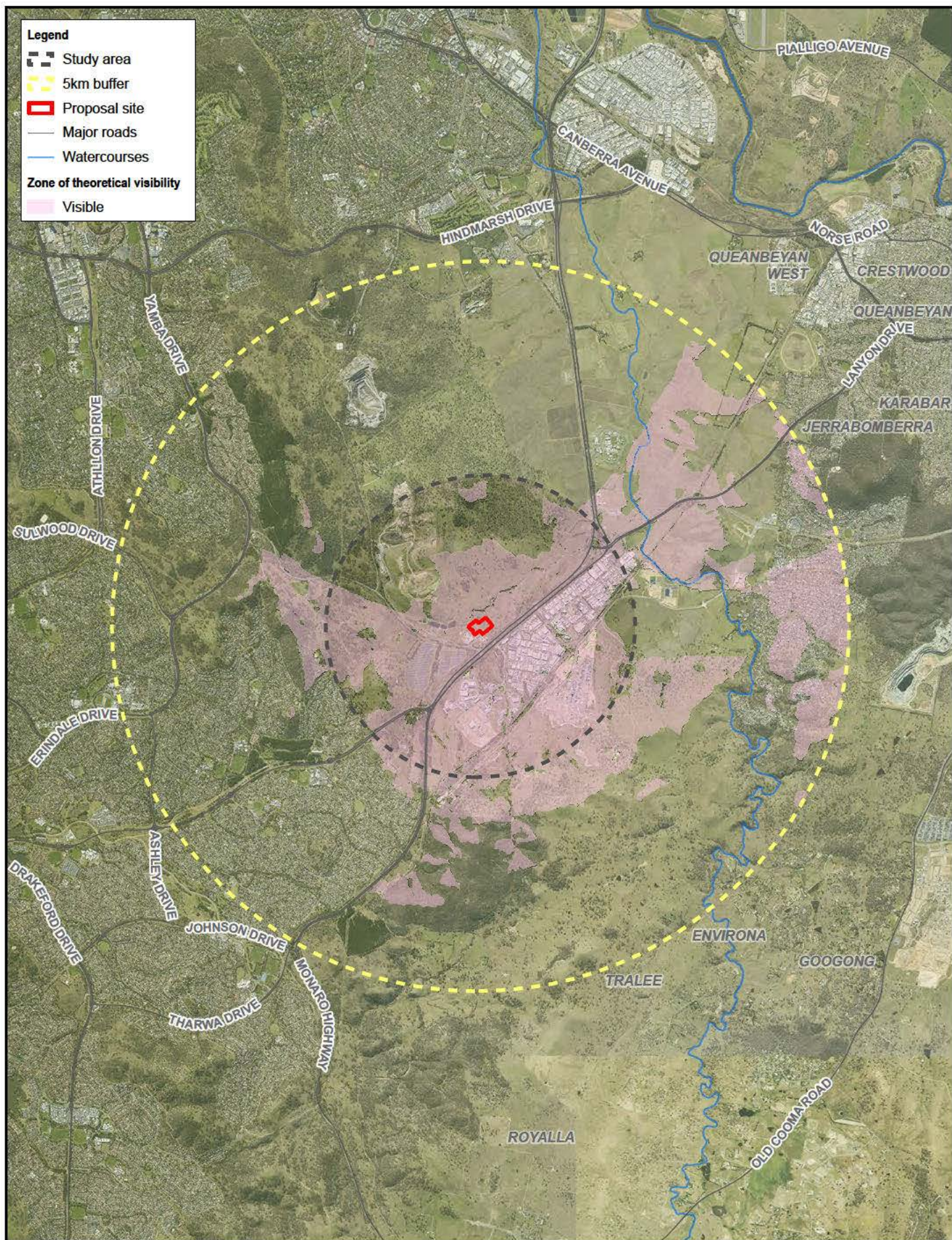
### 11.3.5 Proposal viewshed and sensitive visual receivers

Zone of theoretical visibility (ZTV) mapping undertaken for the proposal is presented in Figure 11.2. The site inspection suggested the actual viewshed for the proposal, when vegetation and built forms are accounted for, would likely be confined to areas within close proximity to the proposal site, such as road users on John Cory Road, Recycling Road and Mugga Lane, or elevated areas within the study area, such as Wanniasa Hills Nature Reserve in the west and West Jerrabomberra Nature Reserve to the north.

### 11.3.6 Viewpoints

The viewpoint locations selected for the visual impact assessment are described in Table 11.7 and shown in Figure 11.3.





Paper Size ISO A4

0 0.5 1  
Kilometres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



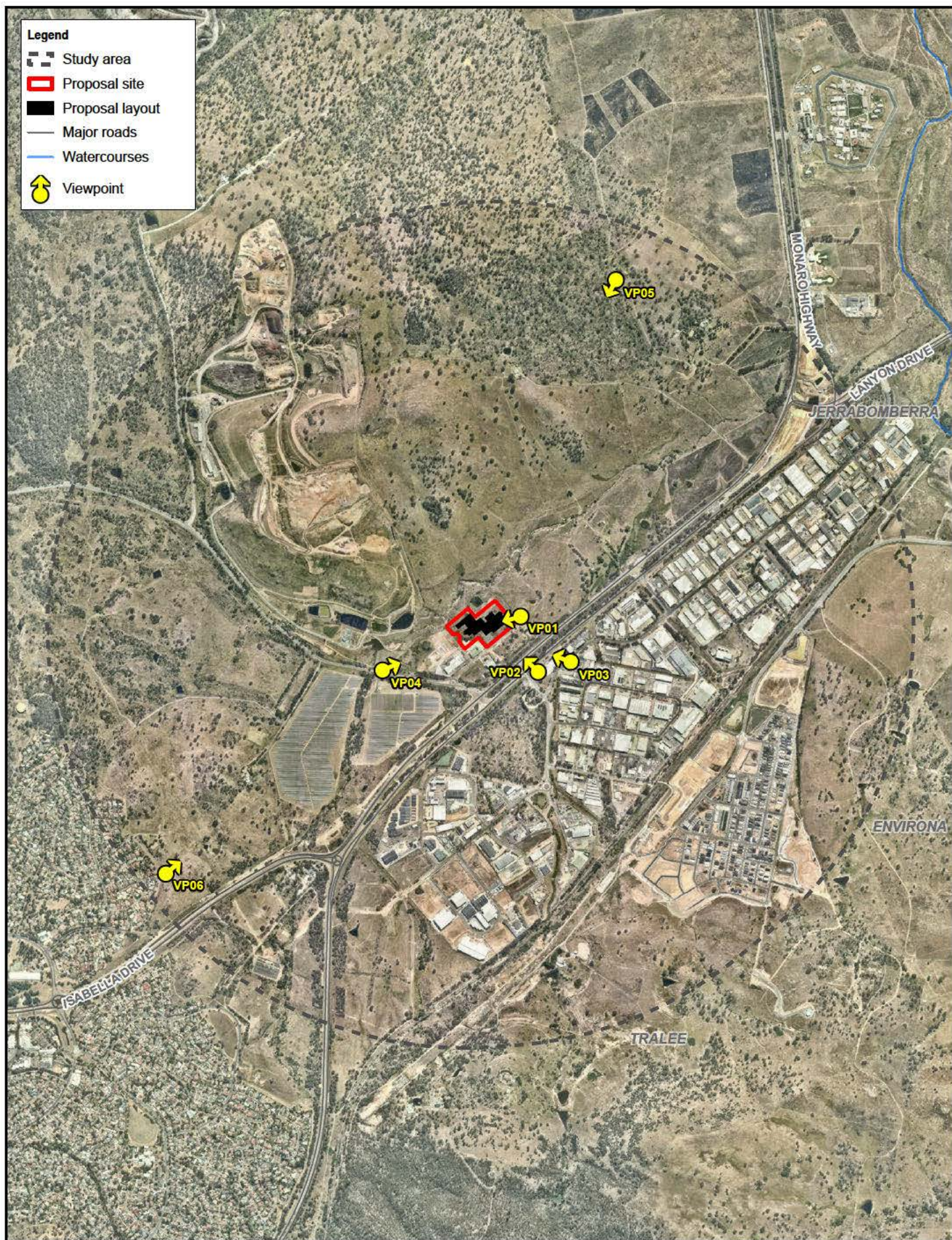
Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540460  
Revision No. 0  
Date 14/09/2023

Zone of theoretical visibility

**FIGURE 11.2**





Paper Size ISO A4  
0 0.25 0.5  
Kilometres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540460  
Revision No. 0  
Date 17/10/2023

## Viewpoints

## FIGURE 11.3



Table 11.7 Viewpoint locations

| Viewpoint                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Viewpoint location 1 (VP01) | <p>VP01 is situated 90 metres from the proposal and faces in a southwest direction. This viewpoint is representative of views experienced by road users on John Cory Road and users of the Tuggeranong Heritage Track.</p>  <p><i>Photo 11.1 Viewpoint location 1: John Cory Road - existing view</i></p> <p>John Cory Road extends away from view, lined with tall streetlights and rows of mature native trees. In the centre of the midground is an open, grassy plain which gradually rises to the right of view, forming a gentle hill scattered with trees. Beyond the plain, the large green sheds of the ACT Skip Hire are visible in the centre of view, partially screened by vegetation. In the left of the background Tralee Hill is visible between the trees, and the densely vegetated Mount Wanniasa ridgeline is visible to the right.</p> |
| Viewpoint location 2 (VP02) | <p>VP02 is situated 230 meters from the proposal and is facing in a northwest direction. This viewpoint is representative of views experienced by road users on the Monaro Highway.</p>  <p><i>Photo 11.2 Viewpoint location 2: Monaro Highway – existing view</i></p> <p>The foreground shows a bitumen highway extending left to right across the field of view. In the left of view is a cross-intersection, where Mugga Lane meets the Monaro Highway. On the near side of the highway is mown grass, and on the far side is a wide median with a row of tall, native trees. The other lane of the highway and another row of buffer trees are visible through the trees.</p>                                                                                                                                                                         |



| Viewpoint                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Viewpoint location 3 (VP03) | <p>VP03 is situated 300 meters from the proposal and is facing in a northwest direction. This viewpoint is representative of views experienced by workers in and visitors to the Hume Industrial Estate.</p>  <p><i>Photo 11.3 Viewpoint location 3: Tralee Street – existing view</i></p> <p>In the foreground a black woven wire fence, approximately two metres high, extends across the view. Behind the fence, is a flat area of lawn with a green and white warehouse to the left. To the right of the fenced area is long, dry grass and a small green shed. In the background, screened views of a small section of the Monaro Highway with multiple rows of native trees behind it.</p>                                                                                                                                                                                                                                         |
| Viewpoint location 4 (VP04) | <p>VP04 is situated 400 meters from the proposal and is facing in a northeast direction. This viewpoint is representative of views experienced by road users on Mugga Lane and workers at the nearby landfill site.</p>  <p><i>Photo 11.4 Viewpoint location 4: Mugga Lane – existing view</i></p> <p>Mugga Lane and the grassed road reservation extend into the background, with rows of large, native trees on either side. Filtered views of the Mugga Lane Solar Park can be achieved through the trees, however long views to the right are restricted by the tree canopies. To the left of the road reservation on the other side of a wire fence is a large, grassy plain which extends into the background. Beyond the plain in the centre of the background, the Materials Recycling Facility is visible. In the left of the background are numerous trees, and behind them a faded ridgeline is visible in the distance.</p> |



| Viewpoint                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Viewpoint location 5 (VP05) | <p>VP05 is situated 1.8 kilometres from the proposal and is facing in a southwest direction. This viewpoint is representative of views experienced by visitors to the West Jerrabomberra Nature Reserve. Two private residences are located 550 and 750 metres south-east and south-west of this viewpoint, respectively.</p>  <p><i>Photo 11.5 Viewpoint location 5: West Jerrabomberra Nature Reserve - existing view</i></p> <p>The foreground consists of an open plain covered in long, dry grass gently sloping away from view. In the midground the clearing transitions to woodland of mature trees and saplings.</p> <p>A powerline runs overhead, through a clearing in the woodland in the centre of view. Through the clearing, in the distance, the low-lying Hume Industrial Estate is visible as a small white cluster of buildings. The Enviro Hills are visible in the background on the horizon.</p>           |
| Viewpoint location 6 (VP06) | <p>VP01 is situated 1.8 kilometres from the proposal and is facing in a northeast direction. This viewpoint is representative of views experienced by residents of the suburb of MacArthur.</p>  <p><i>Photo 11.6 Viewpoint location 6: MacArthur - existing view</i></p> <p>The foreground consists of relatively flat plain covered in tall, dry grass with a post and wire fence running left to right across the view. The topography slopes downwards and the slope is scattered with mature, native trees. A dual set of powerlines runs through the midground, and rolling hills frame the view on both sides. Through the trees, a low-lying area with trees and shed roofs of the Hume Industrial Estate is visible in the background. The proposal site is located in this low-lying area in the centre of view, screened by the trees in the midground. Beyond the valley ridgeline is visible in the distance.</p> |

Other viewpoints were considered for the proposal to determine whether any views from key high points would be impacted.

Table 11.8 Other viewpoint locations

| Viewpoint                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other viewpoint location 1 (OV01) | <p>OV01 is located on the southern edge of the Isaac's Ridge Nature Reserve as shown in Figure 7.1. OV01 is approximately 2.7 kilometres from the proposal and is facing in a southeast direction. Isaac's Ridge nature reserve is a popular visitor destination due to its many walking tracks with long, scenic views and high quality woodlands. The assessment deemed that the proposal will not be visible from Isaac's Ridge Nature Reserve.</p> |



| Viewpoint                         | Description                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other viewpoint location 2 (OV02) | OV02 is located on Palmer Hill, Jerrabomberra. OV02 is approximately four kilometres from the proposal and is facing west. Palmer Hill is a popular destination among locals due to its scenic views of Canberra city and surrounding hills and ridgelines. The assessment deemed that the proposal will not be visible from Palmer Hill. |

## 11.4 Impacts

### 11.4.1 Direct impacts

#### Landscape character impacts

Table 11.9 provides a summary of potential direct landscape character impacts for the proposal.

Impacts on LCZ1 were deemed low, as it is anticipated that the proposal would not be out of character within the industrial area.

Changes to the landscape character of LCZ2 would be indirect and are discussed in Section 11.4.2.

Table 11.9 Summary of direct landscape character impacts

| Landscape character zone                                  | Impact assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Landscape character zone 1: Hume Industrial Estate (LCZ1) | <p><b>Anticipated change to landscape character</b></p> <p>The proposal site is located within LCZ1.</p> <p>Anticipated changes to landscape character during construction works include the delivery of materials, in-situ concrete pouring and construction of new structures, as well as temporary storage areas, fencing and signage.</p> <p>During operation, the main processing building would be steel framed and metal clad construction in Colorbond finish, subject to detailed design.</p> <p>Roads and hardstand areas would be associated with the one-way traffic road for large scale commercial trucks and small-scale vehicles within the proposal site; proposed weighbridges, processing areas adjacent to buildings and a proposed carpark. All vehicles would enter via John Cory Road and exit via John Cory or Recycling Road.</p> <p>During operation, trucks and light vehicles would be present traveling to and from the proposal site through LCZ1. The number of in-bound and out-bound truck movements for the FOGO facility have been estimated at around 80 per day, and light vehicles 30 per day, Monday to Friday. Vehicles delivering FOGO waste are assumed to be 23.5 tonne side loader trucks, and vehicles removing compost are assumed to be 28 tonne trucks.</p> <p>The proposed built works would be visible and would add new elements to the area. However, the area includes existing examples of industrial infrastructure, including the existing MRF in the proposal site, and therefore has capacity for the changes proposed.</p> <p><b>Assessment findings</b></p> <p>The susceptibility to change is <b>Low</b>, as the industrial estate has low landscape value and change caused by the type of development would be unlikely to have a significant adverse effect on the landscape character, condition or values that could not be mitigated. Mitigation measures would be effective in neutralising adverse effects.</p> <p>The sensitivity of the landscape would be <b>Low</b>, as the landscape value is Low and the susceptibility to change is Low.</p> <p>The magnitude of change would be <b>Low</b>, as the introduction of components may be new but would not be uncharacteristic within the existing landscape character. New movement of people and vehicles would be in keeping with existing industrial activities. Construction impacts are short-term and therefore do not significantly impact the magnitude.</p> <p>The significance of impact would be <b>Low</b>.</p> |

#### Visual impacts

Table 11.10 provides a summary of potential visual impacts for the proposal.



Visual impacts at the selected viewpoint locations were generally assessed to be low to negligible due to their low sensitivity and views being commonly screened or filtered by surrounding built form, topography and/or vegetation. Furthermore, the proposed infrastructure components are similar in scale, height, and character to the surrounding existing infrastructure.

The highest visual impacts would be experienced from Viewpoints 1 and 5 due to sensitive receptors on the Tuggeranong Heritage Track and Canberra Centenary Trail. Due to their moderate sensitivity rating, Viewpoint 1 was assessed as having a Moderate-Low overall impact rating.

Table 11.10 Summary of visual impacts

| Viewpoint                              | Impact assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Viewpoint location 1<br>John Cory Road | <p>During construction, visual impacts may be associated with earthworks, in-situ concrete pouring and the establishment of new structures. Construction vehicles, machinery and a work crew may be temporarily visible travelling to and from the site. During this time, storage, stockpile and laydown areas, administration buildings, fencing, barricades and lighting may also be visible. There may be additional dust generated as a result of construction works which may also have a visual impact.</p> <p>During operation, in the centre of the midground, a group of large metal-clad buildings would be visible obscuring the view of the existing Materials Recovery Facility and Mount Wanniasa. In the midground, some earth mounding may be visible under the buildings due to levelling of the site. The 15 metre biofilter stack and other ancillary structures would be obscured from view by the building in view, though vehicles such as waste collection trucks and smaller vehicles would be within view. As the introduced components would have a similar materiality and character to the existing Materials Recovery Facility, they would not be uncharacteristic within the existing view. The proposal illustrated in the photomontage is at concept design stage. It will be reviewed during the detailed design stage and may be subject to change.</p> <p><i>Photo 11.7 Photomontage showing proposed view showing proposed view from John Cory Road (west)</i></p> <p>The sensitivity to change is <b>Moderate</b>, as pedestrians on the Tuggeranong Heritage Track are located proximal to the proposal, however viewing periods are limited and the key focus is away from the site. Road users on John Cory Road have short-term, passing views of the proposal site. The magnitude of change is <b>Moderate</b> as although the introduced facility would not be entirely uncharacteristic within the existing view, it would occupy a large proportion of the view and partially obscure long, scenic views to Mount Wanniasa in the background. Construction impacts are short-term and therefore do not significantly impact the magnitude. significance of impact is <b>Moderate</b>.</p> |
| Viewpoint location 2<br>Monaro Highway | <p>During construction, visual impacts may be associated with in-situ concrete pouring and the establishment of new structures. Construction vehicles, machinery and a work crew may be temporarily visible travelling to and from the site. During this time, filtered views of storage, stockpile and laydown areas, administration buildings, fencing, barricades and lighting may also be visible. There may be additional dust generated as a result of construction works which may also have a visual impact.</p> <p>During operation, filtered views of the large, metal-clad buildings of the new waste facility may be achieved in the centre of the background, as well as ancillary structures and vehicles including water tanks, waste collection trucks, and smaller vehicles. Views of new components would be significantly screened by two rows of trees.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



| Viewpoint                                                 | Impact assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                           | <p>The concept design is mostly consistent with the DCP 171/09/0001 requirements (refer to Section 3.4.4). The National Capital Authority (NCA) have been consulted regarding the departure from the DCP, i.e. the height of the biofilter stack being 15 m (3 m higher than the 12 m roofline).</p> <p>The sensitivity to change is <b>Low</b>, as road users have passing, distant views of the proposal site. The focus of the road users is away from the proposal site.</p> <p>The magnitude of change is <b>Low</b>, as the introduced structure would be a minor alteration to the existing view. Although the introduced facility would be partially visible, it would not be uncharacteristic within the existing view and would be significantly screened by the two rows of buffer vegetation. Construction impacts are short-term and therefore do not significantly impact the magnitude.</p> <p>The significance of impact is <b>Low</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Viewpoint location 3<br>Tralee Street                     | <p>Since views towards the proposal site are filtered by multiple rows of trees, it is unlikely the proposal would be visible from this location. If visible, the introduced buildings and associated vehicles, structures and storage areas would be heavily screened by vegetation and almost imperceptible in the background. There may be additional dust generated as a result of construction works which could be visible above the tree line and through the trees.</p> <p>The sensitivity is <b>Low</b>, as road users on Tralee Street pass have brief, indirect, screened views towards the proposal site.</p> <p>The magnitude of change is <b>Negligible</b>, as the introduced structure would be heavily screened by multiple rows of trees, making it almost imperceptible.</p> <p>The significance of impact is <b>Negligible</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Viewpoint location 4<br>Mugga Lane (east)                 | <p>During construction, visual impacts may be associated with earthworks, in-situ concrete pouring and the establishment of new structures. Construction vehicles, machinery and a work crew may be temporarily visible on and travelling to and from the site. During this time, storage, stockpile and laydown areas, administration buildings, fencing, barricades and lighting may also be visible. There may be additional dust generated as a result of construction works which may also have a visual impact.</p> <p>In the background, to the left of the existing MRF, a group of large metal-clad buildings would be visible. Waste collection trucks and smaller vehicles may also be visible on site and on Mugga Lane, travelling to and from the facility. As the introduced components would have a similar materiality, size and character to the existing MRF, they would not be uncharacteristic within the existing view. As the proposal site is at a distance of 400 metres, the introduced structures would occupy a very small portion of the wider view and would not be prominent.</p> <p>The proposal illustrated in the photomontage is at concept design stage. It will be reviewed during the detailed design stage and may be subject to change.</p>  <p><i>Photo 11.8 Photomontage showing proposed view from Mugga Lane</i></p> <p>The sensitivity is <b>Low</b>, as road users have passing, distant, indirect views of the site.</p> <p>The magnitude of change is <b>Low</b>, as although the introduced facility would be visible, it would occupy a very small portion of the wider view and not be uncharacteristic within the existing view. Construction impacts are short-term and therefore do not significantly impact the magnitude.</p> <p>The significance of impact is <b>Low</b>.</p> |
| Viewpoint location 5<br>West Jerrabomberra Nature Reserve | <p>The proposal site is obscured by the midground vegetation and would not be visible from this location. Occasional glimpses of the proposal may be achieved, but they would be at a distance of almost two kilometres and would be almost imperceptible among the cluster of other buildings within the industrial estate.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



| Viewpoint                                 | Impact assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | <p>The sensitivity is <b>Negligible</b>, as from this location the site is entirely screened by vegetation and topography. Potential occasional views would be short-term, partially screened and at a significant distance.</p> <p>The magnitude of change is <b>Negligible</b> as there is no change to the key elements, features or characteristics of the existing view.</p> <p>The significance of impact is <b>Negligible</b>.</p>                                                                                                                                                                                                                                                                                                                                                                            |
| Viewpoint location 6<br>MacArthur hilltop | <p>It is unlikely the proposal would be visible from this location, due to the terrain and vegetation blocking the view. Occasional glimpses of the proposal may be achieved, but they would be at a distance of almost two kilometres and would be almost imperceptible among the cluster of other buildings within the industrial estate.</p> <p>The sensitivity is <b>Negligible</b>, as from this location the site is entirely screened by vegetation and topography. Potential, occasional views may be achieved, but they would be short-term, partially screened and at a significant distance.</p> <p>The magnitude of change is <b>Negligible</b> as there is no change to the key elements, features or characteristics of the existing view.</p> <p>The significance of impact is <b>Negligible</b>.</p> |

### Consistency with Development Control Plan 171/09/0001

The concept design for the proposal is consistent with the DCP requirements.

The proposed buildings would be limited to a maximum height of 12 metres however consultation with the NCA indicated that a biostack of up to three metres above the roof height (i.e. 15 metres total height) would be unlikely to impact the landscape. Proposed façade materials and colours comply with DCP relevant guidelines. Main vehicle access routes would be located on Recycling Road and John Cory Road, complying with the DCP access requirements.

### Potential for lighting impacts in relation to pilot distraction

The proposed FOGO facility would be similar to others in the area and would offer no significant extra lighting or have lighting that differs from other industrial buildings. Lighting may be used in the earlier hours and would be minimised once there is adequate daylight.

Canberra airport is 14 kilometres away, which is more than twice the six kilometre radius zone for lighting to be subject to the provisions of regulation 94 of CAR (Civil Aviation Regulations) 1988.

Finally, the light design in the facility is not expected to conflict with runway lighting in its configuration or pattern and therefore the risk of pilot distraction would be minimal/rare.

## 11.4.2 Indirect impacts

### Landscape character impacts

Table 11.9 provides a summary of potential indirect landscape character impacts for the proposal.

Impacts on LCZ2 were assessed to be negligible.

Changes to the landscape character of LCZ1 would be direct and are discussed in Section 11.4.1.

Table 11.11 Summary of indirect landscape character impacts

| Landscape character zone                            | Impact assessment                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Landscape character zone 2: Undulating rural (LCZ2) | <p><b>Anticipated change to landscape character</b></p> <p>The proposal site is located adjacent to LCZ2.</p> <p>The anticipated change to the landscape character of LCZ2 would be indirect and relates to modifications of the landscape character within LCZ1. The undulating terrain within LCZ2 limits many views of the proposal site, however close-range views may be achieved from John Cory Road, Mugga Lane and the Monaro Highway.</p> |



| Landscape character zone | Impact assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | <p>During construction, views of proposal site compounds and administration buildings, storage areas, fencing, signage, cranes, and other machinery associated with construction may be achieved.</p> <p>During operation, trucks and light vehicles would be present traveling to and from the site through LCZ2. At the 20-year processing capacity, the number of truck movements have been estimated at 665 inbound and 665 outbound per week. This is an increase of 290 truck movements per week when compared to estimated existing truck movements.</p> <p>During operation, views of buildings, vehicles and infrastructure associated with the proposal may be achieved.</p> <p><b>Assessment findings</b></p> <p>The susceptibility to change is <b>Low</b>, as it is unlikely that this development would have an adverse effect on the landscape character, condition, or value. Mitigation measures such as appropriate screening and siting of storage areas would be effective in neutralising adverse effects and impacts of construction would be short-term.</p> <p>The sensitivity of the landscape would be <b>Low</b>, as although the landscape value is Medium, the susceptibility to change is Low and the development is not within LCZ2.</p> <p>The magnitude of change would be <b>Negligible</b>, as there would be no change to existing landscape character as the proposal is outside of LCZ2. Any new movement of trucks in this character zone would be in keeping with existing activities and would not be out of character. Though views to the construction and operation of the proposal may be achieved, views to LCZ1 are not a key feature of LCZ2 and therefore the anticipated changes do not significantly impact the landscape character.</p> <p>The significance of impact would be <b>Negligible</b>.</p> |

## Visual impacts

No indirect visual impacts are anticipated during construction or operation.

## 11.5 Mitigation measures

Table 11.12 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential landscape and visual impacts.

Table 11.12 Landscape and visual mitigation measures

| Potential impact                                        | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                    | Timing       |
|---------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Visibility of construction activities and storage areas | LV01 | All practical measures will be undertaken to ensure construction equipment, storage areas, and other visible elements are located away from key views to or from the identified sensitive visual receivers.                                                                                                                                           | Construction |
|                                                         | LV02 | General tidiness of the site will be maintained during construction.                                                                                                                                                                                                                                                                                  |              |
|                                                         | LV03 | Conducting of works in evenings and nights will be avoided where possible, to minimise impacts from lighting.                                                                                                                                                                                                                                         |              |
|                                                         | LV04 | Where works cannot be located away from trees, tree protection will be provided to ensure they are not damaged.                                                                                                                                                                                                                                       |              |
|                                                         | LV05 | All areas disturbed by construction and ancillary works will be rehabilitated to their previous condition.                                                                                                                                                                                                                                            |              |
|                                                         | LV06 | During construction, screening measures will be employed to assist the proposal site in blending into the surrounding area. Choice of screening will be sympathetic to the existing rural setting (e.g. neutral colours or green depending on location).                                                                                              |              |
| Visual impacts during operation                         | LV07 | <p>The following measures will be considered during detailed design in relation to design materiality:</p> <ul style="list-style-type: none"> <li>Ensure the proposal form, material and finishes are of high quality and are in keeping with the surrounding setting, contributing positively to the existing landscape character values.</li> </ul> | Operation    |



| Potential impact | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Timing                     |
|------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
|                  |      | <ul style="list-style-type: none"> <li>The DCP Guidelines states that 'The roof should be of pre-coated metal of low reflectivity'. This should be taken into consideration when specifying Colourbond metal roofing finishes.</li> <li>Avoid or minimise the use of shiny or reflective materials to minimise associated visual impacts on surrounding sensitive receivers.</li> <li>Consider specifying a custom-designed external cladding that complements the Indigenous cultural and rural landscape setting, for instance by printing imagery of native vegetation onto the façade, in order to mitigate visual impacts from the Tuggeranong Heritage Track.</li> <li>If custom-designed cladding is not possible, consider using a green colour for the roof and external Colourbond steel façade walls of the facility to ensure it is in keeping with nearby structures, reducing the landscape and visual impacts.</li> </ul> |                            |
|                  | LV08 | <p>The following measures will be considered during detailed design in relation to landscaping:</p> <ul style="list-style-type: none"> <li>Screen planting along the northern property boundary, to preserve the landscape character of Dog Trap Creek corridor and to minimise views from surrounding elevated areas and consistent with principles shown on DCP Drawing No. 171/08/0009.</li> <li>Increasing the density of planting along the site boundaries, to minimise visual impacts of the buildings, car parking, and ancillary structures and equipment, following DCP 171/09/0001 planting requirements.</li> <li>Planting screening vegetation within the site boundary along John Cory Road, to minimise visual impacts experienced from the Tuggeranong Heritage Track.</li> <li>Avoid the clearing of trees where possible, to retain the existing character values.</li> </ul>                                          | Detailed design            |
|                  | LV09 | <p>The following measures will be considered during detailed design in relation to signage:</p> <ul style="list-style-type: none"> <li>Minimising signage dimensions</li> <li>Avoiding brightly illuminated signage</li> <li>Employing high quality signage design</li> <li>Locating signage on buildings rather than freestanding.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Construction and operation |

## 11.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual landscape and visual risks associated with the proposal has been considered and these are identified in Table 11.13.

Table 11.13 Landscape and visual – residual risk assessment

| Risks Identified                                                                   | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                           |                      |                     |                      |                      |
| Visual impacts during construction                                                 | Medium               | Unlikely            | Minor                | Very Low             |
| Additional visual impacts of the new facility to the existing landscape            | Medium               | Unlikely            | Minor                | Very Low             |
| <b>Additional risks</b>                                                            |                      |                     |                      |                      |
| Consider visual impact to the Monaro Highway and consistency with DCP 171/09/0001. | NA                   | Possible            | Minimal              | Very Low             |
| Lighting impacts in relation to pilot distraction<br>Pilot lighting distraction    | NA                   | Remote              | Major                | Low                  |



# 12. Soils and geology

## 12.1 Requirements

This chapter addresses the following soils and geology requirements of the Scoping Document:

- Describe the soil and geology features of the area.
- Provide an environmental assessment of potential existing contamination from previous and adjacent land uses at the development site undertaken by a suitably qualified environmental consultant.
- An assessment of potential PFAS (per-and poly-fluoroalkyl substances) contamination for the site is required.
- Discuss any contamination impacts that are present at the site (soil and groundwater), and how the site will be remediated (if required).
- Describe the potential impacts of leachate/contaminant spills on the local soils.

## 12.2 Environmental conditions and values

### 12.2.1 Topography and drainage

The proposal site area varies between 611 and 614 metres Australia Height Datum (m AHD). The regional topography is mostly flat in the southern area with a slight fall from south to north. The northern area has a relatively steep incline (maximum elevation 730 m AHD) on the northern buffer boundary.

Surface water is expected to follow the local topography and generally flow northwards towards the small dam and Dog Trap Creek.

### 12.2.2 Soils and geology

According to the Atlas of Australian Soils (CSIRO, 2011) the proposal site is within the Williamsdale Landscape. This unit is characterised by Kandosols which are associated with yellow leached earths in intermediate drainage areas and hard neutral and/or alkaline yellow mottled soils in poorly drained areas.

The proposal site falls under acid sulphate soils Class C, and therefore the proposal would have an extremely low probability of encountering acid sulphate containing soils (CSIRO, 2011).

The proposal site is situated on Silurian aged Deakin Volcanics – Rhyodacitic ignimbrite and minor volcanoclastic and argillaceous sediments (NSW Department of Industry, 2014).

### 12.2.3 Hydrogeology

The proposal site and surrounding area is located on extensive fractured or fissured aquifers described to have low to moderate productivity. It is on the Symonston Hydrogeological Landscape which is characterised by low land salinity, with moderate salt store and mobility. There is no available information from boreholes on or within one kilometre of the proposal site.

## 12.3 Investigations

### 12.3.1 Preliminary investigation

A Preliminary Site Investigation (PSI) was completed in general accordance with the ACT Government's 'Information Sheet 7' and guidelines endorsed by the EPA as detailed in the 'Contaminated Sites Environment Protection Policy' (ACT Government, 2017c). To support the investigation a Lotsearch report was acquired which consolidated many of the environmental searches.

The investigation included:

- Searches and review of:

- Historic aerial photographs
- Contaminated Land Search of records held by the EPA
- Groundwater bore records
- Current and former uses of the proposal site through desk-based searches
- Dangerous substances storage at the proposal site
- Soils, geology, hydrology, hydrogeology, and borehole logs
- A site inspection conducted on 27 April 2022
- Preparation of a preliminary conceptual site model
- Provision of conclusions and recommendations (as required) in the context of redevelopment of the proposal site.

This chapter provides a summary of the assessment findings. The full PSI is provided in Appendix K.

### 12.3.2 Historic aerial photographs

Historical aerial photographs show that the proposal site remained undeveloped until 2004, when the existing MRF was established. In 2019, the MRF hardstand area expanded to the north and is used as storage area. There is also a small hard portion extending to the western site boundary by 2019 and appears to also be used as an uncovered storage area.

### 12.3.3 Contaminated land register

The block is recorded on the EPA's contaminated sites management database and geographic information system. This is due to the historic use as a materials recycling facility and the close proximity to MLRMC due to the ability of contaminants to migrate through the environment.

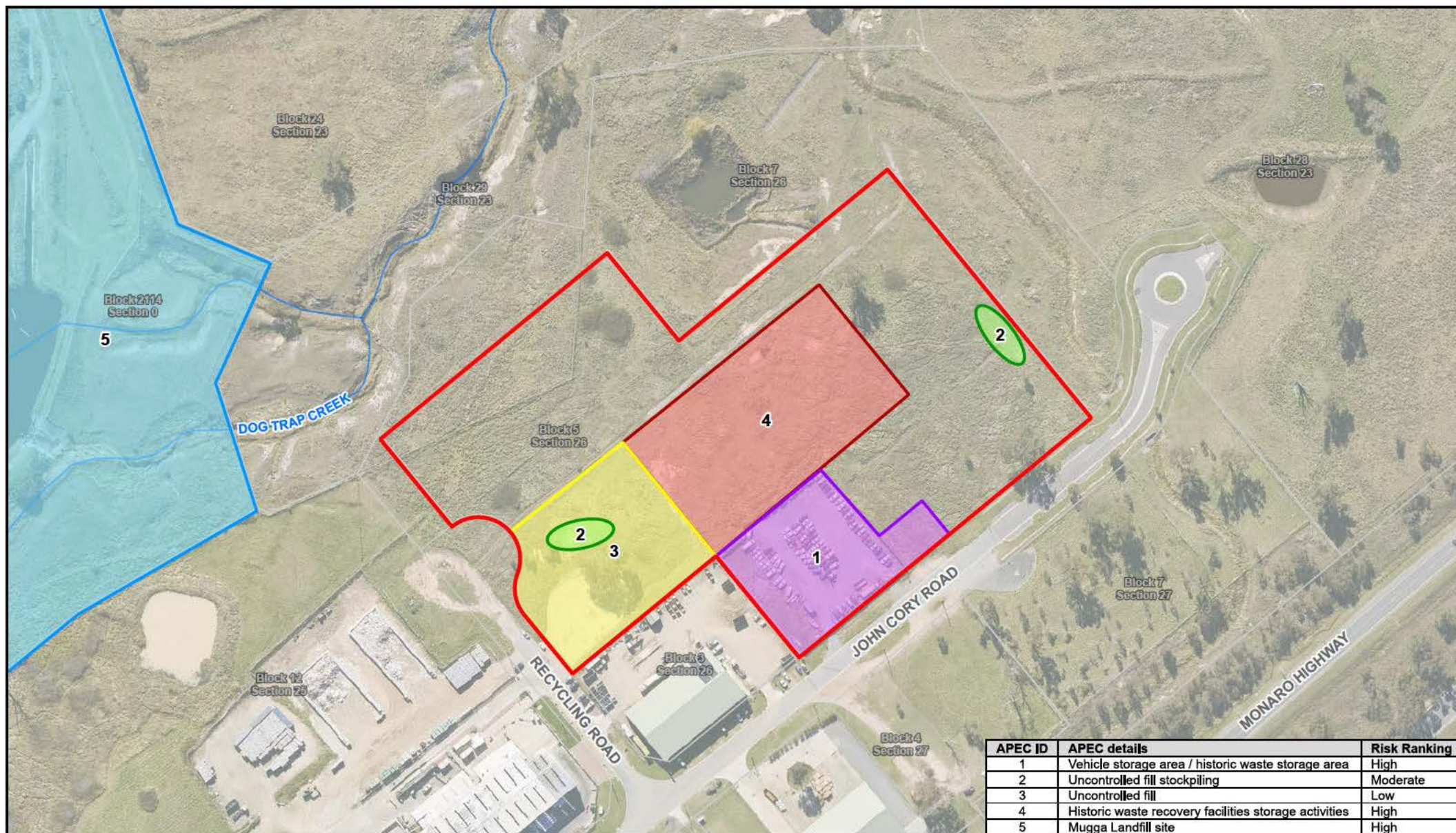
### 12.3.4 Areas of potential environmental concern

Based on review of historical aerial photography, information from the Lotsearch reports, publicly available resources and proposal site walkover on 27 April 2022, areas of potential environmental concerns (APECs) have been identified and included in Table 12.1, these are also shown in Figure 12.1.

Table 12.1 List of APECs

| AEPC ID | AEPC details                                          | Relation to the site               |
|---------|-------------------------------------------------------|------------------------------------|
| 1       | Vehicle storage area / historic waste storage area    | Within the proposal site boundary  |
| 2       | Uncontrolled fill stockpiling                         | Within the proposal site boundary  |
| 3       | Uncontrolled fill                                     | Within the proposal site boundary  |
| 4       | Historic waste recovery facilities storage activities | Within the proposal site boundary  |
| 5       | Mugga Landfill site                                   | Outside the proposal site boundary |





#### Legend

Cadastre  
 Proposal site  
 Watercourses

**APEC**  
 1  
 2  
 3

4  
 5

Paper Size ISO A4  
 0 25 50  
 Metres  
 Map Projection: Transverse Mercator  
 Horizontal Datum: GDA 1994  
 Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
 Hume Food Organics and Garden Organics Facility  
 Environmental Impact Statement

Areas of potential environmental  
 concern

Project No. 12540460  
 Revision No. 0  
 Date 29/08/2023

**FIGURE 12.1**



## 12.4 Impacts

### 12.4.1 Direct impacts

#### Construction

##### Preliminary conceptual site model

A preliminary conceptual site model was developed, as summarised in Table 12.2.

Table 12.2 Preliminary conceptual site model

| Sources                                                  | Contaminant of potential concern                                                                                                                                                                                                                                                                                                                                                        | Pathway                                                                                                                                                                       | Receptor                                                                                                                                  | Potentially or complete exposure pathway |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| On-site:<br>– APEC 1<br>– APEC 2<br>– APEC 3<br>– APEC 4 | <ul style="list-style-type: none"> <li>Asbestos containing material (ACM)</li> <li>Heavy metals (including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc)</li> <li>Organochlorine pesticides (OCP)</li> <li>Organophosphate pesticides (OPP)</li> <li>Polychlorinated biphenyls (PCB)</li> <li>Petroleum hydrocarbons including TRH, BTEX, PAH, Phenols</li> </ul> | Direct contact or inhalation with contaminated soil, fill materials or groundwater.<br>Vapour inhalation.<br>Ingestion of soils and dust.<br>Direct contact with groundwater. | Human<br>– Construction workers<br>– Future FOGO facility employees (including intrusive/extrusive maintenance workers and site visitors) | Possible                                 |
|                                                          |                                                                                                                                                                                                                                                                                                                                                                                         | Migration of surface water towards down gradient receptors.<br>Migration of groundwater towards down gradient receptors.<br>Discharge of groundwater to surface water bodies. | Ecological<br>– Aquatic ecological receptors                                                                                              |                                          |

The preliminary conceptual site model suggested that proposal site is likely to pose a contamination risk to future construction workers. A TSI was therefore undertaken to further investigate the potential for contamination risk.

#### Targeted site investigation

A TSI was undertaken in April and June 2023. The sampling analysis and quality plan is presented in Appendix L.

Key findings of the TSI were as follows:

- The soil profile at test pit locations comprised natural alluvial or residual material consisting of brown to tan or pale orange sandy clay or clayey sand, with some silt or gravel.
- The soil profile at hand auger locations comprised similar natural material with exception of HA07 consisting of gravelly sand towards the target depth. Groundwater was encountered at HA02 at approximately 0.8 metres.
- The soil profile of stockpile 1 in the western portion of the proposal site comprised of dark brown to brown sandy clay, with protruding bricks and some pipes near the base of the stockpile which were embedded within the soil.
- The soil profile of stockpile 2 in the eastern portion of the proposal site comprised of dark brown to brown sandy clay.
- No visual or olfactory evidence of contamination were encountered during the sampling.
- No suspected ACM was encountered at ground surface or stockpile surface at and surrounding sampling locations.



- Asbestos was not detected in any of analysed soil samples.
- Concentrations of COPCs in analysed soil samples were below adopted health screening criteria.

The TSI recommended that continued contamination investigation, assessment, and soil waste classification occur during the design and construction phases of the project, consistent with standard industry design practice.

Noting the adjacent landfill site, any additional contamination investigation should consider media of soil, groundwater, and potential ground gas.

Section 12.5 identifies other proposed measures to mitigate potential contamination risks during demolition and construction works.

### **Contamination and spills**

Potential impacts of contamination associated with construction of the proposal include:

- Increased waste from improper practices such as poor fill management.
- Contaminated or hazardous waste not being correctly disposed of.
- Release of contaminants from construction plant and equipment into underlying soils and groundwater.
- Movement of contaminated sediments from chemical spills into waterways.

The contamination risk from uncontrolled fill would be appropriately managed with the use of an Unexpected Finds Protocol (UFP) during construction. This would be included in the CEMP.

Construction activities would require on-site use and storage of diesel fuel, and lubricating oils. Incorrect management of these materials could result in accidental spills. Safeguards for the transport, storage, use and disposal of these substances would be developed and implemented during construction, to minimise the risk of impacts from these substances on soil and water. All hazardous materials would be stored and banded in designated areas within site compounds in accordance with AS 1940-2004 The storage and handling of flammable and combustible liquids (Standards Australia, 2004).

### **Spoil**

Spoil from the excavation is planned to be reused on-site for filling and compaction. Excavation works would be carried out using excavators and borer machines.

To assess the reuse or disposal options for excavated materials for use as backfill, a risk-based approach would be applied. If the excavated material is of suitable properties for use as backfill then in most cases, it would be reused for that purpose on-site. Where there is surplus excavated material that cannot be reused on-site then it would be necessary to undertake soil classification tests to identify reuse or disposal options.

In the event that excavated material is assessed not to be appropriate for reuse on-site, it could be necessary to import additional material to make up any identified deficit (for backfilling of pole footings). If required, material would be sourced from a local quarry as certified Virgin Excavated Natural Material (VENM).

Stockpiled materials can also cause impacts when materials are mixed. For example, mixing of suitable and unsuitable material or mixing contaminated material can lead to materials that would have ordinarily been reused being rendered as waste. Improper management and handling of stockpiled materials may lead to the need to dispose of materials rather than being able to reuse the materials during construction.

## **Operation**

### **Contamination and spills**

Potential impacts of contamination associated with operation of the proposal include:

- Contaminated or hazardous waste not being correctly disposed of.
- Release of contaminants from operation plant and equipment into underlying soils and groundwater.
- Movement of contaminated sediments from chemical spills into waterways.

Operation activities may require on-site use and storage of diesel fuel, and lubricating oils. Incorrect management of these materials could result in accidental spills. Spill kits would be appropriately placed around the proposal site

during operation and materials would be stored away from drains. All materials would be stored on bunds or as appropriate and safety data sheets (SDS) stored nearby at all times. Safeguards for the transport, storage, use and disposal of these substances would be developed as part of the detailed design and implemented during operation, to minimise the risk of impacts from these substances on soil and water. This would include designated storage areas, storage on bunds and in appropriate containers. All hazardous materials should be stored and banded in designated areas within the site compounds in accordance with AS 1940-2004 The storage and handling of flammable and combustible liquids (Standards Australia, 2004).

FOGO facility feedstock contaminants would be managed in accordance with procedures outlined in Chapter 10.

Runoff and leachate management would be managed in accordance with procedures outlined in Chapter 13.

The storage of potentially hazardous chemicals and other substances has been outlined in Chapter 19.

## 12.4.2 Indirect impacts

### Construction

#### Erosion and sedimentation impacts

During construction, there would be potential for sediment and nutrient laden runoff from areas disturbed by construction to impact water quality in downstream waterways. Areas which would present a high risk of soil erosion include locations where both surface gradients and slope lengths combined would increase the erosive potential of stormwater runoff.

Activities which have the highest risk of sedimentation and erosion impacts include:

- Works near creeks and stormwater drainage lines.
- Vegetation removal.
- General earthworks, including stripping of topsoil, excavation of material or filling of material.
- Stockpiling of topsoil and vegetation.
- Transportation of materials.
- Movement of heavy vehicles across exposed earth.
- Mobilisation of unconsolidated materials if disturbed surfaces are not stabilised or successfully revegetated following construction.

An ESCP would be prepared as part of the CEMP to identify and mitigate erosion impacts from construction activities, particularly during extreme weather.

### Operation

No indirect impacts from operation are anticipated.

## 12.5 Mitigation measures

Table 10.10 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential impacts to soil and geology.

**Table 12.3** Soil and geology mitigation measures

| Potential impact                                                              | ID   | Mitigation measure                                                                                                            | Timing                                 |
|-------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Existing contamination risks to construction workers and ecological receptors | SG01 | A CMP will be prepared with measures to mitigate unexpected contamination risks during construction and included in the CEMP. | Prior to construction and construction |
|                                                                               | SG02 | An asbestos assessor will be appointed to ensure there is no ACM on the proposal site.                                        | Construction                           |
|                                                                               | SG03 | Drainage on the proposal site will be improved to minimise runoff towards Dog Trap Creek.                                     | Construction                           |



| Potential impact                                                                              | ID   | Mitigation measure                                                                                                                                                                                                                                          | Timing                     |
|-----------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Discovery and/or disturbance of unexpected, contaminated material                             | SG04 | An UFP will be developed and included in the CEMP                                                                                                                                                                                                           | Construction               |
| Sediment and nutrient laden runoff from areas impacting water quality in downstream waterways | SG05 | An ESCP will be prepared as part of the CEMP to identify and mitigate erosion impacts from construction activities, particularly during extreme weather.                                                                                                    | Construction               |
| Transport of contaminated material from the proposal site                                     | SG06 | A designated washdown area will either be provided on the proposal site or located at truck depots off-site.                                                                                                                                                | Construction and operation |
|                                                                                               | SG07 | Any contaminated soil removed from the proposal site will be classified in accordance with ACT EPA 'Requirements for the reuse and disposal of contaminated soil in the ACT' (Access Canberra, 2019) and disposed of at a suitable licensed waste facility. | Construction               |
| Spills of diesel fuel, and lubricating oils                                                   | SG08 | All hazardous materials will be stored and banded in designated areas within site compounds in accordance with AS 1940-2004 The storage and handling of flammable and combustible liquids (Standards Australia, 2004).                                      | Construction and operation |
|                                                                                               | SG09 | All diesel fuels and lubricating oils will be stored in appropriate containers and on bunds and away from drainage areas.                                                                                                                                   | Construction and operation |
|                                                                                               | SG10 | Spills kits will be located adjacent to storage areas.                                                                                                                                                                                                      | Construction and operation |
|                                                                                               | SG11 | All spills will be cleaned up immediately as appropriate and certified by the EPA via letter approval.                                                                                                                                                      | Construction and operation |
|                                                                                               | SG12 | SDS sheets will be located adjacent to storage areas.                                                                                                                                                                                                       | Construction and operation |
| Generation of contaminated material                                                           | SG13 | Appropriate storage areas will be created for batteries and fuel that are compliant with relevant standards.                                                                                                                                                | Operation                  |

## 12.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual soils and geology risks associated with the proposal has been considered and these are identified in Table 12.4.

Table 12.4 Soils and geology – residual risk assessment

| Risks Identified                                                                   | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                           |                      |                     |                      |                      |
| Site contamination (such as liquid contaminant spills) from construction machinery | Low                  | Possible            | Minor                | Low                  |
| Erosion and sedimentation causing pollution of waterways during construction       | Medium               | Unlikely            | Moderate             | Low                  |
| Encountering contaminated land                                                     | High                 | Unlikely            | Moderate             | Low                  |

| Risks Identified                                                                                                                | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Additional risks</b>                                                                                                         |                      |                     |                      |                      |
| Unprocessed material or contaminants separated from materials during operation may be a source of contamination if uncontained. | NA                   | Unlikely            | Moderate             | Low                  |
| Contaminated wastewater and stormwater may impact on surrounding land and water catchments.                                     | NA                   | Unlikely            | Moderate             | Low                  |



# 13. Water quality and hydrology

## 13.1 Requirements

This chapter addresses the following water quality and hydrology requirements of the Scoping Document:

- Describe the surface water and groundwater features of the area.
- Investigate the impact the proposal will have on erosion in the Dog Trap Creek and investigate the need for erosion and sediment control structures in the creek to mitigate this impact.
- Provide an assessment of peak stormwater discharge and stormwater discharge volume from the facility and consideration of the impact of stormwater discharges to the Dog Trap Creek.
- Describe how runoff from the development site will be treated before entering the receiving environment.
- Provide information on stormwater retention and reuse capabilities at the development site.
- Describe the potential impacts of leachate/contaminant spills on local groundwater and surface water.
- Provide information on measures to manage leachate/contaminants emanating from the facility to avoid impacts on groundwater and surface water.

## 13.2 Environmental conditions and values

### 13.2.1 Hydrology

The proposal site has an elevation range between 611 and 614 m AHD, falling in a northerly direction towards Dog Trap Creek (Woden Creek). Dog Trap Creek is located 80 metres north of the proposal site boundary and, according to the Strahler stream ordering system, is a 2<sup>nd</sup> order stream, increasing to a 3<sup>rd</sup> order stream immediately downstream of the proposal site. The stream flows in a north-easterly direction through culverts and under the Monaro Highway before it reaches Jerrabomberra Creek. No natural watercourses pass through the proposal site itself.

The proposal site is part of the Murrumbidgee River Catchment. The Murrumbidgee River flows towards the east, into the Murray River downstream of Balranald. This catchment covers an area of 84,000 square kilometres and contributes to 16 percent of the Murray-Darling Basin's input.

### 13.2.2 Flooding

The proposal site is located adjacent to several gullies and ephemeral channels flowing into Dog Trap Creek near the north-western border of the site. Some minor flow paths and trunk drainage lines also flow in from the south, mainly through Hume industrial area, crossing the Monaro Highway via transverse culverts.

The proposal site is located within a floodplain and is anticipated be impacted within the extreme probability maximum flood (PMF). Flood modelling identified that the proposal site would not be significantly impacted by a 1 in 100 Annual Exceedance Probability (AEP) flooding event, with flood waters generally confined to the northern and eastern extent of the proposal site away from the works. Upstream flood waters would be diverted around the existing operations.

## 13.3 Investigations

### 13.3.1 Overview

A Water Impact Assessment (WIA) was undertaken for the proposal to assess potential for hydrological impacts on the proposal site and surroundings during construction and operation. The assessment included:

- A desktop review of the existing environment,
- Hydraulic flood modelling,

- Water quality modelling,
- Review of water quality targets,
- Assessment of wastewater management strategies,
- Development of storm and wastewater retention and reuse systems.

This chapter provides a summary of the assessment findings. The full WIA is provided in Appendix N.

### 13.3.2 Flood modelling

Hydraulic flood modelling of the proposal site was undertaken using TUFLOW to inform the proposed pad level, as well as to identify and avoid flood impacts to nearby receptors. Specifically:

- Results from the model for the existing scenario were used to identify a pad location that would avoid impacts to the proposal from nearby waterways.
- The final pad elevation was selected based on the initial results of flood modelling to avoid flooding impact to the proposal, as well as to minimise potential impacts to flood velocities, hazard, and level (afflux) for nearby receptors.

Detailed flood mapping results for the existing and proposed design scenario are included in Appendix N.

### 13.3.3 Water sourcing

A crucial part of the FOGO processing is pasteurisation and composting which requires a significant volume of water to maintain optimal moisture content. To be able to maintain FOGO processes working at maximum capacity, it is estimated that approximately 29 percent of moisture by weight is needed to maintain moisture conditions optimal for composting processes. A proposed throughput of 70,000 tonnes per year results in demand of approximately 20 megalitres per year of water.

To ensure that the water demands are met, dedicated stormwater management infrastructure, which may include stormwater tanks or equivalent storages, are proposed to reduce reliance on external sources. An assessment was carried out using a MUSIC model to design for the appropriate sizing of water storage systems to supplement the required water demands on-site. The MUSIC model is further discussed and outlined in Section 13.3.4

MUSIC modelling results (refer Section 13.3.4) showed that the reuse provided by rainwater tanks and stormwater management areas significantly reduced the reliance on potable water. The MUSIC model simulated that approximately 75 percent of water demands could potentially be sourced from on-site water collection. During extended dry periods external supply would need to be relied on to meet water demands in the order of approximately 5 megalitres per year.

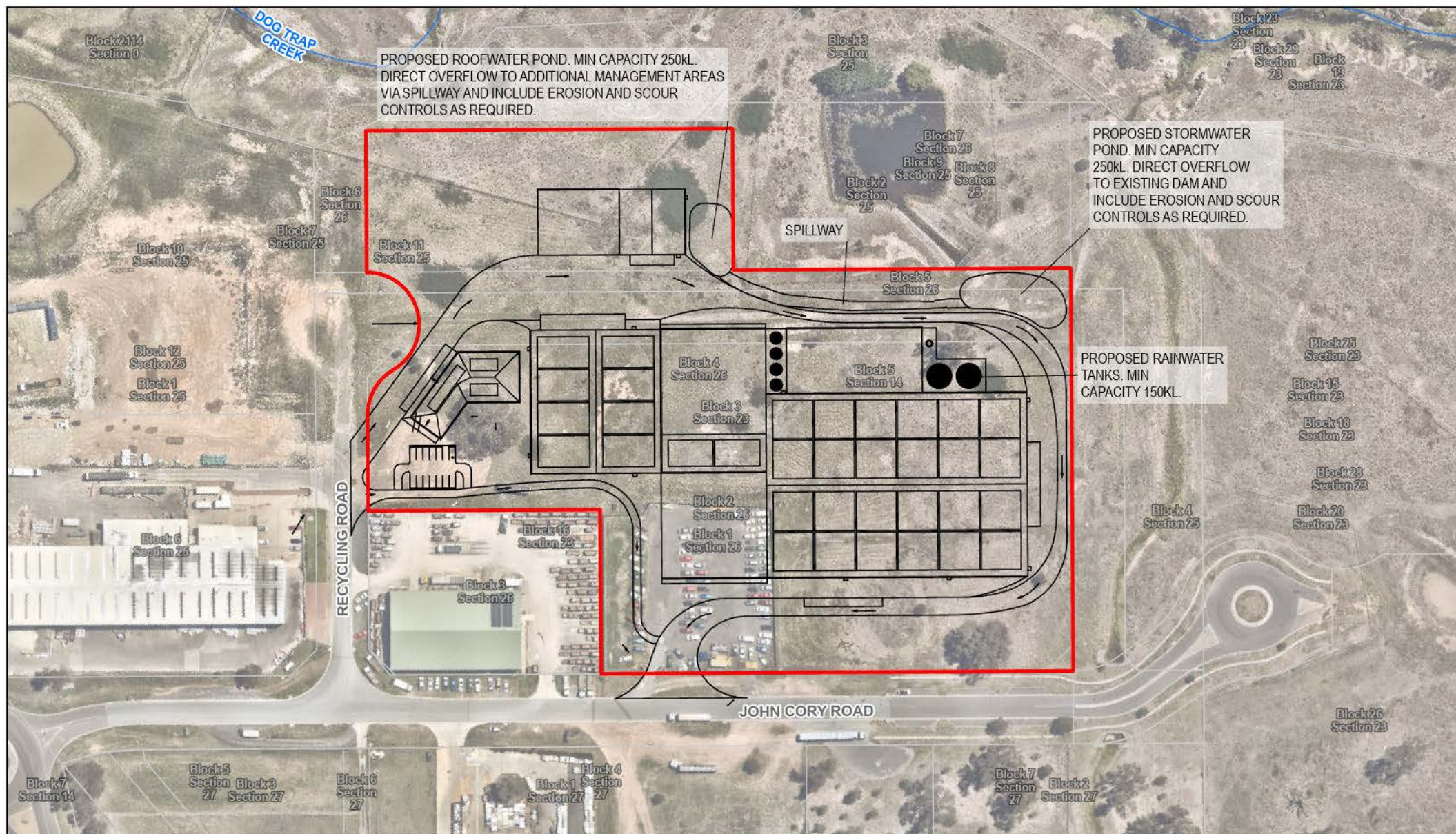
### 13.3.4 Water quality modelling and stormwater management

Identifying that the FOGO processes would be taken place indoors, it is noted that water quality risk is similar to that of a typical urban development. Therefore, the risks associated with the proposal would be similar to those of urbanisation typically such as an increase in runoff volume, sediment, and nutrients.

The proposed in-built water quality treatment train mainly consists of rainwater tanks, detention, and a bio-retention system, as indicated in Figure 13.1. The sizing of the bio-retention basin was iterated until the requirements for all pollutant types were met, indicated by the compliance status. Based on this, the stormwater quality treatment train was specified as follows:

- Roof runoff would be conveyed, captured, and stored in a rainwater storage with capacity of 260 kilolitres. The captured water would be reused for toilet flushing in the building as well as for processes in the FOGO.
- Further runoff would be conveyed to a stormwater storage that would be located at the north-east of the proposal site with a storage of 160 cubic metres. The storage would receive overflow from the rainwater storage.
- Discharge of waters from the treatment train would be via a level spreader or equivalent energy dissipation structure at the outlet to return flows to nearby waterways [REDACTED]

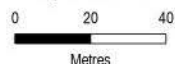




#### Legend

- Proposal site
- Cadastre
- Proposal site layout
- Watercourses

Paper Size ISO A4



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540460  
Revision No. 0  
Date 4/07/2025

**Proposed water treatment design**

**FIGURE 13.1**



### 13.3.5 Water retention and detention

Infrastructure is proposed to manage the quantity (retention) and rate of runoff (detention) and thus minimise impacts to downstream conditions. As part of this process, a water retention and detention system was considered in tandem to the water quality treatment infrastructure (refer Section 13.3.4).

This conceptual stormwater quantity consisted of the following components to address the assessment's requirements:

- Water retention would be provided at a minimum rate of 1.4 kilolitres of storage per 100 square metres of impervious area to be provided for re-use to minimise reliance on external sources.
- Stormwater detention would be implemented at a minimum rate of one kilolitre of storage per 100 square metres of impervious areas to manage the rate at which stormwater leaves the proposal site. Detained stormwater is released over a period of six hours. Peak rate of runoff for the 1 EY event is lesser than an unmitigated (rural) site of the equivalent area.

Using the DRAINS model, a conceptual detention system (see Figure 13.1) was developed based on the following:

- Detention storage is proposed to manage stormwater quantity impacts in accordance with the ACT WSUD regulations and will be configured for both reuse ponds at the proposal site.
- Releases from the stormwater management storage occurs via an engineered pipe-outlet located above the retention zone. The engineered pipe-outlet collects flow from a grated inlet pit and is comprised of a HDPE in the order of 225 millimetre pipe, resulting in a peak flow during the 1 EY event of 65 litres per second compared to the 'existing' baseline of 69 litres per second. This provides 340 kilolitres of temporary storage which is solely drained through the engineered pipe-outlet (equivalent to 1.15 kilolitres of detention per 100 square metre of impervious areas). The outlet typically drains longer duration events over a 6 to 12 hour period.
- During rarer events, up to the 1 in 100 AEP storm, flow through overland flow routes to allow for large events to be safely passed through the system.

### 13.3.6 Wastewater management

Material processing would be undertaken within buildings and under roofed areas, limiting the potential for rainfall derived, leachate generation. To maintain moisture content during FOGO material processing, FOGO processing sites operate on a water deficit, with water required to be sourced to 'make-up' water lost during processing (refer Section 13.3.3).

As material is processed, bleed water, and condensate would be collected in a fully contained, engineered system. Wastewater collected from initial processing of the material can be re-used in the initial processing stages as material is composted. In later stages, any bleed water collected during maturation can be reused and applied to all stages of material processing. Clean water collected from roof-water and storm-water runoff can be reused in all stages of material processing.

Other potential sources of wastewater include generation associated with on-site facilities and typical of domestic wastewater. Trade waste connection may be required, subject to detailed design.

Design of the wastewater system, including the connection to the ACT sewerage network (owned by Icon Water) would be finalised during detailed design of the facility. No impacts from connecting to the existing wastewater network are anticipated.

As all wastewater from both the processing and on-site facilities would be collected in fully contained, engineered systems (with discharge to sewer), no impacts to waterways or biota of waterways are expected.



## 13.4 Impacts

### 13.4.1 Direct impacts

#### Construction

Significant erosion and sedimentation control measures would be required to manage disturbance associated with clearing and construction works adjacent to the waterways, which are unavoidable. Control measures implemented would manage disturbance and potential water quality impacts to downstream waterways and associated aquatic ecosystems with regards to suspended solids.

#### Operation

##### Flooding

Hydraulic modelling was undertaken confirming that the proposal site is located outside of the 1 in 100 AEP flood level. Accordingly, no off-site impacts during this event are anticipated (refer to Section 13.2.2).

##### Water quality

As in-built management measures (see Section 13.3.4) are to be implemented to manage water quality, impacts to the receiving environment, surface water, groundwater and downstream ecosystems are deemed appropriate. Water quantity and discharge rates can be met through in-built management measures to manage stormwater flow rates and to reduce the risk of erosion and scour to nearby waterways, such as Dog Trap Creek.

##### Water sourcing

Given an expected throughput of 70,000 tonnes of organic material per year, the FOGO facility is predicted to demand approximately 20 megalitres water per year to operate at an effective capacity. To ensure that the water demands are met, dedicated stormwater management areas and tanks are proposed to reduce demand on external sources.

MUSIC modelling results supported the assertion that reuse via the rainwater tanks and ponds significantly reduces reliance on potable water. The MUSIC model simulated that approximately 75 percent of water demands could be sourced from on-site water collection. During extended dry periods external supply would need to be relied on.

Overall, appropriate sourcing of water demands has been confirmed and is outlined in Section 13.3.3.

##### Wastewater management

Wastewater generated on-site would be managed in a dedicated collection and conveyance system. As waste materials would be located indoors or roofed, rainfall derived wastewater would not be generated. Wastewater generated would generally be from water applied to processes. The appropriate management of wastewater has been confirmed as outlined in Section 13.3.6, including an engineered system to contain wastewater onsite such that impacts to receiving environments are not predicted.

Other potential sources of wastewater include generation associated with on-site facilities and typical of domestic wastewater. Trade waste connection may be required, subject to detailed design, and Icon Water would be consulted as appropriate to obtain a trade waste licence. All water generated by the proposal would be managed in accordance with authority (Icon Water) requirements.

### 13.4.2 Indirect impacts

#### Construction

An ESCP would be prepared as part of the CEMP to manage sediment and nutrient laden runoff impacts from construction activities on local waterways, particularly during extreme weather events. A Soil and Water Management Plan (SWMP) would also be prepared for the construction phase.

## Operation

Erosion of Dog Trap Creek was raised as a concern during public consultation of the EIS. As discussed in Section 13.3.5, the proposal includes a water retention and detention system developed in accordance with the ACT Water Sensitive Urban Design regulations. The erosion assessment confirmed that the proposal is not anticipated to contribute to a change in creek morphology or bank retreat rates as the proposed discharge rates would be lower than the flood velocities that would otherwise be expected to contribute to erosion of the creek. That is, the proposal is not expected to contribute to erosion of Dog Trap Creek.

No indirect impacts from operation are anticipated.

## 13.5 Mitigation measures

Table 13.1 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential impacts to water quality and hydrology.

Table 13.1 Water quality and hydrology mitigation measures

| Potential impact                                                                                                 | ID  | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Timing       |
|------------------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Water quality impacts to downstream waterways and associated aquatic ecosystems with regards to suspended solids | W01 | <p>Before the commencement of construction, a SWMP will be developed in accordance with Environment Protection Guidelines for Construction and Land Development in the ACT to address erosion and sediment control.</p> <p>The plan will specify numerous general requirements that will apply to the proposal, including:</p> <ul style="list-style-type: none"> <li>– Minimising the extent and duration of disturbance</li> <li>– Handling of soils</li> <li>– Stockpiling</li> <li>– Site access and egress</li> <li>– Management of drainage</li> <li>– Water quality monitoring</li> <li>– Roles, responsibilities, and incident reporting</li> <li>– Fuel storage</li> <li>– Inspection requirements.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Construction |
| Water quality impacts to downstream waterways associated with the operation of the facility.                     | W02 | <p>Before the commencement of the FOGO facility operations, a detailed Operational Water Management Plan (OWMP) will be developed and updated on a yearly basis. Some key features of proposed activities that will be specified and maintained are as follows:</p> <ul style="list-style-type: none"> <li>– Materials inside trucks are not to be removed until truck is fully inside the indoor receiving area.</li> <li>– Fast action roller doors are to be installed so they can close promptly after trucks have entered the building.</li> <li>– Products are to be fully repackaged before leaving indoors on instances where they are transferred off-site or between buildings.</li> </ul> <p>The OWMP will also include details of the following:</p> <ul style="list-style-type: none"> <li>– Maintenance of the wastewater system, including the containment and conveyance system to ensure wastewater is not discharged off-site.</li> <li>– Consultation with Icon Water regarding a trade waste licence and management of water during operation in line with authority requirements.</li> <li>– Emergency management procedures, such as management of uncontrolled spills, including where engineered controls of areas containing hazardous materials are required such as bunding or similar to intercept pollutants from the receiving environment.</li> <li>– Emergency evacuation procedures during extreme rainfall events, including forecasting procedures, evacuation pathways and muster locations.</li> </ul> | Operation    |



## 13.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual water quality and hydrology risks associated with the proposal has been considered and these are identified in Table 13.2.

Table 13.2 Materials and waste – residual risk assessment

| Risks Identified                                                                                                                                                       | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                                                                                                               |                      |                     |                      |                      |
| Dirty runoff from construction works into waterways.                                                                                                                   | Medium               | Unlikely            | Moderate             | Low                  |
| <b>Additional risks</b>                                                                                                                                                |                      |                     |                      |                      |
| Changes to water management infrastructure (dams, ponds) may impact hydrological regimes of surface water and ground water in regard to volume and temporal discharge. | NA                   | Unlikely            | Minor                | Very Low             |
| Potential impacts of wastewater and contaminant spills on local groundwater and surface water.                                                                         | NA                   | Unlikely            | Moderate             | Low                  |
| Potential for impacts associated with wastewater generation and any other on-site activity, on water quality, aquatic ecosystem and erosion within Dog Trap Creek      | NA                   | Unlikely            | Moderate             | Low                  |
| Potential for flooding to occur and damage the FOGO facility.                                                                                                          | NA                   | Unlikely            | Moderate             | Low                  |

# 14. Air quality and odour

## 14.1 Requirements

This chapter addresses the following air quality and odour requirements of the Scoping Document:

- Provide an air quality and odour impact assessment completed by a suitably qualified environmental consultant which considers the air discharges from the facility and their impact on the surrounding environment. The assessment must take into consideration cumulative impacts from surrounding land uses. The assessment must be carried out in accordance with the “NSW EPA Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales”.
- The assessment must consider dust impacts on the surrounding developments.
- The air quality and odour assessment must identify suitable mitigation measures.
- The assessment must include an Air Quality Management Plan which describes proposed mitigation and monitoring of air quality impacts and preventative controls such as maintenance measure and process management.

The below points are discussed in Chapter 15:

- Provide evidence showing net emissions from the operation of the facility.
- Provide quantitative estimates of the Scope 1 and 2 greenhouse gas emissions that will be generated by the proposed development during operation.

## 14.2 Environmental conditions and values

### 14.2.1 Surrounding land use

The proposal site is located in Hume, north of the Monaro Highway in an industrial and rural area approximately 12.5 kilometres south of Canberra City. The predominant annual average wind direction is from the northwest and measured at 2.4 metres per second. High wind speeds (winds greater than five metres per second which are often attributed to dust lift off) mostly occur from the northwest and south and are more frequent during the summer months (BoM, 2023).

The land use around the proposal is mainly industrial and rural operations. Major air emission sources contributing to local airshed include:

- Boral asphalt plant.
- Hume asphalt plant.
- Capital asphalt plant.
- Dry waste facility.
- MLRMC (landfill and green waste facility).

### 14.2.2 Sensitive receptors

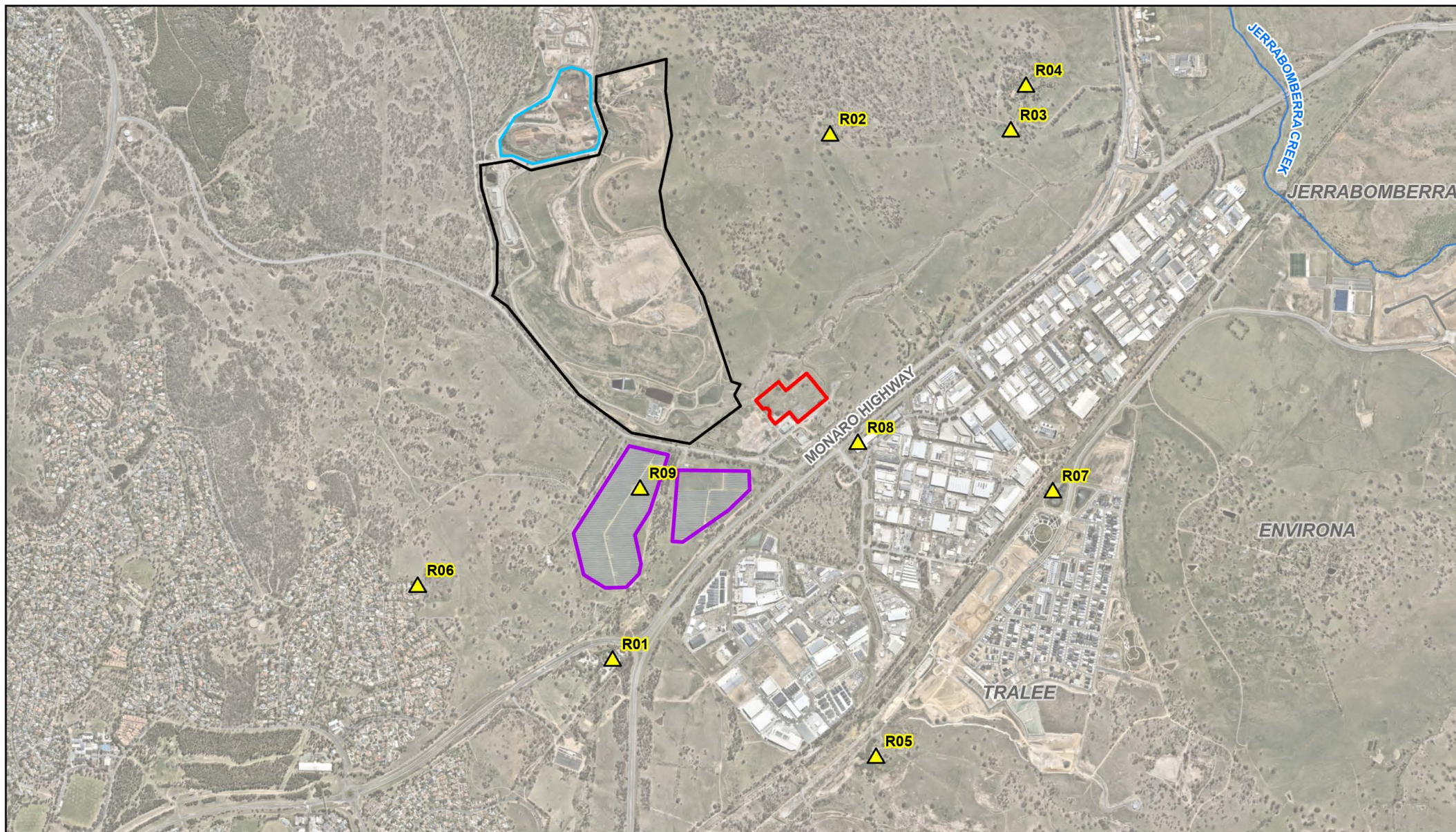
Sensitive receivers are defined based on the type of occupancy and the activities performed in the land use. Sensitive receivers could include both existing and proposed residences, commercial/industrial premises, educational and medical institutes, recreational areas, and places of worship.

The nearest existing residential area is the suburb of MacArthur, located approximately two kilometres southwest of the proposal. The developing suburb of Tralee is located approximately 1.1 kilometres southeast of the proposal site. Isolated sensitive receptors located nearer to the proposal site are described in Table 14.1 and shown in Figure 14.1.



**Table 14.1**      *Sensitive receptors within two kilometres of the proposal site*

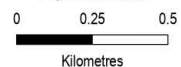
| ID  | Receptor type    | Address                                                     | Distance and direction from proposal site |
|-----|------------------|-------------------------------------------------------------|-------------------------------------------|
| R01 | Commercial       | Rose Cottage Canberra, corner of Isabella Dr and Monaro Hwy | 1.4 km SW                                 |
| R02 | Residence        | Jerrabomberra, 2620                                         | 1.15 km NE                                |
| R03 | Residence        | 10171 Monaro Hwy, Hume                                      | 1.6 km NE                                 |
| R04 | Residence        | Woden Homestead, 10225 Monaro Hwy, Hume                     | 1.65 km NE                                |
| R05 | Residence        | Tralee, 2620                                                | 1.55 km S                                 |
| R06 | Residential area | MacArthur                                                   | 2 km SW                                   |
| R07 | Residential area | Tralee                                                      | 1.1 km SE                                 |
| R08 | Industrial area  | Hume industrial area                                        | 0.25 km S                                 |
| R09 | Industrial area  | Mugga Lane Solar Park                                       | 0.5 km SE                                 |



#### Legend

- ▬ Proposal site
- ▬ Landfill
- ▬ Corkhills
- ▬ Mugga Solar Farm
- ▬ Watercourses
- ▲ Sensitive receptors

Paper Size ISO A4



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



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**Sensitive receptors**

**FIGURE 14.1**



## 14.2.3 Background ACT air quality

The key pollutants in the airshed are mainly associated with manufacturing, fuel combustion and construction, which includes particulate matter of varying size fractions (PM<sub>10</sub> and PM<sub>2.5</sub>).

Ambient air quality monitoring data for the proposal area was taken from the nearest and most representative ambient air quality monitoring station (AQMS) located at Monash, approximately 5.8 kilometres to the west. A summary of this data for the last five years is presented in Table 14.2. Unusually high 24-hour maximums of PM<sub>10</sub> and PM<sub>2.5</sub> in 2019 and 2020 are expected to a result of the 2019-2020 summer bushfires.

Table 14.2 Summary of available background air quality data recorded by the Monash AQMS for 2017-2021

| Pollutant                                                                                 | Averaging period                                                 | Recorded background concentration by year |       |        |         |       |
|-------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------|-------|--------|---------|-------|
|                                                                                           |                                                                  | 2017                                      | 2018  | 2019   | 2020    | 2021  |
| NO <sub>2</sub>                                                                           | Maximum 1 hour (ppm)                                             | 0.04                                      | 0.04  | 0.08   | 0.12    | 0.04  |
|                                                                                           | Annual average (ppm)                                             | 0.005                                     | 0.004 | 0.005  | 0.004   | 0.003 |
| CO                                                                                        | Maximum 8 hour (ppm)                                             | 0.7                                       | 0.7   | 4.8    | 4.9     | 0.6   |
|                                                                                           | Annual average (ppm)                                             | 0.23                                      | 0.21  | 0.21   | 0.30    | 0.11  |
| O <sub>3</sub>                                                                            | Maximum 8 hour (ppm)                                             | 0.05                                      | 0.05  | 0.11   | 0.09    | 0.04  |
|                                                                                           | Annual average (ppm)                                             | 0.02                                      | 0.02  | 0.02   | 0.02    | 0.02  |
| PM <sub>10</sub>                                                                          | Maximum 24 hour (µg/m <sup>3</sup> )                             | -                                         | -     | 310.8* | 1215.8* | 38.7  |
|                                                                                           | Maximum 24 hour (below assessment criteria) (µg/m <sup>3</sup> ) | -                                         | -     | 49.9   | 50.0    | 38.7  |
|                                                                                           | Annual average (µg/m <sup>3</sup> )                              | -                                         | -     | 19.0   | 29.2    | 10.5  |
| PM <sub>2.5</sub>                                                                         | Maximum 24 hour (µg/m <sup>3</sup> )                             | 37.0                                      | 39.2  | 296.4* | 1296.3* | 95.3  |
|                                                                                           | Maximum 24 hour (below assessment criteria) (µg/m <sup>3</sup> ) | 25.0                                      | 25.0  | 25.0   | 25.0    | 25.0  |
|                                                                                           | Annual average (µg/m <sup>3</sup> )                              | 8.1                                       | 7.4   | 14.2   | 25.1    | 7.1   |
| <p>"-" indicates data not available</p> <p>* Black Summer Bushfire season (2019-2020)</p> |                                                                  |                                           |       |        |         |       |

## 14.2.4 Odour

Four rounds of ambient odour field surveys were undertaken in 2021 and 2022 to assess the intensity of odours at the MLRMC and the historical Hume MRF (SLR Consulting Australia, 2021). The odour surveys revealed that odour intensities observed beyond the MLRMC boundary were at most 'distinct'. Stronger odours (ranging from 'strong' to 'extremely strong') were observed within the MLRMC and MRF boundaries. No 'distinct' odours were detected in the residential areas of Macarthur, Fadden or Chisholm. Based on the findings of the surveys, the MLRMC was identified as the most significant source of odour emissions.

Odours emitted from local industrial and rural facilities are identified as being of a different character to that from the proposed FOGO facility, so no cumulative impacts are anticipated.

A total of nine complaints regarding odour detected in suburbs around the MLRMC were recorded in 2020, however the precise cause of odour was not identified.

## 14.2.5 Assessment criteria

### Odour

The assessment criteria for odour are applied at the nearest existing or likely future off-site sensitive receptor. The Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (the Approved Methods) (NSW EPA, 2016) defines odour assessment criteria (measured in odour units (OU))<sup>6</sup> and specifies how

<sup>6</sup> The number of odour units is the concentration of a sample divided by the odour threshold or the number of dilutions required for the sample to reach the threshold. This threshold is the numerical value equivalent to when 50 per cent of a testing panel correctly detect an odour



they should be applied in dispersion modelling to assess the likelihood of nuisance impact arising from the emission of odour.

Odour impact is a subjective experience and has been found to depend on many factors, the most important of which are:

- Frequency of the exposure
- Intensity of the odour
- Duration of the odour episodes
- Offensiveness of the odour
- Location of the source.

These factors are often referred to as the 'FIDOL' factors.

The odour assessment criteria are defined to take account of two of these factors (F is set at 99<sup>th</sup> percentile; I is set at between 2 to 7 OU). The choice of assessment criteria is also dependent on the population of the affected area, as shown in Table 14.3.

Table 14.3 Odour assessment criteria in the Approved Methods (NSW EPA, 2016)

| Population of the affected community | Odour performance criteria (OU, nose response odour certainty units at 99 <sup>th</sup> percentile <sup>7</sup> ) |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Single residence ( $\leq \sim 2$ )   | 7                                                                                                                 |
| $\sim 10$                            | 6                                                                                                                 |
| $\sim 30$                            | 5                                                                                                                 |
| $\sim 125$                           | 4                                                                                                                 |
| $\sim 500$                           | 3                                                                                                                 |
| Urban ( $\geq \sim 2,000$ )          | 2                                                                                                                 |

The criteria assume that 7 OU at the 99<sup>th</sup> percentile would be acceptable to the average person, but as the number of exposed people increases, there is a chance that more sensitive individuals would be encountered. The criterion of 2 OU at the 99<sup>th</sup> percentile is considered to be acceptable for large populations (more than 2,000 people).

The criteria have also been specified at an averaging time of nominally one second. The choice of the short averaging time recognises that the human nose has a response time of less than one second, so that modelling of odour impact should allow for the short-term concentration fluctuations in an odour plume due to turbulence.

As the CALPUFF dispersion model (used in the assessment) cannot predict concentrations for a 1 second average, a ratio between the 1 second peak concentration and 60 minute average concentration has been applied in accordance with Section 6.6 of the Approved Methods. This is known as the peak to mean ratio (P/M60).

There are three main areas of concern near the proposal site:

- MacArthur suburb located approximately two kilometres southwest of the proposal site.
- The developing suburb of Tralee located approximately 1.1 kilometres southeast of the proposal site.
- The Hume industrial area located approximately 250 metres south of the proposal site at the nearest point.

The most stringent criterion of 2 OU has been used to assess the suburbs due to the density of residences in these areas.

The Hume industrial area, in particular the facilities nearest to the proposal site, is not expected to be densely populated. These are large warehouse facilities and likely only have a small number of employees relative to the building footprints. Therefore, the population of this area has been assumed to be not more than 500 people at any one time. The corresponding odour criterion is 3 OU.

<sup>7</sup> This is a prediction of the odour level that may occur 99 per cent of the time, or that is below these criteria for 99 hours in every 100. Odour performance criteria are designed to be precautionary, so that impacts on sensitive receivers can be minimised.



Other sensitive receptors are isolated residences which have been assessed under the least stringent criterion of 7 OU. There is one commercial receptor, a pub, located approximately 1.4 kilometres southwest of the proposal site. The number of people present at this location at any one time has been assumed to be not more than 500 people and as such the criterion at this location is 3 OU.

## Dust

Dust assessment criteria for the proposal was taken from the National Environment Protection (Ambient Air Quality) Measure) (Air NEPM) (National Environment Protection Council, 2021). The adopted air quality assessment criteria are summarised in Table 14.4.

Table 14.4 Dust assessment criteria

| Pollutant                          | Averaging period | Concentration ( $\mu\text{g}/\text{m}^3$ ) |
|------------------------------------|------------------|--------------------------------------------|
| PM <sub>10</sub>                   | 24 hours         | 50                                         |
|                                    | Annual           | 25                                         |
| PM <sub>2.5</sub>                  | 24 hours         | 25                                         |
|                                    | Annual           | 8                                          |
| Total suspended particulates (TSP) | Annual           | 90                                         |

## 14.3 Investigations

### 14.3.1 Overview

An Air Quality Impact Assessment (AQIA) was undertaken in accordance with EPA and contemporary guidance and included:

- Review of available ambient air quality, odour data, complaint data and reports in the local area including MLRMC.
- Assessment of the risk of dust and particulate impacts from construction of the proposal on the surrounding environment.
- Atmospheric dispersion modelling to evaluate the potential worst-case impacts from the proposal under routine operations and inform recommendations of appropriate mitigation measures.
- Identification of mitigation measures.

This chapter provides a summary of the assessment findings. A full copy of the AQIA is provided in Appendix O.

### 14.3.2 Assessment of risk of the construction dust and particulate impacts

The generation of dust and particulate matter are the primary pollutants during the construction phase of the proposal. The risk of dust impacts from construction of the proposal on the surrounding environment was assessed using the United Kingdom Institute of Air Quality Management's Guidance on the assessment of dust from demolition and concrete (Institute of Air Quality Management, 2014) (IAQM guidance).

This involved:

- Estimating the dust emission magnitude from four construction stages (demolition, earthworks, construction and trackout) based on the definitions for small, medium and large dust emission magnitudes provided in the IAQM guidance for how different activities may be defined.
- Estimating the sensitivity of receptors surrounding the proposal site based on the definitions for low, medium and high sensitivity to dust soiling effects, human health impacts and ecological effects in the IAGM guidance.
- Determining the risk of dust impacts using the estimated magnitude and sensitivity using the IAGM guidance risk matrix.



### 14.3.3 Atmospheric dispersion modelling

Predicted air quality impacts were modelled in accordance with the Approved Methods (NSW EPA, 2016) using an approved computer software model CALPUFF. CALPUFF is an advanced non-steady-state, Gaussian puff dispersion model that uses a three-dimensional wind field that is capable of accounting for complex terrain features and varying wind fields. Detailed discussion of parameters is available in Section 7.2 of Appendix O.

The dispersion model was configured to predict odour concentration at identified sensitive receptor locations and for a sampling grid centred on the proposal site. Impacts at and beyond the proposal site boundary were calculated using the sampling grid.

## 14.4 Impacts

### 14.4.1 Direct

#### Construction

The generation of dust and particulate matter are the primary pollutants during the construction phase of the proposal. A review of potential construction air quality emissions was undertaken, and a risk-based approach in accordance with the Institute of Air Quality Management guidance was adopted to assess dust from the construction of the proposal.

Construction works has been divided into four activity groups that have potential to cause significant dust emissions. These activities are:

- Earthworks.
- Construction.
- Track-out.

The sensitivity and scale of each construction activity was used to determine the risk of dust impacts on the surrounding receptors. Table 14.5 outlines the risk levels determined for the construction of the proposal.

The risk identified during all stages of construction (earthworks, construction and track-out) was Low Risk.

Proposed specific mitigation measures and residual impacts are provided in Section 14.5 to further minimise the risk of dust impacts at receptor locations during construction works.

Table 14.5 Risk matrix for dust impacts during construction

| Impact       | Risk       |                 |           |
|--------------|------------|-----------------|-----------|
|              | Earthworks | Construction    | Track-out |
| Dust soiling | Low risk   | Negligible risk | Low risk  |
| Human health | Low risk   | Negligible risk | Low risk  |
| Ecological   | Low risk   | Negligible risk | Low risk  |

#### Operation

##### Emissions

The selected composting technology (in-vessel) and the design of the proposal includes a number of key air quality and odour impact mitigation features:

- The facility would be totally enclosed with a ventilation system that maintains negative pressure, with opening roller doors for truck access in and out of the waste receival area.
- All process air (including from the receival hall, primary composting tunnels and hallway, and the maturation and refining building) would be treated by an odour control system prior to discharge in the environment. The proposed odour control system would likely consist of a number of wet scrubbers and biofilter fitted with



monitoring equipment capable of measuring airflow and moisture content. The odour control system would have an emissions guarantee from the supplier.

- Activities outside the fully enclosed processing building includes matured compost product storage only. These stockpiles would be located within a semi-enclosed and covered product storage shed and managed via controlled application of water for dust suppression when required such as on windy days.

The three main sources of odour from the proposal are therefore:

- The biofilter
- Matured compost product stockpiles in the semi-enclosed and covered product storage shed, and
- Incoming trucks delivering FOGO waste.

Matured compost would undergo screening and blending within the maturation and refining building which would also be enclosed. Due to the high moisture content of FOGO, particulate emissions from activities inside the building would be minimal.

The enclosed facility is considered best practice for the management of odour and potential extreme events due to climate change.

### Dispersion modelling results

Dispersion modelling determined that a typical open or ground biofilter would not be sufficient to maintain odour levels below the odour criteria at the nearby industrial area and Tralee suburb (see Table 14.6). Therefore, a stack was considered to aid in the dispersion and dilution of odour emissions. Three stacks of 15 metres, 13 metres and 12 metres in height were assessed. The results are shown in Figure 14.2.

The predicted impacts from all assessed stack configurations complied with the odour criteria at all sensitive receptors.

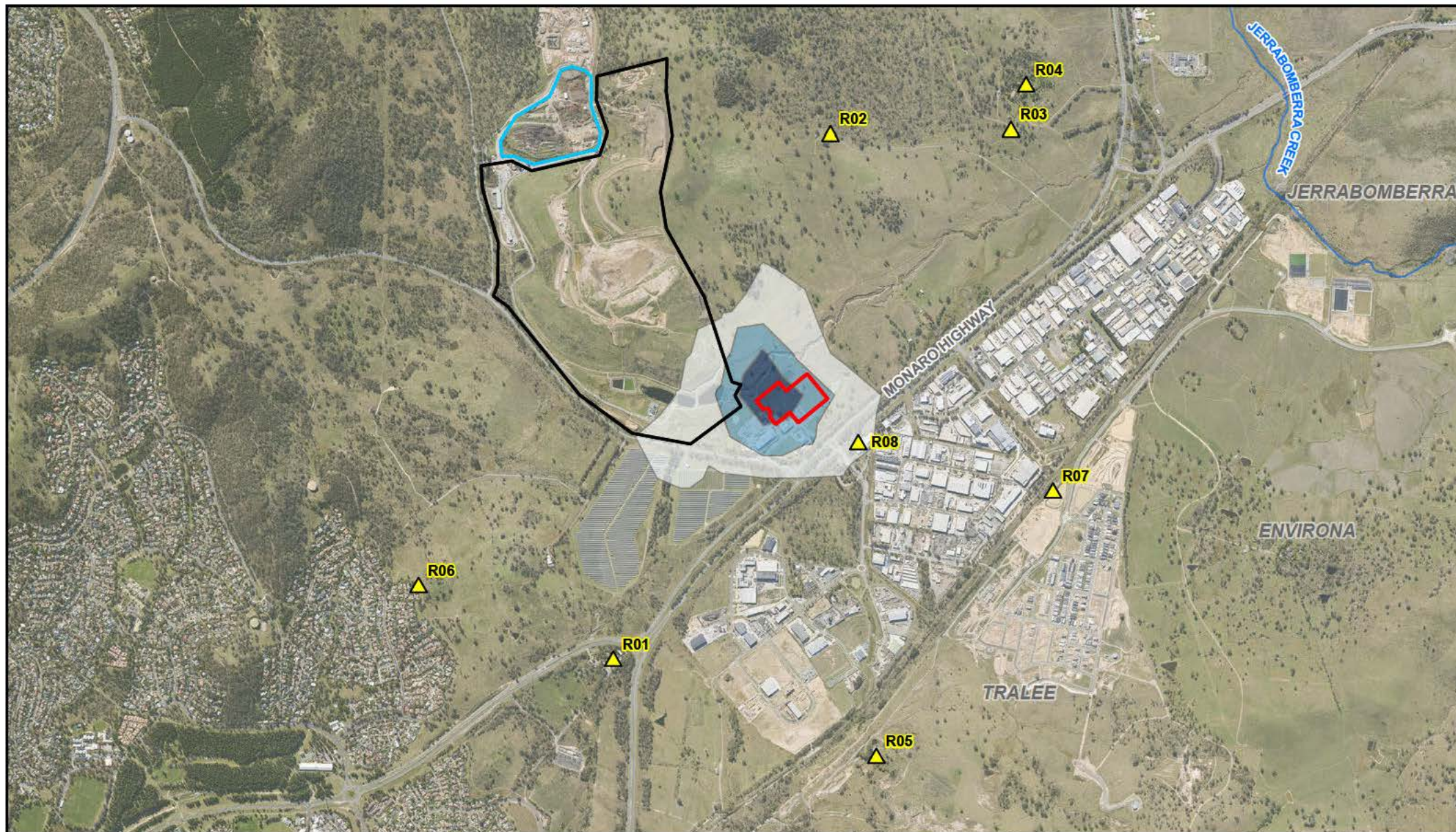
**Table 14.6** Predicted odour concentration from the FOGO facility at sensitive receptors for each assessed biofilter configuration.

| Sensitive receptor |                      | Odour assessment criteria (OU) | Predicted odour concentration (OU) |                      |                      |                      |
|--------------------|----------------------|--------------------------------|------------------------------------|----------------------|----------------------|----------------------|
|                    |                      |                                | Ground biofilter                   | 15 m biofilter stack | 13 m biofilter stack | 12 m biofilter stack |
| R01                | Commercial           | 3                              | 2.5                                | 0.3                  | 0.3                  | 0.3                  |
| R02                | Residence            | 7                              | 4.5                                | 1.0                  | 1.0                  | 1.0                  |
| R03                | Residence            | 7                              | 1.9                                | 0.5                  | 0.6                  | 0.6                  |
| R04                | Residence            | 7                              | 1.7                                | 0.6                  | 0.6                  | 0.6                  |
| R05                | Residence            | 7                              | 1.4                                | 0.2                  | 0.3                  | 0.3                  |
| R06                | McArthur suburb      | 2                              | 1.5                                | 0.5                  | 0.5                  | 0.5                  |
| R07                | Tralee suburb        | 2                              | 2.9                                | 0.8                  | 0.5                  | 0.5                  |
| R08                | Hume industrial area | 3                              | 64                                 | 2.1                  | 2.2                  | 2.3                  |

The minimum recommended stack height for effective dispersion is three metres above the nearby buildings (EPA Victoria, 2021); therefore the 15 metre stack is the recommended option. Figure 14.2 shows the predicted peak odour concentrations from the proposal with a biofilter stack of 15 metres.

The assessment was based on a stack diameter of 2.5 metres and three air changes per hour. Further assessment would be undertaken during detailed design to refine the assumed stack parameters.





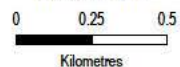
#### Legend

- ▬ Proposal site
- ▬ Landfill
- ▬ Green waste facility
- ▬ Watercourses
- ▲ Sensitive receptors

#### Predicted odour concentration (OU)

- > 7
- 4 - 7
- 2 - 4

Paper Size ISO A4



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



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Predicted peak odour concentration (OU)  
from the proposal (with biofilter stack of 15m)  
(1 second 99th percentile)

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**FIGURE 14.2**



## Cumulative odour

Potential cumulative impacts from the MLRMC were assessed.

The results of the cumulative (both the MLRMC and the proposal) odour modelling and assessment at the sensitive receptors are provided below in Table 14.7. All results are the 1 second 99<sup>th</sup> percentile peak odour concentration as per the Approved Methods (NSW EPA, 2016).

The results indicate that predicted odour from the cumulative impacts of the proposal and the MLRMC is below the criteria at all sensitive receptors.

Table 14.7 Predicted odour concentration from the proposal and the MLRMC at sensitive receptors

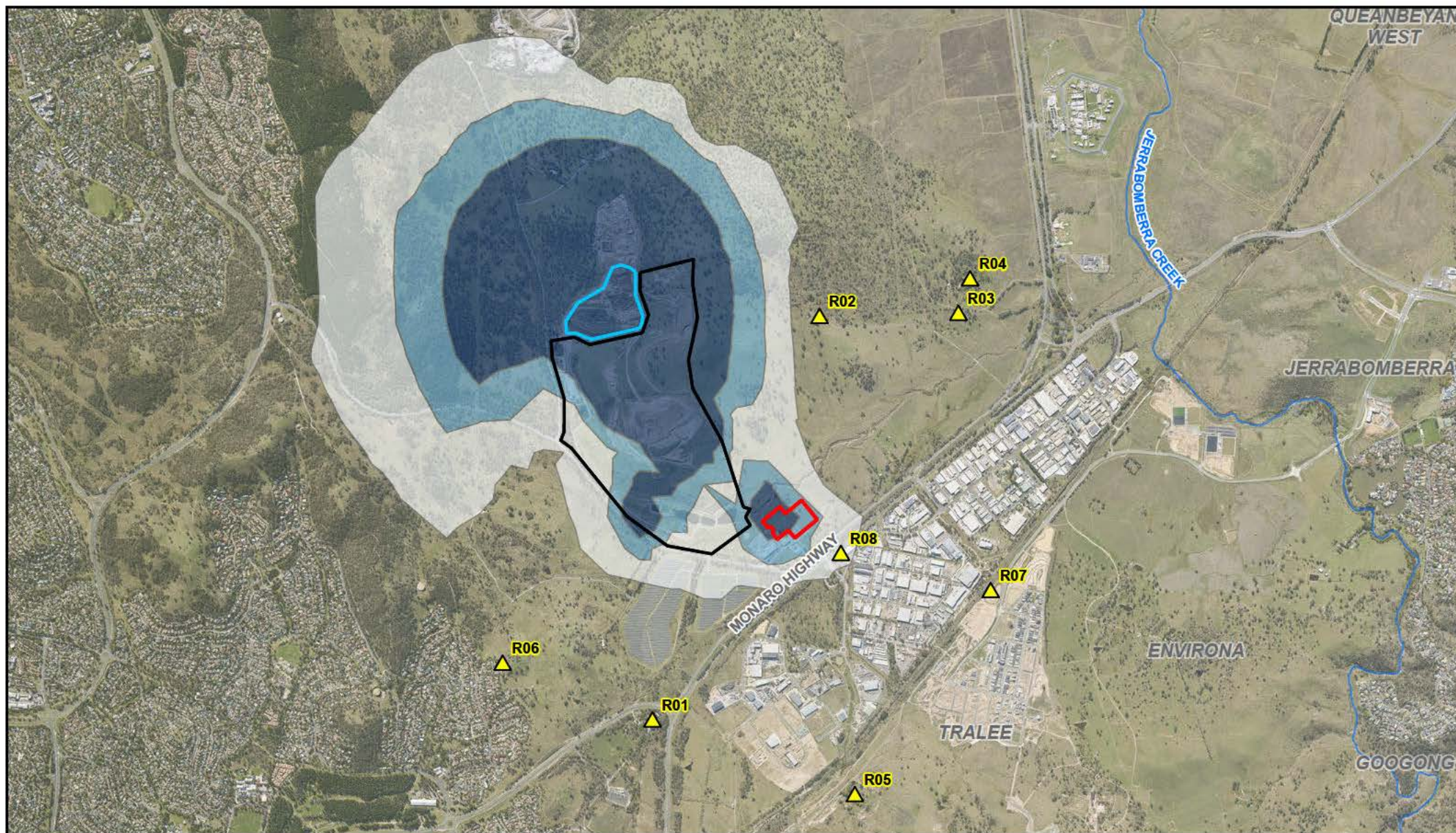
| Sensitive receptor |                      | Predicted odour concentration (OU) | Odour concentration criteria (OU) |
|--------------------|----------------------|------------------------------------|-----------------------------------|
| R01                | Commercial           | 0.6                                | 3                                 |
| R02                | Residence            | 1.3                                | 7                                 |
| R03                | Residence            | 0.8                                | 7                                 |
| R04                | Residence            | 0.8                                | 7                                 |
| R05                | Residence            | 0.5                                | 7                                 |
| R06                | McArthur suburb      | 1.3                                | 2                                 |
| R07                | Tralee suburb        | 0.7                                | 2                                 |
| R08                | Hume industrial area | 2.3                                | 3                                 |

A contour plot for the predicted 1 second 99<sup>th</sup> percentile odour concentration from the proposal and MLRMC is shown in Figure 14.3.

## 14.4.2 Indirect

No indirect impacts from construction or operation are anticipated.





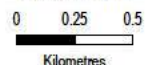
#### Legend

- Proposal site
- Landfill
- Green waste facility
- Watercourses
- ▲ Sensitive receptors

#### Predicted odour concentration (OU)

- > 7
- 4 - 7
- 2 - 4

Paper Size ISO A4



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



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Predicted peak odour concentration (OU)  
from both the proposal and the MLRMC  
(1 second 99th percentile)

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**FIGURE 14.3**



## 14.5 Mitigation measures

Table 14.8 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential impacts to air quality and odour.

Table 14.8 Air quality and odour mitigation measures

| Potential impact               | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Timing       |
|--------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Dust release                   | AQ01 | <p>A dust control protocol will be prepared that forms part of the CEMP to detail management measures, a method for recording dust complaints and monitoring requirements. This will include the following:</p> <ul style="list-style-type: none"> <li>– Dust suppression will be undertaken as required using water sprays, water extension agents, soil stabilising polymers or other media on: <ul style="list-style-type: none"> <li>• Unpaved work areas subject to traffic or wind</li> <li>• During the loading and unloading of dust generating materials</li> <li>• Unpaved access tracks</li> <li>• Stockpiles</li> </ul> </li> <li>– The volume of water applied will be managed so as not to create potentially polluted run-off.</li> <li>– Vehicles will only leave the site via established and stabilised access points.</li> <li>– Equipment will be fitted with relevant dust suppressors (where practicable).</li> <li>– If the works are creating levels of dust which may significantly impact on residential amenity and the nearby solar farm, the works will be modified or stopped until the dust hazard is reduced to an acceptable level.</li> <li>– On days with forecast and actual high winds (i.e over 10 m/s) work effort will be reduced accordingly if windblown dust is observed to be leaving the site boundary.</li> <li>– On days with high background dust levels (due to fire or offsite dust events for example), dust mitigation will be increased in the form of watering or reduce dusty construction activities.</li> <li>– All waste will be removed from site or stored in covered bins and disposed to an appropriately licenced waste facility. No burning of any waste will be permitted. The transfer off site will be done by covered trucks.</li> <li>– Construction vehicles with potential for loss of loads (such as dust or litter) will be covered when using public roads and when not in use.</li> <li>– The wheels of all site equipment and vehicles will be cleaned so that material with potential to generate dust is not spread (particularly to Mugga Lane, adjacent to the Mugga Solar Farm).</li> <li>– Land will be progressively landscaped or otherwise rehabilitated in disturbed areas as works are completed (where practicable)</li> <li>– Include a protocol for handling and responding to community complaints and monthly check-ins with Mugga Solar Farm via email or letter.</li> </ul> | Construction |
| Increased combustion emissions | AQ02 | Plant and equipment will be maintained in good condition to minimise ignition risk, spills and air emissions that may cause nuisance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Construction |
| Odour release                  | AQ03 | 24-hour emergency maintenance agreements will be established with equipment manufacturers to limit the impact of equipment failures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Operation    |
|                                | AQ04 | An onsite meteorological station will be set up to inform operational activities and identify odour sources in the event of a complaint.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Operation    |
|                                | AQ05 | The biofilter will be maintained as per manufacturer specifications and perform regular testing to confirm it is performing correctly.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Operation    |
|                                | AQ06 | The oxygen levels will be monitored inside the composting tunnels to ensure optimum levels are maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Operation    |

| Potential impact | ID   | Mitigation measure                                                                                                                                                                                                                    | Timing          |
|------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
|                  | AQ07 | The moisture content inside the composting tunnels will be monitored and the fan speed adjusted accordingly to maintain optimum air flow.                                                                                             | Operation       |
|                  | AQ08 | Air spigots will be maintained and cleared after material is removed from the tunnels                                                                                                                                                 | Operation       |
|                  | AQ09 | If the works are emitting odour concentrations which may significantly impact the nearby receptors, the works will be modified or stopped until the odour hazard is reduced to an acceptable level.                                   | Operation       |
|                  | AQ10 | Odour audits, including smoke testing at the waste receipt doorway, will be undertaken annually.                                                                                                                                      | Operation       |
|                  | AQ11 | As there may be matured compost product stored in a semi-enclosed and covered product storage shed, dust may be a concern on windy days. This will be managed via controlled application of water for dust suppression when required. | Operation       |
|                  | AQ12 | Use of a stack up to three metres above the building height could be considered during detailed design.                                                                                                                               | Detailed design |

## 14.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual air quality and odour risks associated with the proposal has been considered and these are identified in Table 14.9.

Table 14.9 Air quality and odour – residual risk assessment

| Risks Identified                                                                                                              | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                                                                      |                      |                     |                      |                      |
| Increase odour emission from operation of FOGO facility                                                                       | High                 | Possible            | Moderate             | Medium <sup>8</sup>  |
| Increase in air pollution during construction (e.g. dust, hydrocarbon fumes)                                                  | Low                  | Possible            | Minor                | Low                  |
| <b>Additional risks</b>                                                                                                       |                      |                     |                      |                      |
| Construction activity may contribute to air pollution with dust and gas (such as carbon monoxide, hydrocarbon etc) emissions. | NA                   | Unlikely            | Minor                | Very Low             |
| Increased processing and vehicle movements may contribute to air pollution with gas and odour emissions                       | NA                   | Unlikely            | Minor                | Very Low             |

<sup>8</sup> Mitigation measure AQ12 is expected to further reduce the likelihood of this risk.



# 15. Greenhouse gas assessment

## 15.1 Requirements

This chapter addresses the following greenhouse gas (GHG) (from air quality and odour) requirements of the Scoping Document:

- Provide evidence showing net emissions from the operation of the facility.
- Provide quantitative estimates of the Scope 1 and 2 greenhouse gas emissions that will be generated by the proposed development during operation.

## 15.2 Environmental conditions and values

Australian legislation and guidelines applicable to this GHG assessment include:

- *National Greenhouse and Energy Reporting Act 2007* (NGER Act)
- National Greenhouse and Energy Reporting (Measurement) Determination 2008
- National Greenhouse and Energy Reporting Regulations 2008 (NGER Regulations)
- National Greenhouse Accounts (NGA) Factors workbook, Commonwealth Department of Industry, Science, Energy and Resources 2021

A summary of what is covered by the legislation is presented in Table 15.1.

Table 15.1 Greenhouse gas legislation summary

| Act/ Scheme                                                               | Description                                                                                                 |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| NGER Act and Regulations                                                  | Provides for data accounting in relation to greenhouse gas emissions and energy consumption and production. |
| National Greenhouse and Energy Reporting (Measurement) Determination 2008 | Provides methods and criteria for calculating greenhouse gas emissions and energy data under the NGER Act.  |
| National Greenhouse Accounts                                              | Provides methods and criteria for calculating greenhouse gas emissions, including Scope 3 emissions.        |

These guidelines are considered representative of good practice GHG accounting in Australia and are applicable to the proposal.

The ACT Climate Change Strategy 2019-2025 (ACT Government, 2019a) is also applicable to this assessment. This strategy aims to reduce the ACT's emissions by 50–60 percent by 2025 and achieve net-zero emissions by 2045. The strategy highlights the crucial role that waste avoidance and management plays towards achieving a successful transition to net zero emissions. Goal 6B, *Reduce emissions from waste treatment*, outlines three key actions which align with the project, including:

1. Introducing FOGO waste collection for all households.
2. Developing a scheme that enables FOGO waste collection for large organic waste producers (hospitality and food retail businesses).
3. Identifying emission reduction strategies from organic waste treatment and investigating potential sites for organic waste processing.

The value of diverting organic materials from landfill is identified in the strategy as the main way to reduce emissions from waste, which directly aligns with the proposal. The proposal would be a significant contributor to this goal and play a crucial role in assisting the ACT Government in achieving its goals.

## 15.3 Investigations

### 15.3.1 Overview

The GHG assessment involved the following key tasks:

- Identify the greenhouse gas emission sources during construction and operation.
- Quantify the fuel, electricity, or other activity data for each emission source.
- Identify appropriate emission factors (typically, NGER (Measurement) Determination emission factors are being used as a reference source).
- Calculate emissions for each activity and each stage.
- Determine the total proposal greenhouse gas emissions.
- Identify emission reduction measures.

The emission factors used for the inventory were sourced primarily from the National Greenhouse Accounts (NGA) Factors 2021 (DISER, 2021).

The GHG assessment was prepared based on the information available at the time, including documents provided and other studies conducted as part of the EIS. Wherever possible, estimates were used to calculate GHG emissions. A number of assumptions and exclusions were made to inform the estimate.

### 15.3.2 Assessment boundary

A quantitative assessment estimates the quantity of GHG emissions associated with the proposal during both construction and operation for each relevant greenhouse gas, with total emissions expressed in 'carbon dioxide (CO<sub>2</sub>) equivalent' (CO<sub>2</sub>-e) terms as per the National Greenhouse and Energy Reporting (NGER) scheme.

The following sources of Scope 1 emissions have been considered in this assessment:

- Construction phase emission sources:
  - Diesel use for construction plant.
  - Petrol use for small plant.
- Operational phase emission sources:
  - Diesel use for light and heavy vehicles – waste collection.
  - Diesel use for transporting derived product.
  - Diesel use on site for operational equipment.
  - Diesel use for ongoing maintenance.
  - Composting of FOGO material.
  - Feedstock contamination in landfill.

Scope 2 emissions from grid electricity consumption during the project construction and operation are zero since the grid emissions factor in the ACT is zero due to their reliance on renewable sources for electricity.

Scope 3 emissions, such as transport of materials to site during construction, and worker commuting, have been excluded from this assessment.

### 15.3.3 Greenhouse gases and global warming potentials

The assessment considered the following greenhouse gases:

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>), and
- Nitrous oxide (N<sub>2</sub>O).

Perfluorocarbons, hydrofluorocarbons, and sulphur hexafluoride (SF<sub>6</sub>) are not included in this assessment given the emissions are likely negligible. Acetylene associated with welding is also assumed negligible.



Each of these gases represents a differing Global Warming Potential (GWP) that quantifies the relative contributions of different substances to climate change. The GWPs from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment report and Section 2.02 of the National Greenhouse and Energy Reporting (NGER) Regulations 2008, updated July 2021, were used in this assessment, and are listed below in Table 15.2.

Table 15.2 100-year global warming potentials for select GHGs

| Greenhouse gas                    | Global Warming Potential |
|-----------------------------------|--------------------------|
| Carbon dioxide (CO <sub>2</sub> ) | 1                        |
| Methane (CH <sub>4</sub> )        | 28                       |
| Nitrous oxide (N <sub>2</sub> O)  | 265                      |

## 15.4 Impacts

Emissions from composting FOGO are much lower than if that waste was sent to landfill. Every tonne of food and garden waste in landfill will emit between 2.1 and 1.6 t CO<sub>2</sub>-e compared with 0.046 t CO<sub>2</sub>-e for composting. The proposal would contribute to reducing greenhouse gas emissions in the ACT, and assist the Territory meet the legislated target for net zero emissions by 2045 at the latest.

For context, sending 70,000 tonnes per year of food and garden waste to the proposed FOGO facility as opposed to landfill would see an emissions reduction in the order of 100,000 t CO<sub>2</sub>-e per year. This does not consider all the ancillary emissions associated with sending waste to landfill, or landfill gas capture used for electricity generation used at the Mugga Lane Landfill already. Other ancillary emissions sources from the facility include collection, sorting, processing, operational fuel use, and feedstock contamination, which would minimise the potential emissions reductions of FOGO. It is estimated that diverting organic waste from landfills to a FOGO facility can reduce overall waste emissions by up to 30 percent (ACT Government, 2022).

The total GHG emissions associated with the construction and operational phases of the proposal, are provided in Table 15.3. Proposal operational emissions are negligible compared to annual emissions in ACT and Australia, at 1.4 Mt CO<sub>2</sub>-e in 2018<sup>9</sup> and 501.5 Mt CO<sub>2</sub>-e in 2021<sup>10</sup> respectively.

Table 15.3 GHG emissions summary for the overall proposal

| Proposal phase     | Duration | Emissions (t CO <sub>2</sub> -e) |         |       |
|--------------------|----------|----------------------------------|---------|-------|
|                    |          | Scope 1                          | Scope 2 | Total |
| Construction phase | 1 year   | 1,420                            | 0       | 1,420 |
| Operational phase  | Annual   | 8,900                            | 0       | 8,900 |

### 15.4.1 Construction

The total GHG during construction are estimated at 1,420 t CO<sub>2</sub>-e. Emissions from diesel use is the largest source of emissions during the construction phase, accounting for 99 percent of all emissions. Refer to Table 15.4 for the full emissions inventory.

Table 15.4 Summary of construction phase GHG emissions for all proposal components

| Activity                               | Quantity | Unit | Emissions (t CO <sub>2</sub> -e) |         |       |
|----------------------------------------|----------|------|----------------------------------|---------|-------|
|                                        |          |      | Scope 1                          | Scope 2 | Total |
| Construction diesel - stationary plant | 520.0    | kL   | 1,410                            | -       | 1,410 |
| Construction petrol – small plant      | 2.6      | kL   | 10                               | -       | 10    |

<sup>9</sup> State and Territory GHG inventories 2018 – Australia's National Greenhouse Accounts

<sup>10</sup> National Greenhouse Gas Inventory quarterly update, September 2021



| Activity                 | Quantity | Unit | Emissions (t CO <sub>2</sub> -e) |                 |              |
|--------------------------|----------|------|----------------------------------|-----------------|--------------|
|                          |          |      | Scope 1                          | Scope 2         | Total        |
| Construction electricity | 131,040  | kWh  | -                                | 0 <sup>11</sup> | 0            |
| <b>Total</b>             |          |      | <b>1,420</b>                     | <b>0</b>        | <b>1,420</b> |

## 15.4.2 Operational

A summary of estimated GHG emissions occurring as a result of proposal operations is presented in Table 15.5. Operational emissions are estimated to be on average 8,900 t CO<sub>2</sub>-e per year. The majority of operational emissions come from feedstock contaminants in landfill and FOGO composting emissions, accounting for 38 percent and 35 percent respectively.

Table 15.5 Summary of operational phase GHG emissions, annually, for proposal components

| Activity                                | Quantity | Units | GHG Emissions (t CO <sub>2</sub> -e) |          |              |
|-----------------------------------------|----------|-------|--------------------------------------|----------|--------------|
|                                         |          |       | Scope 1                              | Scope 2  | Total        |
| Diesel – FOGO collection trucks         | 510      | kL    | 1,380                                | 0        | 1,380        |
| Diesel – FOGO collection light vehicles | 200      | kL    | 540                                  | 0        | 540          |
| Diesel – transport of derived product   | 20       | kL    | 50                                   | 0        | 50           |
| Diesel - operations                     | 150      | kL    | 410                                  | 0        | 410          |
| Diesel - maintenance                    | 20       | kL    | 40                                   | 0        | 40           |
| Feedstock contaminants in landfill      | 2,100    | t/y   | 3,360                                | 0        | 3,360        |
| Composting emissions                    | 67,900   | t/y   | 3,120                                | 0        | 3,120        |
| Electricity - operations                | 40,020   | MWh   | 0                                    | 0        | 0            |
| Electricity - maintenance               | 10       | MWh   | 0                                    | 0        | 0            |
| <b>Total</b>                            |          |       | <b>8,900</b>                         | <b>0</b> | <b>8,900</b> |

## 15.5 Mitigation measures

In order to reach the Territory's net zero target by 2045, the proposal would need to eliminate all operational emissions sources. Preliminary measures to eliminate emissions are discussed below and summarised in Table 15.6.

Contamination in the incoming feedstock can have a significant impact on the operational emissions. The level of feedstock contamination is dependent on the public and can be minimised by education campaigns and increasing awareness (Rawtec, 2018). Feedstock contamination being sent to landfill accounts for 38 percent of the proposal's operational emissions. If contamination rates were reduced from three percent to two percent, this would result in a reduction of approximately 13 percent of the total proposal's operational emissions.

Diesel use for facility operations accounts for approximately 22 percent of operational emissions. To reduce diesel emissions, ACT NoWaste has considered using electric, hydrogen or hybrid electric/hydrogen vehicles (light or heavy) as their waste collection fleet. If the electricity and hydrogen come from a renewable source, all diesel emissions can be mitigated, resulting in a 22 percent reduction in operational emissions. For plant that cannot use hydrogen fuel, the electrification of vehicles and operational equipment would be required to reduce diesel emissions. However, if diesel is still required, incorporating routine maintenance of operational equipment can maximum fuel efficiency can be achieved, resulting in lower emissions.

FOGO facilities play a large role in reaching emission reduction targets. However, for the ACT to reach its net zero target, the emissions that are released during the operation of FOGO facilities are to be eliminated. In doing so,

<sup>11</sup> As the ACT sources electricity from 100% renewable sources, the GHG emissions factor for grid electricity is taken as zero. ACT Greenhouse Gas Emissions Inventory Report 2020-2021, Point Advisory



emission capturing techniques and Carbon Capture Utilisation and Storage (CCUS) measures should be considered.

Table 15.6 GHG mitigation measures

| Potential impact                         | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Timing                     |
|------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Construction emissions                   | GHG1 | <p>Opportunities to reduce construction emissions will be investigated and considered during design and construction planning. This will include consideration of:</p> <ul style="list-style-type: none"> <li>– Use of construction materials with high recycled content, such as supplementary cementitious materials in concrete, reclaimed asphalt pavement in asphalt and post-consumer recycled content in steel.</li> <li>– Revegetation of nearby land.</li> <li>– Sustainable procurement practices where feasible.</li> <li>– Construction materials sourced locally where possible.</li> <li>– Opportunities for the reuse/recycling of other construction and demolition waste materials to be investigated and included in construction management plans, where feasible.</li> </ul> | Construction               |
| Diesel use                               | GHG2 | Ways to lower demand of diesel use and substitution with less emission intense fuels will be investigated and considered. This will include considering the use of electric/hydrogen plant and vehicles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Construction and operation |
| Operational emissions                    | GHG3 | Emission capturing techniques and Carbon Capture Utilisation and Storage (CCUS) measures will be considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Detailed design            |
| Feedstock contamination sent to landfill | GHG4 | Educational campaigns and increasing recycling awareness will be developed and implemented to help reduce feedstock contamination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Operation                  |

## 15.6 Residual impact

Based on the mitigation measures identified, an assessment of the greenhouse gas risks associated with the proposal has been considered and these are identified in Table 15.7.

Table 15.7 Greenhouse gas – residual impacts

| Risks Identified                                                                                                                                                               | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                                                                                                                       |                      |                     |                      |                      |
| Generation of greenhouse gas emission.                                                                                                                                         | Low*                 | Almost certain      | Minimal              | Medium               |
| *This was ranked as Low in the original scoping document as the likelihood was incorrect. The emissions are certain however the proposal would reduce emissions from landfill. |                      |                     |                      |                      |

# 16. Climate change

## 16.1 Requirements

This chapter addresses the following hazard and risk requirements of the Scoping Document:

- A climate change risk assessment is required addressing the risk from increased events from flood, bushfire or extreme heat risk.
- If the proponent is assessing flood, bushfire or extreme heat risk, the Division advises that the impacts of climate change also need to be considered in the EIS, ideally through a climate change risk assessment. The Division encourages the use of NARClm regional downscaled climate projections for any reference to the ACT's future climate.

## 16.2 Environmental conditions and values

Canberra's climate is relatively dry and warm compared to the much cooler and wetter south-western area of the ACT. The warmest month of the year is January, with an average daily temperature of 24.3 °C. July is the coolest month with an average daily temperature of 12.2 °C. July is also the driest month, with an average of 22 mm of rainfall. The highest volume of precipitation falls in December with an average of 590 mm. Maximum temperatures in excess of 25 °C occur frequently in the region. An annual average of 20 days greater than 25 °C are typically recorded in January. Canberra typically experiences 70-90 cold nights (temperatures below 2 °C) and fewer than 10 hot days (maximum temperatures above 35 °C) per year.

Historic average climate statistics recorded at the nearby Canberra Airport BoM weather station are summarized in Table 16.1.

Table 16.1 Historic average climate statistics (Canberra Airport BoM weather station) (BoM, 2022)

| Description                      | Value      |
|----------------------------------|------------|
| Mean minimum temperature         | 6.8°C      |
| Mean maximum temperature         | 20.0°C     |
| Coldest recorded temperature     | -8.5°C     |
| Highest recorded temperature     | 40.0°C     |
| Mean wind speed (9 am)           | 8.4 km/h   |
| Mean wind speed (3 pm)           | 17.6 km/h  |
| Maximum wind gust                | 124.0 km/h |
| Mean annual rainfall             | 616.8 mm   |
| Mean relative humidity (9 am)    | 73.3%      |
| Mean relative humidity (3 pm)    | 46.7%      |
| Severe fire danger days per year | 1.4        |

## 16.3 Investigations

Climate Change Risk Assessment (CCRA) provides a high-level assessment of the inherent vulnerability of the asset to the physical effects of climate change and is intended to briefly establish the context for the risk assessment and conduct broad identification and assessment of physical risks. This is executed via a review of asset design information, and historical records of extreme weather events in the vicinity of the asset.

The method applied for the proposal Climate Change Risk Assessment (CCRA) is consistent with AS 5334:2013 *Climate Change Adaptation for Settlements and Infrastructure – A Risk Based Approach*. The Standard follows the international standards, AS/NZS ISO 31000:2018, *Risk Management – Principles and Guidelines*, which provides



a set of international endorsed principles and guidance on how organizations can integrate decisions about risk and responses into their existing management and decision-making processes.

The assessment was undertaken by desktop analysis and consisted of the steps outlined in Figure 16.1.

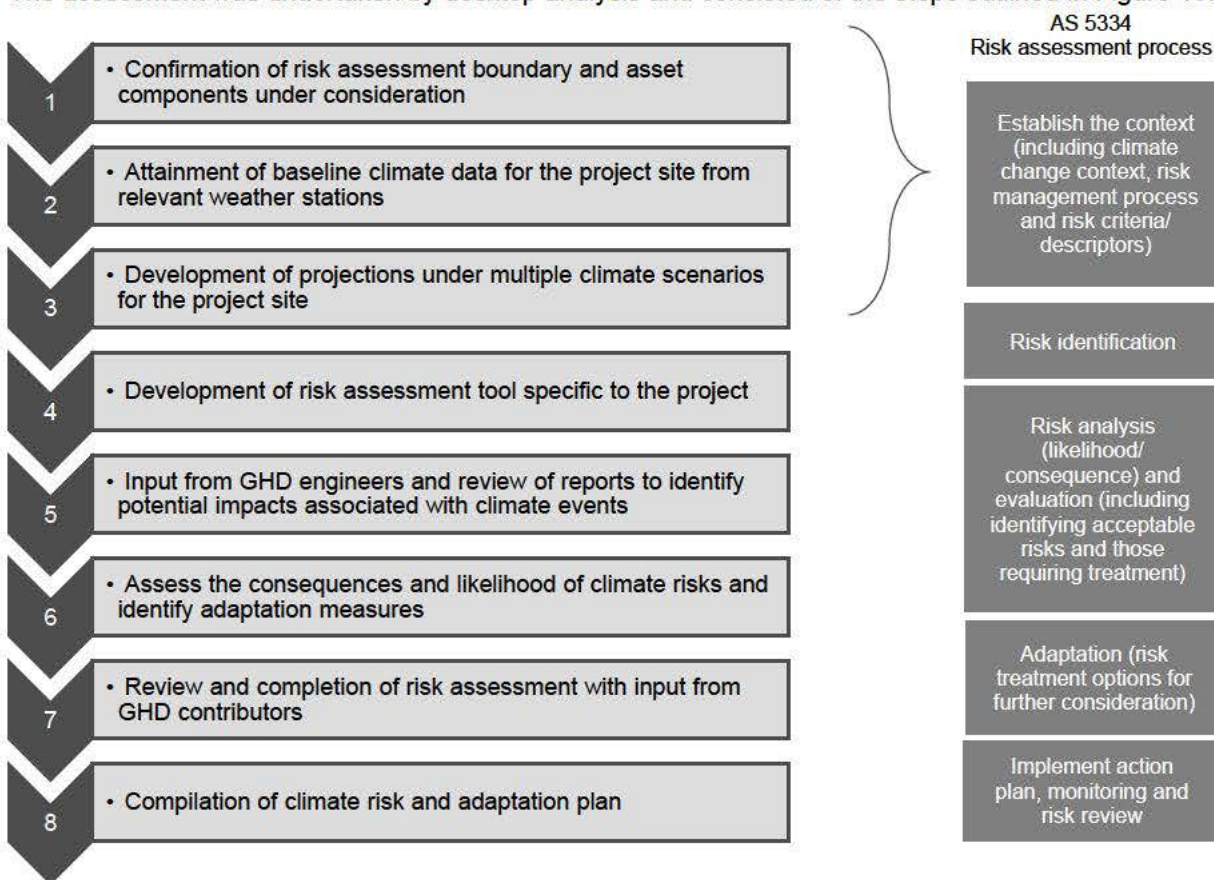


Figure 16.1 Climate change risk assessment methodology

## 16.4 Impacts

### 16.4.1 Historical climate context and projection data

The climate change risk assessment undertaken for the proposal considered a short-term extreme plausible scenario of future greenhouse gas emissions (RCP 8.5) and a mid-term extreme plausible scenario of future greenhouse gas emissions (RCP 8.5). To reflect the design life (see Table 16.3) of the facility and associated infrastructure, the short-term time horizon of 2030 and mid-term time horizon of 2050 were used to identify climate risks.

A summary of current trends in the frequency and intensity of extreme events for Canberra are presented in Table 16.2 and climate projection data is presented in Appendix P.



Table 16.2 Current trends in the frequency and intensity of extreme events for Canberra

| Climate risk pre-screening question                                                |                                                                                                                                                                                         | Response and supporting information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Exposure                                                                           | Impact                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Does the site include areas that have been impacted by extreme events in the past? | Have past extreme events caused physical damage or impacted the operations and maintenance of similar assets or supporting infrastructure within the proposal location? To what extent? | Severe storms (including hailstorms, extreme rainfall, extreme winds, flooding), heatwaves and bushfires are some of Canberra's extreme weather events.                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                    |                                                                                                                                                                                         | On 19 January 2020 a significant storm cell hit Canberra. At the height of the storm, winds reached more than 116 km/h at the Canberra Airport weather station.                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                    |                                                                                                                                                                                         | With hailstones the size of golf balls, some measuring more than four centimetres, it was the worst hailstorm to hit an urban area in Australia since the 1999 Sydney hailstorm. The storm smashed windows, dented thousands of cars, tore branches off trees and uplifted power lines, causing localised flooding.                                                                                                                                                                                                                                                                  |
|                                                                                    |                                                                                                                                                                                         | The ACT State Emergency Service responded to more than 2,000 requests for help in the wake of the storm. Insurance claims from the ACT (74,660 in total) accounted for 57 per cent of all claims made from the storm that also hit NSW and Victoria. <sup>12</sup> The extent of the hail damage was so large and the backlog so great that building repair companies who were contracted by insurers moved to set up permanent offices in Canberra for the first time to deal with the influx of repair jobs..                                                                      |
|                                                                                    |                                                                                                                                                                                         | The Canberra hailstorm also led to devastation for Canberra's wildlife. The storm resulted in the deaths of more than 600 flying foxes in Commonwealth Park, according to the National Capital Authority.                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                    |                                                                                                                                                                                         | Over the past century the ACT has experienced several major bushfires during the hot and dry summer months. Most have been caused by lightning strikes in the Brindabella Ranges on the ACT's western border.                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                    |                                                                                                                                                                                         | On 18 January 2003 the ACT experienced the most destructive bushfires in its history. Four people died, hundreds were injured and 500 homes destroyed.                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                    |                                                                                                                                                                                         | The firestorm hit the suburb of Duffy. Over the next few hours it devastated houses in the suburbs of Holder, Weston, Chapman, Rivett and Kambah.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                                                    |                                                                                                                                                                                         | The fires overwhelmed firefighters and caused a power and communications blackout. In the ensuing confusion and panic, thousands of residents fled the burning suburbs in their cars. Others stayed, desperately trying to protect their homes. Canberra Hospital was overrun with people suffering burns and smoke inhalation. <sup>13</sup>                                                                                                                                                                                                                                        |
|                                                                                    |                                                                                                                                                                                         | Extreme temperatures and heatwaves are not uncommon in Canberra's summer months. Temperatures in Canberra in February 2020 set a new monthly record. Temperatures hit 42.7 °C an all-time high for February that broke the record of 42.2 °C set in 1968. The new record along with all-time highs in January and December made the 2019-2020 summer the hottest on record. <sup>14</sup>                                                                                                                                                                                            |
|                                                                                    |                                                                                                                                                                                         | Heavy rain between 24 and 26 February 2018 caused flash flooding in parts of Canberra and ACT. Canberra Airport and Charnwood recorded their highest ever rainfall totals for a February day. In a 24-hour period to early 26 February 2018, 64 mm of rain fell at Canberra Airport and 70 mm at Charnwood. Flooding forced the closure of a number of roads in central areas of the city and also the suburbs of Lyneham, Dickson and Turner. Some homes and buildings were flooded, including parts of the Australian National University which was forced to close. <sup>15</sup> |
|                                                                                    |                                                                                                                                                                                         | In December 2021, a severe storm cell hit Canberra, resulting in strong winds reaching 89 km/h at Canberra Airport. Strong winds caused several trees to fall, blocking roads and damaging power lines and                                                                                                                                                                                                                                                                                                                                                                           |

<sup>12</sup> Canberra Times, 18 January 2021, Canberra hailstorm one year on: many still counting the cost, <https://www.canberratimes.com.au/story/7088846/one-year-on-canberra-is-still-counting-the-cost-of-the-devastating-hailstorm/>

<sup>13</sup> National Museum Australia, Defining Moments Canberra Bushfires, <https://www.nma.gov.au/defining-moments/resources/canberra-bushfires>

<sup>14</sup> Phys.org, 1 February 2020, Canberra heatwave breaks records amid wildfire threat, <https://phys.org/news/2020-02-canberra-heatwave-wildfire-threat.html>

<sup>15</sup> Floodlist, 26 February 2018, Australia – Record Rain Floods Canberra, <http://floodlist.com/australia/record-rain-floods-canberra-february-2018>



| Climate risk pre-screening question                                                              |                                                                                                                                                                                                                                                                     | Response and supporting information                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Exposure                                                                                         | Impact                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                  |                                                                                                                                                                                                                                                                     | properties. The ACT State Emergency Services received nearly 70 requests for assistance following the storm. <sup>16</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                  |                                                                                                                                                                                                                                                                     | Past extremes in weather, including severe storms and bushfires have impacted the operation of assets in the vicinity of the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| What past or current trends can be observed regarding frequency and intensity of extreme events? | If any past or current impacts from extreme events have been identified, consider whether proposed changes in the climate might worsen in the future and the potential impact this may have on the asset or supporting infrastructure within the proposal location. | <p>A summary of current trends in the frequency and intensity of extreme events is as follows:</p> <p>Under the high emission scenario (RCP 8.5), the maximum daily temperature at nearby BOM Canberra Airport is projected to warm on average by 0.7-1.3 °C to 21.3 °C by 2030, and 1.4-2.3 °C to 22.3 °C by 2050.</p> <p>Projections show that by 2050, under the high emissions scenario, the hottest summer day is likely to increase by a median value of 2.4°C to 42.4°C, compared to the 1986-2005 record (40.0 °C). Under the same scenario for 2030, the hottest summer day is likely to increase by a median value of 1.3 °C to 41.3 °C, compared to the 1986-2005 average.</p> <p>A decrease in annual rainfall is proposal for both time series compared to the 1986-2005 average, with 2030 projections showing a decrease of -1% to 610.6 mm, and 2050 -3.7% to 593.9 mm. The highest daily rainfall event is expected to increase from the 1986-2005 average by 6.4% in 2030 (134.1 mm) and 6.1% in 2050 (133.7 mm).</p> <p>In the current climate, this region experiences 15-20 thunder days per year. This is predicted to increase by 5-6% per degree Celsius of warming, resulting in a 7-8.4% increase in lightning frequency by 2030, and 18.5-22.2% by 2050.</p> <p>The current climate experiences 4 hail producing thunderstorms per year, and this is expected to increase to 6 hail producing thunderstorms per year under the high emissions scenario by 2050.</p> <p>An increase in the number of extreme heat days compounded with a decrease in annual rainfall will lead to drought conditions and a decrease in soil moisture (-3.1% by 2030, -7% by 2050) and an increase in evapotranspiration (+3.1% by 2030, +5.5% by 2050).</p> <p>Fire danger days are subsequently expected to increase from 1.4 days (current) to 1.7 to 2.1 days by 2030 (RCP8.5) and 2.1 to 5.9 days (RCP8.5).</p> <p>An increase in the intensity and frequency of extreme weather events in the vicinity of the proposal may impact the asset and supporting infrastructure. These climate risks are assessed in Appendix P.</p> |
|                                                                                                  | If the proposal location has previously recorded impacts, to what extent is it anticipated that the future proposal design will avoid or mitigate the risks from those impacts, and can adaptation responses be cost effectively retrofitted in future?             | <p>More frequent and severe storms, floods and bushfires are a risk to the functionality of the FOGO facility.</p> <p>Design inputs to mitigate these risks should be addressed during early in the proposal to ensure identified risks are adequately managed.</p> <p>Recommended climate change adaptation measures for the proposal are detailed in Appendix P.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## 16.4.2 Description of asset components

Infrastructure assets of the proposal were identified in consultation with the design team to determine what might be impacted in terms of functionality and operability, and importantly, what will need to be managed in response to climate change. The asset components identified as part of the risk assessment are listed in Table 16.3.

<sup>16</sup> ACT Emergency Services Agency, 18 December 2021, Canberra Storms update, <https://www.esa.act.gov.au/canberra-storms-update>



Table 16.3 Identified asset components of the proposal

| Component | Component name                                                                  | Design life |
|-----------|---------------------------------------------------------------------------------|-------------|
| 1         | Permanent mechanical systems, stationary equipment, tanks and building elements | 20 years    |
| 2         | Replaceable mechanical equipment and critical components                        | 10 years    |
| 3         | Mobile plant and equipment                                                      | 7 years     |

### 16.4.3 Climate change risk assessment

The CCRA was completed as per Figure 16.1, including inherent risks, which consider the measures identified in the planned controls, and the residual risks, which consider the identified adaptation measures. The full CCRA for the proposal is presented in Appendix P. Planned and assumed controls, and adaptation measures for the identified risks were documented. In this context, planned controls represent Business as Usual (BAU) measures that have been identified as standard considerations which will then be implemented in design while assumed planned controls are those that will foreseeably form part of future design, construction, or operation considerations. Adaptation measures on the other hand, represent measures above and beyond BAU incorporated specifically for the climate change risk identified. Adaptation measures to address risks will be identified and should be considered in design or to be adopted during the construction and operation of the proposal.

The assessment identified four climate hazards and associated risks which were applicable to the proposal: extreme heat, extreme rainfall, storms and bushfires. These climate hazard events were identified during the assessment process with the potential to impact the components of the infrastructure asset as defined in Table 16.3, or impact upon the construction or operation.

Eighteen impacts were identified across the different climate event scenarios. Nine identified risks returned a risk rating of low for baseline, RCP 8.5 2030 and 2050 conditions, and the risks presented in Table 16.4 are those that were deemed a medium to high inherent risk. Details of risks for each phase of the proposal are presented below:

- For construction, risks resulting from extreme heat are a primary concern resulting in a medium risk during the construction period (risk 006 and 007).
- For operation, extreme heat (risk 008: medium risk) and extreme rainfall or storms (risk 009 and 013: medium risk) are found to be the highest risks.
- Drought (risk 002: medium risk), extreme rainfall (risk 009: medium risk), storms (risk 013: medium risk) and bushfire (risk 015 medium risk) were found to be the highest risks to infrastructure components.

For medium risks 008, 009 and 014 adaptation responses were identified to reduce residual risks to low.



Table 16.4 Climate Change Risk Assessment

| Risk ID | Impact                                                                                                                                                                          | Components potentially impacted | Planned controls                                                                                                                                                                                                   | Inherent risk ratings |              |              | Adaption responses                                                                                 | Residual risk |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------|--------------|----------------------------------------------------------------------------------------------------|---------------|
|         |                                                                                                                                                                                 |                                 |                                                                                                                                                                                                                    | Current climate       | 2030 RCP 8.5 | 2050 RCP 8.5 |                                                                                                    |               |
| 002     | Extreme heat affects materials causing cracking and damage, resulting in reduced reliability and design life.                                                                   | Building elements.              | Concrete is inherently resilient to this risk. Expected thermal movement is a parameter used in design and materials selection.                                                                                    | M                     | M            | M            | No further adaptation measures identified.                                                         | M             |
| 006     | Extreme heat effects concrete temperature management for early age crack risk and for concrete curing resulting in reduce reliability and design life of concrete foundations.  | Construction                    | Planned controls documented in design and construction specifications and include the thermal control plan and the concrete specification. Plan for concrete pours to occur during cooler/finer weather conditions | M                     | n/a          |              | n/a                                                                                                | -             |
| 007     | Increase in extreme heat days resulting in 'stop work' days, and greater delays to the construction program than accounted for.                                                 | Construction                    | Additional buffer in program to account for increase in extreme weather days (i.e. 5 days per year)                                                                                                                | M                     | n/a          |              | n/a                                                                                                | -             |
| 008     | Increase in extreme heat days resulting in 'stop work' days during operations.                                                                                                  | Operations                      | WHS management procedures for extreme heat days are covered in the facility's operational plans.                                                                                                                   | M                     | M            | M            | Regularly update WHS management plan and procedures to adjust to conditions.                       | L             |
| 009     | Extreme rainfall leading to flooding of FOGO products stored in partially open areas leading to contamination of flood water leaving the site (water quality compliance issues) | Operations                      | Stormwater management areas will be sized for complete capture of rainfall on site. Flood modelling shows the area is safe for general use. Drainage would be directed to be kept on site.                         | M                     | M            | M            | Consider additional protection structures during detailed design.                                  | L             |
| 013     | Increased frequency, severity, and duration of significant storm events including hail cause damage to the sites exposed components such as roofs and uncovered equipment.      | All infrastructure components.  | Consider use of materials (especially roofing) that can withstand potential hail damage. Ensure that mobile and permanent equipment is sufficiently covered.                                                       | M                     | M            | M            | No further adaptation measures identified.                                                         | M             |
| 014     | Severe wind/ storm event has higher wind loading than designed, causing stress to site structures resulting in damage, reduced design life or safety hazard.                    | All infrastructure components   | Site to be designed in accordance with Australian Standards in regard to wind loading. Maintenance of vegetation in the surroundings of the site.                                                                  | L                     | L            | M            | Ongoing monitoring of site components and maintenance if deficiencies are identified.              | L             |
| 015     | Extreme heat generated by bushfires (>300 degrees) comes in direct contact with site components causing damage.                                                                 | All infrastructure components   | Implement of asset owner bushfire management plan and operational protocols.                                                                                                                                       | M                     | M            | M            | Maintenance slashing of vegetation in and regular updating and review of bushfire management plan. | M             |

## 16.5 Mitigation measures

The implementation of adaptation measures is to be recorded and tracked for traceability as the design progresses. Adaptation measures to address risks will be identified and should be considered in design or to be adopted during the construction and operation of the proposal. All proposed adaptations were assessed with input from the proposal team and relevant stakeholders. The proposed mitigation measures associated with climate change (planned controls) are described in Table 16.4.

For the eight risks identified as medium or higher, four adaptation responses were identified, and three of these lead to a decrease of the risk (risk 008, 009 and 014). The adaptation measures for these three risks are presented in Table 16.5, and relate to the detailed design or operation of the proposal.

Refer to Appendix P for the full CCRA including adaptation measures.

Table 16.5 Climate change mitigation measures

| Risk ID | Mitigation ID | Impact                                                                                                                                                       | Adaptation measures                                                                                                                                                                                                                                              | Timing          |
|---------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 008     | CCR01         | Increase in extreme heat days resulting in 'stop work' days during operations.                                                                               | Regularly update WHS management plan and procedures to adjust to conditions.<br><br>Consider use of 'cool' materials when designing. This includes light-coloured roofs, increased tree canopy and other landscaping elements to mitigate impacts of urban heat. | Operations      |
| 009     | CCR02         | Extreme rainfall leading to flooding of FOGO products stored in in partially open areas leading to contamination of flood water leaving the site             | Consider additional protection structures during detailed design.                                                                                                                                                                                                | Detailed design |
| 014     | CCR03         | Severe wind/ storm event has higher wind loading than designed, causing stress to site structures resulting in damage, reduced design life or safety hazard. | Consider use of materials (especially roofing) that can withstand potential hail damage. Ensure that mobile and permanent equipment is sufficiently covered.                                                                                                     | Detailed design |

## 16.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual climate change risks associated with the proposal has been considered and these are identified in Table 16.4.



# 17. Socio-economic and health

## 17.1 Requirements

This chapter addresses the following socio-economic and health requirements of the Scoping Document:

- Provide an assessment of impacts from the operation harbouring vermin and pest animals.
- Outline vermin and pest control measures encompassing both the transport and storage of organic waste on site.

## 17.2 Environmental conditions and values

### 17.2.1 Biosecurity framework

Biosecurity is a term that is commonly used for management and the set of measures adopted to protect the economy, the environment, and the community, of pests and diseases entering, emerging, establishing or spreading. Pests and diseases include weeds, pest animals, and pests and diseases of plants and animals. Biosecurity protocols would need to be considered as part of both the construction and operation of the proposal to ensure biosecurity is appropriately managed.

The ACT Biosecurity Strategy 2016-26 (ACT Government, 2016) outlines the critical importance of effectively managing biosecurity risks to minimise the impacts of weeds, pest animals, and plant and animal pests and diseases on the economy, environment and community. It identifies the goals, objectives and supporting actions for addressing identified biosecurity risks. The strategy acknowledges that biosecurity is a shared responsibility, and the productivity and profitability of agricultural production depends in part on the management of pests and diseases, including the prevention of incursion of pests and diseases onto properties.

Biosecurity in the ACT is currently governed by the following legislation and respective subordinate legislation and supporting strategies and plans:

- *Biosecurity Act 2015* (Cth)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- *Animal Diseases Act 2005* (ACT)
- *Plant Diseases Act 2002* (ACT)
- *Pest Plants and Animals Act 2005* (ACT)
- *Nature Conservation Act 2014* (ACT)
- *Emergencies Act 2004* (ACT)
- *Fisheries Act 2000* (ACT)
- ACT Pest Animal Management Strategy 2012 – 2022 (ACT Government, 2012)
- ACT Weeds Strategy 2009 – 2019 (ACT Government, 2009)
- ACT Biosecurity Emergency Plan (sub-plan of the *ACT Emergencies (Emergency Plan) 2014*)

The current strategy in the ACT is consistent with Commonwealth biosecurity legislation and strategies, as well as national and cross-border agreements and in particular the Intergovernmental Agreement on Biosecurity.

As the ACT is surrounded by NSW, there are current cross-border arrangements in place with NSW to help reduce the ACT's biosecurity risk including close operational cooperation. The ACT Biosecurity Strategy (ACT Government, 2016) recognises the close links with NSW as part of its overall vision: 'the effective management of biosecurity risks, in close cooperation with NSW, will contribute to community wellbeing by supporting a strong local and regional economy and a healthy environment.'

In NSW, the *Biosecurity Act 2015* provides a framework for the prevention, elimination and minimisation of biosecurity risks. The General Biosecurity Duty under the Act provides a general obligation on people to be aware of their surroundings and take action to prevent the introduction and spread of pests, diseases, weeds and contaminants.

Biosecurity protocols would need to be considered as part of both the construction and operation phase and ensure they are appropriately managed.

## 17.2.2 Demographics and land use

In the 2016 Census, there were approximately 1,934 people residing in Canberra East, which includes various districts including Hume, and of these 66.6 per cent were male and 33.4 per cent were female. The median age of people in Canberra East was 40 years.

The proposal area and surrounding land is typically industrial or rural land used for agricultural land uses. As a result, the surrounding land has been subject to larger land leases in the northern area and smaller leases within Hume with few residential dwellings or urban developments that are considered to be particularly sensitive.

## 17.2.3 Key surrounding developments

The proposal site is located within the HRRE, in the District of Hume, an industrial suburb located adjacent north-east to Tuggeranong and west of Jerrabomberra.

It is understood that land at the ACT/NSW border, near Tralee and South Jerrabomberra, may be rezoned to residential in the future. The nearest of those locations and any existing residences would be approximately one kilometre from the facility.

The proposal site is located approximately one kilometre from the MLRMC, which currently contains a landfill and a small food FOGO composting site and approximately 10 kilometres to the south-west of Canberra International Airport. The Hume MRF site is adjacent to the south-west which received recyclables up until December 2022 when operations ceased due to fire.

## 17.3 Investigations

A desktop review was undertaken to identify the potential social, economic and health impacts associated with construction and operation of the proposal, with a particular focus on biosecurity risks including pests and vermin.

## 17.4 Impacts

### 17.4.1 Construction

Biosecurity risks would be managed during construction with the development and implementation of a construction biosecurity management plan as part of the CEMP. It would include measures to ensure controls and procedures are implemented during construction to avoid, minimise or manage potential adverse impacts on biodiversity within and adjacent to the proposal site. The CEMP would also include measures to retain and protect existing flora and fauna habitat wherever possible and also appropriately manage the spread of weeds and plant pathogens.

The construction biosecurity management plan (including a pest and weed management plan) would also detail measures to minimise the potential for biosecurity risks during construction in accordance with the *Biosecurity Act 2015* and relevant ACT legislation. Potential biosecurity risks and measures that may mitigate these risks would be included in the plan. With the implementation of biosecurity measures identified in the plan, impacts associated with vermin and pest animals during construction are not expected. The biosecurity measures would address the following areas:

#### People

- Limit entry points to the property.
- Complete site hygiene measures for vehicles, equipment and personnel to ensure no biosecurity issues are introduced or encouraged onto the site.
- Limit worker contact with livestock, crops or plant materials on adjacent properties as much as possible and eliminate any unnecessary contact altogether.
- Keep a visitor register.



## Vehicles

- Limit the number of entry and exit points (one is preferable).
- Clearly sign and lock restricted access areas.
- Ensure construction vehicles are clean and are parked in a designated area away from livestock or crops.
- Complete site hygiene measures for vehicles and staff to ensure no biosecurity issues are introduced or encouraged onto the site. Consideration might be given for a vehicle high pressure wash down facility (if required) to clean vehicles and equipment.
- Ensure construction vehicles remain on designated tracks.

## Equipment

- Clean machinery and equipment from the top down and dismantle it as far as possible to gain access to internal spaces.

## 17.4.2 Operation

### Biosecurity, pests, vermin and vermin predators

The operational phase would involve the transportation of FOGO waste to the facility for processing via in-vessel tunnel composting in accordance with the requirements of AS 4454-2012 (including pasteurisation) (Standards Australia, 2012). FOGO-derived products would then be sold as a variety of mulch, compost and soil conditioner products for distribution across the ACT and other areas.

The transport and processing of FOGO has potential to attract birds, native wildlife and other vermin (and associated vermin predators) or facilitate the spread of pathogens to and from the facility if not properly managed.

Vehicles delivering FOGO waste to the facility would be required to be covered to minimise any biosecurity risks. All incoming loads would be weighed and vehicle identification, load description (material type), source and mass details would be recorded.

The FOGO waste would be delivered directly into the receival hall through automated fast acting roller/shutter doors and unloaded in the designated delivery areas within the building. As the operations (including receival and processing) would take place within enclosed buildings the likelihood birds, wildlife, pests and vermin being attracted to the proposed facility is minimal. This would be refined during the DA phase for the proposal.

Consideration would also be given as to where the FOGO material is sourced including out of region or interstate and determine if the transport, storage and processing of material would have any biosecurity implications as a result of pathogens, animals or plant diseases.

Grape phylloxera (*Daktulosphaira vitifoliae*) is a plant pest of grapevines in parts of New South Wales and Victoria. Phylloxera is a serious threat to Australia's grape and wine industry. Currently most of Australia's main vineyard regions are free of phylloxera including in the ACT. Quarantine boundaries have been established in Australia to prevent spread of phylloxera from known Phylloxera Infested Zones (PIZ) to phylloxera free areas known as Phylloxera Exclusion Zones (PEZ). The ACT *Plant Diseases (Phylloxera) Prohibition 2011 (No 1)* Instrument has movement restrictions in place to protect PEZ from the threat of phylloxera. As the proposal would be located within a PEZ, no organic material from a Phylloxera inclusion zone would be permitted to be transported to the facility.

The technical design and proposed site operation of the facility is therefore expected to control biosecurity risks and the potential to attract pests, vermin and associated predators such as cats and foxes

An operational biosecurity management plan would also be prepared for the operational phase of the proposal to document the operational procedures, controls and ongoing monitoring and measurement to manage biosecurity risks. The plan would also outline how pests and weeds will be managed on the site. The site operator would be required to undertake routine monitoring and inspections of the operational biosecurity management plan.

## Benefits

The proposal is anticipated to result in socio-economic benefits to the community through the diversion of waste from landfill which can be used locally as mulch or other garden products. With less waste being disposed of to landfill means that there will be a reduction in the costs need to extend the capacity of landfills.

## 17.5 Mitigation measures

The mitigation measures listed in Table 17.1 would be adopted to manage potential socio-economic and health impacts, and in particular the potential for socioeconomic and health risks including from vermin and pest animals.

Table 17.1 Socioeconomic and health mitigation measures

| Potential impact                                                      | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Timing       |
|-----------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Biosecurity including vermin and pest animals which impacts on health | SH01 | <p>A construction biosecurity management plan (including a pest and weed management plan) will be developed and implemented as part of the CEMP and include:</p> <ul style="list-style-type: none"> <li>Measures to ensure controls and procedures are implemented during construction to avoid, minimise or manage potential adverse impacts on biodiversity.</li> <li>Measures to retain and protect existing flora and fauna habitat where possible and appropriately manage the spread of weeds and plant pathogens.</li> <li>Measures to minimise the potential for biosecurity risks during construction in accordance with the <i>Biosecurity Act 2015</i> and relevant ACT legislation</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Construction |
|                                                                       | SH02 | <p>An operational biosecurity management plan will be developed and implemented which:</p> <ul style="list-style-type: none"> <li>Clearly documents operational procedures, controls and ongoing monitoring and measurement of biosecurity risks associated with the proposal, including requirements for: <ul style="list-style-type: none"> <li>Ensuring that staff know how diseases, pests and weeds spread, and what they should do when entering and leaving the site to minimise risk</li> <li>Maintenance of records of staff training and ensure they are regularly maintained</li> <li>Maintenance of a visitor record</li> <li>Induction of contractors/visitors to state what biosecurity measures are expected of them while working on/visiting the site</li> <li>Appropriate signage for entry/exit points and scrubbing stations (where applicable)</li> <li>Dedicated area for high risk items (such as footwear, tools, or other PPE worn within the receival halls)</li> <li>Vehicle deliveries to be covered</li> <li>Prohibiting the receipt of feedstock from a PIZ</li> <li>Delivery within the receival hall and composting (pasteurisation) in accordance with the requirements of AS 4454-2012 (Standards Australia, 2012).</li> </ul> </li> <li>Identifies common pests and weeds (and associated disease symptoms, where applicable) within the local region so that staff can readily identify them.</li> <li>Outlines how pest and weeds will be managed on the site which may include but not limited to: <ul style="list-style-type: none"> <li>trapping and baiting</li> <li>regular inspections of effectiveness of pest control</li> <li>boot scrubbing stations</li> <li>limit entry/exit points.</li> </ul> </li> </ul> | Operation    |



| Potential impact | ID | Mitigation measure                                                                                                           | Timing |
|------------------|----|------------------------------------------------------------------------------------------------------------------------------|--------|
|                  |    | – Requires the site operator to undertake routine monitoring and inspections on the operational biosecurity management plan. |        |

## 17.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual socioeconomic and health risks associated with the proposal has been considered and these are identified in Table 17.2.

Table 17.2 Socioeconomic and health – residual risk assessment

| Risks Identified                                                                                              | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|---------------------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                                                      |                      |                     |                      |                      |
| Reduction in amenity during construction (noise, visual, and dust impacts)                                    | High                 | Remote              | Moderate             | Very Low             |
| Reduction in amenity during operation (noise, visual, and dust impacts)                                       | Medium               | Unlikely            | Minor                | Very Low             |
| Increase in complaints from the community for the FOGO facility (relating to odour, noise and visual impacts) | High                 | Unlikely            | Moderate             | Low                  |
| <b>Additional risks</b>                                                                                       |                      |                     |                      |                      |
| Impacts from the operation harbouring vermin and pest animals                                                 | NA                   | Unlikely            | Moderate             | Low                  |

# 18. Noise and vibration

## 18.1 Requirements

This chapter addresses the following noise and vibration requirements of the Scoping Document:

- Provide a noise and vibration impact assessment regarding the operation of the facility prepared in accordance with the “Guidelines for the preparation of Noise Management Plans for development applications Environment Protection Authority, February 2014”.

## 18.2 Environmental conditions and values

### 18.2.1 Noise zones and sensitive receivers

The ACT has been divided into seven noise zones which relate to land zones under the Territory Plan. The noise standards permit the highest noise levels in industrial areas and are most stringent in residential areas.

The noise zones and sensitive receivers identified within the 1.5 kilometres from the proposal site boundary are outlined in Table 18.1, and noise zones are displayed in Figure 18.1. The nearest noise sensitive receivers are located 1.1 kilometres to the south in NSW and 1.1 kilometres to the north-east.

Table 18.1 Noise zone descriptions

| Noise zone | ACT land description                                                                                                                                                                                                                                                | Sensitive receivers                                                                                                                                                                                                                                                                                                                                                                                      |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A          | Land in an industrial zone                                                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>– A materials recovery facility directly to the south-west of the proposal site.</li> <li>– A soft-landing mattress recycling facility directly to the south of the proposal site.</li> <li>– Other commercial and industrial buildings between Monaro Highway and the NSW border.</li> </ul>                                                                     |
| E          | <ul style="list-style-type: none"> <li>– Land (other than land in the city centre, town centres and group centres) in a restricted access recreation zone.</li> <li>– A broadacre zone.</li> </ul>                                                                  | <ul style="list-style-type: none"> <li>– Mugga Lane Solar Park to the west of the proposal site.</li> <li>– MLRMC to the north of the proposal site.</li> <li>– Wanniasa Hill Special Purpose Reserve to the west of the proposal site.</li> <li>– Two residential rural receivers north-east of the proposal site.</li> <li>– The proposed Southern Memorial Park west of the proposal site.</li> </ul> |
| F          | Land (other than land in the city centre, town centres and group centres) in. <ul style="list-style-type: none"> <li>– A commercial CZ5 zone.</li> <li>– A TSZ2 zone.</li> <li>– A community facility zone.</li> <li>– A leisure and accommodation zone.</li> </ul> | <ul style="list-style-type: none"> <li>– Rose Cottage to the south-west of the proposal site.</li> <li>– Other open areas shown in Figure 18.1.</li> </ul>                                                                                                                                                                                                                                               |
| G          | All other land, other than land in the Central National Area (Fairbairn)                                                                                                                                                                                            | No residential dwellings or other sensitive receivers have been identified within Zone G in the study area.                                                                                                                                                                                                                                                                                              |





#### Legend

- Study area
- Proposal site
- Watercourses

#### Noise zone

- Zone A
- Zone E
- Zone F

Paper Size ISO A4  
 0 250 500  
 Metres  
 Map Projection: Transverse Mercator  
 Horizontal Datum: GDA 1994  
 Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
 Hume Food Organics and Garden Organics Facility  
 Environmental Impact Statement

Project No. 12540460  
 Revision No. 0  
 Date 29/08/2023

#### Noise zone map

#### FIGURE 18.1



## 18.2.2 Noise standards

The ACT noise standards as applied to the proposal are presented in Table 18.2. Operational noise levels are to be predicted and assessed to the vertical plane of the proposal site boundary.

Table 18.2 Project noise standards

| Noise zone | ACT land description       | L <sub>10(10minutes)</sub> Noise standard, dB(A) |       |
|------------|----------------------------|--------------------------------------------------|-------|
|            |                            | Day                                              | Night |
| A          | Land in an industrial zone | 65                                               | 55    |

It is recognised that certain activities have the potential to generate noise above the relevant noise standard. Exceedances of the noise standards are permitted for certain activities under the *Environmental Protection Regulation 2005* (EP Regulation) if additional conditions are met. The full list of noise conditions can be found in Schedule 2 of the EP Regulation. The following exemption applies to the proposal:

Table 18.3 Noise conditions

| Item | Noise                                                             | Conditions                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------|-------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5    | Noise emitted in the course of maintaining or repairing something | a) The noise is emitted- <ul style="list-style-type: none"> <li>i) Between 7 am and 8 pm on Monday to Saturday; or</li> <li>ii) Between 8 am and 8 pm on Sunday or a public holiday; and</li> </ul> b) Any noise exceeding a zone noise standard is emitted for periods totalling not more than 40 hours in any 8-week period; and<br>c) The equipment used is maintained and operated in accordance with the manufacturer's instructions. |

## 18.2.3 Compliance point

As a general rule, the compliance point is any point as near as practicable to the boundary of the parcel of land. In a case where compliance to the noise standard is considered excessive, an environmental authorisation or approval may specify an alternative compliance point, and in effect, change the noise level permitted. When such a compliance point is specified, it is done by applying the following principles:

- The compliance point should make it easy as possible to measure the sound concerned.
- In combination with the setting of the noise level permitted, the choice of compliance point should ensure that the overall noise authorised or approved is consistent with the provisions and Objects of the EP Act and the Noise Environment Protection Policy (EPA, 2010).

## 18.3 Investigations

A Noise and Vibration Impact Assessment (NVIA) was undertaken for the proposal to assess potential for noise and vibration impacts on the sensitive receivers surrounding the proposal site during operation. The NVIA includes:

- Identification of the noise sources associated with the proposal, the noise zones applicable at the boundary of the proposal site and the location of the nearest sensitive receivers to the proposal site.
- Establishment of relevant noise criteria at the boundary of the proposal site based on the requirements of the EP Regulation and the Noise Environment Protection Policy (EPA, 2010).
- The development of a 3D noise model of the study area using SoundPLAN 8.2 software. Source noise levels of plant and equipment have been estimated based on noise measurements of similar equipment.
- The assessment of operational noise from the proposal with reference to the EP Regulation and Noise Environment Protection Policy (EPA, 2010).
- Where required, mitigation and management recommendations have been provided to minimise potential noise impacts as a result of the operation of the facility.

This chapter provides a summary of the assessment findings. The full NVIA report is provided in Appendix Q.



The study area for the NVIA was selected to be 1.5 kilometres from the proposal site boundary as no operational noise impacts were anticipated beyond this distance.

### 18.3.1 Noise sources

Key sources of noise expected to occur on proposal site include (in general order of their noise contribution to noise levels at the most-affected boundaries of the proposal site):

1. Heavy vehicle movements along the internal access road.
2. Other mobile plant operating externally within the proposal site such as wheeled loaders.
3. Break out noise from the receival hall, composting hall, maturation and refining building and workshop/machinery shed. Open doors are generally considered the weakest area.
4. Axial fans (associated with the biofilter operation and building ventilation).

Active operation times for various mobile and fixed plant and equipment is expected to be around 6 to 7 hours per day (day period only). This would include decontamination and feedstock preparation, tunnel loading/unloading, compost maturation pile maintenance, product screening and refinement, and finished product load-out. Night-time operation and movements of mobile plant is not expected to be required.

Tunnel composting is a 24 hour continuous process enabling effective pasteurisation and rapid active composting cycles. Accordingly, blowers, fans and pumps would be operating (or cycling) continuously, including nights and weekends. Fans and pumps would be selected and/or configured as low noise emitting equipment such that noise emissions from the facility would comply with regulatory requirements.

The key assumptions and source noise levels used in the noise modelling are summarised in Table 18.4. The base-case model assumes the worst-case activities during the day period would be similar to the worst-case activities during the night period.

Table 18.4 FOGO facility modelling sources

| Source                           | Noise source assumptions                                                                            | Sound Level, dBA   |
|----------------------------------|-----------------------------------------------------------------------------------------------------|--------------------|
| Access road                      | Line source – 20 vehicle movements per hour                                                         | Lw 108 per vehicle |
| Receival hall                    | Industrial building source with four doorways open 8 minutes per hour                               | SPLi 85            |
| Primary composting hall          | Industrial building source with two doorways open 8 minutes per hour                                | SPLi 85            |
| Maturation and refining building | Industrial building source with four doorways open 8 minutes per hour                               | SPLi 85            |
| Biofilter (day operations)       | Industrial building source with two openings open for 8 minutes an hour                             | SPLi 85            |
| Biofilter (night operations)     | Industrial building source with all doors and openings closed                                       | SPLi 85            |
| Ventilation fans                 | Point sources – four on the roof of the receiver hall, primary composting room, and maturation room | Lw 85              |
| Workshop/machinery Shed          | Industrial building source                                                                          | SPLi 90            |
| Wheeled loader (small)           | Wheeled loader operating continuously outside the product storage area                              | Lw 105             |

Buildings would be steel framed and metal clad construction (0.6 millimetres thick) in Colorbond finish, with a maximum height of 12 metres (excluding a potential biofilter stack which is subject to detailed design). This material would generally achieve a sound transmission indices performance of  $R_w$  22.

## 18.3.2 Noise modelling

Acoustic modelling was undertaken using SoundPLAN 8.2 noise modelling software to predict indicative environmental noise levels to the boundary of the proposal site. The general parameters used in the noise model are presented in Table 18.5.

Table 18.5 Noise modelling parameters

| Variable                  | Parameter used                                                                                                                                |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Software                  | SoundPLAN 8.2                                                                                                                                 |
| Calculation method        | ISO 9613-2: Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation                              |
| Topography                | 1 m LIDAR elevation data was sourced from NSW Government – Spatial Services                                                                   |
| Receiver and grid heights | 1.5 m above the ground floor                                                                                                                  |
| Ground absorption         | 0.5 for all areas (0 is non-porous ground such as concrete and 1 is porous ground such as grass)                                              |
| Temperature               | 20 deg Celsius                                                                                                                                |
| Humidity                  | 80%                                                                                                                                           |
| Doors                     | Vehicle access doors for the receival hall, primary composting hall and the maturation and refining building are automatic and fast-shutting. |

## 18.4 Impacts

### 18.4.1 Direct impacts

#### Construction

##### Vibration

Vibration impacts (human comfort or cosmetic damage to buildings) would be generally limited to an area of 100 metres. No sensitive receivers have been identified within 100 metres of the proposal site boundary and the nearest building is an industrial building located about 30 metres from the proposal site boundary. At this distance, no cosmetic damage vibration impacts are anticipated.

##### Noise

Section 9.4 of the Noise Environment Protection Policy (EPA, 2010) permits noise from building work that exceeds the noise standard, subject to time restrictions and provided the work is carried out in accordance with AS 2436. It states that:

*“In industrial areas, city centre and town centres, noise from building work can only exceed the noise standard between 6am and 8pm.”*

The proposal site is located in an industrial zone and the construction hours would be limited to:

- 7 am to 6 pm Monday to Friday
- 8 am to 6 pm Saturdays
- 8 am to 6 pm on Sundays or Public Holidays

Given this, exceedances of the noise standard are permitted, and no further assessment of construction noise is required.



## **Operation**

### **Vibration**

No vibration intensive activities or equipment is proposed during operation and as such, no vibration impacts are anticipated.

### **Noise**

The results of the noise modelling indicate that noise levels would be compliant with the relevant noise standard limit of 65 dBA in the Noise Environmental Protection Policy (EPA, 2010). Noise contour maps are provided in Figure 18.2 (day) and Figure 18.3 (night).

The nearest noise sensitive receivers include two rural residences located approximately 1.2 kilometres and 1.8 kilometres to the north-east of the proposal, as well as the planned Southern Memorial Park located approximately 800 metres to the west. Considering noise levels from facility operations are modelled to be generally below 65 dBA for the day period, and below 55 dBA for the night period at the property boundary of the facility, no noise impacts are expected at these receivers given the large separation distance between the proposal and the residential dwellings.





#### Legend

- Proposal site
- Industrial buildings
- Site buildings
- Cadastre
- Access road surface
- Axial fan source

Paper Size ISO A4  
0 50 100  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



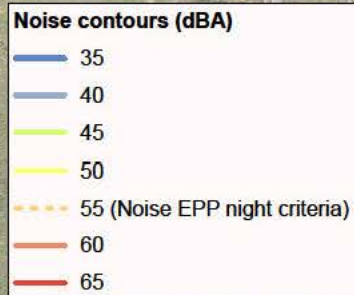
Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Predicted operational noise contours  
(day operations)

Project No. 12540460  
Revision No. 0  
Date 14/09/2023

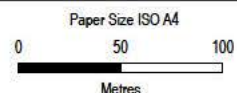
**FIGURE 18.2**





#### Legend

- Proposal site
- Industrial buildings
- Site buildings
- Cadastre
- Access road surface
- Axial fan source



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Predicted operational noise contours  
(night operations)

Project No. 12540460  
Revision No. 0  
Date 14/09/2023

**FIGURE 18.3**



## 18.4.2 Indirect impacts

No indirect impacts from construction or operation of the proposal are expected.

## 18.5 Mitigation measures

The results of the noise modelling and assessment indicate that noise from the proposal is predicted to comply with the requirements of the Noise Environment Protection Policy (EPA, 2010) when assessed at the boundary of the proposal site. Therefore, no additional mitigation measures are required.

## 18.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual noise and vibration risks associated with the proposal has been considered and these are identified in Table 18.6.

Table 18.6 Noise and vibration – residual risk assessment

| Risks Identified                                                                                | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|-------------------------------------------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                                                        |                      |                     |                      |                      |
| Noise and vibration impact during construction activities (increased in vehicles and machinery) | Medium               | Unlikely            | Minor                | Very Low             |
| Noise and vibration impact during operation                                                     | Medium               | Unlikely            | Minor                | Very Low             |



# 19. Hazard and risk

## 19.1 Requirements

This chapter addresses the following hazard and risk requirements of the Scoping Document:

- Outline management procedures to be followed should critical infrastructure failure occur.
- Provide assessment and mitigation measures against the requirements of the NASF and airport operations including “Guideline C Managing the Risk of Wildlife Strikes in the Vicinity of Airports” and “Guideline E Lighting and Pilot Distraction”.
- Provide a Wildlife Management Program in accordance with the NASF Guidelines.

This chapter also addresses the following materials and waste requirements of the Scoping Document:

- Describe any hazardous materials and dangerous chemicals to be used or stored on site during construction and operation.
- Identify any Schedule 11 hazardous chemical, as per Work Health and Safety Regulation 2011 (WHS Regulation).
- Provide details of maximum storage capacities for any hazardous chemicals.
- Provide safety data sheets for any hazardous chemicals.
- Identify whether any Schedule 11 hazardous chemicals meet the placard quantity as per the WHS Regulation.

This chapter also addresses the following traffic and transport requirement of the Scoping Document:

- Describe how any potential hazardous materials will be transported to and from the site.

## 19.2 Environmental conditions and values

### 19.2.1 Legislative and policy context

The PD Act is the key legislation informing planning and development on Territory land in the ACT.

The PD Act sets out requirements that include, but are not limited to, the provision of offsets and a policy to compensate for impacts that have significant adverse impacts on protected matters. It also provides the formal process for development approvals, the management of public land, and complaints and enforcement.

The PD Act also references Schedule 11 hazardous chemicals which are set out in the ACT *Work Health and Safety Regulations 2011*.

## 19.3 Investigations

A preliminary hazard analysis (PHA) was prepared for the proposal. The PHA approach was based on a comprehensive hazard identification study to demonstrate that the proposed activities do not pose a significant risk. The PHA process complied with Australian Standard AS 31000:2018 risk management – principles and guidance, and followed the following steps:

- System definition
- Hazard identification
- Likelihood analysis
- Consequence analysis
- Risk calculations/ analysis
- Risk evaluation (compare against criteria and consider risk mitigation and management options)

The hazard identification was undertaken as a desktop qualitative assessment to document possible events, potential causes and identify operational and organisational safeguards. In undertaking the hazard identification study, both on-site and off-site risks were considered and it was assumed that:

- All equipment is installed and operated in accordance with appropriate Australian Standards, codes and guidelines.
- All equipment and systems are designed to be inherently safe.

This chapter provides a summary of the assessment findings. A full copy of the PHA is provided in Appendix R.

It is noted that bushfire risk and climate change risk have been considered separately (refer to Chapters 20 and 16 respectively) and are not discussed further in this chapter. It is also noted that dust and noise have been assessed in detail in Chapters 14 and 18, respectively.

## 19.4 Impacts

### 19.4.1 Direct impacts

#### Hazardous materials and dangerous chemicals

Schedule 11 to the Work Health and Safety Regulations 2011, outlines the threshold quantities for placarding and providing a manifest for materials storage.

A list of the expected hazardous chemicals to be used during construction and operation is shown in Table 19.1 and Table 19.2, respectively. Minimal chemicals are expected to be stored on-site during construction.

As the final chemical supply details are not finalised, example safety data sheets (SDS) are provided in Appendix C of the PHA (Appendix R).

Table 19.1 Indicative hazardous chemicals used/stored during construction

| Product Name                            | UN number | GHS Class          | GHS category     | Indicative maximum Quantity (kg) | Schedule 11 placard threshold (litres) | Schedule 11 manifest threshold (litres) | Schedule 11 Requirements |
|-----------------------------------------|-----------|--------------------|------------------|----------------------------------|----------------------------------------|-----------------------------------------|--------------------------|
| Spray paint                             | Multiple  | Gas under pressure | Acute toxicity 1 | 0.02                             | 50                                     | 500                                     | None                     |
| LPG                                     | 1075      | Flammable gas      | 1                | 0.09                             | 200                                    | 5,000                                   | None                     |
| Acetylene (welding)                     | 1001      | Flammable gas      | 1                | 0.01                             | 200                                    | 5,000                                   | None                     |
| Oxygen (welding)                        | 1072      | Gas under pressure | Other            | 0.05                             | 1,000                                  | 10,000                                  | None                     |
| Paint (oil based considered worst case) | 1263      | Flammable liquid   | 2                | 0.1                              | in combination 1,000                   | in combination 10,000                   | None                     |
| Solvents                                | Multiple  | Flammable liquid   | 3                | 0.1                              | in combination 1,000                   | in combination 10,000                   | None                     |
| Epoxy resins                            | Multiple  | Flammable liquid   | 3                | 0.1                              | in combination 1,000                   | in combination 10,000                   | None                     |
| Diesel (C1)                             | 3082      | Flammable liquid   | 4                | 2.5                              | 10,000                                 | 100,000                                 | None                     |
| General oils and lubricants (C2)        | Multiple  | Flammable liquid   | 4                | 0.5                              | 10,000                                 | 100,000                                 | None                     |
| Bitumen                                 | 3257      | Flammable liquid   | 4                | -                                | 10,000                                 | 100,000                                 | None                     |
| Cleaning products                       | Multiple  | Eye irritation     | 1                | 0.005                            | None                                   | None                                    | None                     |



| Product Name             | UN number | GHS Class            | GHS category | Indicative maximum Quantity (kg) | Schedule 11 placard threshold (litres) | Schedule 11 manifest threshold (litres) | Schedule 11 Requirements |
|--------------------------|-----------|----------------------|--------------|----------------------------------|----------------------------------------|-----------------------------------------|--------------------------|
| Concrete                 | N/A       | Not classified as DG |              | -                                | None                                   | None                                    | None                     |
| Steel structural members | N/A       | Not classified as DG |              | -                                | None                                   | None                                    | None                     |
| Plasterboard             | N/A       | Not classified as DG |              | -                                | None                                   | None                                    | None                     |
| Sealants / joint fillers | N/A       | Not classified as DG |              | 0.05                             | None                                   | None                                    | None                     |
| Detergent                | N/A       | Not classified as DG |              | 0.005                            | None                                   | None                                    | None                     |

\* Minimal chemicals are expected to be stored on site during construction.

Table 19.2 Indicative hazardous chemicals used/stored during operation

| Product Name         | GHS Class        | Indicative maximum Quantity (kg) | Schedule 11 manifest threshold (litres) |
|----------------------|------------------|----------------------------------|-----------------------------------------|
| Diesel               | Flammable liquid | 5,000                            | 100,000                                 |
| Oils and lubricants  | Flammable liquid | 1,000                            | 100,000                                 |
| Sulphuric Acid       | Skin corrosive   | 2,000                            | 500                                     |
| Laboratory chemicals | Skin corrosive   | 10                               | 10,000 (in combination)                 |
| Biocide              | Eye irritation   | 1,000                            | None                                    |

Sulfuric acid is required for ammonia scrubbing. The need for wet scrubbers would be considered in the detailed design phase and if deemed to be required, further details would be available as part of the detailed design and DA. As outlined in Section 7.1.2 of the PHA, all chemicals (including sulfuric acid) would be stored in accordance with Australian Standards. The storage locations would be within designated work areas and mitigation measures HR04 to HR07 are applicable to the storage of sulfuric acid. Each chemical would have appropriate labelling, an appropriately sized bund, separation where necessary and would be disposed of in accordance with Australian Standards.

Whilst only sulphuric acid triggers the need for a manifest, management of all chemicals in a consistent manner is recommended. In this manner, a register of all chemicals used on site should be kept that includes GHS and Australian dangerous goods (ADG) designations, quantities and storage locations. A current safety data sheet (SDS) should also be accessible to all personnel for all chemicals used on site.

The expectation is that any hazardous chemical will be transported to site following the ADG code requirements. Whilst diesel is likely to be trucked in via a bulk tanker and transferred to a fixed storage vessel, the other chemicals are expected to be transported in package form. To limit the potential of a fire initiating from diesel storage, it is recommended the goods are stored in dedicated locations away from potential ignition sources.

## Preliminary hazard analysis

The results of the hazard identification process and risk assessment of hazards are summarised in Table 19.3.

The hazard identification process indicated that whilst there are several hazard scenarios that have the potential for off-site impact, it is considered that there is minimal, if any, potential for high-level harm. Therefore, a qualitative PHA was determined to be appropriate.

The assessment of the hazards show that the risk is rated as medium, which is within the risk appetite of ACT NoWaste. The risk of fire at the facility is associated with a total loss event and assumes the safeguards are implemented. It should also be noted that the PHA risk matrix differs from an impact assessment risk rating. The risk of bushfire is considered in Chapter 20.

Recommended safeguards for each of the hazard scenarios have been included in Table 19.3 which contain, or control each of the hazards to an acceptable level.

The potential for unauthorised access resulting in safety risks is low, based on ACT workplace safety laws and the location of the proposal site. A work health and safety management plan and safe work method statements would be developed in accordance with regulatory requirements.



**Table 19.3**      *Hazard identification and analysis*

| Hazard                    | Phase        | Causes                                                               | Consequence                               | Identified / recommended safeguards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Consequence rating | Likelihood rating | Risk rank |
|---------------------------|--------------|----------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------|-----------|
| Fire                      | All          | Accumulation of flammable waste product<br>Building/ electrical fire | Personal injury<br>Asset damage           | <ul style="list-style-type: none"> <li>– Fire Management Plan</li> <li>– Appropriate placement of smoke detectors, fire extinguishers, fire blankets, fire hose reels and sprinklers</li> <li>– Emergency Management Plan</li> </ul>                                                                                                                                                                                                                                                                                                           | Moderate           | Unlikely          | Medium    |
| Hazardous chemicals spill | All          | Chemicals transfer/ transport                                        | Personal injury                           | <ul style="list-style-type: none"> <li>– Licenced transporters of chemicals</li> <li>– Trained handlers of chemicals</li> <li>– Safe work method statements and procedures for the use of chemicals</li> <li>– Safety data sheets (SDS)</li> <li>– Personal protective equipment (PPE)</li> </ul>                                                                                                                                                                                                                                              | Minor              | Unlikely          | Medium    |
| Noise                     | All          | Heavy vehicle use during construction<br>Equipment use               | Complaints                                | <ul style="list-style-type: none"> <li>– Construction Management Plan</li> <li>– Equipment designed to minimise noise generation</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                    | Insignificant      | Possible          | Low       |
| Dust                      | Construction | Earth movement<br>Vehicle movement                                   | Complaints<br>Environmental damage        | <ul style="list-style-type: none"> <li>– Construction Management Plan</li> <li>– Water cart where appropriate</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                       | Insignificant      | Possible          | Low       |
| Spontaneous combustion    | Operational  | Heat generated during composting                                     | Personal injury<br>Asset damage           | <ul style="list-style-type: none"> <li>– Tunnel composting process with air quality, moisture and temperature management and a monitoring</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                           | Minor              | Rare              | Low       |
| Bird strikes to aircraft  | Operational  | Birds being attracted toward organic waste                           | Injury/ fatality to birds<br>Asset damage | <ul style="list-style-type: none"> <li>– Adhere to Guideline C of the NASF, Managing the Risk of Wildlife Strikes in the Vicinity of Airports</li> <li>– Waste stored and processed in-building.</li> <li>– Use of deterrent technologies as required.</li> <li>– Waste will be stored in appropriate bins with sealed lids and be serviced regularly by a waste contractor.</li> <li>– The site would be kept clean and tidy.</li> <li>– A Waste Management Plan is created for the site to continuously manage and monitor waste.</li> </ul> | Moderate           | Rare              | Medium    |

| Hazard                             | Phase       | Causes                                                                                                                                     | Consequence                                           | Identified / recommended safeguards                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Consequence rating | Likelihood rating | Risk rank |
|------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------|-----------|
| Failure of critical infrastructure | Operational | Lack of maintenance                                                                                                                        | Loss of production<br>Personal injury<br>Asset damage | <ul style="list-style-type: none"> <li>Regular maintenance schedule undertaken by qualified personnel.</li> <li>Adequate training provided on operating machinery</li> </ul>                                                                                                                                                                                                                                                                                                                              | Minor              | Unlikely          | Medium    |
| Odour                              | Operational | Failure of odour treatment facility<br>Composting process                                                                                  | Environmental breaches<br>Complaints                  | <ul style="list-style-type: none"> <li>Odour treatment biofilter</li> <li>Receival hall operated under negative pressure to contain odour, dust and bio-aerosols.</li> <li>Receival hall and corridor will be ventilated and connected to an odour treatment biofilter.</li> <li>Vehicle access to the facility will be via rapid acting automated doors.</li> </ul>                                                                                                                                      | Moderate           | Unlikely          | Medium    |
| Asphyxiation                       | Operational | By-product of composting                                                                                                                   | Personal injury                                       | <ul style="list-style-type: none"> <li>Tunnel composting process with air quality, moisture and temperature management and a monitoring.</li> </ul>                                                                                                                                                                                                                                                                                                                                                       | Major              | Rare              | Medium    |
| Pest infestation                   | Operational | Build-up of waste material                                                                                                                 | Injury to native wildlife                             | <ul style="list-style-type: none"> <li>Waste stored and processed in-building.</li> <li>Engage pest management professionals as required.</li> <li>Regular cleaning of waste units /areas.</li> </ul>                                                                                                                                                                                                                                                                                                     | Moderate           | Rare              | Medium    |
| Spread of pathogens and disease    | All         | Waste and wastewater making its way into water ways.<br>Silt build-up during construction<br>Deceased pests<br>Proximity of Dog Trap creek | Personal injury/<br>health issues                     | <ul style="list-style-type: none"> <li>Waste stored and processed in-buildings or vessels.</li> <li>Secondary containment shall be in place for all liquid-containing process elements.</li> <li>All liquids collected or generated within the facility from the processing activities shall be collected for re-use, treatment or sampling.</li> <li>Septic tank systems are utilised on the broader site.</li> <li>Reused leachate/water from tunnels to be recirculated within the tunnels.</li> </ul> | Major              | Rare              | Medium    |



## Failure of critical infrastructure

Management of critical infrastructure, including processes to follow should a failure occur, would be detailed in the Asset Management Plan (AMP) for the proposal. The requirements and contents of the AMP would be subject to the final detail design and updated in conjunction with the maintenance schedule and operational contingency planning. The AMP is expected to include a description of all asset systems, standard of asset service definition, planned actions and lifecycle management.

Key environmental risks associated with critical infrastructure failure to be addressed in the AMP and operational contingency planning would primarily relate to failure of elements of the odour management system and/or power failure leading to disruption of control measures. Measures and procedures that may include, but not be limited to:

- In the case of power supply interruption:
  - Manual override for rapid doors to enable opening and closing by chain wheel or mechanical override
  - Keeping the building closed to minimise potential for air exchange (with external air)
  - Manually opening composting tunnel doors to minimise potential for anaerobic conditions
- In the case of odour control system element failure:
  - Establishment of 24-hour emergency maintenance agreements with equipment manufacturers

## 19.4.2 Indirect impacts

### Wildlife strikes

Guideline C of National Airports Safeguarding Framework (NASF), Managing the Risk of Wildlife Strikes in the Vicinity of Airports (Guideline C) aims to provide guidelines to land users and planning decision makers to manage the risk of collisions between wildlife and aircraft at or near airports where that risk may be increased by the presence of wildlife-attracting land uses. It is important to note that:

- The majority of the proposed site activities (including FOGO delivery/receival, composting and maturation) would be contained within an enclosed building, eliminating access to birds.
- Finished products/processed material would be housed inside the building or in a semi-enclosed hardstand area adjacent to the building.

Given that the risk of wildlife strike at the proposal site is not increasing the risk in relation to an existing airport, further risk mitigation measure such as Wildlife Management Programs are not considered to be required. A Wildlife Management Plan has been prepared regardless and is provided in Appendix B of the PHA.

### Odour management

Odour management and tunnel composting are critical to operation of the facility. Regular maintenance of all mechanical components associated with the raw material delivery, shredding and mixing processes would also be undertaken to mitigate equipment failure events.

Enclosing and ducting air away from key process stages may be a source of offensive odour so the following measures would be in place to controls the hazard:

- Effective aeration of compost through processing in enclosed tunnels for a four-week process and addressing the cause of odour (e.g., low oxygen levels in the compost pile, loss of structure and porosity), and
- Recycling potentially odorous air within the tunnel composting process as much as possible, to minimise total air volume requiring treatment.

All air exhausted from the composting tunnels, as well as extracted air from the main building and receival hall, would be ducted to the odour management system for treatment and final discharge of treated air.

### Pest and pathogen management

FOGO and composting can attract pest animals, which may impact native wildlife and promote the spread of pathogens. Pathogens in wastewater can also be spread if they reach waterways.

The short-term nature of the transportation of the FOGO from residential areas to the composting facility is not expected to create any potential biosecurity impacts. Facility processes would include pasteurisation prior to packaging of the finished compost product to minimise the spread of pest weeds. Undertaking of all processing indoors reduces risk of attracting pest species.

Run-off from internal processes would be collected through a network of sealed pipes and drained into a sealed process water tank. Process water would be recycled back through the tunnel composting process to maintain optimal moisture content in the organic material.

Maintaining the integrity of the treatment buildings to exclude pest animal entry would require ongoing focus.

## 19.5 Mitigation measures

Table 19.4 identifies the mitigation measures that would be implemented for the proposal to avoid or reduce potential impacts to hazard and risk.

Table 19.4 Hazard and risk impact mitigation measures

| Potential impact              | ID   | Mitigation measure                                                                                                                                                                 | Timing                     |
|-------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Fire                          | HR01 | A Fire Management Plan will be prepared for construction and operations.                                                                                                           | Construction and Operation |
|                               | HR02 | Smoke detectors, fire extinguishers, fire blankets, fire hose reels and sprinklers will be appropriately placed within buildings.                                                  | Operation                  |
|                               | HR03 | An Emergency Management Plan will be prepared.                                                                                                                                     | Operation                  |
| Hazardous/dangerous chemicals | HR04 | Each chemical will have appropriate labelling, an appropriately sized bund and stored within designated work areas.                                                                | Construction and Operation |
|                               | HR05 | SWMS and procedures will be implemented for the handling of all chemicals including transfer, storage, spill prevention and clean up requirements.                                 | Operation                  |
|                               | HR06 | A SDS library will be located on-site that covers all chemicals used and/or stored on-site.                                                                                        | Operation                  |
|                               | HR07 | Appropriate PPE will be provided for users of chemicals.                                                                                                                           | Operation                  |
| Wildlife strike               | HR08 | Guideline C of NASF, Managing the Risk of Wildlife Strikes in the Vicinity of Airports will be adhered to.                                                                         | Operation                  |
|                               | HR09 | Waste will be stored and processed in buildings or vessels.                                                                                                                        | Operation                  |
|                               | HR10 | Deterrent technologies will be used as required.                                                                                                                                   | Operation                  |
|                               | HR11 | FOGO contamination or other waste generated as a result of the operation will be stored in an enclosed skip bins for off-site disposal or recycling within the receival hall.      | Operation                  |
|                               | HR12 | Recyclable materials will be held in dedicated sealed skip bins. This will be managed in accordance with the site operations plan and be serviced regularly by a waste contractor. | Operation                  |
|                               | HR13 | The site will be kept clean and tidy.                                                                                                                                              | Operation                  |
|                               | HR14 | Waste from office and administration activities will be stored in appropriate bins (with lids).                                                                                    | Operation                  |
| Pest infestation              | HR15 | Buildings will be maintained to exclude pest animal entry.                                                                                                                         | Operation                  |
|                               | HR16 | Pest management professionals will be engaged as required.                                                                                                                         | Operation                  |
|                               | HR17 | Good housekeeping practices will be adopted.                                                                                                                                       | Operation                  |
| Odour                         | HR18 | The receival hall will be normally closed and operated under negative pressure.                                                                                                    | Operation                  |
|                               | HR19 | Air exhaust from composting facility will be directed to an odour treatment system.                                                                                                | Operation                  |



| Potential impact                   | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Timing    |
|------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                                    | HR20 | The biofilter will be operated and maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Operation |
|                                    | HR21 | Effective aeration of compost will be maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Operation |
| Spread of pathogens and disease    | HR22 | FOGO will be pasteurised prior to despatch of finished product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Operation |
|                                    | HR23 | The process water recycle system will appropriately maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Operation |
| Failure of critical infrastructure | HR24 | Adequate training will be provided on operating machinery.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Operation |
|                                    | HR25 | <p>The following plans will be developed to manage critical infrastructure:</p> <ul style="list-style-type: none"> <li>– Business Continuity Plan which may include: <ul style="list-style-type: none"> <li>• Definition of critical waste services and plan coverage</li> <li>• Identification of potential threats and assessment of impacts</li> <li>• Critical function checklists (such as inventory of critical equipment and materials, vendors and logistics)</li> <li>• Recovery strategies (such as temporary staffing, mobile equipment options)</li> <li>• Emergency management procedures</li> </ul> </li> <li>– Internal and external communication plans, including contact lists for staff, suppliers, and emergency services. Asset Management Plan which may include: <ul style="list-style-type: none"> <li>• Asset inventory</li> <li>• Condition and performance inspection requirements and lifecycle planning</li> <li>• Maintenance and renewal plans including scheduled servicing</li> </ul> </li> </ul> | Operation |

## 19.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual hazard and risks association with the proposal have been considered and are identified in Table 19.5.

Table 19.5 Hazard and risk -- residual risk assessment

| Risks Identified                     | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|--------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>             |                      |                     |                      |                      |
| NA                                   |                      |                     |                      |                      |
| <b>Additional risks</b>              |                      |                     |                      |                      |
| Fire at facility                     | NA                   | Unlikely            | Moderate             | Low                  |
| Hazardous chemical spills            | NA                   | Unlikely            | Minor                | Very Low             |
| Failure of critical infrastructure   | NA                   | Unlikely            | Moderate             | Low                  |
| Impacts on aircraft from bird strike | NA                   | Remote              | Moderate             | Very Low             |
| Odour escaping the proposal          | NA                   | Unlikely            | Moderate             | Low                  |
| Pilot distraction from lighting      | NA                   | Remote              | Minimal              | Negligible           |

## 20. Bushfire

### 20.1 Requirements

This chapter addresses the following bushfire risk requirements of the Scoping Document:

- Provide an assessment of the potential threat of fire occurring at the facility, such as risk in relation to fire in stockpiled material, any effect on the surrounding area that a fire may have, and the protection measures necessary to address the potential threat of fire.
- A bushfire assessment must be undertaken by a suitably qualified person.

### 20.2 Environmental conditions and values

The area surrounding the proposal site is predominantly grassland vegetation, with a small portion of open woodland present adjacent John Cory Road to the southeast. The MRF is located to the west and is predominantly cleared. A solar farm to the west of Mugga Lane retains some grassland vegetation under panels however this vegetation is considered managed, with extensive networks of tracks providing fire breaks and grass growth beneath the solar panels minimised.

The proposal site is predominantly grassland vegetation, with a small portion of open woodland present adjacent John Cory Road to the southeast. However, it is currently mapped as Bushfire Prone by the ACT Emergency Services Agency (ESA).

The bushfire season is typically between 1 October and 31 March. This may vary from year to year, depending upon prevailing weather conditions including wind speed, ambient temperature, relative humidity, and fuel load. The potential for extreme fire weather varies greatly both in frequency and severity throughout Australia. When potential extreme fire weather is experienced close to populated areas, significant loss is possible.

### 20.3 Investigations

A Bushfire Risk Assessment (BRA) was prepared for the proposal in accordance with the recently legislated ACT Bushfire Management Standards 2023 (ESA, 2023) and Strategic Bushfire Management Plan 2019-2024 (ESA, no date).

The investigation included:

- Site inspections to collect site information and data.
- Assessment of the risk profile of the proposal site and the impact of siting on Asset Protection Zones (APZ).
- Identification and prioritisation of mitigation measures appropriate for the proposed use and development type.
- Assessment of the existing road network to evaluate the capacity to deal with evacuating site users and responding emergency services.
- Consideration and analysis of the increase in demand for emergency services responding to bush fire, and the ability of emergency services to carry out fire suppression because of the proposal.
- Identification and prioritisation of issues associated with infrastructure and utilities, particularly water for firefighting.
- Assessment of the impact on adjoining landowners and their ability to undertake bush fire management.

This chapter provides a summary of the assessment findings. A full copy of the BRA is provided in Appendix S.



## 20.4 Impacts

### 20.4.1 Direct Impacts

#### Construction

Construction may occur during the bushfire season. The proposal has the potential to spark or ignite fires from the following activities during construction:

- Hot works that generate heat and sparks such as welding and grinding.
- Vehicle use including:
  - Driving through long grass and igniting from the exhaust.
  - Collision with a power pole or infrastructure causing a spark or ignition of fuel.
  - Sparking from striking a stone with heavy machinery such as grader or dozer.
- Excavation, where there is potential to sever underground powerlines or dislodge overhead powerlines.
- Mulch or cleared vegetation stored in large quantities for long periods of time.
- Electrical fault as a result of equipment not being maintained or stored properly.

The level of risk would be minimised through the implementation of mitigation measures in Table 20.3.

#### Operation

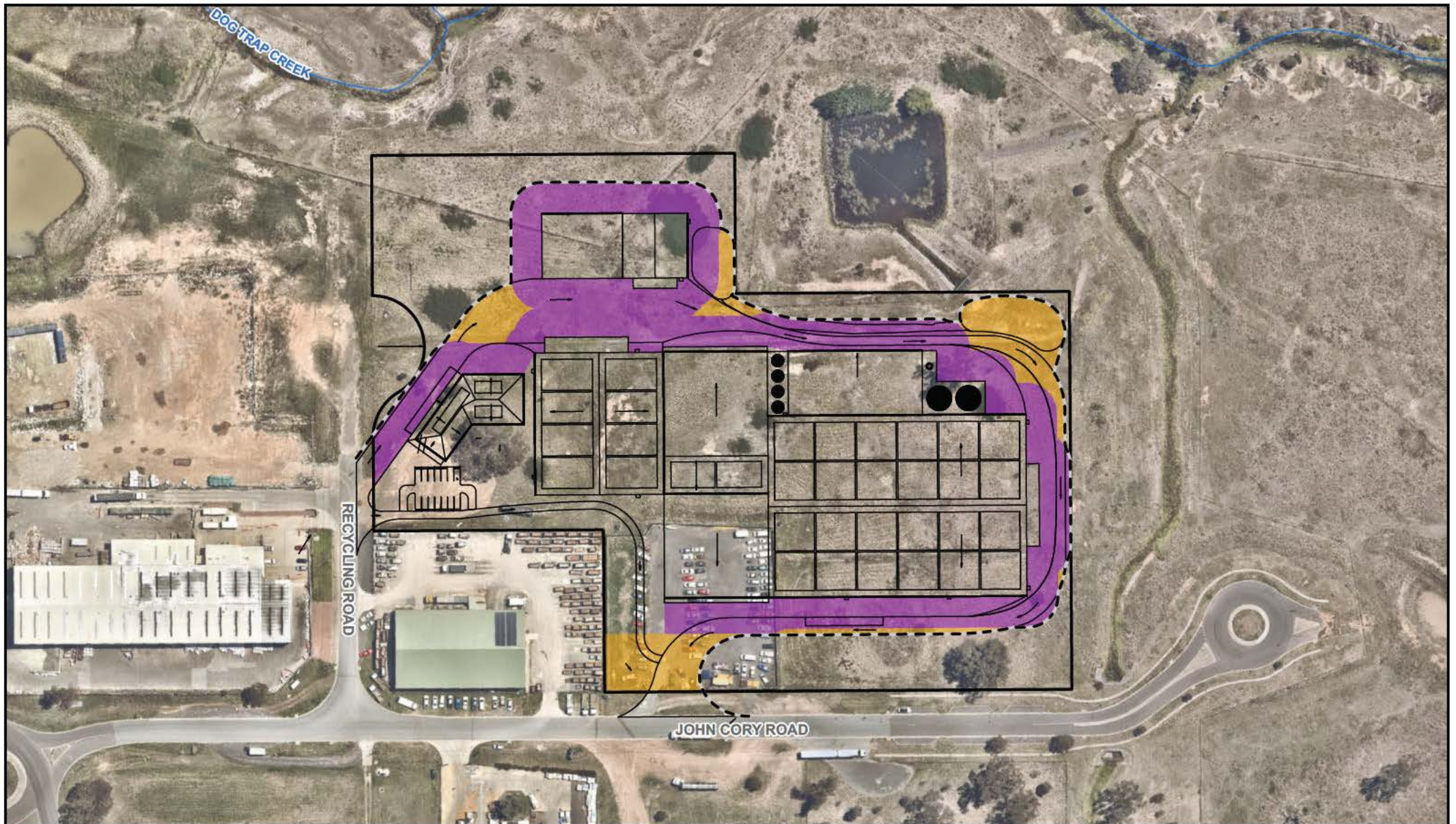
##### Asset Protection Zone Requirements

The required APZs for each aspect are provided in Table 20.1, and an indication of the separation distances is shown on The APZ requirements for each aspect surrounding the proposal site are provided in and an indication of the separation distances shown in Figure 20.1.

Table 20.1 APZ requirements

| Aspect    | Vegetation type (BMS) | Location                                                                     | Minimum required Sensitive use development APZ (m) | Comment                        |
|-----------|-----------------------|------------------------------------------------------------------------------|----------------------------------------------------|--------------------------------|
| Northeast | Grassland             | NE of the maturation and refinement building.                                | 12                                                 | Within proposal site boundary. |
| Northwest | Grassland             | NW of the primary composting building and truck parking and product storage. | 12                                                 | Within proposal site boundary  |
| Southeast | Grassy woodland       | Between the maturation and refinement building and John Cory Road.           | 12                                                 | Within proposal site boundary  |
| Southwest | Grassland             | W of the admin building towards Block 6 Section 26 Hume District.            | 12                                                 | Within proposal site boundary  |





#### Legend

- Proposal site
- Proposal site layout
- Hazard interface
- Watercourses
- Available APZ
- Required APZ

Paper Size ISO A4  
0 25 50  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55



Transport Canberra and City Services  
Hume Food Organics and Garden Organics Facility  
Environmental Impact Statement

Project No. 12540460  
Revision No. 0  
Date 7/07/2025

Bushfire hazard assessment and APZ

FIGURE 20.1



## Construction standards

Based on the proposed concept layout and the APZ (shown on Figure 20.1), the indicative construction standard (as defined in AS 3959-2018 Construction of buildings in bushfire-prone areas) Bushfire Attack Levels for the proposal are indicated in Table 20.2.

Table 20.2 Indicative Bushfire Attack Levels for the proposal

| Aspect    | Vegetation      | Slope          | Bushfire Attack Level (AS 3959) |
|-----------|-----------------|----------------|---------------------------------|
| Northeast | Grassland       | Downslope 0-5° | 29                              |
| Northwest | Grassland       | Downslope 0-5° | 29                              |
| Southeast | Grassy Woodland | Upslope/flat   | 29                              |
| West      | Grassland       | Downslope 0-5° | 29                              |

There is an opportunity to manage the proposal site to the boundary with landscaping in accordance with Appendix 4 of the ACT Bushfire Management Standards 2023 (ESA, 2023) to reduce the BAL exposure of the buildings thereby reduce the construction requirements of the primary composting building and the biofilter and ancillary infrastructure building to BAL-19 or less.

## Water supply

The proposal site would be serviced by reticulated water supply. Icon Water supplied reticulated water supply would be connected to the proposal meeting acceptable solutions of the ACT Bushfire Management Standards 2023 (ESA, 2023) and complying with *Utilities Act 2000*. Installation of fire hydrants spacing, sizing and pressure would comply with AS2419.1:2021. Hydrants would be accessible (i.e., outside parking bays or within the access road) and suitably spaced. Additionally, all above ground water service pipes external to the building would be metal, including taps.

Static water supply is available in the form of two stormwater management areas proposed within the proposal site as well as a number of ponds and dams in the surrounding landscape.

## Utilities

Gas is not proposed to be used on the proposal site.

Electrical servicing for the proposal site would be provided via overhead power lines. Overhead powerlines would be kept clear of existing vegetation with no part of a tree closer than the distance set out in the ACT Bushfire Management Standards (ESA, 2023).

## Access and egress

Primary access to the proposal would be provided via both Recycling Road and John Cory Road. The access road proposed for the FOGO facility is designed for use by semi-trailer vehicles and would meet the applicable access requirements detailed in Table 14 of the ACT Bushfire Management Standards (ESA, 2023) through design.

## Storage risk mitigation

Fires at composting facilities can occur under certain conditions if internal heat builds up to ignition point. Key conditions that lead to spontaneous combustion are biological activity, relatively dry materials or dry pockets, large well-insulated piles, limited or low air flow, and prolonged time for temperature to build up. It is important to monitor the temperature of the compost to limit the chance of spontaneous combustion.

The AFAC and NSW guidelines for fire safety in waste management facilities (AFAC, 2022) (FRNSW, 2020) provide guidance to manage fire risk through effective storage management, monitoring hazards and implementing policies and procedures to be considered in the development of bushfire mitigation and operational plans for waste facilities with hazardous material. While these guidelines do not technically apply to this proposal (composting), they should be considered.



## Landscaping and bushfire mitigation plans

Any proposed landscaping and management of open or residual areas is required to consider bushfire risk in determining location, vegetation species, density, extent and ongoing maintenance requirements. All open space within the proposal site would undergo management to meet APZ or low hazard standards under AS3959-2018.

The proposed APZ may require tree removal to support the proposal however the proposal site is predominantly cleared. Fuel management practices in line with the ACT Bushfire Management Standards 2023 (ESA, 2023) would be implemented by the proposal site operator within the APZ (both within the licence area and outside to the west and northeast). This would entail regular slashing of grass fuels to a maximum height of 200 millimetres before the start of the bushfire season (generally 1<sup>st</sup> October) and subsequent maintenance at this maximum height when grassland curing is greater than or equal to 70 percent.

## Emergency and evacuation planning

A Bushfire Emergency Management and Evacuation Plan would be prepared for the proposal and updated prior to construction, operation and occupancy of the facility in compliance with the requirements set out in the ACT Bushfire Management Standards (ESA, 2023).

There is a risk to users of the proposed facility, particularly on days of elevated fire danger. Usage and public access restrictions should be considered such that occupation is limited to only essential staff on days where the Fire Danger Rating is forecast to be Catastrophic and potentially at lower levels depending on risk and advice from relevant authorities.

## 20.4.2 Indirect impacts

No indirect impacts from construction or operation of the proposal are anticipated.

## 20.5 Mitigation measures

The mitigation measures listed in Table 20.3 would be adopted to manage potential bushfire impacts from the construction and operation of the proposal.

Table 20.3 Bushfire mitigation measures

| Potential impact | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Timing       |
|------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Bushfire         | BR01 | <p>A bushfire prevention and response plan will be prepared as part of the CEMP, providing relevant information for fire and emergency service responders and project personnel. The plan will include the following requirements:</p> <ul style="list-style-type: none"><li>– Plant and equipment to be maintained in accordance with manufacturers recommendations and best practice.</li><li>– Seasonal and daily fire hazard warnings issued by the ACT Emergency Services Agency to be observed.<ul style="list-style-type: none"><li>• No work on days of Extreme or Catastrophic Fire Danger Rating days</li><li>• No hot works on days of Severe, Extreme or Catastrophic Danger Rating</li></ul></li><li>– Vehicles to be kept on formed roads and paths, and away from long grass where possible.</li><li>– Appropriate parking areas to be provided for personnel that are away from long grass and other ignition sources.</li><li>– Unnecessary idling of vehicles to be avoided.</li><li>– All vehicles on-site to be equipped with fire extinguishers.</li><li>– Fire prevention and fire control instructions to be included in site inductions.</li><li>– Hot works not to be undertaken outside designated workshop areas.</li><li>– Job Safety Analyses to incorporate fire ignition risk assessment and controls for prevention of grass fire ignition where relevant.</li></ul> | Construction |



| Potential impact | ID   | Mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Timing                                      |
|------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
|                  |      | <ul style="list-style-type: none"> <li>Job Safety Analyses for activities involving hot works to incorporate hot works risk assessment and controls.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                        |                                             |
|                  | BR02 | APZs will be provided in accordance with Table 20.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Detailed design, construction and operation |
|                  | BR03 | Overhead electrical transmission lines will be installed with short pole spacing (30 metres) and away from vegetation in line with the ACT Bushfire Management Standards (ESA, 2023). Consultation with the electrical transmission line service provider will be undertaken to ensure the overhead electrical transmission.                                                                                                                                                                                                                           | Detailed design and construction            |
|                  | BR04 | Construction requirements will be implemented in design and construction under the National Construction Code (Australian Building Codes Board, 2022) to the BAL presented in Table 20.2. Alternatively, the proposal site will be managed to the landscaping requirements of Appendix 4 of the ACT Bushfire Management Standards (ESA, 2023) to the proposal site boundary to reduce the BAL exposure of the buildings thereby reducing the construction requirements of the primary composting and biofilter and ancillary infrastructure buildings. | Detailed design                             |
|                  | BR05 | APZ landscaping will comply with the ACT Bushfire Management Standards (ESA, 2023) fuel management standards for Inner APZ and be guided by the fuel management principles. These will be managed by the proposal site operator.                                                                                                                                                                                                                                                                                                                       | Operation                                   |
|                  | BR06 | <p>A Bushfire Emergency Management and Evacuation Plan will be developed prior to construction, operation, and occupancy of the proposed facility. The plan will:</p> <ul style="list-style-type: none"> <li>Clearly identify bushfire preparedness actions, bushfire response actions, evacuation plans and procedures (for on-site and off-site evacuation), and on-site refuge locations.</li> <li>Be provided to ACT ESA for its information prior to occupation of the facility.</li> </ul>                                                       | Construction and operation                  |

## 20.6 Residual impact

Based on the mitigation measures identified, an assessment of the residual bushfire risks associated with the proposal have been considered and are identified in Table 20.4.

Table 20.4 Bushfire residual risk assessment

| Risks Identified                                              | Original risk rating | Residual likelihood | Residual Consequence | Residual risk rating |
|---------------------------------------------------------------|----------------------|---------------------|----------------------|----------------------|
| <b>Preliminary risks</b>                                      |                      |                     |                      |                      |
| Potential risk of bushfire during construction                | Low                  | Possible            | Minor                | Low                  |
| Potential impact of bushfires affecting operation of facility | Very Low             | Unlikely            | Moderate             | Low                  |
| <b>Additional risks</b>                                       |                      |                     |                      |                      |
| Impacts from fires in the surrounding area.                   | NA                   | Unlikely            | Moderate             | Low                  |



# 21. Cumulative impacts

## 21.1 Requirements

The Scoping Document did not require cumulative impacts to be assessed. Nonetheless, an evaluation of the potential for the proposal to have cumulative environmental impacts with other developments in the vicinity of the proposal site has been undertaken.

## 21.2 Environmental conditions and values

For an EIS, cumulative impacts can be defined as the successive, incremental and combined effect of multiple impacts, which may in themselves be minor, but could become significant when considered together.

A large-scale future proposal in the area is the upgrade of the MRF. This will occur on an adjacent block of land and likely coincide with the development of this proposal.

## 21.3 Investigations

The following was undertaken to assess the potential for cumulative impacts:

- Review of active development applications and environmental approvals within a one-kilometre radius of the proposal site.
- Screening of identified projects for their potential to interact with the proposal.
- Identifying and evaluating the significance of potential cumulative impacts.

There are three active development applications located within a one-kilometre radius of the proposal site. These are summarised in Table 21.1.

Table 21.1 Development applications within one kilometre radius

| DA Number | Block and Section    | Date lodged | Proposal                                                                                                                                                                                                                                                                                                                                                                                                                         | Assessment of relevance                                                                                                                                                                  |
|-----------|----------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 200704152 | Block 1676 Section 0 | March 2008  | No information.                                                                                                                                                                                                                                                                                                                                                                                                                  | There is insufficient information to determine the potential for interaction with the proposal                                                                                           |
| 202341588 | Block 13 Section 1   | May 2023    | This Lease Variation serves to vary the Crown Lease Purpose Clause for Block 13 Section 1 Hume, to increase the maximum GFA that can be used for 'light industry' will be increased to 741.50 square metres from 315 square metres, an increase of 426.50 square metres.<br><br>The use is described as 'cold store distribution and freight transport facility'.<br>Potential increase in traffic flow is described as 'minor'. | Potential for interaction with the proposal:<br>– Due to proposed use and likelihood for increased traffic flow being minor, the development is unlikely to have any cumulative impacts. |
| 202341432 | Block 66 Section 22  | March 2023  | Proposal for construction of a new warehouse for storage, landscaping and associated site works was approved.<br><br>Total gross floor area 94.24 square metres.                                                                                                                                                                                                                                                                 | Potential for interaction with the proposal:<br>– Due to the small size of the proposed storage warehouse, this development is unlikely to have any cumulative impacts.                  |

The proposed MRF is currently in the environmental approvals stage and would be located on Block 12 Section 25. The MRF would have the capacity to receive up to 115,000 tonnes per year and is expected to commence construction within two years of receiving approval, subject to tendering. Given the nature and size, there is potential for the proposed MRF construction and operation to have some cumulative impacts. The potential



impacts are anticipated to be limited to noise, air quality and traffic. The significance of these potential cumulative impacts is evaluated in Section 21.4

No other proposed large-scale future developments in the vicinity of the proposal site are known at this time.

## 21.4 Impacts

### 21.4.1 Construction

If construction of the proposal and the proposed Hume MRF occurred simultaneously, cumulative impacts are anticipated to be limited to air quality, traffic and transports.

#### **Air quality**

The Air Quality Impact Assessment (Appendix O) assessed the risk of dust and particulate matter impacts to be low during all stages of construction of the proposal (demolition, earthworks, construction and track-out). With implementation of appropriate dust mitigation and management measures during construction of both the proposal and the proposed MRF, the potential for cumulative dust impacts is also considered to be low.

#### **Traffic**

The TTIA (Appendix E) considered the cumulative traffic impacts of construction of the proposal and proposed MRF occurring concurrently. Key assessment findings were as follows:

- The roundabout joining Mugga Lane and John Cory Road (proposal site access) is expected to continue operating at LoS B with minimal delays.
- Intersections with the Monaro Highway are expected to operate between LoS A and F in the AM peak, with high delays and long queues in the northbound lane. In the PM peak, both northbound and southbound lanes experience poor levels of service from LoS D to F, with delays ranging from 37 to 75 seconds.
- The LoS for the key intersections are generally expected to remain the same with or without the construction activities associated with the proposal and proposed MRF, except for the Monaro Highway at Mugga Lane (southbound) which would experience an LoS increase from D to F during the PM peak.

### 21.4.2 Operation

Potential cumulative operation impacts of the proposal and the proposed MRF are anticipated to be limited to air quality, noise and traffic.

#### **Air quality**

Odour from the proposal would be emitted from receipt of FOGO material, the composting and maturation processes, and storage of finished product. The selected composting technology (in-vessel) and the design of the proposal includes a number of key air quality and odour impact mitigation features. The assessment undertaken as part of the Air Quality Impact Assessment (Appendix O) found that the predicted impacts from the proposal with a biofilter stack complied with the odour criteria at all sensitive receptors.

The proposed MRF adjacent to the proposal site would be enclosed, would not process putrescible waste, and would have minimal processes which are considered a source of odour or particulates. Therefore, cumulative operational air quality impacts are therefore considered unlikely.

#### **Noise**

The Noise and Vibration Impact Assessment for the proposal (Appendix Q) indicated compliance with the ACT Noise Standard can be achieved during the day and night period at all boundaries of the proposal site.

The proposed MRF is expected to slightly exceed the night noise standard limit of 55 dBA however this would not extend to impacting sensitive receivers and would be limited to immediate areas of the MRF such as the road corridor and a small portion of the neighbouring facilities (Mugga Lane Solar Park, the proposal, and the empty lot to the south-east). These are not considered sensitive receivers.

As such, cumulative operational noise impacts from the proposal and MRF would be minimal.

## **Traffic**

An increase in traffic is expected along John Cory Road, Recycling Road, Mugga Lane and the Monaro highway during operation of the proposal and proposed MRF.

The TTIA (Appendix E) considered the cumulative impacts of operation of the proposal and proposed MRF (2033 horizon year). Key assessment findings were as follows:

- With the operation of the proposal and MRF, the roundabout joining Mugga Lane and John Cory Road (proposal site access) is expected to continue operating at LoS B with minimal delays.
- The LoS of key intersections are expected to remain the same with or without the operation of the proposal and the proposed MRF.

Even without the operation of the proposal and proposed MRF, the Monaro Highway at Mugga Lane is expected to be already operating over capacity during the AM and PM peak periods. Capacity upgrades would be necessary to allow the intersections to operate at acceptable levels of service. The Monaro Highway Upgrade program has undertaken traffic modelling that identified that the proposed upgrades to the Monaro Highway at Mugga Lane would support a good LoS in the 2031 and 2041 horizon years.

## **21.5 Mitigation measures**

Mitigation measures are not considered to be required given the low risk of cumulative impacts.

## **21.6 Residual impact**

No residual impacts associated with cumulative impacts are expected.



## 22. Summary of mitigation measures

Table 22.1 Summary of mitigation measures

| Environmental Matter                 | ID  | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Timing                                 |
|--------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Traffic and Transport</b>         |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                        |
| Impacts to site access and parking   | T01 | Logistics management will be controlled by the site supervisor to ensure the efficient delivery of equipment and construction materials, and to minimise the number of trips that will need to be taken for all vehicle types.                                                                                                                                                                                                                                                                    | Construction                           |
|                                      | T02 | Carpooling opportunities for personnel living in close proximity to one another will be explored where feasible. Opportunities for coach services to shuttle workers from the CBD or nearby public transport stations to the site shall also be explored.                                                                                                                                                                                                                                         | Construction and operation             |
|                                      | T03 | All vehicles will comply with road traffic rules, particularly for any local traffic rules.                                                                                                                                                                                                                                                                                                                                                                                                       | Construction and operation             |
|                                      | T04 | All parking will be contained within the proposal site premises. Under no circumstance will personnel, company vehicles or heavy vehicles be allowed to use any public road for long-term parking, including leaving parked or unattended vehicles.                                                                                                                                                                                                                                               | Construction and operation             |
| Safety                               | T05 | All staff and subcontractors engaged on-site will be required to undergo site induction. The induction will all outline the requirements on the CTMP, including access routes, environmental and occupational health and safety responsibilities, emergency procedures, potential carpooling/shuttle service opportunities, and vehicle height and mass restrictions, among others. Additionally, the Site Manager will discuss CTMP requirements regularly as a part of regular "toolbox talks". | Construction                           |
|                                      | T06 | Separation of internal haulage routes for light and heavy vehicle movements within the proposal site will be maintained as far as practicable. There will be no queuing of vehicles off-site.                                                                                                                                                                                                                                                                                                     | Construction                           |
|                                      | T07 | All vehicles will move through the proposal site in a single direction, preferably clockwise, to maintain the predictability of vehicle movements and to minimise conflict points.                                                                                                                                                                                                                                                                                                                | Construction                           |
|                                      | T08 | Separate entrances and exits for vehicles and pedestrians will be provided. Pedestrians on-site will be directed to utilise clearly-defined designated pedestrian paths.                                                                                                                                                                                                                                                                                                                          | Construction                           |
|                                      | T09 | Access for emergency vehicles will be maintained at the proposal site during the construction works, in accordance with emergency vehicle requirements. The emergency services, including fire, ambulance, and police, will be advised of all planned changes to traffic arrangements prior to the commencement of works.                                                                                                                                                                         | Construction                           |
| Heavy vehicle access                 | T10 | Truck drivers will be directed to follow the predetermined haulage routes. Additionally, all drivers will be required to observe posted speed limits on adjoining road networks to comply with Australian Road Rules. Drivers will be required to adjust speeds to suit the road environment and weather conditions appropriately to ensure the safe movement of the vehicles based on the individual vehicle configurations.                                                                     | Construction and operation             |
|                                      | T11 | Any oversized or overweight load will be transported in accordance with the requirements of the relevant road authority.                                                                                                                                                                                                                                                                                                                                                                          | Construction and operation             |
| Construction traffic management plan | T12 | A CTMP will be developed prior to construction. This will include, at a minimum, the following management measures:<br><ul style="list-style-type: none"> <li>Preparation of a Traffic Guidance Scheme, detailing adequate road signage at construction work sites to inform motorists and pedestrians of the work site ahead to ensure that the risk of</li> </ul>                                                                                                                               | Prior to construction and construction |



| Environmental Matter                       | ID  | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Timing                                 |
|--------------------------------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|                                            |     | <p>road accidents and disruption to surrounding land uses is minimised.</p> <ul style="list-style-type: none"> <li>– Maintain accessibility for pedestrians and cyclists.</li> <li>– Indicate routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and businesses.</li> <li>– Implement measures to manage traffic flows around the area affected by the construction of the proposal, including, as required, regulatory and direction signposting, line marking, and variable message signs and all other traffic control devices necessary for the implementation of the construction traffic management sub-plan.</li> <li>– Undertake consultation with the relevant road authorities during preparation of the sub-plan. Ensure the performance of the proposal traffic arrangements is monitored during construction.</li> <li>– Ensure trucks used for the delivery for the developments on John Cory Road are unimpeded.</li> <li>– Monitor the roads leading to and from the proposal site and take necessary steps to rectify any road deposits caused by site vehicles, to maintain the safety of road users.</li> <li>– Where possible, offset the construction vehicle activity from peak periods of road network activity.</li> <li>– Induct employees and contractors to raise awareness and understanding of traffic and transport mitigation measures to be implemented during construction via the CEMP.</li> </ul> |                                        |
| <b>Utilities</b>                           |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                        |
| Locations of utilities and services        | U01 | The locations of existing utility services and any changes required will be confirmed by the construction contractor during the detailed design of the proposal in consultation with the relevant utility provider (if required to be removed).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Detailed design and construction       |
| Impacts to critical services and utilities | U02 | <p>Prior to commencing detailed design, the BYDA will be conducted again and a service locator engaged to verify the locations of the utilities and services (this may be via pot-holing or similar).</p> <p>During the detailed design process necessary clearance distances as per AS standard, and Evoenergy standards shall be determined and provided to utility and service providers as necessary.</p> <p>Site supervision by the utility and service providers will be included as required during construction.</p> <p>Where any services are encountered (abandoned or live), the find/s will be managed in accordance with an unexpected finds protocol (UFP) which will be developed as part of the CEMP, and relevant utility provider contacted using details in the BYDA documentation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Detailed design and construction       |
| Operation of existing utilities            | U03 | <p>Evoenergy (or other electricity provider), Icon Water and telecommunications providers will be consulted during the detailed design phase to ensure the existing utilities have capacity to service the proposal, or otherwise identify any upgrades required support the proposal and/or any licencing requirements.</p> <p>In particular, consultation with the Icon Water liquid trade waste team will occur during detailed design and DA stage.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Detailed design                        |
| Contamination resulting from utilities     | U04 | The CEMP will include appropriate water management and erosion and sediment controls to avoid contamination resulting from utility works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Prior to construction and construction |
| <b>Biodiversity and conservation</b>       |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                        |



| Environmental Matter                     | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Timing                                        |
|------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Impacts to native vegetation and habitat | BC01 | <p>A FFMP will be developed before the commencement of construction (as part of the CEMP). Measures will be implemented before, during and after construction to avoid and mitigate impacts to flora and fauna within the study area. The FFMP will include the following measures:</p> <ul style="list-style-type: none"> <li>– Removal of areas of native vegetation and rocky habitat will be minimised wherever possible.</li> <li>– No impact to any areas of habitat not marked for removal will occur.</li> <li>– No vegetation removal or soil disturbance will occur outside the impact areas.</li> <li>– All staff will be inducted and informed of the limits of vegetation clearing and the areas of vegetation to be retained.</li> <li>– If any unexpected threatened flora or threatened ecological communities or rocky habitat not assessed in the ecological assessment are identified in the proposal site, work will cease immediately and the environmental manager will be contacted.</li> <li>– An ecologist/wildlife carer will be present on-site during clearing activities.</li> </ul>                                                                                                 | Prior to construction and during construction |
|                                          | BC02 | Trees to be retained will be managed during construction in accordance with <i>Australian Standards 4970-2009 Protection of Trees on Development Sites</i> . No construction, heavy machinery or other disturbance will within the dripline and critical root zone as defined in AS 4970-2009. Consultation with an arborist will be undertaken if proposed work may impact this.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Construction                                  |
|                                          | BC03 | The rocky habitat present on-site will be relocated during clearance. These rocks will be moved to an area outside of the construction impact zone and, preferentially, to a location where they will not undergo further human modification. Consultation with Parks ACT will be undertaken to determine this action, as this authority may help facilitate moving this habitat to a reserve or other area it will benefit conservation of biodiversity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Prior to construction                         |
| Habitat connectivity                     | BC04 | Principles of Biodiversity Sensitive Urban Design will be integrated into the detailed design at DA stage and include planting of native grasses in undeveloped area to the west.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Detailed design                               |
| Spread of weeds, pathogens and diseases  | BC05 | <p>A WPMP will be developed before the commencement of construction (as part of the CEMP). Measures will be implemented before, during and after construction to prevent the establishment and/or spread of weeds within and beyond the study area. The WPMP will include the following measures:</p> <ul style="list-style-type: none"> <li>– Weed management may include the following measures: <ul style="list-style-type: none"> <li>• Use of herbicides</li> <li>• Integrated weed management throughout the site such as use of herbicides</li> <li>• Implementing exclusion zones</li> <li>• Weed removal and disposal prior to construction.</li> </ul> </li> <li>– The weed management plan will include: <ul style="list-style-type: none"> <li>• A description of the weed for identification purposes, including a description of its relevance to the site</li> <li>• Specific function of the weed, including flowering and seeding periods</li> <li>• Identified risk of spread</li> <li>• Identification of specific management measures for individual weed control</li> <li>• Limits of movement during construction to reduce spread to areas of high-quality habitat.</li> </ul> </li> </ul> | Prior to construction                         |



| Environmental Matter                          | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Timing                                 |
|-----------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|                                               |      | <ul style="list-style-type: none"> <li>– Declared pest plants and WoNS will be identified and controlled prior to any earthworks commencing to assist in minimising spread of pest plants and WoNS.</li> <li>– Vehicle and machinery wash/brush downs will be required to ensure that weed species are not spread to non-infested areas. No construction vehicles or staff should enter surrounding areas to minimise weed spread.</li> <li>– Washing/brushing of workers shoes upon entry/exit of the proposal site.</li> <li>– Sediment control, such as silt fences, will assist in reducing the potential for spreading weeds downstream.</li> <li>– Soil disturbance will be avoided as much as possible to minimise the potential for erosion and spread of weeds.</li> <li>– The spread of exotic plant species within and adjacent to the proposal site will be monitored. Weed control will be undertaken if it is determined that the proposal is causing significant spread of weed species.</li> <li>– No machinery, light vehicle, or construction staff access to adjacent areas will occur, to minimise the risk of spread of weeds to sensitive areas.</li> <li>– When transporting weed waste from the proposal site to the waste facility, trucks must be covered to avoid the spread of weed-contaminated material. Disposal must be documented, and evidence of appropriate disposal must be kept.</li> </ul> <p>Other protocols will include:</p> <ul style="list-style-type: none"> <li>– Minimising the removal of vegetation wherever possible.</li> <li>– Having an ecologist/wildlife carer on site during clearing activities.</li> </ul> |                                        |
| Soil erosion, sedimentation and water quality | BC06 | <p>A SWMP will be prepared incorporating an ESCP prior to construction commencement, as part of the CEMP. This will also include the following:</p> <ul style="list-style-type: none"> <li>– Refuelling or maintenance of plant and machinery will not be undertaken within 50 metres of waterways or drainage lines.</li> <li>– A RRP will be prepared for areas disturbed during the works. This will identify appropriate methods for stabilising disturbed soils to resist erosion.</li> <li>– Sediment and erosion controls downstream of the proposal site (such as the nearby creek lines outside of the study area) will be implemented before any construction commences and inspected regularly, particularly after a rainfall event, and maintenance works undertaken as needed. These controls will remain in place after construction until sufficient regeneration of vegetation to prevent erosion or sedimentation occurs.</li> <li>– Weather forecasts will be checked daily to ensure that high risk soil and erosion activities are not undertaken immediately before or during high rainfall or wind events. Disturbed surfaces will be compacted and stabilised in anticipation of rain events to reduce the potential for erosion.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                  | Prior to construction                  |
| <b>Heritage</b>                               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                        |
| Impacts to known heritage sites               | H01  | All proposal personnel, including contractors, will be made aware of the heritage status of the known heritage sites prior to impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Prior to construction and construction |
|                                               | H02  | Site HFF01 and HFF02 will be fenced during construction to ensure that no machinery can impact the surface artefacts. Site fencing should be installed with the assistance of the RAOs and a suitably qualified archaeologist.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Construction                           |
|                                               | H03  | Artefacts within HFFPAD01 around high density deposits will be salvaged in accordance with a salvage methodology approved by ACT Heritage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Prior to construction                  |



| Environmental Matter                                                   | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Timing                                 |
|------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|                                                                        |      | The timeline for these works will be arranged by Infrastructure Canberra in consultation with ACT Heritage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                        |
|                                                                        | H04  | All proposal personnel, including contractors, will be made aware of the heritage status of these sites prior to impacts.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Construction                           |
|                                                                        | H05  | Additional heritage investigations will be undertaken prior to completion of the development application.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Prior to construction                  |
|                                                                        | H06  | Areas of heritage significance within or outside of the proposal site will be demarcated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Construction                           |
| Impacts to known heritage sites located outside the proposal site      | H07  | An UFP will be developed as part of the CEMP. The protocols for the unanticipated discovery of archaeological material and suspected human remains (presented in Appendix 5 of Appendix H) will be adopted and complied with during construction activities involving ground surface disturbance and excavation.                                                                                                                                                                                                                                                                                                                                 | Prior to construction and construction |
|                                                                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                        |
|                                                                        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                        |
| <b>Materials and waste</b>                                             |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                        |
| Human health risks due to storage of contaminated materials            | MW01 | A TSI was completed to further identify and classify any contaminated material at the proposal site. The TSI did not find any exceedances in contaminants. A UFP will be in place during construction.                                                                                                                                                                                                                                                                                                                                                                                                                                           | Design and planning phase              |
| Excessive waste generation                                             | MW02 | Detailed design should include measures to minimise quantities of waste requiring off-site disposal including minimising volume bulk excavations and careful procurement of construction materials to minimise excess waste materials.                                                                                                                                                                                                                                                                                                                                                                                                           | Detailed design                        |
| Non-classified or incorrectly classified waste transport and disposal  | MW03 | A demolition and construction waste management plan should be prepared and implemented as part of the CEMP for the proposal. The plan should adopt the waste hierarchy principles contained in the <i>Waste Management and Resource Recovery Act 2016</i> and detail processes, responsibilities and measures to manage waste and minimise the potential for impacts. This should include waste separation, handling, storage, transport and off-site reuse, licensed recycling and disposal locations.                                                                                                                                          | Prior to construction                  |
| Regulatory non-compliance and/or contamination at receiving facilities | MW04 | All demolition and construction waste should be classified and recycled or disposed of in accordance with the ACT 'Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes 2021' (EPSDD, 2021) and other relevant legislative and policy requirements.                                                                                                                                                                                                                                                                                                                                                            | Construction phase                     |
| Improper waste handling                                                | MW05 | A detailed Operational Waste Management Plan Appendix I will be developed and implemented which incorporates the requirements of relevant guidance documents, waste management hierarchy principles contained in the <i>Waste Management and Resource Recovery Act 2016</i> . This should include: <ul style="list-style-type: none"> <li>– All key waste and process residue streams and expected quantities.</li> <li>– Waste and residue handling, management and storage procedures including feedstock receipt and waste loading.</li> <li>– Procedures for identifying and managing unacceptable and non-compliant waste types.</li> </ul> | Prior to operation                     |



| Environmental Matter                                    | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Timing             |
|---------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
|                                                         |      | <ul style="list-style-type: none"> <li>Waste classification procedures and details of how all waste streams will be recycled or disposal of in accordance with the ACT Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes 2021 (EPSDD, 2021) and other relevant legislative and policies.</li> <li>A Contingency Management Plan to be developed during DA stage to manage exceedance of storage capacity.</li> <li>Details of off-site recycling and disposal locations.</li> <li>Detailed output product sampling and validation program in accordance with agreed end use specifications to ensure fitness for purpose for each intended end uses.</li> <li>Record keeping and reporting requirements.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |
| Human health risks due to contaminants                  | MW06 | <p>A FOGO feedstock management plan will be developed and implemented which includes:</p> <ul style="list-style-type: none"> <li>FOGO feedstock specification and contaminant tolerances.</li> <li>FOGO feedstock pre-sort procedures.</li> <li>Detailed feedstock sampling and monitoring program which documents sampling and other quality assurance/quality control procedures based on the allowable contaminant tolerances.</li> <li>Consideration of the PFAS NEMP 3.0 which will be refined during the DA Stage but may include: <ul style="list-style-type: none"> <li>procedures for sampling and testing of inputs to fully characterise PFAS content of any feedstocks identified as posing a risk of containing PFAS</li> <li>procedures to determine whether feedstocks are suitable to meet the product requirements with respect to PFAS content</li> <li>procedures for the management of product formulation/blending/composition to ensure PFAS content of the product meets any criteria relevant to the products proposed use</li> <li>regular monitoring of product outputs to ensure PFAS content does not exceed any relevant criteria or concentration limits.</li> </ul> </li> <li>Record keeping and reporting requirements</li> </ul> | Prior to operation |
| <b>Landscape and visual</b>                             |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |
| Visibility of construction activities and storage areas | LV01 | All practical measures will be undertaken to ensure construction equipment, storage areas, and other visible elements are located away from key views to or from the identified sensitive visual receivers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Construction       |
|                                                         | LV02 | General tidiness of the site will be maintained during construction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |
|                                                         | LV03 | Conducting of works in evenings and nights will be avoided where possible, to minimise impacts from lighting.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                    |
|                                                         | LV04 | Where works cannot be located away from trees, tree protection will be provided to ensure they are not damaged.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                    |
|                                                         | LV05 | All areas disturbed by construction and ancillary works will be rehabilitated to their previous condition.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                    |
|                                                         | LV06 | During construction, screening measures will be employed to assist the proposal site in blending into the surrounding area. Choice of screening will be sympathetic to the existing rural setting (e.g. neutral colours or green depending on location).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    |
| Visual impacts during operation                         | LV07 | The following measures will be considered during detailed design in relation to design materiality:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Operation          |



| Environmental Matter                                                          | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Timing                                 |
|-------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|                                                                               |      | <ul style="list-style-type: none"> <li>– Ensure the proposal form, material and finishes are of high quality and are in keeping with the surrounding setting, contributing positively to the existing landscape character values.</li> <li>– The DCP Guidelines states that '<i>The roof should be of pre-coated metal of low reflectivity</i>'. This should be taken into consideration when specifying Colourbond metal roofing finishes.</li> <li>– Avoid or minimise the use of shiny or reflective materials to minimise associated visual impacts on surrounding sensitive receivers.</li> <li>– Consider specifying a custom-designed external cladding that complements the Indigenous cultural and rural landscape setting, for instance by printing imagery of native vegetation onto the façade, in order to mitigate visual impacts from the Tuggeranong Heritage Track.</li> <li>– If custom-designed cladding is not possible, consider using a green colour for the roof and external Colourbond steel façade walls of the facility to ensure it is in keeping with nearby structures, reducing the landscape and visual impacts.</li> </ul> |                                        |
|                                                                               | LV08 | <p>The following measures will be considered during detailed design in relation to landscaping:</p> <ul style="list-style-type: none"> <li>– Screen planting along the northern property boundary, to preserve the landscape character of Dog Trap Creek corridor and to minimise views from surrounding elevated areas and consistent with principles shown on DCP Drawing No. 171/08/0009.</li> <li>– Increasing the density of planting along the site boundaries, to minimise visual impacts of the buildings, car parking, and ancillary structures and equipment, following DCP 171/09/0001 planting requirements.</li> <li>– Planting screening vegetation within the site boundary along John Cory Road, to minimise visual impacts experienced from the Tuggeranong Heritage Track.</li> <li>– Avoid the clearing of trees where possible, to retain the existing character values.</li> </ul>                                                                                                                                                                                                                                                     | Construction                           |
|                                                                               | LV09 | <p>The following measures will be considered during detailed design in relation to signage:</p> <ul style="list-style-type: none"> <li>– Minimising signage dimensions</li> <li>– Avoiding brightly illuminated signage</li> <li>– Employing high quality signage design</li> <li>– Locating signage on buildings rather than freestanding.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Construction and Operation             |
| <b>Soil and geology</b>                                                       |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                        |
| Existing contamination risks to construction workers and ecological receptors | SG01 | A CMP will be prepared with measures to mitigate unexpected contamination risks during construction and included in the CEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Prior to construction and construction |
|                                                                               | SG02 | An asbestos assessor will be appointed to ensure there is no ACM on the proposal site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Construction                           |
|                                                                               | SG03 | Drainage on the proposal site will be improved to minimise runoff towards Dog Trap Creek.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Construction                           |
| Discovery and/or disturbance of unexpected, contaminated material             | SG04 | An UFP will be developed and included in the CEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Construction                           |

| Environmental Matter                                                                                             | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Timing                     |
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| Sediment and nutrient laden runoff from areas impacting water quality in downstream waterways                    | SG05 | An ESCP will be prepared as part of the CEMP to identify and mitigate erosion impacts from construction activities, particularly during extreme weather.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Construction               |
| Transport of contaminated material from the proposal site                                                        | SG06 | A designated washdown area will either be provided on the proposal site or located at truck depots off-site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Construction and operation |
|                                                                                                                  | SG07 | Any contaminated soil removed from the proposal site will be classified in accordance with ACT EPA 'Requirements for the reuse and disposal of contaminated soil in the ACT' (Access Canberra, 2019) and disposed of at a suitable licensed waste facility.                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Construction               |
| Spills of diesel fuel, and lubricating oils                                                                      | SG08 | All hazardous materials will be stored and banded in designated areas within site compounds in accordance with AS 1940-2004 The storage and handling of flammable and combustible liquids (Standards Australia, 2004).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Construction and operation |
|                                                                                                                  | SG09 | All diesel fuels and lubricating oils will be stored in appropriate containers and on bunds and away from drainage areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Construction and operation |
|                                                                                                                  | SG10 | Spills kits will be located adjacent to storage areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Construction and operation |
|                                                                                                                  | SG11 | All spills will be cleaned up immediately as appropriate and certified by the EPA via letter approval.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Construction and operation |
|                                                                                                                  | SG12 | SDS sheets will be located adjacent to storage areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Construction and operation |
| Generation of contaminated material                                                                              | SG13 | Appropriate storage areas will be created for batteries and fuel that are compliant with relevant standards.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Operation                  |
| <b>Water quality and hydrology</b>                                                                               |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                            |
| Water quality impacts to downstream waterways and associated aquatic ecosystems with regards to suspended solids | W01  | <p>Before the commencement of construction, a SWMP will be developed in accordance with Environment Protection Guidelines for Construction and Land Development in the ACT to address erosion and sediment control.</p> <p>The plan will specify numerous general requirements that will apply to the proposal, including:</p> <ul style="list-style-type: none"> <li>– Minimising the extent and duration of disturbance</li> <li>– Handling of soils</li> <li>– Stockpiling</li> <li>– Site access and egress</li> <li>– Management of drainage</li> <li>– Water quality monitoring</li> <li>– Roles, responsibilities, and incident reporting</li> <li>– Fuel storage</li> <li>– Inspection requirements.</li> </ul> | Construction               |
| Water quality impacts to downstream waterways associated with the operation of the facility.                     | W02  | <p>Before the commencement of the FOGO operations, a detailed Operational Water Management Plan (OWMP) will be developed and updated on a yearly basis. Some key features of proposed activities that will be specified and maintained are as follows:</p> <ul style="list-style-type: none"> <li>– Materials inside trucks are not to be removed until truck is fully inside the indoor receiving area.</li> <li>– Fast action roller doors are to be installed so they can close promptly after trucks have entered the building.</li> </ul>                                                                                                                                                                          | Operation                  |



| Environmental Matter         | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Timing       |
|------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|                              |      | <ul style="list-style-type: none"> <li>Products are to be fully repackaged before leaving indoors on instances where they are transferred off-site or between buildings.</li> </ul> <p>The OWMP will also include details of the following:</p> <ul style="list-style-type: none"> <li>Maintenance of the wastewater system, including the containment and conveyance system to ensure wastewater is not discharged offsite.</li> <li>Consultation with Icon Water regarding a trade waste licence and management of water during operation in line with authority requirements.</li> <li>Emergency management procedures, such as management of uncontrolled spills, including where engineered controls of areas containing hazardous materials are required such as bunding or similar to intercept pollutants from the receiving environment.</li> <li>Emergency evacuation procedures during extreme rainfall events, including forecasting procedures, evacuation pathways and muster locations.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |
| <b>Air quality and odour</b> |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |
| Dust release                 | AQ01 | <p>A dust control protocol will be prepared that forms part of the CEMP to detail management measures, a method for recording dust complaints and monitoring requirements. This will include the following:</p> <ul style="list-style-type: none"> <li>On days with forecast and actual high winds (i.e over 10 m/s) work effort will be reduced accordingly if windblown dust is observed to be leaving the site boundary.</li> <li>Dust suppression will be undertaken as required using water sprays, water extension agents, soil stabilising polymers or other media on: <ul style="list-style-type: none"> <li>Unpaved work areas subject to traffic or wind</li> <li>During the loading and unloading of dust generating materials</li> <li>Unpaved access tracks</li> <li>Stockpiles</li> </ul> </li> <li>The volume of water applied will be managed so as not to create potentially polluted run-off.</li> <li>Vehicles will only leave the site via established and stabilised access points.</li> <li>Equipment will be fitted with relevant dust suppressors (where practicable).</li> <li>If the works are creating levels of dust which may significantly impact on residential amenity and the nearby solar farm, the works will be modified or stopped until the dust hazard is reduced to an acceptable level.</li> <li>On days with forecast and actual high winds (i.e over 10 m/s) work effort will be reduced accordingly if windblown dust is observed to be leaving the site boundary.</li> <li>On days with high background dust levels (due to fire or offsite dust events for example), dust mitigation will be increased in the form of watering or reduce dusty construction activities.</li> <li>All waste will be removed from site or stored in covered bins and disposed to an appropriately licenced waste facility. No burning of any waste will be permitted. The transfer off site will be done by covered trucks.</li> <li>Construction vehicles with potential for loss of loads (such as dust or litter) will be covered when using public roads and when not in use.</li> </ul> | Construction |

| Environmental Matter           | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Timing          |
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|                                |      | <ul style="list-style-type: none"> <li>– The wheels of all site equipment and vehicles will be cleaned so that material with potential to generate dust is not spread (particularly to Mugga Lane, adjacent to the Mugga Solar Farm).</li> <li>– Land will be progressively landscaped or otherwise rehabilitated in disturbed areas as works are completed (where practicable)</li> <li>– Include a protocol for handling and responding to community complaints and monthly check-ins with Mugga Solar Farm via email or letter.</li> </ul>                                                                                                                                                                                                                                                    |                 |
| Increased combustion emissions | AQ02 | Plant and equipment will be maintained in good condition to minimise ignition risk, spills and air emissions that may cause nuisance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Construction    |
| Odour release                  | AQ03 | 24-hour emergency maintenance agreements will be established with equipment manufacturers to limit the impact of equipment failures.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Operation       |
|                                | AQ04 | An onsite meteorological station will be set up to inform operational activities and identify odour sources in the event of a complaint.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Operation       |
|                                | AQ05 | The biofilter will be maintained as per manufacturer specifications and perform regular testing to confirm it is performing correctly.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Operation       |
|                                | AQ06 | The oxygen levels will be monitored inside the composting tunnels to ensure optimum levels are maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Operation       |
|                                | AQ07 | The moisture content inside the composting tunnels will be monitored and the fan speed adjusted accordingly to maintain optimum air flow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Operation       |
|                                | AQ08 | Air spigots will be maintained and cleared after material is removed from the tunnels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Operation       |
|                                | AQ09 | If the works are emitting odour concentrations which may significantly impact the nearby receptors, the works will be modified or stopped until the odour hazard is reduced to an acceptable level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Operation       |
|                                | AQ10 | Odour audits, including smoke testing at the waste receival doorway, will be undertaken annually.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Operation       |
|                                | AQ11 | As there may be matured compost product stored in a semi-enclosed and covered product storage shed, dust may be a concern on windy days. This will be managed via controlled application of water for dust suppression when required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Operation       |
|                                | AQ12 | Use of a stack up to three metres above the building height could be considered during detailed design.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Detailed design |
| <b>Greenhouse gases</b>        |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |
| Construction emissions         | GHG1 | <p>Opportunities to reduce construction emissions will be investigated and considered during design and construction planning. This will include consideration of:</p> <ul style="list-style-type: none"> <li>– Use of construction materials with high recycled content, such as supplementary cementitious materials in concrete, reclaimed asphalt pavement in asphalt and post-consumer recycled content in steel.</li> <li>– Revegetation of nearby land.</li> <li>– Sustainable procurement practices where feasible.</li> <li>– Construction materials sourced locally where possible.</li> <li>– Opportunities for the reuse/recycling of other construction and demolition waste materials to be investigated and included in construction management plans, where feasible.</li> </ul> | Construction    |



| Environmental Matter                                                                                                                                                            | ID     | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Timing                     |
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| Diesel use                                                                                                                                                                      | GHG2   | Ways to lower demand of diesel use and substitution with less emission intense fuels will be investigated and considered. This will include considering the use of electric/hydrogen plant and vehicles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Construction and operation |
| Operational emissions                                                                                                                                                           | GHG3   | Emission capturing techniques and Carbon Capture Utilisation and Storage (CCUS) measures will be considered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Detailed design            |
| Feedstock contamination sent to landfill                                                                                                                                        | GHG4   | Educational campaigns and increasing recycling awareness will be developed and implemented to help reduce feedstock contamination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Operation                  |
| <b>Climate change</b>                                                                                                                                                           |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |
| Increase in extreme heat days resulting in 'stop work' days during operations.                                                                                                  | CCR0 1 | Regularly update WHS management plan and procedures to adjust to conditions.<br><br>Consider use of 'cool' materials when designing. This includes light-coloured roofs, increased tree canopy and other landscaping elements to mitigate impacts of urban heat.                                                                                                                                                                                                                                                                                                                                                                                                                                    | Operations                 |
| Extreme rainfall leading to flooding of FOGO products stored in partially open areas leading to contamination of flood water leaving the site (water quality compliance issues) | CCR0 2 | Consider additional protection structures during detailed design.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Detailed design            |
| Severe wind/ storm event has higher wind loading than designed, causing stress to site structures resulting in damage, reduced design life or safety hazard.                    | CCR0 3 | Consider use of materials (especially roofing) that can withstand potential hail damage. Ensure that mobile and permanent equipment is sufficiently covered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Detailed design            |
| <b>Socioeconomic and health</b>                                                                                                                                                 |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |
| Biosecurity including vermin and pest animals which impacts on health                                                                                                           | SH01   | A construction biosecurity management plan (including a pest and weed management plan) will be developed and implemented as part of the CEMP and include: <ul style="list-style-type: none"> <li>Measures to ensure controls and procedures are implemented during construction to avoid, minimise or manage potential adverse impacts on biodiversity.</li> <li>Measures to retain and protect existing flora and fauna habitat where possible and appropriately manage the spread of weeds and plant pathogens.</li> <li>Measures to minimise the potential for biosecurity risks during construction in accordance with the <i>Biosecurity Act 2015</i> and relevant ACT legislation.</li> </ul> | Construction               |
|                                                                                                                                                                                 | SH02   | An operational biosecurity management plan will be developed and implemented which: <ul style="list-style-type: none"> <li>Clearly documents operational procedures, controls and ongoing monitoring and measurement of biosecurity risks associated with the proposal, including requirements for:</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      | Operation                  |

| Environmental Matter   | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Timing                     |
|------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
|                        |      | <ul style="list-style-type: none"> <li>Ensuring that staff know how diseases, pests and weeds spread, and what they should do when entering and leaving the site to minimise risk</li> <li>Maintenance of records of staff training and ensure they are regularly maintained</li> <li>Maintenance of a visitor record</li> <li>Induction of contractors/visitors to state what biosecurity measures are expected of them while working on/visiting the site</li> <li>Appropriate signage for entry/exit points and scrubbing stations (where applicable)</li> <li>Dedicated area for high risk items (such as footwear, tools, or other PPE worn within the receival halls)</li> <li>Vehicle deliveries to be covered</li> <li>Prohibiting the receipt of feedstock from a PIZ</li> <li>Delivery within the receival hall and composting (pasteurisation) in accordance with the requirements of AS 4454-2012 (Standards Australia, 2012).</li> </ul> <ul style="list-style-type: none"> <li>Identifies common pests and weeds (and associated disease symptoms, where applicable) within the local region so that staff can readily identify them.</li> <li>Outlines how pest and weeds will be managed on the site which may include but not limited to: <ul style="list-style-type: none"> <li>trapping and baiting</li> <li>regular inspections of effectiveness of pest control</li> <li>boot scrubbing stations</li> <li>limit entry/exit points.</li> </ul> </li> <li>Requires the site operator to undertake routine monitoring and inspections on the operational biosecurity management plan.</li> <li>Clearly documents operational procedures, controls and ongoing monitoring and measurement of biosecurity risks associated with the proposal – including requirements for vehicle deliveries to be covered, prohibiting the receipt of feedstock from a PIZ, delivery within the receival hall and composting (pasteurisation) in accordance with the requirements of AS 4454-2012 (Standards Australia, 2012).</li> <li>Outlines how pest and weeds will be managed on the site.</li> <li>Requires the site operator to undertake routine monitoring and inspections on the operational biosecurity management plan.</li> </ul> |                            |
| <b>Hazard and risk</b> |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |
| Fire                   | HR01 | A Fire Management Plan will be prepared for construction and operations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Construction and Operation |
|                        | HR02 | Smoke detectors, fire extinguishers, fire blankets, fire hose reels and sprinklers will be appropriately placed within buildings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Operation                  |
|                        | HR03 | An Emergency Management Plan will be prepared.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Operation                  |
| Hazardous chemicals    | HR04 | Each chemical will have appropriate labelling, an appropriately sized bund and stored within designated work areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Construction and Operation |
|                        | HR05 | SWMS and procedures will be implemented for the handling of all chemicals including transfer, storage, spill prevention and clean up requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Operation                  |
|                        | HR06 | A SDS library will be located on-site that covers all chemicals used and/or stored on-site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Operation                  |
|                        | HR07 | Appropriate PPE will be provided for users of chemicals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Operation                  |



| Environmental Matter               | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Timing       |
|------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Wildlife                           | HR08 | Guideline C of NASF, Managing the Risk of Wildlife Strikes in the Vicinity of Airports will be adhered to.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Operation    |
|                                    | HR09 | Waste will be stored and processed in buildings or vessels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Operation    |
|                                    | HR10 | Deterrent technologies will be used as required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Operation    |
|                                    | HR11 | FOGO contamination or other waste generated as a result of the operation will be stored in an enclosed skip bins for off-site disposal or recycling within the receival hall.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Operation    |
|                                    | HR12 | Recyclable materials will be held in dedicated sealed skip bins. This will be managed in accordance with the site operations plan and be serviced regularly by a waste contractor.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Operation    |
|                                    | HR13 | The site will be kept clean and tidy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Operation    |
|                                    | HR14 | Waste from office and administration activities will be stored in appropriate bins (with lids).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Operation    |
| Pest infestation                   | HR15 | Buildings will be maintained to exclude pest animal entry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Operation    |
|                                    | HR16 | Pest management professionals will be engaged as required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Operation    |
|                                    | HR17 | Good housekeeping practices will be adopted.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Operation    |
| Odour                              | HR18 | The receival hall will be normally closed and operated under negative pressure.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Operation    |
|                                    | HR19 | Air exhaust from composting facility will be directed to an odour treatment system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Operation    |
|                                    | HR20 | The biofilter will be operated and maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Operation    |
|                                    | HR21 | Effective aeration of compost will be maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Operation    |
| Spread of pathogens and disease    | HR22 | FOGO will be pasteurised prior to despatch of finished product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Operation    |
|                                    | HR23 | The process water recycle system will appropriately maintained.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Operation    |
| Failure of critical infrastructure | HR24 | Adequate training will be provided on operating machinery.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Operation    |
|                                    | HR25 | <p>The following plans will be developed to manage critical infrastructure:</p> <ul style="list-style-type: none"> <li>– Business Continuity Plan which may include: <ul style="list-style-type: none"> <li>• Definition of critical waste services and plan coverage</li> <li>• Identification of potential threats and assessment of impacts</li> <li>• Critical function checklists (such as inventory of critical equipment and materials, vendors and logistics)</li> <li>• Recovery strategies (such as temporary staffing, mobile equipment options)</li> <li>• Emergency management procedures</li> <li>• Internal and external communication plans, including contact lists for staff, suppliers, and emergency services.</li> </ul> </li> <li>– Asset Management Plan which may include: <ul style="list-style-type: none"> <li>• Asset inventory</li> <li>• Condition and performance inspection requirements and lifecycle planning</li> </ul> </li> <li>– Maintenance and renewal plans including scheduled servicing</li> </ul> | Operation    |
| <b>Bushfire</b>                    |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |
| Bushfire                           | BR01 | A bushfire prevention and response plan will be prepared as part of the CEMP, providing relevant information for fire and emergency service responders and project personnel. The plan will include the following requirements:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Construction |

| Environmental Matter | ID   | Recommended mitigation measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Timing                                      |
|----------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
|                      |      | <ul style="list-style-type: none"> <li>Plant and equipment to be maintained in accordance with manufacturers recommendations and best practice.</li> <li>Seasonal and daily fire hazard warnings issued by the ACT Emergency Services Agency to be observed. <ul style="list-style-type: none"> <li>No work on days of Extreme or Catastrophic Fire Danger Rating days</li> <li>No hot works on days of Severe, Extreme or Catastrophic Danger Rating</li> </ul> </li> <li>Vehicles to be kept on formed roads and paths, and away from long grass where possible.</li> <li>Appropriate parking areas to be provided for personnel that are away from long grass and other ignition sources.</li> <li>Unnecessary idling of vehicles to be avoided.</li> <li>All vehicles on-site to be equipped with fire extinguishers.</li> <li>Fire prevention and fire control instructions to be included in site inductions.</li> <li>Hot works not to be undertaken outside designated workshop areas.</li> <li>Job Safety Analyses to incorporate fire ignition risk assessment and controls for prevention of grass fire ignition where relevant.</li> <li>Job Safety Analyses for activities involving hot works to incorporate hot works risk assessment and controls.</li> </ul> |                                             |
|                      | BR02 | APZs will be provided in accordance with Table 20.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Detailed design, construction and operation |
|                      | BR03 | Overhead electrical transmission lines will be installed with short pole spacing (30 metres) and away from vegetation in line with the ACT Bushfire Management Standards (ESA, 2023). Consultation with the electrical transmission line service provider will be undertaken to ensure the overhead electrical transmission.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Detailed design and construction            |
|                      | BR04 | Construction requirements will be implemented in design and construction under the National Construction Code (Australian Building Codes Board, 2022) to the BAL presented in Table 20.2. Alternatively, the proposal site will be managed to the landscaping requirements of Appendix 4 of the ACT Bushfire Management Standards (ESA, 2023) to the proposal site boundary to reduce the BAL exposure of the buildings thereby reducing the construction requirements of the primary composting and biofilter and ancillary infrastructure buildings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Detailed design                             |
|                      | BR05 | APZ landscaping will comply with the ACT Bushfire Management Standards (ESA, 2023) fuel management standards for Inner APZ and be guided by the fuel management principles. These will be managed by the proposal site operator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Operation                                   |
|                      | BR06 | <p>A Bushfire Emergency Management and Evacuation Plan will be developed prior to construction, operation, and occupancy of the proposed facility. The plan will:</p> <ul style="list-style-type: none"> <li>Clearly identify bushfire preparedness actions, bushfire response actions, evacuation plans and procedures (for on-site and off-site evacuation), and on-site refuge locations.</li> <li>Be provided to ACT ESA for its information prior to occupation of the facility.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Construction and operation                  |



## 23. Community and stakeholder consultation

This chapter addresses the following community and stakeholder engagement requirements of the Scoping Document:

- Consultation must be undertaken with:
  - Lease holders and land managers of land potentially impacted by the proposal.
  - Any recreational groups which may be affected by the proposal.
  - Any volunteer conservation, landscape management or land care groups active in the area to be affected by the proposal, such as the Molonglo Conservation Group and the Isaacs Ridge Mount Mugga Mugga Park Care Group.
  - Adjacent and nearby business owners and employees.
  - The local community; and community groups, such as the Tuggeranong Community Council, the Jerrabomberra Residents Association and other community groups in the Southern Central Canberra area.
- Provide a consultation report that includes:
  - A description of the methodology and criteria for identifying stakeholders and how they were identified. Details and plans must be provided showing potential impacts on the local and wider community to justify how stakeholders were identified.
  - An outline of the communication methods used. A variety of communication methods must be adopted to ensure all stakeholders are engaged appropriately, such as face to face, email/letters, community meetings and information sessions and website notifications.
  - Details on the information provided during the community consultation process. Note: A plain English statement explaining the proposal and conceptual drawings must be made available to the community and stakeholders.
  - A summary of the responses and the main comments raised. Evidence must be provided demonstrating that consultation has been undertaken with each relevant group/person including specific detail on how these concerns were addressed.
  - A description on how any concerns have been considered and identify any changes that have been made to the proposal.

### 23.1 Consultation approach

#### 23.1.1 Overall approach

A community and stakeholder engagement plan (CSEP) was prepared to outline the proposed engagement approach to be undertaken to support and address the requirements of the EIS.

Given the proximity of the proposal to the proposed future MRF facility, the public engagement phase was carried out for both facilities together to consider community feedback.

The engagement approach was guided by the Core Values and Code of Ethics of the International Association for Public Participation (IAP2). As outlined in Figure 23.1, the level of participation for the EIS stage of the proposal is advised to be at the '**Inform**' and '**Consult**' levels.

This spectrum is based on the level of community and stakeholder impact of the proposal to ensure adequate feedback is received from the community. Involving the community and stakeholders at these levels has helped ensure that concerns and aspirations are directly reflected in the concept design and EIS, where feasible, and to provide feedback on how community and stakeholder input influenced the decision-making process.

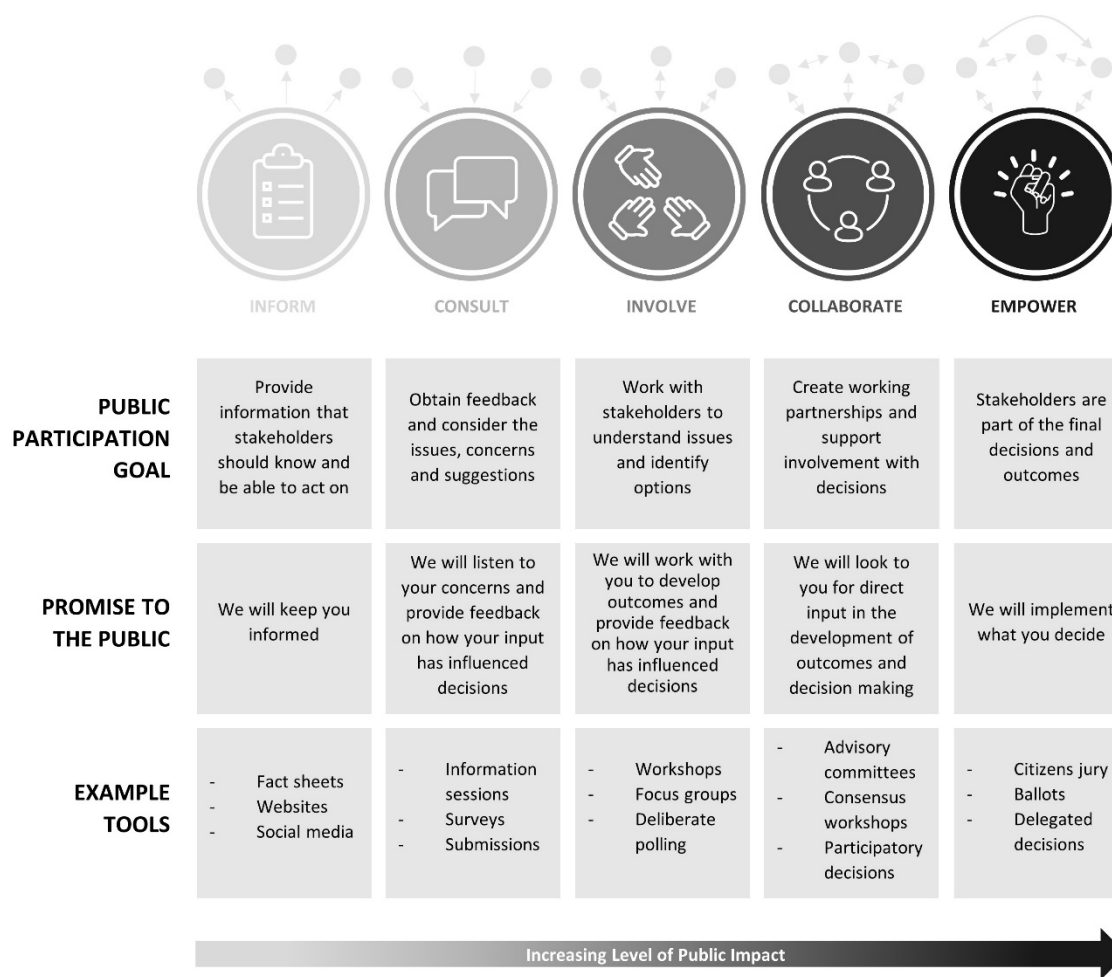


Figure 23.1 IAP2 Public Participation Spectrum

## 23.1.2 Engagement objectives

The objectives of engagement for the proposal were to:

- Build and maintain relationships with the community and stakeholders.
- Ensure that a broad range of the local community and stakeholders are informed about the proposal and given the opportunity to provide feedback.
- Provide the community and stakeholders with an opportunity to ask questions and to identify areas of concern with respect to the proposal.
- Provide direct feedback to the project team during all stages of the proposal and develop solutions that address community expectations where possible.
- Effectively and proactively identify and manage issues.
- Manage stakeholder feedback and complaints in a timely, respectful way.
- Monitor and evaluate stakeholder feedback to measure success.
- Build community and stakeholder confidence in the act government and the decisions it makes.

## 23.1.3 Identification of key stakeholders

The proposal site is located approximately one kilometre from low density suburban areas and is situated in proximity to potential sensitive environmental zones. The community was seen to fall into three categories as listed in Table 23.1; those potentially directly impacted, potentially indirectly impacted and the broader community.



Table 23.1 Community overview

| Community                       |                                                                                                                                                                                                                  |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Potentially directly impacted   | Community members who own, live or work at properties potentially impacted by the proposal's operation or construction.                                                                                          |
| Potentially indirectly impacted | Community members who own, live or work at properties located adjacent to, or near the proposal.                                                                                                                 |
| Broader community               | <p>Wider community within area</p> <ul style="list-style-type: none"> <li>- Community groups</li> <li>- Local businesses</li> <li>- Canberra Airport</li> <li>- Media</li> <li>- Environmental groups</li> </ul> |

The proposal is located near the Hume Industrial Estate on the outskirts of Canberra. It was expected the local stakeholder and community concerns would relate to traffic and noise impacts with construction and operation as well as the potential for odour and litter associated with the nature of the proposal.

Stakeholder mapping identified the following key stakeholders:

- The local area dominated by low density residential properties to the west of the proposal site.
- Neighbouring suburbs of Chisholm, Fadden, Farrer, Gilmore, Gowrie, Hume, Isaacs, Jerrabomberra, Macarthur and Tralee.
- Hume Business District.
- Businesses operating on or near Recycling Road, John Cory Road, and Mugga Lane including ACT Skip Hire and Soft Landing Mattress Recycling ACT, Mugga Lane Solar Park, ACT Recycling, Corkhill Bros and the MLRMC.
- Community groups including the Tuggeranong Community Council, Inner South Canberra Community Council, Jerrabomberra Residents Association and the Woden Valley Community Council.
- Volunteer conservation, landscape management or landcare groups active in the area including the Molonglo Conservation Group.

## 23.1.4 Consultation and engagement tools

Consultation for the proposal started on 24 April and closed on 5 June 2023.

The community and stakeholders were notified through a letterbox drop and a stakeholder email inviting them to community sessions about the proposal. This was supported by a project page on the City Services website and downloadable factsheets and project information.

Feedback on the proposal was encouraged via email or attendance at one of the drop-in sessions.

Further details including a copy of the provided letter and text from the webpage are provided in the Engagement Report, Appendix T.

## 23.2 Consultation and engagement activities

### 23.2.1 Community consultation sessions

Four face-to-face consultation sessions were held in May 2023. Across the four sessions, 76 people attended and registered interest in the project.

The community sessions were held across two weeks, with two sessions per week, across four different locations near the proposal sites. The community sessions are outlined below.

**Session 1:**

Date: Saturday 20 May 2023

Time: 10:30 am to 12:30 pm

Location: Woden Library

|                   |                                                                                                          |
|-------------------|----------------------------------------------------------------------------------------------------------|
| <b>Session 2:</b> | Date: Wednesday 24 May 2023<br>Time: 3:30 pm to 5:30 pm<br>Location: Tuggeranong Library                 |
| <b>Session 3:</b> | Date: Saturday 27 May 2023<br>Time: 10:30 am to 12:30 pm<br>Location: Chisholm Village Shopping Centre   |
| <b>Session 4:</b> | Date: Wednesday 31 May 2023<br>Time: 10:30 am to 12:30 pm<br>Location: Mawson Southlands Shopping Centre |

The purpose of the sessions was to allow the community to:

- Understand the proposal.
- Ask questions and discuss issues and their concerns in the more detail.
- Provide feedback to inform the development of the EIS.

To support the consultation sessions, six A0 sized posters were prepared. In addition, hard copies of the project fact sheets were provided to attendees.

## 23.3 Engagement outcomes

### 23.3.1 Overview

The consultation and engagement activities resulted in the following engagement:

- 765 views of the project page.
- 4 pop-ups were held.
- 1 presentation to the Tuggeranong community Council.
- 10,000 letters were delivered to residents and the community.
- 143 emails were sent to businesses and organisations.
- 1382 individuals reached via social media.
- 10 items of written feedback.
- 76 conversations, we spoke with 76 people during engagement.

### 23.3.2 Comments and/or issues raised

Stakeholders and community members expressed support for the proposal acknowledging the role of the new FOGO facility as a key piece of resource recovery infrastructure for the Territory.

Key topics raised by stakeholders and community members related to:

- Traffic
- Circular economy
- Community education
- Water management
- Odour and air quality
- Legislation/regulation
- Procurement process
- Waste collection trucks



- Consultation session locations
- Location of facility
- Pests and vermin
- FOGO pilot expansion

The Engagement Report (Appendix T) provides details of the written comments received during the engagement period and the ACT Government response to each of the key topics and issues raised.

## **23.4 Public exhibition of the EIS**

The EIS was placed on public exhibition for 42 days from 29 January 2024 and closed on 12 March 2024. Over this period three public submissions were received and several agency responses. The agency comments and responses are outlined in Table 23.2 and Table 23.3.

Table 23.2 Public exhibition comments and responses

| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Response and location in EIS                                                                                                                                                                                                                                                                           |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EPD    | <p>6.2 Other Requirements</p> <p>Please provide information on how the proposal is consistent with the Transport for Canberra Policy.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Section 3.4.10 added which discusses how the proposal is consistent with the Policy.                                                                                                                                                                                                                   |
|        | <p>7. Risk Assessment; 8. Assessment of Risks</p> <p>The scoping document states: "The Preliminary Risk Assessment (PRA) submitted as part of the request for a scoping document must be revised to include, but not be limited to, the risks identified by the Authority in Table 1". The PRA in the EIS does not include the risks in Table 1 of the scoping document. The risks identified by the authority may already be covered in the assessment, but this should be outlined in a PRA table combining the risks identified by the proponent and the authority. All risks should be addressed in the residual impact table at the end of each environmental theme section for clarity and to allow efficient assessment against the scoping document requirements. Where risks identified by the authority are covered by risks identified by the proponent this must be briefly explained/stated.</p> | Amended as requested and differentiated risks identified in Scoping Document and agencies.                                                                                                                                                                                                             |
|        | <p>8.2.1 Planning and Land Status</p> <p>Please revise Table 5.3 to correct the division name in all instances where Majura has been used.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Amended as requested and added footnote regarding <i>Planning and Development Act 2007</i> being repealed and replaced by <i>Planning Act 2023</i> .                                                                                                                                                   |
|        | <p>8.2.4 Biodiversity and nature conservation</p> <p>The revised EIS should include Dog Trap Creek and details of associated aquatic biota as ecological values adjacent to the site. Please include a description of the creek's significance to the area and potential impacts to aquatic biota, including those downstream.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | The creek has no known significant ecological values due to its highly degraded state and native vegetation being primarily cleared (see CHA (Navin Officer Heritage Consultants, 2022)). The proposal is also set-back from the creek to avoid any impacts. This has been clarified in Section 8.3.2. |
|        | <p>The scoping document requests that the EIS considers impact on the area from the facility attracting vermin and associated predators. In this section of the EIS please consider the potential impacts from the facility attracting vermin, and particularly their associated predators, and include any proposed avoidance and mitigation measures to ensure identified impacts are reduced.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A reference to Chapter 17 has been added.                                                                                                                                                                                                                                                              |
|        | <p>[REDACTED]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>[REDACTED]</p>                                                                                                                                                                                                                                                                                      |
|        | <p>8.2.6 Materials and waste</p> <p>Potential impacts associated with aspects of waste generation during demolition, construction and operation are provided in tables 10.8 and 10.9. It is noted that section</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Amended as requested.                                                                                                                                                                                                                                                                                  |



| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | 10.4 references where some impacts are covered elsewhere in the EIS, and additional mitigation measures are proposed in table 10.10. However, further clarity in this section is required. In the revised EIS please provide a table listing each potential impact from tables 10.8 and 10.9 and the mitigation measure proposed for each impact.                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|        | Discuss the basis for the decision to allow for a minimum of 2 days and maximum of 3 days storage capacity. In addition, provide further details of potential alternative facilities and landfill options.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | These numbers are based on the storage capacity of the receival hall and processing area. This has been included in Chapter 10 for consistency. A contingency management plan will be developed during DA stage to outline measures to be implemented if these timeframes are not met.                                                                                                                                                                                                                                                                 |
|        | Provide details of stockpiling of product if there is oversupply. Impacts from excess stockpiling of waste or recyclable material was listed as a risk in Table 1 of the scoping document, and 'exceedance of storage capacity' is listed as a potential impact in Table 10.9, but there are no details of the potential impacts of this in section 10.4. Details of this potential impact should be expanded upon here and mitigation measures described in table 10.10.                                                                                                                                                                                                                                         | Amended as requested.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|        | An operational waste management plan has been provided as requested in the scoping document and this will need to be updated following changes made in the revised EIS in response to authority and entity comments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Noted. No action required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|        | <p><b>8.2.7 Landscape and visual</b></p> <p>In the viewpoints considered, please include the view from Fadden Ridge as this location was raised in a public representation. Identify the 'Other viewpoint locations' considered in the EIS on Figure 11.3 of the EIS and Figure 7.1 of Appendix J. Ensure all viewpoint locations on Figure 11. 3 are in accurate positions and pointing in the direction which the photo is taken.</p> <p>For all viewpoints considered, please provide a photomontage showing where the proposed development will be visible and ensure the images include the proposed biofilter stacks at their maximum potential height from any viewpoints where they would be visible.</p> | <p>The viewpoint referenced is approximately 2.5 km away (outside of the study area) and the proposal is mostly shielded by trees. The proposal is visually consistent with other industrial building that are already visible from this location.</p> <p>The figure was amended as requested.</p> <p>A photomontage from every location is not a requirement in LVIA. The photomontage locations were selected on the basis that they were locations that facility would be visible from. The proposal would not be visible from other locations.</p> |
|        | Please revise the visual impacts summary. On page 125, the highest visual impacts are described as being from viewpoints 1 and 5, however table 11.10 rates viewpoint 1 as moderate, but viewpoint 5 as negligible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Amended as requested.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|        | The EIS states the concept design is consistent with the Development Control Plan 171/09/0001 on page 127, but table 11.10 states it is mostly consistent apart from stack height. Please discuss how the height of the biofilter stacks was considered, including details of consultation undertaken with the National Capital Authority (NCA).                                                                                                                                                                                                                                                                                                                                                                  | The DCP is summarised in Table 5.2 (Chapter 5). The NCA was consulted with throughout proposal development and had no further comments on this EIS. The NCA will be consulted with during DA stage.                                                                                                                                                                                                                                                                                                                                                    |
|        | <p><b>8.2.8 Soil and geology</b></p> <p>Please provide more detail of the assessment of the potential for nutrient laden runoff/leachate during operation from processing and storage of FOGO material/products.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Reference added to Chapter 13 which outlines to process.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|        | <p>8.2.9 Water and hydrology</p> <p>Authority comments on this section are covered by comments from the Conservator of Flora and Fauna and the ACT Heritage Council.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | No action required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|        | <p>8.2.10 Air quality and climate change</p> <p>It is noted that the residual risk rating for odour impacts is medium, and page 50 of the EIS states that a residual risk rating of medium or higher will be subject to further consideration during the development of the detailed design. Please provide information on potential additional mitigation measures which may be considered at detailed design to further reduce odour emissions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Footnote added in Section 14.6 to identify AQ12 as a way to further reduce the likelihood of this risk.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|        | <p>8.2.12 Socio-economic and health</p> <p>Both construction (as part of the Construction Environmental Management Plan) and operation biosecurity management plans are proposed to be developed and implemented, but limited detail is provided. Please provide further details of the vermin and pest control measures to be implemented, encompassing both transport and storage of organic waste on site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SH02 (Chapter 17) updated to state this item is subject to detailed design.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|        | <p>8.2.13 Hazard and Risk</p> <p>The proposal includes the storage of 2000 kg of sulphuric acid, and the EIS notes that the manifest threshold is 500 litres. Under Schedule 4 of the Planning and Development Act 2007, Part 4.2, item 11, a development proposal triggers an EIS if it 'involves storage of the placard quantity of a Schedule 11 hazardous chemical on land, or in a building or structure on the land, that, immediately before the commencement day, was not registered as premises in the placard quantity register, unless the authority produces an environmental significance opinion indicating that the proposal is not likely to have a significant adverse environmental impact'. The item 11 EIS trigger was not included at the scoping stage. Please consider whether this trigger applies to the proposed development and confirm in the revised EIS whether the trigger applies.</p> | This is an indicative quantity which may change upon detailed design. Table 3.2 updated to reflect this possible trigger.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|        | <p>Please provide further details of the storage and details of the use of sulphuric acid on site in the revised EIS. Include details of any specific mitigation measures proposed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Sulphuric acid would be used for ammonia scrubbing, if needed. The need for wet scrubbers would be considered in the detailed design phase and if deemed to be required, further details would be available as part of the detailed design. As outlined in Section 7.1.2 of the PHA (Appendix R), all chemicals (including sulfuric acid) would be stored in accordance with Australian Standards. The storage locations would be within designated work areas. Each chemical would have appropriate labelling, an appropriately sized bund, separation where necessary and would be disposed of in accordance with Australian Standards. Mitigation measures HR04 to HR07 are applicable to the storage of sulfuric acid. |
|        | <p>The scoping document requested that the EIS outlined the management procedures to be followed should critical infrastructure failure occur. Mitigation measures listed in the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Section 19.4.1 <i>Failure of critical infrastructure</i> updated with some further detail. The requirements and contents of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



| Agency                            | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|                                   | <p>EIS include that 'adequate training would be provided on operating machinery and the following plans would be developed to manage critical infrastructure: Business Continuity Plan and Asset Management Plan'. Procedures to be followed should critical infrastructure failure occur could be covered within these documents but have not been outlined in the EIS. Please provide a more detailed outline of the management procedures to be included in the above plans.</p> <p>9 Community and stakeholder consultation</p> <p>Please provide further detail of the information provided in the community consultation process, such as the text from the web page and a copy of the letter distributed.</p> <p>11 Recommendations</p> <p>Table 22.1 of the EIS summarises the recommended mitigation measures including timing of implementation. Please update the table in the revised EIS, in response to the comments below:</p> <p>Item MW06 contains the words 'for the energy from waste facility' at the end of point 3, which does not match the wording from the item in Chapter 10.</p> <p>The 'Environmental Matter' associated with item CCR02 is 'Extreme rainfall leading to flooding of the site and facilities leading to impact on open processing of recyclables and contamination of flood water leaving the site (water quality compliance issues)' whereas in Chapter 16 CCRO2 refers to 'open processing of food and organic waste'.</p> <p>Given the proposal is not for open processing of FOGO material, it is suggested that the environmental matter/impact considered be the storage of FOGO products in partially open areas leading to contamination of flood water leaving the site.</p> <p>Item BR01 is missing the statement 'No works on days of Extreme or Catastrophic Danger Rating' from the corresponding mitigation measure in Chapter 20.</p> <p>Where appropriate, update areas where the development of plans is mentioned to also include implementation of the plans. For all mitigation measures proposed in the EIS, please update the language used to be committal, for example the use of 'must' rather than 'should' or 'would'.</p> | <p>Business Continuity Plan and Asset Management Plan would be covered in the DA and subject to detailed design.</p> <p>Amended as requested.</p> <p>Amended as requested.</p>                                                                                                                                                                                                                                                                                |
| ACT Emergency Service Agency      | In the event of fire, ACTF&R will need to consider firefighting media/water run-off from firefighting efforts to prevent leaching into Dog Trap Creek.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | No action required.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Canberra Airport                  | No queries                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No action required.                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Climate Change and Energy (EPSDD) | <p>Emissions</p> <p>The Climate Change and Energy Division requested that the Proponent provide evidence that demonstrates how the proposed development will result in a reduction in net emissions by diverting waste from landfill. The Division also requested that the EIS provide quantitative estimates of Scope 1 and 2 greenhouse gas emissions that will be generated by the development during operation.</p> <p>The Division notes that Table 15.5 on p.160 provides estimates of the quantity of diesel used to transport derived product from the facility. The estimated quantity of diesel used for this purpose represents only 2.8% of the diesel used in collections. While the Division</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>Full calculations were provided to the Division and response was confirmed as acceptable. No action required.</p> <p>The calculation estimated that less trucks would be associated with derived product per day due to the significant volume and weight reduction from the processing. In addition, the trucks removing derived product from site would have a much higher payload (e.g. 28 t) compared to the collection vehicles (8 t) which would</p> |



| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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|        | <p>acknowledges that the derived product will be significantly smaller in volume and weight, and possibly not need to travel as far, this figure still appears to be a significant underestimation.</p> <p>The Division therefore recommends that the Proponent is required to provide the assumptions used to derive this figure. Without assurances that this figure is correct, the Division is unable to assess the total emissions calculations specified in the scoping document.</p> <p>Consideration of Dust Impacts on the Mugga Lane Solar Park</p> <p>Noting the proximity of the proposed development to the Mugga Lane Solar Park, the Climate Change and Energy Division requested that the Proponent provide evidence of any potential impacts of the proposed development on the solar facility.</p> <p>The Division notes that the EIS and Air Quality Assessment Report do not consider the Mugga Lane Solar Park to be a sensitive receiver (EIS, p.197; Air Quality Assessment Report, p.14). Because the EIS does not classify the solar farm as a sensitive receiver, the EIS does not consider the impact that dust (nor any other potential impacts) caused during the construction phase of the proposed development may have on the operability of the neighbouring solar facility.</p> <p>The Division also notes that the dust control protocol outlined on p.38 of the Air Quality Assessment as well as the "dust release" mitigation measure on p.155 of the EIS note that mitigation measures will be triggered if dust impacts on "residential amenity". As a result, this "dust release" protocol does not consider the impact of dust on the Mugga Lane Solar farm, located only 500 m away, and instead uses a residential area 2 km away as the trigger for mitigation measures.</p> <p>The EIS therefore does not provide evidence to this element of the scoping document. It is well understood that dust can have a significant impact on the operability of photovoltaic arrays. For this reason, the Division considers it imperative that impacts on this solar facility are considered in the EIS, as per the requirements in the scoping document.</p> <p>Climate Change Risk Assessment</p> <p>The Climate Change and Energy Division requested that the EIS considers the impacts of climate change, ideally through a climate change risk assessment. A climate change risk assessment has been provided as part of the EIS. Except for the consideration of extreme heat, the Division considers this risk assessment to satisfy the criteria of the scoping document for this element.</p> <p>While the Division supports the consideration of extreme heat in the climate change risk assessment, the Division notes that none of the mitigation measures proposed on p.168 of the EIS attempt to mitigate the impact of extreme heat. One would reasonably expect the Proponent to consider in the proposed development the use of "cool" materials, such as light-coloured roofs, or the provision for tree canopy cover and/or other landscaping elements that mitigate the impact of urban heat.</p> <p>Without such mitigation measures, the Division does not consider the EIS to have fully addressed this element of the scoping document.</p> | <p>deliver FOGO feedstock to the site. The Division reviewed the material and accepted the response.</p> <p>As per a similar facility next door (the proposed MRF), the risk of dust impacts was considered Low to Negligible for construction and mitigation measures have been developed to manage dust including wetting down, stop work procedures, monitoring requirements. These can be refined at the DA stage in consultation with the solar farm as required.</p> <p>Amended as requested.</p> |



| Agency                                                            | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Response and location in EIS                                                                                                                                                                                                                                                                    |
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| Department of Planning and Sustainable Development – Attachment A | <p><b>1. Water Impact Assessment</b></p> <p>The Water Impact Assessment reports and water modelling provided have not adequately addressed the Conservator's interests. These were originally raised in the EIS Scoping Letter dated 12 July 2022. These include increased erosion risk and stormwater control. Ongoing discussions are occurring, with these reports and modelling to be resolved in the revised EIS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>Water Impact Assessment (Appendix N) updated to consider potential erosion impacts from the proposal. No impact was identified. Chapter 13 also updated to include outcomes of erosion assessment.</p>                                                                                       |
|                                                                   | <p><b>2. Stormwater control</b></p> <p>A review of the water impact assessment report and MUSIC model has identified a discrepancy in the modelling of stormwater re-use.</p> <p>According to the MUSIC model, the proposed development aims to use approximately 40ML of water a year within the plant. Approximately 15ML of this is anticipated to be recovered through their onsite stormwater retention tanks. This does not match with the water impact assessment report, which reports that approximately 20ML/year is required within the plant. This appears to be a simple error in the model, but may have significant ramifications for the reported efficacy of the stormwater retention system. This will need to be reviewed and updated.</p> <p>The overall impacts of the proposed development on dog-trap creek will be minimal, however is contingent on whether the model error has any material impact or not on the modelled results.</p> | <p>The proposal would use 20ML/year of which 15ML/year would be sourced from run-off and a potable water supply would supply the remaining 5ML/year.</p>                                                                                                                                        |
|                                                                   | <p><b>3. Increased erosion</b></p> <p>This development will lead to an estimated doubling of annual outflow into Dog-trap creek, from approximately 2.5ML/year to 5ML/year. While the peak flows have been managed to remain within current performance, the cumulative impacts, and interactions with other inflows to Dog trap creek mean there is a high likelihood that hydrologic stress on Dog trap creek is increasing.</p> <p>Fundamentally, Dog trap creek catchment is in a state of rapid change, and erosion processes are now highly dynamic. The possibility that major erosion will occur/continue to occur is high, and risk of damage to existing heritage values in and immediately adjacent to Dog trap creek from erosion are high.</p>                                                                                                                                                                                                      | <p>Annual discharge would be 2.8 ML/year from the proposal. This would be discharged to Dog Trap Creek at a rate that would not cause significant erosion to Dog Trap Creek.</p>                                                                                                                |
|                                                                   | <p><b>4. Impacts to aquatic biodiversity</b></p> <p>The EIS has not adequately considered impacts to aquatic biota sufficiently, given that adjacent receiving waters have been highlighted as at risk. Most of the wastewater controls discussed are likely to be successful at capturing potential sources of pollution to the receiving waterway. However, impact of wastewater escape or flood water flow through, following and during high rainfall events has not been sufficiently considered in terms of impact on the biota of the receiving waters. These impacts should be considered.</p>                                                                                                                                                                                                                                                                                                                                                           | <p>All wastewater from both the processing and on-site facilities would be collected in fully contained, engineered systems. Wastewater would periodically be discharged to sewer and engineered to not cause impacts to the receiving environment. Section 13.3.6 updated to clarify this.</p> |
|                                                                   | <p><b>5. Bushfire Risk</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>All APZs are now located wholly within the proposal site.</p>                                                                                                                                                                                                                                |



| Agency                                                            | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                                                                   | <p>Upon review of the Bushfire Risk Assessment, the proposed Asset Protection Zones do not comply with the ACT Bushfire Management Standards 2023. This will need to be reviewed and updated.</p> <p>6. Habitat Connectivity</p> <p>The EIS does not adequately identify opportunities for improving habitat connectivity. There are opportunities to rehabilitate land near Dog Trap Creek in a way that may improve the existing level of connectivity. The details can be included in the DA, but the issue should be a recommendation from the EIS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>The proposal maintains large trees and will not inhibit connectivity outside of the proposal area. Mitigation measures added (BC04) that Principles of Biodiversity Sensitive Urban Design will be integrated into the detailed design at DA stage and include planting of native grasses in the undeveloped area to the west.</p> <p>The Conservator agreed with this approach and no further action was undertaken.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Department of Planning and Sustainable Development – Attachment B | <p>1. Urban ACT Ecological Network</p> <p>The area is mapped as falling within the Urban ACT Ecological Network (see East Canberra District Strategy) and is of key interest for the application of Biodiversity Sensitive Urban Design Guide and the conservation of natural values, including native species habitat and ecological connectivity. Habitat and connectivity modelling for the site indicates that Block 26 Section 5 contains the following potential habitat:</p> <p>Grassland Reptile core and corridor habitat,<br/>Riparian Reptile and Mammal corridor habitat,<br/>Insect Pollinators core habitat;<br/>Amphibian core and corridor habitat (currently fragmented across three patches); and<br/>Small Woodland Bird corridor habitat.</p> <p>Predicted habitat on this site is supported by surveys and anecdotal reports included as part of the original EIS. Captures of <i>Hemiergis talbingoensis</i> confirms functional habitat for grassland reptiles; recordings of calls of <i>Crinia signifera</i> and <i>Uperoleia</i> sp. confirms functional habitat for frogs; and the sightings of small woodland birds (e.g. Buff-rumped Thornbill, Weebill, Superb Fairy Wren) and grassland specialist birds (e.g. Golden-headed Cisticola) confirm function habitat for small native birds.</p> <p>No surveys for riparian reptiles or mammals (e.g. Eastern Long-necked Turtle, Rakali) were attempted through this EIS.</p> <p>2. PCT Zone Mapping</p> <p>As the area is within the Urban ACT Ecological Network and has been previously mapped as containing both native grassland and potential threatened woodland,</p> | <p>This document and <i>Planning Act 2023</i> was released after the development of the EIS.</p> <p>An ecological survey of the proposal site was completed and indicated the small patches of degraded Blakely's Red Gum – Yellow Box Grassy Woodland (u19) occur where trees remain. The remainder of the proposal site is exotic grassland. The proposal site supports a range of common fauna species as noted, but is unlikely to provide suitable habitat for threatened species given its highly modified nature. Better quality habitat appears to occur north-west of Dog Trap Creek, where remnant woodland is present.</p> <p>Mitigation measure BC01 updated to include requirement for pre-clearance survey of frogs to be undertaken prior to commencing works. This notes that an SLL survey was already undertaken and no SLLs were observed (BC01).</p> <p>The design proposes the removal of only one (of four) mature trees so these would still be present for connectivity and have the area to the east to move through. It is noted the HRRE is designated for industrial use and the proposal is constrained to this area and not anticipated to impact offsite habitat.</p> <p>Given the highly degraded nature of the creek it would be very unlikely that turtles would be present.</p> <p>The proposal would avoid the area mapped as a sensitive community as this is part of mapped heritage values in the north closest to the creek. Other trees on proposal site will be retained as noted above.</p> <p>As noted this document was released after development of the EIS. Consideration of BSUD at DA stage added as BC04.</p> |



| Agency                                   | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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|                                          | <p>undertaking Plant Community Type (PCT) Zone mapping across the site would be a valuable addition.</p> <p>PCT zone mapping is expected to form the basis for the application of BSUD on the site for the DA, and so would be a helpful addition at this early planning stage. As the site is currently mapped as u19 (box gum woodland) and NG (native grassland) in the ACT Vegetation Map on actmapi, this additional level of vegetation mapping will also assist in clarifying the need to protect and buffer valuable habitat areas from development impacts.</p> <p>The survey work undertaken to date to identify mature and regenerating trees, wetlands/soaks/dams, rocky outcrops, and other potentially important habitat features will also form an important component of the application of BSUD at the DA stage and should be shown in detail on the site map.</p> <p><b>3. Ecological Connectivity</b></p> <p>Grassland and riparian habitat present on Block 26 Section 5 currently provides an important linkage to support ecological connectivity for grassland and riparian fauna across Dog Trap Creek. Loss or fragmentation of this habitat would hence be anticipated to have a significant and irreversible impact on habitat connectivity for grassland and riparian taxa in this landscape. To overcome this issue, part of the block should be retained (and/or restored) as natural grassland/riparian habitat in order to support the continued function of this area in providing ecological connectivity.</p> <p>Further information to support the appropriate design of ecological corridors, and protection of core native species habitat, can be found in the <b><u>ACT Biodiversity Sensitive Urban Design Guide</u></b>.</p> | <p>PCT mapping is provided on Figure 4.2 of Appendix F, which shows small patches of u19 (degraded Box Gum Woodland) associated with trees, with the remainder mapped as exotic grassland. No areas of native grassland were recorded during the survey.</p> <p>It has been recommended within the EIS to move the rocky habitat to a potential area to the east or south which is also mapped similarly.</p> <p>See Figure 4.2 of Appendix F.</p> <p>An ecological survey of the site was completed and indicated the area contains small patches of degraded Blakely's Red Gum – Yellow Box Grassy Woodland over exotic grassland.</p> <p>The development site is already set back from Dog Trap Creek, and facilities will be further set back within the site. As such a riparian/grassland corridor of at least 50 metres from the creek will be maintained.</p> <p>For full capacity facility to operate it would be unfeasible to make the design smaller. The design will only remove one mature tree on the site and plant native trees for screening. BC04 has been updated to include consideration of BSUD requirements.</p> |
| Environmental Protection Authority (EPA) | <p>EPA requires further elaboration on the feedstock management procedures that will be employed to manage/reduce acceptance of potentially PFAS containing 'compostable' food packaging and a PFAS assessment of the end product considering the guidance in the draft PFAS NEMP 3.0. This requirement is clarified as follows:</p> <p>The ACT Environment Protection Authority (EPA) refers to the scoping document which specified: 'An assessment of potential PFAS (per-and polyfluoroalkyl substances) contamination at the site and in the product is required, taking account of research undertaken by the Australian Packaging Covenant Organisation, Australia's PFAS National Environmental Management Plan and ACT initiatives to ban single use plastic packaging.'</p> <p>Table 1.1 'Section of the draft EIS where assessment requirements are addressed', indicates that this assessment is covered in Chapter 12 'Soils and Geology'. EPA notes that Chapter 12 only briefly and indirectly addresses potential PFAS contamination stating, 'FOGO facility feedstock contaminants would be managed in accordance with procedures outlined in Chapter 10'.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>The feedstock management plan would adopt appropriate management criteria upon release of PFAS NEMP 3.0 which would include:</p> <ul style="list-style-type: none"> <li>– procedures for sampling and testing of inputs to appropriately characterise PFAS content of any feedstocks identified as posing a risk of containing PFAS</li> <li>– procedures to determine whether feedstocks are suitable to meet the product requirements with respect to PFAS content</li> <li>– procedures for the management of product formulation/blending/composition to ensure PFAS content of the product meets any criteria relevant to the products proposed use</li> <li>– regular monitoring of product outputs to ensure PFAS content does not exceed any relevant criteria or concentration limits.</li> </ul>                                                                                                                                                                                                                                                                                                                            |



| Agency     | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|            | <p>Chapter 10 'Materials and Waste' includes Table 10.10 'Waste management mitigation measures' includes mitigation measures to control human health risks due to contaminants':</p> <p>'A FOGO feedstock management plan would be developed and implemented which includes:</p> <p>FOGO feedstock specification and contaminant tolerances.</p> <p>FOGO feedstock pre-sort procedures.</p> <p>Detailed feedstock sampling and monitoring program which documents sampling and other quality assurance/quality control procedures based on the allowable contaminant tolerances.</p> <p>Record keeping and reporting requirements.'</p> <p>The draft PFAS NEMP Version 3.0 is expected to be in place in time for the FOGO operation, and as such would provide the relevant guidance pertaining to the presence of PFAS in organic waste and resource recovery materials. For the reuse of domestic organic wastes, including FOGO, it considers PFAS assessment and management is likely to be required. Please provide further detail on the feedstock management procedures.</p> | <p>This would be refined in the DA stage when it is determined what the proposal would receive. This has been included in MW06.</p> <p>The PFAS NEMP 3.0 was released in 2025 with specific controls limiting the accumulation of PFAS in soils following biosolids land application. Organic products produced from the FOGO facility intended for use for soil amendment would likely be assessed for PFAS composition as well and would likely be able to similarly be used in accordance with PFAS NEMP 3.0 requirements.</p> |
|            | <p>For other relevant sections in the draft EIS, the EPA has reviewed and agrees with the findings in:</p> <p>Appendix Q: noise assessment</p> <p>Appendix O: air quality assessment: the modelling demonstrates that impacts can be mitigated by the installation of a 15m high stack.</p> <p>Appendix N: water impact assessment: noting here that the application for additional water (5ML from modelling) will be assessed against management area availability and reasonable use guidelines.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>No action required.</p> <p>Recommendation to source this water from potable water supply however this would be confirmed at DA stage. This has been updated in Appendix N.</p>                                                                                                                                                                                                                                                                                                                                                 |
| ACT Health | <p>The Health Protection Service (HPS) notes that the EIS Scoping document for the ACT FOGO Waste Facility adequately addresses the HPS comments provided on 13 June 2022.</p> <p>There are no further public health concerns in relation to the EIS.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>No action required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Icon Water | <p>1.</p> <p>There is an existing DN150 within the site, relocation or easement might be required for the proposed development.</p> <p>Capacity check will be required when more information on the development is available.</p> <p>Trade Waste will need to be consulted for any wastewater discharge to the sewer network.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <p>No action required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|            | <p>2. Liquid Trade Waste management</p> <p>The proponent must ensure our sewer system is protected from any unapproved discharge to sewer associated with the construction works.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>No action required. Consultation with the Icon Water liquid trade waste team will occur during detailed design and DA stage.</p>                                                                                                                                                                                                                                                                                                                                                                                               |



| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Response and location in EIS |
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|        | <p>Should there be a need to potentially discharge any liquid waste to sewer that is nondomestic in nature and volume, the Icon Water liquid trade waste team must be contacted.</p> <p>An application for Non-Domestic Discharge (Liquid Trade Waste) to sewer will need to be submitted to Icon Water for assessment prior to construction and operation of the site. Any discharge of non-domestic wastewater must be approved by Icon Water before discharge to sewer commences.</p> <p>Information on our Liquid Trade Waste requirements and online application forms can be found on our website [<a href="http://iconwater.com.au/LiquidTradeWaste">iconwater.com.au/LiquidTradeWaste</a>]</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                              |
|        | <p>3. No objections from a Developer services perspective. We provide the following comments to consider in the next phases of design.</p> <p>Icon Water In Principle acceptance of the development will be required. Refer to the Icon Water Asset Creation and Acceptance Process for more information.</p> <p>There are abandoned sewer main assets within the block that should be exhumed prior to development over.</p> <p>Sewer and water network capacity will be confirmed at the in principle stage of design.</p> <p>Existing sewer/water assets within and adjacent the block will require all clearances/protection from the development per Icon Water standards.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | No action required.          |
|        | <p>Potential for output product enhancement for improved regional resilience</p> <p>The Waste Management Plan (Appendix I) for the proposed facility includes FOGO inputs and mulch, compost and soil conditioner outputs, with limited elaboration on the final landscaping and soil conditioner products and distribution to consumers.</p> <p>It is possible that superior products might be generated with Icon Water inputs like biosolids-derived Agri-Ash which is a valuable source of Phosphorus and liming agent for pH correcting soils in our region, as well as water treatment solids which has desirable water holding potential properties favourable for plant resilience under more extreme climate change conditions. From ~2030 it is expected that Icon Water will replace the existing furnaces with gasifiers that will produce a biosolids-derived biochar product retaining more carbon than Agri-Ash, which will have a desirable carbon sequestration benefit when applied to soil.</p> <p>It is uncertain if product refinement and optimisation with additional inputs would occur at this facility or offsite by a third party, such as landscaping material wholesalers.</p> <p>Consideration of opportunities or provisions for incorporation of additional inputs for product optimisation would improve capability of the facility and products to provide superior value for the community.</p> | No action required.          |
|        | <p>Potential to highlight climate change benefits and opportunities</p> <p>The Climate Change Risk Assessment (Appendix P) identifies risks associated with the proposed facility without identifying broader climate change mitigation and adaptation benefits that will be realised from the facility.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | No action required.          |



| Agency                    | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|                           | <p>Section 15 of the Environmental Impact Statement (EIS) Report outlines the estimated greenhouse gas (GHG) emissions for the proposed facility. There is potential to highlight up front in the EIS Report summary that there may be a net positive GHG emission outcome compared with the existing approaches of garden organics composting and food organics landfill. Inclusion of the GHG emissions associated with the current situation (i.e. without the proposed facility) could help quantify the benefits associated with the proposal.</p> <p>It is expected that increased recovery of scarce nutrient Potassium, together with Nitrogen and Carbon, in FOGO-derived products will improve living infrastructure condition for a greener and cooler Canberra region that is more resilient to climate change conditions. Inclusion of opportunities in the risk assessment would provide context for consideration of impacts, both positive and negative.</p> <p>These benefits might be amplified with combination of Phosphorus from biosolids-derived Agri-Ash and water holding capacity from Water Treatment Solids as outlined above. Combination with a future biosolids-derived biochar from ~2030 may also fully offset operational GHG emissions associated with the facility. Icon Water has provided in-principle support for the current Australian Research Council bid submitted by the Australian National University for 'Upcycling organic waste into novel climate-friendly fertiliser products' towards realisation of this beneficial circular economy outcome.</p> <p>Consideration of climate change benefits leveraged through this proposed facility would demonstrate a balanced management of risks and opportunities for improved regional sustainability overall.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| TCCS – Development Branch | <p><b>Street Trees</b></p> <p>Noting the lack of trees surrounding and within the proposed development site, TCCS strongly recommend that the verges should be planted with trees to provide amenity, shade, and cooling to the environment in alignment with the government's target to increase canopy cover to 30% by 2045.</p> <p>With regards to the recommended street tree planning associated with the development at Hume Block 5 Section 26 (6 Recycling Road), TCCS recommend planting <i>Eucalyptus mannifera</i>, minimum 250AS pot with a 52-week consolidation. New street trees must be planted to TCCS specification, please refer to attached planting detail - Tree Planting Detail -Street Tree 2017.pdf</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Guidance for planting has been outlined in the Bushfire Risk Assessment limits this to 15% canopy cover. Table 5.2 has been updated to include Tree Planting Detail document which would be considered in development of Landscape Plan.</p>                                                                                                                                                                                                                             |
|                           | <p><b>Traffic</b></p> <p>Section 3.1.5, pg. 25 – The parking requirement and proposed provision is not analysed. Hence, please provide more details regarding parking requirements and proposed on-site provision.</p> <p>Section 4.5, pg.35-40 – Please clarify if future intersection performance was based on the future intersection layouts along Monaro Highway due to the upgrade works outlined in Section 4.1.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>A car park would be provided on-site and has been sized to accommodate the number of workers. See Figure 3.1 of Appendix E.</p> <p>It is noted that staffing levels would be confirmed as part of the detailed design and the design would ensure that the carpark is sufficiently sized to accommodate the parking demand.</p> <p>It was not. It was unclear when the upgrade works program would be completed and therefore the EIS assumed a worst-case scenario.</p> |



| Agency                        | Concerns raised                                                                                                                                                                                                                                                                                                                                                        | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| ACT Heritage Council          | 1. The potential error in the MUSIC model must be addressed and corrected and any required alterations to the Water Impact Assessment arising from addressing this matter.                                                                                                                                                                                             | The outcomes of the modelling completed for the FOGO facility concluded that the proposal would not significantly impact erosion to the creek. Report updated to reflect this.                                                                                                                                                                                                                                                                                                                                          |
|                               | [REDACTED]                                                                                                                                                                                                                                                                                                                                                             | [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                               | 3. Further information on whether there are any other reasonably practicable ways to reduce impacts to HFFPAD01. The Draft EIS identifies that there are no alternatives to impact, but this is justified with limited information. Consideration of how avoidance of HFFPAD01 would affect the feasibility of the proposal may assist in addressing this requirement. | Alternative design and locations have been updated (see Section 2.7) as well as the FOGO SHE Report.                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                               | [REDACTED]                                                                                                                                                                                                                                                                                                                                                             | [REDACTED]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Public representations</b> |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Peter Vincent                 | <b>SIZE:</b><br>IS advises that the ACT produces 25,000 tonnes of fogo material a year. Why is the proposed facility sized at 70,000 tonnes capacity? It appears the facility is intended to meet more than the needs of the ACT. The bigger the facility the more emission pollutants etc have to be dealt with.                                                      | The ACT produces about 26,000 tonnes of food waste per year. FOGO is a combination of food waste and garden organics.<br><br>The proposal is sized for future use and assumes the ACT population will continue to grow. It is expected that the facility will have an initial processing capacity of 50,000 tonnes per year. The design would incorporate modular elements to enable the capacity and operating parameter to cost-effectively expanded in future to achieve the 70,000 tonnes per year design capacity. |
|                               | <b>AIR QUALITY:</b><br>Monash meteorological site has been used as the primary source of weather and particulate data. This facility is around 6 kilometres from the intended site, well below it in                                                                                                                                                                   | The response is broken down in Table 23.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Response and location in EIS |
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|        | <p>height and separated by solid ridgelines from the site. These ridgelines can trap air flow and industrial pollutants from Hume.</p> <p>There is no mention of the Tuggeranong valley inversion layer which traps fog/wood smoke etc in winter and would likely trap pollutants from the facility, slowing dispersal and increase ground level pollutant &amp; odour spread. The 2008 power station proposal doubled planned chimney height to 30 metres to ensure effective emission spread.</p> <p>The CALPUFF modelling tool has been used to for cast odour/ pollutant spread. This model has significant limitations in term of inability to process data at the one second intervals which the human nose detects.</p> <p>Input data used starts with a poorly justified and incorrect assumption that there is currently NO odour issue effecting nearby residents stating: "it has been assumed the MLRMC (Mugga Lane Recycling Management Centre) does not impact nearby receptors" (i.e. humans). It concludes that with the added emissions from 70,000 tonnes of composting fogo material, releasing likely 345,000 cubic metres of emissions an hour (7 days a week) there won't be any detectable pollutant beyond tolerable levels. Provided plume graphics show no significant emissions over surrounding residential areas. This is not valid.</p> <p>It is made clear that modelling includes impact from the proposed facility and the MLRMC only. What about background pollution and the major impact of wood smoke etc in winter.</p> <p>The ACT requirement is for 1 kilometre separation from compost processing facilities to residential areas. The EIS claims this facility should be treated as a transfer station, based on its use of enclosed facilities. As mentioned above 345,000 cubic metres of emissions an hour (24 x7) from up to 70,000 tonnes of food and organics is not a transfer station. If treated as a composting facility (as it should be) the facility would likely not be permitted in the proposed location.</p> <p>The CALPUFF modelling tool has been set up to use Odour Units(OU) as an indicator of emission effect on humans. The EIS applies without justification OU units ranging from 2OU through to 7OU for different communities. This in effect is mandating how much impact a resident can expect/tolerate. No explanation of the impact (stench, impact on lifestyle &amp; enjoyment of home etc) of these mandated ratings is supplied. Is a rate of 2OU a serious long term impact of odour stench or a non noticeable effect. Note that the major residential areas get a 2OU rating assumption while Hume, Rose Cottage, localised isolated housing etc get higher as it is assumed a smaller population base will likely have less humans who are strongly affected.</p> <p>It is intended that facility will be built to maximum site height limit of 12 metres but will require a chimney stack 2.5 metres wide up to 3 metres above this height. As outlined above apart from being outside the permissible height I believe that design consideration for inversion layer effect will force this stack to be much higher. If the stack is not built (i.e. ground level emissions) the EIS clearly states emission levels will not meet required standards.</p> <p>Particulate matter is dismissed as a significant issue based on data from the Monash meteorological site. This is not valid as the proposed facility is 6 km away and just 300 metres west of Hume industrial estate and is ringed by ridgelines to the north west, west</p> |                              |



| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|        | <p>and south west. This would act to trap particulates etc around the industrial area , potentially leaking around the ridgelines to residential suburbs (e.g. MacArthur, Fadden, Tralee). The added impact of the proposed facility into this mix is not defined.</p> <p>The provided risk assessment identifies Air Quality&amp; Odour as a Medium risk even after all mitigations are added. This is not acceptable given the potential impacts that can and likely will ruin people's lives. I am very concerned that even this level of residual risk is based on a number of significantly questionable modelling and data inclusions that act to favour the supposedly positive EIS outcome.</p> <p><b>NOISE:</b></p> <p>The EIS explains that noise levels expected within the boundaries of the proposed facility and the overall MLRMC district will be within the ACT's mandated 65dba industrial area limit. This level is above the residential limits of 45dba in daytime and 35dba at night. Given semi-rural nature of suburbs like Macarthur, Fadden, Isaacs, Tralee etc, I suspect current levels may be well below these mandated limits.</p> <p>No analysis of the noise impact on the currently occurring and mandated noise levels of nearby residential areas is provided.</p> <p><b>COST verses technology:</b></p> <p>The EIS contains a number of recommended mitigations for noise and odour management etc. It emphasises very important mitigations including building design, chimney stack height (options of no stack or stack with height 12, 13 or 15 metres), use of wet scrubbers &amp; biofilter, air exchange rates etc. Unfortunately assessment of the EIS is by necessity based on these assumptions included (and explained) within the EIS. However the EIS also advises that each of these mitigations will be subject to final design and the need for the design to be 'economically feasible". This is a major issue as these mitigations are key in getting pollution levels etc down to even the 'Medium' risk level. Removing or modifying these mitigations would have a potentially major impact on the surrounding communities. If this happens the community needs to be advised including updated pollutant outputs and varied risk profile outcomes.</p> <p><b>Need for Proven Technology &amp; Operations:</b></p> <p>Given potentially major impacts of emissions on local businesses and residents, it is essential that this proposal provide evidence as to operational viability of comparable operational "closed composting" facilities of similar size and technical operation. Facilities offered for proof of viability should also operate on a similar basis and have geographical and climate characteristics similar to the proposed site. Offered sites should include use of core mitigations within a fully enclosed facility, wet scrubbers and chimney stack of similar height with turnover of total facility air volumes up to air three times an hour incorporating forced release to the outside air. Related findings and supporting data from a proof of concept facility should be published within the EIS. This proposal should not proceed if the proposed technology used to effectively manage high impacts cannot be absolutely proven to be viable in large volume fogo processing adjacent to residential and business locations.</p> | <p></p> <p>The noise levels would be less than 45 and 35 dBA during the day and night (respectively) based on modelling. The noise modelling only shows modelling for approximately 300 m which is an industrial area. The suburbs mentioned have trees, buildings and other obstacles in the way that would further dissipate sound to be further below the levels indicated.</p> <p>The EIS mitigation measures include considerations of best available technology to minimise odour. Refer to odour assessment which will drive these measures.</p> <p>This is detailed in Feasibility Study 2022 <b><u>FOGO-Feasibility-Study-March-2022-.pdf (act.gov.au)</u></b></p> <p><i>There are many ways to process FOGO. The ACT Government conducted detailed research and a feasibility study into processing methods to find out which method is best suited to the type of waste, and the proposed location in the ACT.</i></p> <p><i>A range of high-level options for processing technology and feedstock were considered:</i></p> <ul style="list-style-type: none"> <li>– <i>Open windrow composting – the simplest form of composting where organic waste is composted in 'piles' known as windrows with aeration to promote maturation provided through occasional mixing or via a blower with perforations under the windrows.</i></li> </ul> |

| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>– <i>In-vessel composting (IVC) – the composting process is contained within a vessel or building and aeration and temperature is controlled to optimise the composting process.</i></li> <li>– <i>Anaerobic digestion (AD), with energy offtakes in the form of electricity, injection to the natural gas grid or gas compression as transport fuel. AD occurs in the absence of oxygen in a fully enclosed vessel with controlled temperature to produce biogas (rich in methane). ‘Wet’ AD is most common and is suitable for liquid or slurry organic feedstocks, whereas ‘dry’ AD is less common and can treat a proportion of solid organic content.</i></li> <li>– <i>Co-processing of ACT FOGO material with other feedstocks such as commercial food waste, wastewater treatment sludge, agricultural residues or FOGO feedstocks from neighbouring local government areas (LGAs), using any of the technology options outlines above.</i></li> </ul> <p>The study resulted in the selection of IVC system as it would be able to minimise odour more than the other options.</p> |
|        | <p>Need for Effective Performance Reporting; Problem Reporting, Investigation and Feedback :</p> <p>Currently the reporting process for tip related issues such as offensive odour impacting residents involves reporting to Access Canberra who eventually escalate to EPA for investigation, which often happens days later. Unsurprisingly, the feedback is typically “no problem identified” or a referral to the EIS related to the tip (which identified the risk of this as Moderate), advice is therefore basically ‘thanks for the call but its all approved’. Even when raised to MLA level the response is typically “it is not cannot proven to be the tip”.</p> <p>This type of ineffective process destroys residents trust in the management of the facility and leaves residents feeling helpless and believing there is nothing they can do about an issue that potentially has a major impact on their lives. Such an approach is not fair to the community when significant harm to people’s lives and homes can result. Accordingly, if implemented the FOGO facility must be supported by effective operational monitoring and performance reporting. In addition it must include effective problem reporting, investigation and follow up. Closure of a problem should require agreement from the initial complainant. Readily available performance and problem management should be publicly available.</p> | <p>The EIS could recommend routine monitoring required for the facility and requirement to document complaints process in environmental authorisation and how to complaint was resolved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|        | <p>Need for Demonstrably Independent Assessment Processes:</p> <p>The ACT government has publicly announced the implementation of an ACT wide FOGO facility. It is the proponent for the proposed facility and is directly facilitating both the EIS</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>The final proponent of the <b>EIS</b> will be the <b>ACT</b> government. Detailed design and planning approvals will be completed by a contractor selected through a competitive</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |



| Agency          | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Response and location in EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                 | <p>and DA processes. The developed EIS and DA will then be assessed by the ACT Government and a final decision as to the implementation will be made by the relevant government minister. Construction and operation of the facility will be directly controlled by the government. Finally, once commissioned, monitoring and reporting will be performed by an ACT Government entity. None of these processes appears to have any independence in terms of opinion or advice to Ministers (and departments). It is essential for both probity and public perception reasons that independent review and advice be provided to the relevant department or minister. Given the potentially very significant impact of this proposal on the lives of thousands of people and many businesses it is essential that independent advice is provided by suitable skilled and demonstrably independent personnel. In this way the public can be assured that they can trust the relevant impacts and effects have been fully, appropriately and independently considered.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>procurement process.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Suzanne Vincent | <p><b>Odour</b></p> <p>I am concerned that the modelling used to predict odour emissions and plume spread are not a reflection of the true "on the ground" situation. In particular I am concerned about the use of averaged and mean figures that have been used in relation to temperature "observation" data which I assume were fed into the plume model.</p> <p>Use of 50th percentiles monthly minimum and maximum temps is not the reality of what occurs. The chart in the EIS (shown above) shows minimum averages in June and July of 0.4 and -0.4. In truth these temps are rarely if ever experienced. (Attaches BoM weather data).</p> <p>This chart shows that in June 2023 there were 17 days where the daily minimum temp was in the negative range from -1.3 Celsius to -5.45 Celsius. With one sequence of 12 days in a row well into the minus temps. These days were also typically days of very low winds.</p> <p>It is the winter days with cold and still mornings that typically are the most likely to have the odour issue related to the current tip. I believe this is due to cold air at ground level combined with a lack of wind.</p> <p>I believe that the fact that the area likely to be impacted by the odour emitted from the planned FOGO site gets sequences of 12 days or more of minimum temps, in a row, with these temps well into the negative means that the use of 50th percentiles and monthly averages does not reflect the reality of the climate in the affected area.</p> <p>I believe that the modelling, if based on 50th percentiles of monthly averages is not valid and will not adequately reflect the true behaviour of emission spread from the FOGO site over the Tuggeranong Valley.</p> <p>What for example would the plume chart look like if modelled on the reality of 12 days in a row of temps well into minus's and low winds.</p> | <p><b>The meteorological modelling has simulated the meteorology at the site by incorporating the hourly observations from the nearby BoM stations, as well as taking into account spatial variability such as terrain and land use.</b></p> <p>Hourly meteorological observations between 01 January 2017 to 31 December 2017 from both the Tuggeranong BoM station and the Canberra Airport BoM station have been integrated into the dispersion modelling. This includes:</p> <ul style="list-style-type: none"> <li>– 16 consecutive days with minimum temperature below 0 °C at the Tuggeranong BoM station</li> <li>– 12 consecutive days with minimum temperature below 0 °C at the Canberra Airport BoM station</li> <li>– The location of each of these stations has been taken into account, as well as terrain and land use, to produce a 3-dimensional wind field to estimate the plume dispersion and predicted impacts. Description of the meteorological modelling is provided in Appendix A of the air quality assessment report.</li> <li>– The figures shown in section 5.4 are provided to give general context about the climate and meteorology in the area. 50<sup>th</sup> percentiles and mean monthly temperatures have not been used in the dispersion modelling.</li> </ul> |
| Jane Aitjen     | <p>This is a long awaited, but sadly overdue initiative to reduce food and green waste going to landfill. I urge the Government to accelerate this initiative as fast as possible concentrating on food waste over green waste for which there are currently mechanisms in place. We already have a fantastic food composting model developed by Dr Brook</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>No action required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Agency | Concerns raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Response and location in EIS |
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|        | <p>Clinton here in the ACT which can be readily scaled up at multiple, purpose built FOGO sites. An ideal starting point would be to target apartment blocks through harnessing volunteer apartment block champions who can foster and educate their fellow residents to engage in diverting their food waste from landfill. It will be critical to ensure the proposed FOGO is overseen by experienced, scientifically qualified personnel to ensure the facility meets hygiene and odour control standards as well as producing high quality end products. This initiative has the potential to dramatically reduce methane production as well as achieving other climate action goals. We cannot delay in establishing at least one FOGO site as a start in addressing the enormous problem of food waste going to landfill.</p> |                              |



Table 23.3 Additional odour responses

| Issue raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b>Representation 2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>In the Executive Summary it is stated that the ACT produces 26000 tonnes of FOGO type material per year and yet the proposal is for a facility to handle up to 70,000 tonnes per annum. Why is this the case.</p> <p>It appears that FOGO materials external to the ACT may be brought in for processing. As a local likely to be significantly affected by the odours from the proposed facility, I am concerned that designing it to process volumes of material beyond that required to meet the needs of ACT residents will act to unnecessarily increase impacts on the surrounding communities.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>Approximately 26,000 tonnes of household food waste goes to landfill each year in the ACT. However, FOGO is a combination of food organics and garden organics. The facility will receive and process FOGO.</p> <p>The proposal is sized for future use and assumes the ACT population will continue to grow. It is expected that the facility will have an initial processing capacity of 50,000 tonnes per year. The design would incorporate modular elements to enable the capacity and operating parameter to cost-effectively expanded in future to achieve the 70,000 tonnes per year design capacity.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>Data from the Monash metrological site has been used for modelling purposes. This is a significant issue as that facility is around 6 kilometres away from the proposed facility location. The proposed location is significantly elevated above the Monash area and is ringed by ridges to the north west, west and south west. The proposed location is also to the west of the Hume industrial estate and thus has increased particulates etc trapped by the ridgelines surrounding the proposed facility area. Similarly winter 'inversion' layers combined with the surrounding raised ridge lines area will likely act to block dispersal of pollution.</p>                                                                                                                                                                                                                                                                                                                                                                                                 | <p><b>The meteorological modelling has simulated the meteorology at the site by incorporating the hourly observations from the nearby BoM stations, as well as taking into account spatial variability such as terrain and land use.</b></p> <p>Hourly meteorological observations between 01 January 2017 to 31 December 2017 from both the Tuggeranong BoM station and the Canberra Airport BoM station have been integrated into the dispersion modelling. This observational data has been used to nudge the model toward real observations, however conditions at the site were not assumed to be the same as those at either of the station locations.</p> <p>The location of each of these stations has been taken into account, as well as terrain and land use, to produce a 3-dimensional wind field to estimate the plume dispersion and predicted impacts.</p> <p>CALMET/CALPUFF was selected for meteorological and dispersion modelling as it is able to simulate the effects of time- and space-varying meteorological conditions on pollutant transport. The model is able to take into account the spatial variability of meteorological conditions.</p> <p>Description of the meteorological modelling is provided in Appendix A of the air quality assessment report.</p> |
| <p>The proposed location is also to the west of the Hume industrial estate and thus has increased particulates etc trapped by the ridgelines surrounding the proposed facility area. Similarly winter 'inversion' layers combined with the surrounding raised ridge lines area will likely act to block dispersal of pollution.</p> <p>The Tuggeranong Valley has a significant problem with wood smoke etc, partially because a cold air inversion layer forms well above the ground and acts to trap fog, smoke etc below it, until the inversion layer eventually 'burns off'. This inversion layer can be in place for extended periods of time. I see no provision in the EIS of any inclusion of, nor analysis of the inversion layer. As the Monash monitoring station is at ground level some 6 kilometres away its data does NOT include information about the inversion layer.</p> <p>The large volume of proposed emissions (up to 345,000 cubic metres an hour), combined with the site area being surrounded by ridge lines on the north west, west</p> | <p><b>The meteorological modelling simulates inversion layers at the site.</b></p> <p>CALMET, the meteorological preprocessor for CALPUFF, has been used to simulate the meteorology at and around the site. Prognostic meteorological data generated by TAPM has been read into CALMET in conjunction with observational data.</p> <p>TAPM generates a vertical temperature distribution which is then used in CALMET to calculate the maximum mixing height. Terrain is also taken into account in CALMET. These models are therefore able to simulate the inversion layers observed at the site, and inversion layers are incorporated into the dispersion modelling.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



| Issue raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <p>and south west, the impact of winter inversion layers will be significant and must be included in analysis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>In 2008 an EIS was produced for a proposed power station/ data centre to be located where the solar farm is now operating in Mugga Lane, directly adjacent to the proposed facility location. During the process the height of the main emissions release stack from the proposal was increased from around 15 metres in height to over 30 metres in height. It was stated in the EIS and design documents as being necessary to ensure pollution dispersance in winter. I see no such inclusion or analysis and resultant design variation within the draft FOGO EIS. This causes me significant concern in relation to validity of the odour and greenhouse gas plume analysis included in this EIS, especially given the planned emission release rate from the stacks of [up to 345,000 m<sup>3</sup>/hour].</p> <p>Appropriate stack heights are critical to ensure appropriate odour dispersal.</p>                                                                                                                                                                                                                                                                                                                                             | <p><b>Four biofilter variations were assessed as part of the odour assessment, included a ground level biofilter and three biofilter release stacks of varying heights (12m, 13m and 15m).</b></p> <p>The use of a stack for release of air from the biofilter is a direct recommendation of the air quality assessment due to the predicted impacts from a ground level biofilter. As part of this recommendation, three stack heights (12m, 13m, and 15m) were investigated and results were presented in the report. The 15 m stack height was found to sufficiently disperse odour emissions to achieve the required odour concentrations at the surrounding sensitive receptors.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>The draft EIS uses Odour Units (OU) to specify the presumed odour tolerance level in relation to different communities of 'sensitive receptors' (i.e. humans). However the following chart from the EIS shows that an arbitrary impact acceptance was used in the modelling. With the unit of 2 being typically applied in larger urban areas (Fadden, Macarthur, Gilmore rated 2. While 3 would be used for nearby hotel (Rose Cottage) rated 3, Hume industrial area rated 3, and Tralee . Isolated nearby residences are rated 7. It is explained that the assumption is that the bigger the population of the area the more likely there will be some people strongly affected by the emission level.</p> <p>This is an entirely arbitrary data input. There is no explanation as to what an OU level of 2 would look like compared to a 3OU or a 7OU. Would an impact of 7OU mean that very unlikely someone could live with the stench? Similarly does 2OU mean there would be no noticeable odour for the vast majority of residents or does it mean you would smell it all the time but it would not be overpowering? What would the residents of these areas think if they had access to the necessary assumptions behind these numbers?</p> | <p><b>The odour criteria used to assess risk at each sensitive receptor location have been taken from a guideline adopted by the NSW EPA for the purpose of assessing and managing activities that emit odour. The most stringent recommended odour criterion has been applied to the suburbs of Tralee and MacArthur.</b></p> <p>In the absence of ACT-specific guidelines for odour assessment, the Technical Framework for Assessment and Management of Odour from Stationary Sources in NSW (NSW Department of Environment and Conservation, 2006) and the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (NSW EPA, 2016) have been used for this odour assessment.</p> <p>This guideline <i>"offers guidance for industry, consent authorities, environmental regulators and odour specialists on assessing and managing activities that emit odour."</i> A Level 3 assessment has been undertaken in accordance with this guidance, which is described as the most comprehensive and realistic level of assessment available. This includes a refined-level dispersion model which uses site-specific input data, and compares predicted odour concentrations surrounding the site against the odour criteria described in this guideline.</p> <p>As odorous gases can be made up of a complex mixture of chemicals, assessing the concentrations of each chemical is not feasible. Therefore the standard 'odour units' metric has been adopted. This guideline describes odour units as follows:</p> <p><i>"The detectability of an odour is a sensory property that refers to the theoretical minimum concentration that produces an olfactory response or sensation. As noted in section 1.5, this point is called the 'odour threshold' and defines one odour unit (1 OU). Therefore, an odour criterion of less than 1 OU would theoretically result in no odour impact being experienced ... Based on the literature available, the level at which an odour is perceived to be of nuisance can range from 2 OU to 10 OU depending on the combination of a number of factors."</i></p> |



| Issue raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <p>Based on this definition of odour units, the Technical Framework has further defined odour assessment criteria based on population size. Justification for this method is described as follows:</p> <p><i>“Odour assessment criteria need to be designed to take into account the range in sensitivities to odours within the community, and provide additional protection for individuals with a heightened response to odours. This can be done using a statistical approach which depends upon the size of the affected population. As the affected population size increases, the number of sensitive individuals is also likely to increase, which suggests that more stringent criteria are necessary in these situations. Therefore, the odour assessment criteria allow for population size, cumulative impacts, anticipated odour levels during adverse meteorological conditions and community expectations of amenity.”</i></p> <p>The most stringent criterion described in this guideline has been applied in the odour assessment for the neighbouring suburbs of MacArthur and Tralee, due to the large number of people that may be impacted by emissions of odour. Less stringent criterion has been applied for other sensitive receptors around the proposal site based on the estimated population at each of these locations.</p> |
| <p>Use of a 99th percentile OU means that in effect for one hour in every hundred the anticipated OU figure may not apply. This could mean that in the modelling, for one hour in every 4 days the emissions may exceed the forecast level for that area. This is NOT an acceptable assumption. Residents can't have a solution where the risk of bad emissions outcomes is not fully included. A model allowing for an average of one bad hour every 4 days is not acceptable.</p> | <p><b>Using the 99<sup>th</sup> percentile odour concentrations for comparison against the identified criteria is based on recommendation from the relevant guideline, the Technical Framework.</b></p> <p>The odour criteria have been taken from the Technical Framework, as described above. This guideline, as well as the accompanying Technical Notes document, specifies that these criteria are to be applied to the 99<sup>th</sup> percentile concentrations for a Level 3 assessment. Assessment against the odour criteria has been undertaken in accordance with the Technical Framework.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>The EIS explains that the CALPUFF modelling used cannot handle a 1 second averaging times. It explains that: [...]</p> <p>This scenario means that odour levels may be significantly higher (and more offensive to the nose) for periods well over the one second that the nose can detect. But in the modelling this is averaged over a longer period. This is not the reality that people will be living with. Our noses don't average a smell over an extended period.</p>    | <p><b>A peak-to-mean ratio has been applied to convert predicted hourly concentrations to peak 1-second concentrations, in accordance with the Technical Framework and the Approved Methods.</b></p> <p>The CALPUFF modelling undertaken as part of the odour assessment is indeed limited to a minimum time step of one hour. The Technical Framework guidance, as described above, describes a peak-to-mean ratio for this purpose. A peak-to-mean ratio is a conversion factor that adjusts mean dispersion-model predictions to the peak concentrations perceived by the human nose, i.e. it estimates the peak 1-second concentration based on the hourly average concentration.</p> <p>The Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (NSW EPA, 2016) describe factors for estimating peak concentrations in Table 6.1. The sources used the odour assessment include area sources and a wake-affected point source. The recommended factors for these source types range from 1.9 to 2.3. The maximum recommended peak-to-mean ratio of 2.5 has been applied to all odour</p>                                                                                                                                                                                                                                      |



| Issue raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <p>The draft EIS advises that: [...]</p> <p>This is a misleading statement and requires qualification.</p> <p>Odour emissions are a fact of life in the residential areas (Macarthur, Fadden, Gilmore etc) around the current tip area which is adjacent to where the FOGO facility is proposed. I live in central Fadden and can smell the current tip facility regularly although not frequently and not always of an overpowering strength. However on approximately 6 occasions I have found the stench so overpowering that I had to report it to Access Canberra (and sent copies to my local MLA). The response from ACT services has varied from nothing found (turns out the complaints were followed up either the next day or a couple of days later). On another occasion a manager rang and advised it was a fact of life and had been spelt out as a risk in the EIS for the MLRMC and had been accepted as an ongoing risk. The idea being that we have to live with it.</p> <p>It is not realistic to assume that if an odour is around at a specific day in specific conditions that it will continue to be around for days. Thus to say that four 'odour surveys' were conducted in residential areas and found nothing is like saying that we monitored four times to see if it was raining, it was not, so it must not rain.</p> <p>I am concerned that the issue of current odour impacts from the MLRMC area are being downplayed in this EIS.</p> | <p>emission rates. The predicted odour impacts describe in the report are based on a peak 1-second duration for each hour.</p> <p>Odour surveys were provided by ACT No Waste, undertaken by SLR. These were used to gain an understanding of the existing air quality conditions. The odour surveys took into account wind direction and were undertaken at increasing distances downwind of the landfill to gain an understanding of plume extent.</p> <p>Odour surveys were conducted by an odour assessor who had successfully undertaken and complied with the odour assessor sensitivity screening protocol in accordance with AS/NZS 4323.3:2001 <i>Stationary source emission – Part 3: Determination of odour concentration by dynamic olfactometry</i>.</p> <p>Four odour sampling events were conducted over 2021 and 2022, each of which included three odour surveys. Surveys were performed at different times of day to capture various meteorological and operating conditions and included periods with wind directions from the east.</p>                                                                                                                                                                                                                                                                                                                       |
| <p>The odour plume assessment in this report does not reflect current reality let alone the addition of major odour source and volumes from the FOGO facility. The analysis is flawed and does not reach valid conclusions. Indeed one stated assumption in Appendix 'O' is:</p> <p><i>"Cumulative assessment has been undertaken based on assumptions about the MLRMC layout, odour concentrations and operations. No source odour sampling was provided and this was undertaken using representative odour data. Based on odour sampling survey results, it has been assumed the MLRMC does not impact the nearby sensitive receptors."</i></p> <p>I see no evidence of a defensible systematic odour sampling having taken place nor of an effective survey process. The stated assumption is dangerous and not appropriate.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>Cumulative impacts from the MLRMC and the green waste facility to the north have been assessed by including these facilities in the dispersion modelling and assessing the predicted impacts.</b></p> <p>The assumption that the MLRMC does not impact the nearby sensitive receptors was based on the odour surveys undertaken around the site, as well as the limited number of odour complaints received. Despite this assumption, further assessment of cumulative impacts was undertaken to ensure impacts from the additional operations would not lead to unacceptable impacts.</p> <p>Impacts from the MLRMC and green waste facility to the north have been estimated and included in the dispersion modelling as part of the cumulative assessment. The layout and operations at each site has been estimated based on aerial imagery as well as a GHD site visit. As odour sampling of each source at the separate facilities was not feasible, representative worst case odour emission rates have been estimated using odour sampling from facilities which undertake similar operations.</p> <p>Dispersion modelling results from the MLRMC landfill and the green waste facility are presented separately, as well as with the proposed FOGO facility. Predicted odour concentrations were below the defined odour criteria for all sensitive receptors.</p> |
| <p>Appendix 'O' advises that ACT policy mandates separation distances between polluters and 'sensitive receivers' (people). It then explains that the distance from composting works is specified as a 1000m minimum. It then advises that this is</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p><b>The separation distance document has not been used to demonstrate compliance but rather to provide context to the facility and the potential impacts. However, all areas considered sensitive as per the ACT separation</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



| Issue raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| <p>intended for open composting as varied from this proposals' enclosed composting which would be more appropriate to consider the facility as you would a waste transfer station (mandated separation 300 metres).</p> <p>This appears a deliberate downplay to ensure that the 'sensitive receptors' in Hume, localised isolated houses and Tralee come outside the mandated distance. This is not acceptable. The reality is that this facility is not a transfer station and it will process up to 345,000 tonnes of food waste a year with likely 345,000 cubic metres of emissions being pumped to air every hour, 365 days a year. That is not a transfer station and clearly a number of 'sensitive receptors' are too close to the intended site.</p> | <p><b>distance guideline are outside of the 1000 m buffer distance specified for composting works.</b></p> <p>The Environment Protection Authority (EPA) in several states has specified separation distances between industrial land uses that emit odour or dust and sensitive land uses. These guidelines are published as one method of considering potential conflicts between incompatible land uses. These are recommendations only, and there is always opportunity for a proponent to demonstrate compliance with relevant legislative requirements through other methods.</p> <p>The Separation Distance Guidelines for Air Emissions (ACT Government, 2018) has been used for this assessment.</p> <p>The separation distance described for composting of 1000 m was considered inappropriate, as this is based on outdoor, open-air composting which allows all odour emissions to be directly released to the atmosphere. Operations at the proposed facility will be enclosed within an area under negative pressure, and all air will be treated by a biofilter prior to release. Therefore odour will be significantly reduced prior to emission compared with an open air facility.</p> <p>However, all areas considered sensitive as per the ACT separation distance guideline are outside of the 1000 m buffer distance specified for composting works.</p> <p>Additionally, further assessment including dispersion modelling has been undertaken to ensure any impacts at these receptors are compliant. The inclusion of separation distance recommendations in the odour assessment provides context to the facility and the potential impacts. The separation distances have not been used to demonstrate compliance.</p> |
| <p>It is worth noting that in my experience in the current situation, when tip odour is offensive, it is typically in the morning when conditions are cool and calm. I note that the graphic wind direction charts supplied, show that for a significant period of time wind is from the east which would cause it to move odour over the suburbs such as Fadden, Gowrie, Chisholm, Isaacs. I am not sure that this scenario has been fully included in the plume dispersion charts provided.</p>                                                                                                                                                                                                                                                              | <p><b>The meteorological modelling has simulated the meteorology at the site by incorporating the hourly observations from the nearby BoM stations, as well as taking into account spatial variability such as terrain and land use. The modelled wind conditions at the site include winds from the east (between 45° and 135° from north) 25% of the time and calm conditions 13.2% of the time.</b></p> <p>Hourly meteorological observations between 01 January 2017 to 31 December 2017 from both the Tuggeranong BoM station and the Canberra Airport BoM station have been integrated into the dispersion modelling. This includes:</p> <ul style="list-style-type: none"> <li>- Winds from the east (between 45° and 135° from north) 25% of the time at the Tuggeranong BoM station and calm conditions (wind speeds less than 0.5 m/s) 23.8% of the time</li> <li>- Winds from the east (between 45° and 135° from north) 27% of the time at the Canberra Airport BoM station and calm conditions 5.4% of the time</li> </ul> <p>The location of each of these stations has been taken into account, as well as terrain and land use, to produce a 3-dimensional wind field to estimate the plume dispersion and predicted impacts. Description of the meteorological modelling is provided in Appendix A of the air quality assessment report.</p>                                                                                                                                                                                                                                                                                                                                                                                     |



| Issue raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| <p>The EIS advises that Particulate Matter levels as identified through the Monash meteorological station are not significant even when combined with those anticipated from the FOGO facility. This is an invalid assumption. As previously explained the proposed facility will in effect be directly west (about 1 km) of the Hume Industrial area. The FOGO facility will be well down below ridgelines that go from the north west to the south. In effect this ridgeline acts to interrupt the movement of airborne odours, particulates etc from Hume across to the west. Thus the level of particulates detected at Monash meteorological station over the ridge and 6 kilometres away to the west would bear little similarity to those likely to be located around the FOGO facility. The particulate matter analysis within the report is not appropriate and needs to be reworked.</p> | <p>The modelled wind conditions at the site include winds from the east (between 45° and 135° from north) 25% of the time, and calm conditions 13.2% of the time.</p> <p><b>Particulate matter concentrations from the Monash AQMS have been included as there are no nearer air quality monitoring stations to the site. These observations provide context to the general air quality of the region, rather than site specific conditions. The outcomes of the dust assessment would not change with variation of the background data.</b></p> <p>Emissions of particulate matter will predominantly occur during the construction phase of the project. Operations will be within an enclosed shed under negative pressure. All process air will be treated by an odour control system prior to discharge to the environment which will likely consist of a number of wet scrubbers and biofilter. Therefore, particulates from operations will be captured. Based on this, emissions of particulate matter during operation are anticipated to have negligible impact.</p> <p>Construction emissions have been assessed using the Institute of Air Quality Management's <i>Guidance on the assessment of dust from demolition and construction</i>. This assessment takes into account the distance between the construction works and sensitive receptors, as well as the estimated dust emission magnitude of the construction works. This guidance only requires a detailed assessment when receptors are located within 350 m of the site (updated to 250 m in the latest version). The only receptor within this distance is the Hume industrial area, which is considered a low sensitivity receptor due to the current operations in this area. A detailed assessment in accordance with this guidance has been undertaken, and overall risks from construction emissions were found to be at most low risk.</p> <p>Furthermore, emissions of particulate matter will be short-term and will cease during operations.</p> <p>In the absence of site-representative air quality monitoring data, data from the Monash AQMS has been referred to. The annual average concentration has been used to assess sensitivity to human health, however due to the distance between the site and the receptors even if the greatest annual average bracket was used (&gt;32 µg/m<sup>3</sup>) the sensitivity would remain unchanged. Therefore differences between the ambient air quality at the site and at the Monash AQMS location are not anticipated to affect the outcomes of the assessment.</p> |
| <p>Given the EIS advises that the Product Storage Shed (to be used for storage of treated product before shipment or for additional storage) will not be fully enclosed. From an odour, pest and insect management perspective I would have thought this area should be fully enclosed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Treated product is not anticipated to emit an offensive odour therefore enclosure is not required for this material.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Extract from Table E.1 Medium or Higher Risk summary (inherent and mitigated) [indicates air quality and odour inherent risk is High, and mitigated risk is Medium]</p> <p>Given the issues I have raised above, and the MITIGATED risk identified in the draft EIS (table above), acceptance within the EIS acting to support the go ahead for the FOGO facility is not appropriate. Asking the community (potentially thousands of people) to accept a MEDIUM risk (based on seriously questionable assumptions and</p>                                                                                                                                                                                                                                                                                                                                                                       | <p>Based on the responses provided above, the risks identified in the EIS are still considered suitable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



| Issue raised                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Response |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <p>modelling) of unacceptable odour impacting their lives and enjoyment of their homes is not appropriate. As explained above, I do not accept the odour nature and dispersion modelling within this report is correct or valid.</p> <p>Experience with the odour issues related to the current tip facility has demonstrated that residents complaining are treated as the problem and are typically ignored or fobbed off with minimal explanation. Bear in mind that typically locals no longer report odour issues as they have found, as I did that it is a waste of time. Perhaps that is the management strategy. This is demonstrated by the draft EIS advising that 9 complaints were made (within the year chosen to look at in the EIS) and of these a cause was NOT found for the odour triggering any of the complaints. Thus to show the Mitigated Risk of increased community complaints as LOW is not realistic. How can this rating be justified when we know that complaints already occur and will increase and are very unlikely to be treated seriously or that any viable fix will be available.</p> |          |

## **23.5 Future consultation**

ACT NoWaste will continue to engage with the community and stakeholders during the detailed design, DA stage and construction phases of the proposal.



## 24. Conclusion and justification

This EIS addresses the matters specified in the EPSDD Scoping Document dated 19 July 2022 (Application Number 202200016). It has been prepared to assess the potential environmental impacts of the development of the proposed new Hume FOGO facility on Block 5, Section 26 Hume, Recycling Road.

The proposal would provide the ACT with the capability to receive and process up to 70,000 tonnes per year of FOGO waste using in-vessel composting technology. The proposal would divert organic waste from landfill and produce various grades of FOGO-derived products such as mulch, compost and soil conditioners.

The proposal would enable robust, long-term capability for the ACT to manage FOGO waste consistent with:

- The ACT's new Circular Economy reform package (strategy and legislation).
- Key Territory and Federal Government resource recovery and landfill diversion targets including:
  - The National Waste Policy Action Plan target of halving the amount of organic waste sent to landfill for disposal by 2030.
  - The ACT Waste Management Strategy 2011-25 target of increasing the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill.
- Community expectations in regard to maximising resource recovery and minimising waste to landfill.

Consultation has been undertaken with relevant stakeholders, including ACT Government, relevant landowners, the local communities, nearby businesses and special interest groups and RAOs, during preparation of the EIS. Matters raised by these stakeholders have been considered when assessing potential impacts and developing management measures.

A detailed list of committed mitigation measures has been developed. These measures are to be implemented with the aim to avoid or reduce potential impacts on environmental values within or in proximity to the proposal site. They include planning and design features, construction management commitments, and operational management commitments.

It has been assessed for all matters considered, that provided that the committed mitigation measures are implemented, that the proposal would be unlikely to cause significant adverse environmental impact.

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# Appendices



# **Appendix A**

## **EIS Scoping Document**

# **Appendix B**

## **Scoping document checklist**



| Scoping Document reference                  | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Location in EIS     |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 1. Cover Page                               | The cover page must clearly display the following: <ul style="list-style-type: none"> <li>– The name of the proposal (proposal title)</li> <li>– The block identifier(s) and street address for the proposal</li> <li>– The date of the preparation of the document</li> <li>– Full name and postal address of the designated proponent</li> <li>– Full name and postal address of the designated applicant</li> <li>– Name and contact details of the person/organisation who prepared the documents (if different to the above)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Page 4              |
| 2. Glossary                                 | Provide a glossary of technical terms, acronyms and abbreviations used in the EIS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Page 4              |
| 3. Executive Summary                        | Provide a non-technical summary of the EIS including a description of the proposal, key findings and recommendations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Page 4              |
| 4. Introduction                             | Summarise the proposal background and justification for the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Chapter 1           |
| <b>5. Proposal Details</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Section 1.2         |
| 5.1 Project Description                     | Provide a description of the proposal, including: <ul style="list-style-type: none"> <li>a. The objectives and justification for the proposal;</li> <li>b. The location of the land to which the proposal relates, including detailed maps;</li> <li>c. The division and/or district names and block and/or Section numbers of the land under the <i>Districts Act 2002</i>;</li> <li>d. If the land is leased – the lessee's name;</li> <li>e. If the land is unleased or public land – the custodian of the land;</li> <li>f. The purposes for which the land may be used;</li> <li>g. A clear identification of all lands subject to direct disturbance from the proposal and associated infrastructure and geomorphic features such as waterways and wetlands. This is to be supported by a map showing all affected lands;</li> <li>h. An outline of any developments that have been, or are being, undertaken by the proponent, or other person(s) or entities, within the proposal area and broadly in the region. Describe how the proposal relates to these developments;</li> <li>i. A description of all the components of the proposal, including the proposal specifications, the predicted timescale for implementation (design, approvals, construction and decommissioning) and proposal life;</li> <li>j. A plan/description of the precise location of any works to be undertaken, structures to be built or elements of the proposal that may have relevant impacts; and</li> <li>k. A description of the construction methodologies for the proposal.</li> </ul> | Chapter 2           |
| 5.2 Alternatives to the proposal            | As background for the proposal, provide details of any alternatives considered in developing the proposal including a description of: <ul style="list-style-type: none"> <li>a. Any alternatives to the proposal and provide reasons for selecting the preferred option with and analysis of site selection as an attachment to the EIS</li> <li>b. The criteria used for assessing the performance of any alternative to the proposal considered</li> <li>c. Any matters considered to avoid or reduce potential impacts prior to the selection of the preferred option and</li> <li>d. Details of the consequences of not proceeding with the proposal</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Section 2.7         |
| <b>6. Legislative and Strategic Context</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Section 3           |
| 6.1 Statutory Requirements                  | The description must include information on statutory requirements for the preparation of an EIS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Section 3.1 and 3.2 |



| Scoping Document reference                | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Location in EIS          |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                                           | <ul style="list-style-type: none"> <li>– <i>Planning and Development Act 2007</i> (including confirmation of relevant Schedule 4 triggers based on impacts identified in the scoping document and any studies undertaken in preparing the draft EIS)</li> <li>– <i>Planning and Development Regulation 2008</i></li> <li>– <i>Waste Management and Resource Recovery Act 2016</i></li> <li>– Related statutory approvals</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |
| 6.2 Other requirements                    | <p>The description must also include information on how each of the following has been considered in the preparation of the EIS and the development of the proposal:</p> <ul style="list-style-type: none"> <li>– Territory Plan 2008</li> <li>– ACT Planning Strategy</li> <li>– National Capital Plan</li> <li>– Sustainability Policies</li> <li>– Relevant Environment Protection Policies and Separation Distance Guidelines for Air Emissions:<br/>(<a href="https://www.environment.act.gov.au/environment/legislation_and_policies">https://www.environment.act.gov.au/environment/legislation_and_policies</a>)</li> <li>– Environment Protection Act</li> <li>– ACT Waste Management Strategy 2011-2025</li> <li>– ACT Waste Feasibility Study</li> <li>– Other relevant planning and environmental guidelines and management plans</li> </ul>                            | Section 3.4              |
| <b>7. Risk Assessment</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Chapter 4                |
| 7.3.1 Risk Assessment Methodology         | Provide a risk assessment in accordance with the Australian and New Zealand Standard for risk management AS/NZS ISO 31000:2009 <i>Risk management – Principles and guidelines</i> . The proposed criteria for determining which risks are potentially significant impacts must be described.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Chapter 4                |
| 8. Assessment of impacts                  | Sufficient information is required to provide the Authority with an adequate understanding of the environmental impacts associated with the proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Chapters 6 to Chapter 21 |
| 8.1.1 Environmental conditions and values | Describe the environmental conditions and identify the environmental values for the environmental themes identified in Table 1 of the Scoping Document. This section should discuss the baseline conditions for the area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |
| 8.1.2 Investigations                      | Identify the findings and results of any environmental investigation in relation to the land to which the proposal relates.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |
| 8.1.3 Impacts                             | Describe the effects of the environmental impact as a result of construction and operation of the proposed development for the environmental themes identified in Table 1 (including those in the proponent's risk assessment) (including cumulative, consequential and indirect effects) on physical and ecological systems and human communities. Particular emphasis should be placed on the potentially significant impacts identified in the risk assessment and this scoping document. Include a discussion of the timeframes of impacts i.e. short or long term, their nature and extent and whether they are reversible or irreversible, unknown or unpredictable. Include an analysis of the significance of the relevant impacts. Information must include any technical data and other information used or needed to make a detailed assessment of the relevant impacts. |                          |
| 8.1.4 Mitigation                          | <p>Discuss the safeguards and mitigation measures proposed to be taken for the environmental management of the land to which the proposal relates for the environmental themes identified in Table 1 (including those in the proponent's risk assessment). This is to include:</p> <ol style="list-style-type: none"> <li>A description and an assessment of the proposed impact prevention, mitigation or offsetting measures to deal with the environmental impact of the proposal, along with which stage the mitigation measures will be adopted</li> <li>Any statutory or policy basis for the mitigation measure</li> <li>An outline of an environmental management plan (EMP) that sets out the framework for continuing management, mitigation and monitoring</li> </ol>                                                                                                    |                          |



| Scoping Document reference                 | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Location in EIS         |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
|                                            | <p>programs for the relevant impacts of the action, including any provisions for independent environmental auditing</p> <p>d. The frequency, duration and objectives of monitoring proposed</p> <p>e. The name of the agency responsible for endorsing or approving each mitigation measure or monitoring program</p> <p>f. A description of the cost effectiveness of environmental mitigation or rehabilitation measures proposed and the expected or predicted effectiveness of those measures</p>                                                                                                                                                                                |                         |
| 8.1.5 Residual risk                        | Provide a table that details the residual risk for the potentially significant impacts identified for the environmental themes in Table 1 and the proponent's risk assessment. A residual risk assessment is only required where the significance of impact is determined as medium or above. The calculation of the residual risk should take into account the influence of implementation of mitigation or offsetting measures on the impacts identified by the risk assessment. A discussion of how the calculations were determined should also be included, including the expected or predicted effectiveness of the mitigation measures.                                       |                         |
| <b>8.2 Detailed requirements</b>           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                         |
| 8.2.1.Planning and land status             | <ul style="list-style-type: none"> <li>– Include a description of the planning context of the area where the proposal will be located.</li> <li>– Describe the planning and development status of any land or proposal relevant to the proposal.</li> <li>– Describe the land use of the proposed land and any land to be affected (including, but not limited to, zoning, lessee(s) or custodian of the land, the permissibility of the proposed use defined in the Territory Plan).</li> <li>– Investigate the impact the proposal will have on surrounding uses and whether the proposal will limit existing or future uses for the surrounding businesses/residences.</li> </ul> | Chapter 5               |
| 8.2.2 Traffic and transport                | <ul style="list-style-type: none"> <li>– Investigate the traffic impacts of the construction and operation of the facility on Mugga Lane and the Monaro Highway including consideration of whether continued safe and efficient movement of vehicles accessing the facility, relating to other activities such as the Mugga Landfill or the materials recycling facility, is not impeded by road network arrangements.</li> <li>– Undertake a Transport Impact Assessment (TIA) in accordance with Transport Canberra and City Services (TCCS) Transport Impact Assessment Guidelines.</li> <li>– The TIA must include intersection analysis of the nearby roads.</li> </ul>         | Chapter 6<br>Appendix E |
| 8.2.3 Utilities                            | <ul style="list-style-type: none"> <li>– Describe current utilities on and surrounding the site.</li> <li>– Provide details of new connections and any proposed relocation.</li> <li>– Provide details of any proposed discharge of liquid trade waste required.</li> <li>– Information must be provided regarding utility works that are required as part of the proposal and mitigation measures proposed to avoid contamination.</li> </ul>                                                                                                                                                                                                                                       | Chapter 7               |
| 8.2.4 Biodiversity and nature conservation | <ul style="list-style-type: none"> <li>– Provide a description of ecological values on and adjacent to the site.</li> <li>– Identify whether the development is within the Built-Up Urban Area determined by the Tree Protection Act.</li> <li>– Provide a Tree Assessment and Tree Management Plan if the development is determined to be within the Built-Up Urban Area. If the development is outside the Built-Up Urban Area, then the Tree Protection Act requirements don't apply.</li> <li>– Include consideration of whether the removal of trees will be a key threatening process under the Nature Conservation Act</li> </ul>                                             | Chapter 8<br>Appendix F |
| 8.2.5 Heritage                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chapter 9<br>Appendix H |



| Scoping Document reference        | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Location in EIS          |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                                   | <ul style="list-style-type: none"> <li>– Provide a Cultural Heritage Assessment (CHA) to assist in determining any possible heritage impacts from the development proposal. The CHA must:</li> <li>– Be undertaken by a suitably qualified archaeologist</li> <li>– Include the information as required by the Heritage Council's Cultural Heritage Reporting policy</li> <li>– Include consultation with Representative Aboriginal Organisations (RAOs) about the heritage significance of any identified Aboriginal places and objects, and the impacts of the proposed development or activity on Aboriginal places and objects.</li> <li>– If the CHA identifies that proposed works will cause damage or diminish the significance of heritage places, recommendations must be presented to comply with Heritage Act 2004 provisions. This must include consideration of alternatives to avoid heritage impacts, and if these alternatives are not reasonably practicable, measures that could be adopted to minimise heritage impacts.</li> </ul> |                          |
| 8.2.6 Materials and waste         | <ul style="list-style-type: none"> <li>– Describe the nature, location and quantities of all materials (including hazardous wastes) to be handled on the site, including the assessment, storage, stockpiling, processing and disposal of materials and waste.</li> <li>– Provide details of expected finished compost volumes and export rates.</li> <li>– Outline management procedures in case of oversupply and/or stockpiling of waste and any consideration to the measures implemented when/if the facility ceases operation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 10               |
|                                   | <ul style="list-style-type: none"> <li>– Prepare an Operational Waste Management Plan in accordance with TCCS Waste Code.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Appendix I               |
|                                   | <ul style="list-style-type: none"> <li>– Describe any hazardous materials and dangerous chemicals to be used or stored on site during construction and operation.</li> <li>– Identify any Schedule 11 hazardous chemical, as per Work Health and Safety Regulation 2011 (WHS Regulation).</li> <li>– Provide details of maximum storage capacities for any hazardous chemicals.</li> <li>– Provide safety data sheets for any hazardous chemicals.</li> <li>– Identify whether any Schedule 11 hazardous chemicals meet the placard quantity as per the WHS Regulation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chapter 19<br>Appendix R |
| 8.2.7 Landscape and visual        | <ul style="list-style-type: none"> <li>– Undertake a visual assessment of the site and surrounds to describe the current landscape character of the area.</li> <li>– Describe the predicted impacts the facility and its operations (such as incoming wastes, composting material, and potential stockpiling) may have on the landscape character of the site and surrounds.</li> <li>– Provide perspectives and/or a visual analysis of the proposal from local vantage points.</li> <li>– Consider visual impact to the Monaro Highway and consistency with Development Control Plan 171/09/0001.</li> <li>– Consider lighting impacts in relation to pilot distraction.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                   | Chapter 11<br>Appendix J |
| 8.2.8 Soils and geology           | <ul style="list-style-type: none"> <li>– Describe the soil and geology features of the area.</li> <li>– Provide an environmental assessment of potential existing contamination from previous and adjacent land uses at the development site undertaken by a suitably qualified environmental consultant.</li> <li>– An assessment of potential PFAS (per- and poly-fluoroalkyl substances) contamination for the site is required.</li> <li>– Discuss any contamination impacts that are present at the site (soil and groundwater), and how the site will be remediated (if required).</li> <li>– Describe the potential impacts of leachate/contaminant spills on the local soils.</li> </ul>                                                                                                                                                                                                                                                                                                                                                        | Chapter 12<br>Appendix K |
| 8.2.9 Water quality and hydrology | <ul style="list-style-type: none"> <li>– Describe the surface water and groundwater features of the area.</li> <li>– Investigate the impact the proposal will have on erosion in the Dog Trap Creek and investigate the need for erosion and sediment control structures in the creek to mitigate this impact.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Chapter 13<br>Appendix N |



| Scoping Document reference            | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Location in EIS          |
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|                                       | <ul style="list-style-type: none"> <li>– Provide an assessment of peak stormwater discharge and stormwater discharge volume from the facility and consideration of the impact of stormwater discharges to the Dog Trap Creek.</li> <li>– Describe how runoff from the development site will be treated before entering the receiving environment.</li> <li>– Provide information on stormwater retention and reuse capabilities at the development site.</li> <li>– Describe the potential impacts of leachate/contaminant spills on local groundwater and surface water.</li> <li>– Provide information on measures to manage leachate/contaminants emanating from the facility to avoid impacts on groundwater and surface water.</li> </ul>                                                                                                                                                                                                 |                          |
| 8.2.10 Air quality and climate change | <ul style="list-style-type: none"> <li>– Provide an air quality and odour impact assessment completed by a suitably qualified environmental consultant which considers the air discharges from the facility and their impact on the surrounding environment. The assessment must take into consideration cumulative impacts from surrounding land uses. The assessment must be carried out in accordance with the "NSW EPA Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales".</li> <li>– The assessment must consider dust impacts on the surrounding developments.</li> <li>– The air quality and odour assessment must identify suitable mitigation measures.</li> <li>– The assessment must include an Air Quality Management Plan which describes proposed mitigation and monitoring of air quality impacts and preventative controls such as maintenance measure and process management.</li> </ul> | Chapter 14<br>Appendix O |
|                                       | <ul style="list-style-type: none"> <li>– Provide evidence showing net emissions from the operation of the facility.</li> <li>– Provide quantitative estimates of the Scope 1 and 2 greenhouse gas emissions that will be generated by the proposed development during operation.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Chapter 15<br>Appendix P |
| 8.2.11 Socio-economic and health      | <ul style="list-style-type: none"> <li>– Provide an assessment of impacts from the operation harbouring vermin and pest animals.</li> <li>– Outline vermin and pest control measures encompassing both the transport and storage of organic waste on site.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter 17               |
| 8.2.12 Noise and vibration            | <ul style="list-style-type: none"> <li>– Provide a noise and vibration impact assessment regarding the operation of the facility prepared in accordance with the "Guidelines for the preparation of Noise Management Plans for development applications Environment Protection Authority, February 2014"</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chapter 18<br>Appendix Q |
| 8.2.13 Hazard and risk                | <ul style="list-style-type: none"> <li>– Provide an assessment of the potential threat of fire occurring at the facility, such as risk in relation to fire in stockpiled material, any effect on the surrounding area that a fire may have, and the protection measures necessary to address the potential threat of fire.</li> <li>– Outline management procedures to be followed should critical infrastructure failure occur.</li> <li>– Describe any hazardous materials and dangerous chemicals to be used or stored on site during construction and operation.</li> <li>– Provide assessment and mitigation measures against the requirements of the "National Airport Safeguarding Framework (NASF)" and airport operations including "Guideline C - Managing the Risk of Wildlife Strikes in the Vicinity of Airports."</li> <li>– Provide a Wildlife Management Program in accordance with the NASF Guidelines.</li> </ul>            | Chapter 19<br>Appendix R |
|                                       | <ul style="list-style-type: none"> <li>– A bushfire assessment must be undertaken by a suitably qualified person.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chapter 20<br>Appendix S |



| Scoping Document reference              | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Location in EIS                                                             |
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|                                         | <ul style="list-style-type: none"> <li>A climate change risk assessment is required addressing the risk from increased events from flood, bushfire or extreme heat risk.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 16<br>Appendix P                                                    |
| <b>Entity Requirements</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                             |
| 8.3.1 ACT Emergency Services Agency     | <p>ACTF&amp;R has reviewed the Application for Environment Impact Statement Scoping documents. These documents acknowledge the proposed development is located within bushfire prone area, and that bushfire risk would be considered during the EIS process.</p> <p>ACTF&amp;R require a bushfire assessment to be completed and submitted for review for this development. Due to the nature of the facility, ACTF&amp;R recommend the assessment includes provision of shielding (non-combustible fencing) to the perimeter of the block to assist with prevention of fire travel into facility from grassland hazard in the event of a bushfire.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 20<br>Appendix S                                                    |
| 8.3.2 Canberra Airport                  | <p>We acknowledge the application document references the NASF Guidelines and the proponent will undertake a Bird and Wildlife Assessment (Guideline C). The site is just under 9km away from the airport and so it lies between the Area B and Area C of the NASF Guideline C, this details a Mitigate and Monitor action plan for dealing with birds and wildlife. A thorough investigation is required by the proponent. We are happy to provide contact details of preferred consultants if required.</p> <p>We also request that Guideline E- lighting and pilot distraction be regarded to, we acknowledge that this would be addressed under the NCA Outdoor Lighting policy.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 19                                                                  |
| 8.3.3 Climate Change and Energy (EPSDD) | <p>The documentation provided suggests that there are overall environmental benefits of processing organic waste in a FOGO facility, compared to sending that waste to landfill. However, it is not clear from the available information whether the proposed development will result in an overall reduction in net greenhouse gas emissions. Climate Change and Energy Division recommends that the proponent is required to provide evidence that gives assurance there will be a reduction in net emissions by diverting waste from landfill.</p> <p>If the proposal has the potential to be a significant emitter and may impact on the ACT's greenhouse gas emissions targets, the proponent will need to provide quantitative estimates of the Scope 1 and 2 greenhouse gas emissions that will be generated by the proposed development during operation. Mitigation and/or offsetting measures proposed and the extent to which they reduce emissions must also be quantified. Estimates must be calculated in a way that is comparable to the greenhouse gas emissions targets in the Climate Change and Greenhouse Gas Reduction Act 2010.</p> <p>The Climate Change and Energy Division notes the proximity of the proposed development to the Mugga Lane Solar Park. The Division recommends the proponent is required to consider the potential impacts (e.g. dust) of the development on the solar facility.</p> <p>If the proponent is assessing flood, bushfire or extreme heat risk, the Division advises that the impacts of climate change also need to be considered in the EIS, ideally through a climate change risk assessment. The Division encourages the use of NARClm regional downscaled climate propositions for any reference to the ACT's future climate. More information can be found here:<br/> <a href="https://www.climatechange.environment.nsw.gov.au/climate-proposals-USEDADAPTNSW?elqTrackId=f72f9814d12b4d16ba7df19f02bf31e5&amp;elqaid=83&amp;elqat=2">https://www.climatechange.environment.nsw.gov.au/climate-proposals-USEDADAPTNSW?elqTrackId=f72f9814d12b4d16ba7df19f02bf31e5&amp;elqaid=83&amp;elqat=2</a></p> | Chapter 14,<br>Chapter 15<br>and Chapter 16<br><br>Appendix O<br>Appendix P |
| 8.3.4 Conservator of Flora and Fauna    | <p>Terrestrial biodiversity impacts of the development are likely to be negligible and additional assessment is not required. However, there are several major concerns regarding potential impacts to Dog Trap Creek which are required to be included in the Scoping Document and addressed in the EIS process. In particular, the EIS will need to incorporate potential impacts of the future operation of the facility in addition to the impacts during construction. The specific items for inclusion are:</p> <p><b>1. Increased erosion</b></p> <p>The degraded state and active erosion of Dog Trap Creek is a major concern. Increased development adjacent to the creek will increase the hydrologic stress on this system, leading to further erosion. Ideally, creek stabilisation</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Chapter 13<br>Appendix F<br>Appendix N                                      |



| Scoping Document reference                     | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Location in EIS          |
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|                                                | <p>works are needed in conjunction with increasing development in the catchment. The EIS should consider the need for erosion and sediment control structures in the creek.</p> <p><b>2. Stormwater control</b></p> <p>The EIS should include assessment of peak discharge and discharge volume and demonstrate that the facility will have no impact.</p> <p>In addition, the EIS should demonstrate how all runoff from the development site will be treated before entering the receiving environment and consider retention of stormwater and stormwater reuse on-site.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
|                                                | <p><b><u>Bushfire Risk</u></b></p> <p>Whilst the proposal has identified that it will consider bushfire risk in the EIS, I suggest the following should be the minimum elements that should be considered:</p> <ul style="list-style-type: none"> <li>– Risk of bushfire impacting the facility. Particularly addressing any required asset protection zones, the construction standards of any buildings, the siting of any stockpiles and windrows of flammable materials.</li> <li>– Fire originating on the site affecting other lands. Construction, and Operational phases. Measures to reduce the likelihood of fire ignition and spread, including conditions around the safety of plant and equipment to minimise risk of ignition, and on when construction or operations should cease for safety.</li> <li>– Asset protection zones. These must be located within the site boundary and maintained by the operator. Any impacts of APZ on the environment to be assessed as part of the EIS.</li> </ul> <p>Irrespective of the above the proponent should conduct a full risk assessment of potential natural hazards and risks, including flooding.</p> | Chapter 20<br>Appendix S |
|                                                | <p><b><u>Impacts to connectivity</u></b></p> <p>The proposal is adjacent to undeveloped land and, as identified in the preliminary assessment, there are a range of potential conservation values present. The habitat connectivity mapping prepared by the ACT Government notes that the site is located in an area of Moderate to High value for its potential to improve habitat connectivity. As part of the biodiversity assessment, the proposal should assess the risk associated with the development from the perspective of habitat connectivity.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Chapter 8<br>Appendix F  |
|                                                | <p><b><u>Impacts to biodiversity</u></b></p> <p>The type of facility being proposed for this development holds a risk for attracting vermin and associated predators, which can then impact on adjacent lands and biodiversity. The EIS should consider this risk in the operational phases.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Chapter 8<br>Appendix R  |
|                                                | <p><b><u>Potential presence of Striped Legless Lizard</u></b></p> <p>The Scoping Document refers to an inspection performed by my team in 2020 that determined the vegetation on the site was too degraded to support Striped Legless Lizard (SLL).</p> <p>Prior to European settlement, this section of Dog Trap Creek was natural temperate grassland or open woodland which was primary habitat for this species. Recent surveys (post 2020) in the Jerrabomberra area have recorded SLL in degraded vegetation. Advice received from an expert in this species is that the site does have potential to support a population. Possible SLL habitat in this vicinity is subject to a number of development proposals which represent a cumulative threat to the conservation of this species. For this reason, I require a targeted SLL survey to be undertaken on the site as part of the EIS. This is required to ensure that the proposal does not pose a threat to SLL.</p>                                                                                                                                                                                   | Chapter 8<br>Appendix G  |
| 8.3.5 Environmental Protection Authority (EPA) | <p><b>Air Emissions:</b></p> <p>A quantitative assessment of the potential air quality and odour impacts on the surrounding area and details of all proposed mitigation, management and monitoring measures. This assessment must be carried out in accordance with the NSW EPA Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 14<br>Appendix O |



| Scoping Document reference | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Location in EIS                               |
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|                            | <b>Noise Emissions:</b><br>A noise impact assessment prepared in accordance with the "Guidelines for the preparation of Noise Management Plans for development applications Environment Protection Authority, February 2014"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Chapter 18<br>Appendix Q                      |
|                            | <b>Water:</b><br>An assessment of surface water and leachate management must be included in the EIS documentation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Chapter 13<br>Appendix N                      |
|                            | <b>Contamination:</b><br>An environmental assessment of the site to determine whether it is suitable for the proposed uses from a contamination perspective. Whilst the proponent can be made aware of this requirement it can be covered off in the DA process rather than the EIS.<br>An assessment of potential PFAS (per- and poly-fluoroalkyl substances) contamination at the site and in the product is required, taking account of research undertaken by the Australian Packaging Covenant Organisation, Australia's PFAS National Environmental Management Plan and ACT initiatives to ban single use plastic packaging.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Chapter 12<br>Appendix K                      |
|                            | <b>Advice</b><br>It should be noted that if approved, the proponent will be required to hold an Environmental Authorisation (EA) granted by the EPA. The EA will be required to be obtained following approval of a Development Application and prior to operations commencing on the site. The EPA will set a range of conditions in the EA including setting limits on emissions and managing and monitoring emissions and impacts on the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Appendix C                                    |
| 8.3.6 ACT Health           | Odour impacts associated with the facilities' operation on surrounding receptors should be identified and assessed and mitigation measures should be discussed within the EIS.<br>The applicant is advised that The HPS supports the implement standard mitigation measures, actions and studies in table 8 of the EIS scoping document (refer to page 45-49).<br>The HPS supports that a contamination assessment should be undertaken as part of the EIS as indicated in the ACT FOGO waste facility EIS Scoping Document 4.5 Soils and contamination.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 12 and 14<br>Appendix O<br>Appendix K |
| 8.3.7 ACT Heritage         | <div style="background-color: black; height: 20px; width: 100%;"></div> <div style="background-color: black; height: 20px; width: 100%;"></div> <div style="background-color: black; height: 20px; width: 100%;"></div> <p>3. A Cultural Heritage Assessment (CHA) of the potential Aboriginal heritage impacts of the proposal, which must:</p> <ol style="list-style-type: none"> <li>Be undertaken by a suitably qualified archaeologist;</li> <li>Be informed by consultation with Representative Aboriginal Organisations (RAOs) about: the cultural and heritage significance of any identified Aboriginal places and objects; the potential heritage impacts of proposed development; and proposed management outcomes;</li> <li>Meet the information requirements of the Council's Cultural Heritage Reporting policy, which is available at <a href="https://www.environment.act.gov.au/heritage/publications-and-resources">https://www.environment.act.gov.au/heritage/publications-and-resources</a>;</li> <li>If the CHA identifies that proposed works will cause damage or diminish the significance of heritage places, recommendations must be presented to comply with <i>Heritage Act 2004</i> provisions; and</li> <li>This CHA is to be submitted directly to the Council for review, and for advice on any additional <i>Heritage Act 2004</i> requirements.</li> </ol> <div style="background-color: black; height: 20px; width: 100%;"></div> | Chapter 9<br>Appendix H                       |



| Scoping Document reference | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Location in EIS                        |
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|                            | <p>a. Preparation of an Excavation Permit application by suitability qualified specialists, and including a Research Design and Methodology;</p> <p>b. Where the application relates to Aboriginal places and objects, consultation with RAOs regarding the proposed investigation, its methods and the management of any objects recovered;</p> <p>c. Submission of the application to the Council under section 61E of the <i>Heritage Act 2004</i>; and</p> <p>d. Following approval of the application under section 61F of the <i>Heritage Act 2004</i>, completion of the investigation in accordance with the conditions of that approval.</p> <p>5. If the above assessment actions identify that the proposal may have detrimental heritage effects, all alternatives to heritage impacts must be considered and adopted where reasonably practicable. Where alternatives are not reasonably practicable, measures to minimise heritage impacts must also be considered and adopted.</p> <p>Note: The EIS must redact information on some heritage places and objects, including in attached heritage reports, as:</p> <ul style="list-style-type: none"> <li>- [REDACTED]</li> <li>- Information on Aboriginal places and objects is culturally sensitive and should not be made public in accordance with Traditional Custodians views. It is also an offence under section 55 of the <i>Heritage Act 2004</i> to make information on some Aboriginal places at Hume publicly available.</li> </ul> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> |                                        |
| 8.3.8 Icon Water           | <p><b><u>Trade Waste</u></b></p> <p>All connections to sewer that are classified as Liquid Trade Waste (any non-domestic sewage) must apply to Icon Water's Liquid Trade Waste team for approval before connection to sewer. This will include any discharge to sewer from this facility. Further information on acceptance requirements for liquid trade waste can be found on the Icon Water website <a href="http://www.iconwater.com.au/tradewaste">www.iconwater.com.au/tradewaste</a>.</p> <p>In this circumstance at a minimum the ACT FOGO waste facility will need a current Icon Water Approval to discharge to sewer. A new trade waste application must be submitted. A consultation may be required to ascertain the likely discharge and discuss any pre-treatment requirements or if some waste must be collected for off-site disposal. The ACT FOGO waste facility will also need to consider how they are going to manage their liquid wastewater during construction and any potentially contaminated ground or surface water. This water must not be discharged to sewer without approval from Icon Water.</p> <p>Icon Water Liquid Trade Waste team contact information is Email: <a href="mailto:trade.waste@iconwater.com.au">trade.waste@iconwater.com.au</a><br/>Phone 02 6248 3222.</p>                                                                                                                                                                                                                                                    | Chapter 7 and Chapter 13               |
|                            | <p><b><u>Environment</u></b></p> <p>The site is potentially contaminated with Heavy Metals / Hydrocarbons / Asbestos overlay. The EIS notes that a contamination study will be done. This will need to take into account Icon Water assets and ensuring that any</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Chapter 7 and Chapter 12<br>Appendix K |



| Scoping Document reference                                              | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Location in EIS          |
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|                                                                         | connections and movement of pipelines done through the proposal are done ensuring contamination does not occur to the pipeline.<br>The contamination study should be provided to Icon Water to help us future manage the infrastructure we have in the area as well.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |
| 8.3.9 National Capital Authority (NCA)                                  | The site is identified as an urban area in the National Capital Plan (the Plan) and the proposed land use is permitted under the Plan. Any future development application on this site will need to consider visual impact to the Monaro Highway and be consistent with Development Control Plan 171/09/0001.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Chapter 5                |
| 8.3.10 Transport Canberra and City Services (TCCS)                      | TCCS had no comments for the EIS scoping stage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NA                       |
| 9. Community and stakeholder consultation                               | The intention of the consultation in this scoping document is to ensure significant proposals include meaningful engagement with the community in the early stages of the proposal and provide clear expectations and an understanding of the actual development proposed. Consultation also provides an opportunity for the community to contribute to the design of the proposal and to resolve any major concerns early in the planning stages.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 23<br>Appendix T |
| 9.1 Consultation must be undertaken with:                               | <ul style="list-style-type: none"> <li>– Lease holders and land managers of land potentially impacted by the proposal.</li> <li>– Any recreational groups which may be affected by the proposal.</li> <li>– Any volunteer conservation, landscape management or land care groups active in the area to be affected by the proposal, such as the Molonglo Conservation Group and the Isaacs Ridge Mount Molonglo Conservation Group and the Isaacs Ridge Mount Mugga Mugga ParkCare Group.</li> <li>– The local community and businesses owners and employees. This includes local community groups such as the Tuggeranong Community Council, the Jerrabomberra Residents Association and other community groups in the Southern Central Canberra area.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Chapter 23<br>Appendix T |
| 9.2 Provide a consultation report that includes:                        | <ul style="list-style-type: none"> <li>– A description of the methodology and criteria for identifying stakeholders and how they were identified. Details and plans must be provided showing potential impacts on the local and wider community to justify how stakeholders were identified.</li> <li>– An outline of the communication methods used. A variety of communication methods must be adopted to ensure all stakeholders are engaged appropriately, such as face to face, email/letters, community meetings and information sessions and website notifications.</li> <li>– Details on the information provided during the community consultation process. Note: A plain English statement explaining the proposal and conceptual drawings must be made available to the community and stakeholders.</li> <li>– A summary of the responses and the main comments raised. Evidence must be provided demonstrating that consultation has been undertaken with each relevant group/person and provide specific detail on how these concerns were addressed.</li> <li>– A description on how any concerns have been considered and identify any changes that have been made to the proposal.</li> <li>– Consultation must occur as early as possible and avoid, or make allowances for public holidays, school holidays and the summer holiday (Christmas) shutdown period. The level of engagement must be comparable with the size, location and nature of the development and potential impact on the wider community.</li> </ul> | Chapter 23<br>Appendix T |
| 9.3 Consideration of public representations from Draft EIS notification | The revised EIS must include a consultation report outlining the representations received, issues raised in the representations and a response to the issues and values identified. The summary response must clearly identify the representation(s) to which the responses relate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Chapter 23               |
| 10. Recommendations                                                     | Provide a summary of any commitments to impact prevention, mitigation measures, offsetting measures and other actions within the EIS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Chapter 22               |



| Scoping Document reference             | General requirements for the EIS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Location in EIS          |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
|                                        | Describe the monitoring parameters, monitoring points, frequency, data interpretation and reporting proposals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |
| 11. Other relevant information         | The proponent may wish to include issues outside the scope of the EIS as a separate section of the EIS. This allows the proponent to identify matters not required to be addressed in the EIS, but that would be subject to development assessment consideration and notification. This can provide additional context for members of the public regarding management of environmental issues, by ensuring that the public is aware that these issues will be addressed in the detailed design of the proposal.                                                                                                              | Chapter 21               |
| 12. References                         | A reference list using standard referencing systems must be included.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Chapter 25               |
| 13. Required Appendices                | All relevant additional documentation and specialist studies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Appendices               |
| 13.1 Scoping document for the EIS      | A copy of the scoping document should be included in the EIS. Where it is intended to bind appendices in a separate volume from the main body of the EIS, the scoping document should be bound with the main body of the EIS for ease of cross-referencing.                                                                                                                                                                                                                                                                                                                                                                  | Appendix A               |
| 13.2 Scoping document reference        | Include a table that cross-references the EIS to the scoping document. If the EIS addresses the scoping document in multiple places, then this must be also referenced.                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Appendix B               |
| 13.3 Proponent's environmental history | Provide details of any proceedings under a Commonwealth or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against: <ul style="list-style-type: none"> <li>– The person proposing to take the action.</li> <li>– For an action for which a person has applied for a permit, the person making the application.</li> <li>– If the person proposing to take the action is a corporation, then provide details of the corporation's environmental policy and planning framework. Enough information is required to satisfy s136(4) of the EPBC Act.</li> </ul> | Appendix C               |
| 13.4 Information Sources               | For information given the following must be stated: <ul style="list-style-type: none"> <li>– The author or any reports or studies.</li> <li>– The publication date.</li> <li>– The source of the information.</li> <li>– How recent the information is (i.e. when a study was conducted or when primary sources were produced).</li> <li>– How the reliability of the information was tested.</li> <li>– What uncertainties (if any) are in the information.</li> </ul>                                                                                                                                                      | NA                       |
| 13.5 Study team                        | The qualifications and experience of the study team and specialist sub-consultants and expert reviewers must be provided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Appendix D               |
| 13.6 Specialist studies                | All reports generated based on specialist studies undertaken as part of the EIS are to be included as appendices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Appendix E to Appendix T |
| 13.7 Research                          | Any proposals for researching alternative environmental management strategies or for obtaining any further necessary information should be outlined in an appendix.                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                       |

# **Appendix C**

## **Proponent's Environmental History**



ACT NoWaste is a subunit established by CED to implement the ACT Government's Waste Management Strategy 2011-2025. This strategy aims to reach a waste-free society through:

- Community commitment,
- Avoidance and reduction,
- Resource recovery,
- Residual waste management,
- Creative solutions.

The main goal of the ACT Government's Waste Management Strategy is to ensure ACT leads innovation to achieve full resource recovery and a carbon neutral sector. This can be seen through the following objectives:

- Less waste generated,
- Full resource recovery,
- A clean environment,
- A carbon neutral waste sector.

The FOGO facility is another step to achieve these objectives while acting with excellence, safety, respect, integrity, collaboration, and innovation within waste management.

ACT NoWaste has not had any compliance issues with the EPA or any legal proceedings in Commonwealth, State or Territory for impacts to the protection of the environment or for the conservation and sustainable use of natural resources. It is committed to the protection of the environment and sustainability set by CED through the Waste Management Strategy.

ACT NoWaste operates and maintains an Environmental Management System to the CED and has a team of qualified and experienced environmental professionals to guide, monitor and report on ACT NoWaste's environmental performance.

ACT NoWaste has historical commitment to the environment. This can be seen through their current waste strategies. These include:

- ACT Waste Feasibility Study
- Waste Management Development Control Code
- National Waste Policy
- Waste Levy
- ACT Waste-To-Energy policy
- Used Packaging Materials
- Draft ACT Circular Economy Strategy

ACT NoWaste is acting to relieve pressure on raw material use and reuse, reduce greenhouse gas emissions, and ensure Canberra remains a clean safe place to live and enjoy. It does this through recognising the essential role waste management plays in the economy and acting to ensure employment and future development is as sustainable as possible.

# Appendix D

Study Team



| Role                          | Name                                                  | Qualification                                                                                                                                             |
|-------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Director              | Kevin Earle                                           | Bachelor of Engineering (Civil, Hons) University of Melbourne, 1996                                                                                       |
| Technical reviewer            | Anna Montgomery                                       | Bachelor of Civil and Environmental Engineering (Hons – 1st), 2004                                                                                        |
| Concept design                | Martin Gravett                                        | Bachelor of Engineering (Construction), Curtin University, 1990                                                                                           |
| Lead EIS authors              | Rachel Stuckey                                        | Bachelor of Science (Chemistry), Australian National University, 2021<br>Bachelor of Environment and Sustainability, Australian National University, 2021 |
| Support EIS authors           | Alice Kelly                                           | Bachelor of Science (Biology/Earth Science, Hons- 1st), Australian National University, 2022                                                              |
|                               | Ruby Abbott                                           | Bachelor of Environment and Sustainability, Australian National University, ongoing                                                                       |
| Planning                      | Rachel Stuckey                                        | As above.                                                                                                                                                 |
| Traffic                       | Mark Leigh Lucas                                      | Bachelor of Applied Science (Geography), University of New South Wales, 2005                                                                              |
| Utilities                     | Martin Gravett                                        | As above.                                                                                                                                                 |
|                               | Rachel Stuckey                                        |                                                                                                                                                           |
| Biodiversity                  | Andrew Smith                                          | PhD (Avian Population Ecology), 2009<br>Bachelor of Science (Environmental Biology), 2004                                                                 |
|                               | Rhys Cairncross                                       | Bachelor of Science / Advanced (Hons), 2022                                                                                                               |
| Striped Legless Lizard Survey | Robert Speirs (Capital Ecology)                       | Bachelor of Applied Science (Ecology), CEnvP                                                                                                              |
| Heritage                      | Nicola Hayes (Navin Officer Heritage Consultants)     | Bachelor of Arts and Science, Australian National University, 2001<br>Graduate Diploma Arts (Archaeology), Australian National University, 2003           |
|                               | Jasmine Fenyvesi (Navin Officer Heritage Consultants) | Bachelor of Archaeological Practice, Australian National University, 2018                                                                                 |
| Waste                         | Anna Montgomery                                       | As above.                                                                                                                                                 |
| Landscape and visual          | Sophie Rae                                            | Postgraduate Diploma of Landscape Architecture, 2007<br>Bachelor of Architecture and Landscape, 2003                                                      |
| Soils and contamination       | Helen Milne                                           | Master of Science (Environmental Analysis & Assessment), 2002<br>Bachelor of Science (Environmental Geology, Hons), 1999                                  |
|                               | Henry Luo                                             | Bachelor of Engineering (Environmental/Chemical, Hons), 2001                                                                                              |
|                               | Rachel Stuckey                                        | As above.                                                                                                                                                 |
| Hydrology                     | Rod Towner                                            | Bachelor of Engineering (Civil, Hons – 1st), 2009                                                                                                         |
| Air quality                   | Evan Smith                                            | Bachelor of Engineering (Environmental), Griffith University, 2003                                                                                        |
| Greenhouse gas                | Damien Mulvanah                                       | Bachelor of Engineering (Mechanical, Hons), University of Sydney, 2017<br>Bachelor of Science (Physics), University of Sydney, 2017                       |
| Climate change                | Oliver Maennicke                                      | Diplom-Ingenieur (German equiv. Master of Engineering) (Water Resources Management), 2010                                                                 |
| Socioeconomic                 | Rachel Stuckey                                        | As above.                                                                                                                                                 |
| Noise and vibration           | Evan Milton                                           | Bachelor of Engineering, University of New South Wales, 2002                                                                                              |
| Hazard and risk               | Fiona Duncan                                          | Bachelor of Engineering (Chemical), Royal Melbourne Institute of Technology, 1997                                                                         |

| Role                   | Name        | Qualification                                                                                                                                    |
|------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |             | Bachelor of Business (Administration), Royal Melbourne Institute of Technology, 1997                                                             |
| Bushfire               | Mick George | Graduate Diploma of Bushfire Protection, Western Sydney University, 2021<br>Bachelor of Science (Forestry), Australian National University, 2000 |
| Community consultation | Kelly Munro | Graduate Certificate (Marketing)<br>Bachelor of Science (Environmental Science)                                                                  |



# **Appendix E**

**Traffic and transport impact assessment**

# **Appendix F**

## **Biodiversity Assessment Report**



# **Appendix G**

**Striped legless lizard survey**

# **Appendix H**

## **Cultural Heritage Assessment**



# **Appendix I**

## **Operational Waste Management Plan**

# **Appendix J**

## **Landscape and Visual Impact Assessment**



# **Appendix K**

## **Preliminary Site Investigation**

# **Appendix L**

**Sampling analysis and quality plan**



# **Appendix M**

**Targeted site investigation**

# **Appendix N**

## **Water Quality and Hydrology Report**



# **Appendix O**

## **Air Quality Impact Assessment**

# **Appendix P**

## **Climate Change Risk Assessment**



# **Appendix Q**

## **Noise and Vibration Impact Assessment**

# **Appendix R**

## **Preliminary hazard assessment**



# **Appendix S**

## **Bushfire Risk Assessment**

# **Appendix T**

## **Engagement Report**





→ The Power of Commitment