

ACT MATERIALS RECOVERY FACILITY

ADDENDUM TO APPENDIX G LANDSCAPE AND VISUAL IMPACT ASSESSMENT REPORT

Prepared for Veolia Environmental Services (Australia) Pty Ltd | 2 April 2025

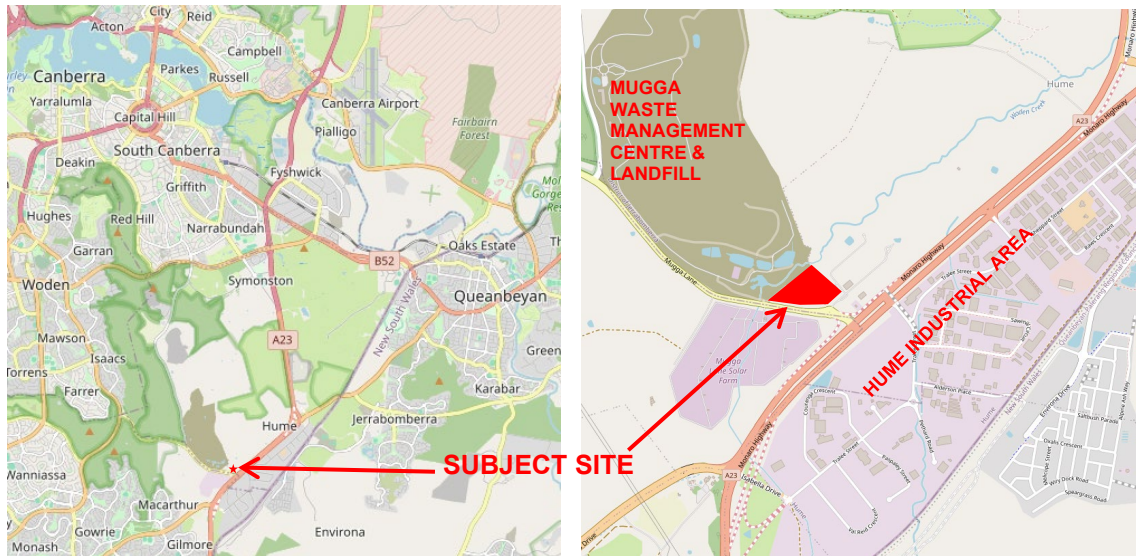


Introduction

This report is prepared as an Addendum to *Appendix G Landscape and Visual Impact Assessment Report* prepared by GHD for ACT NoWaste in 2023 and submitted with a draft EIS for a new Materials Recovery Facility (MRF) on Block 12 Section 25 Hume, refer Figure 1.

Since that time ACT NoWaste has passed the responsibility to finalise the EIS to Veolia. GHD are not in a position to complete the EIS and as such, Veolia has engaged Element Environment to undertake this work.

Figure 1: Site Location



Veolia has made changes to the proposed site layout and design of the MRF to achieve operational efficiencies (refer Figure 2 & 3).

Figure 2: Veolia Revised Site Plan



Figure 3: GHD Concept Plan



The GHD *Appendix G Landscape and Visual Impact Assessment Report* considered the impacts of a concept site layout including a 12 metre (m) high building with a gross floor area (GFA) of 13,591m². The Veolia design proposes a building 13.5m high with a GFA of 11,747m². The revised building will be set back 10m from Mugga Lane, the same as the GHD concept and will extend into the site a similar distance to the GHD concept. As such, although the building will be 1.5m higher at the ridge line of the roof, the overall bulk and scale, and therefore visual impact, will be similar.

Additional Investigations

The GHD study classified the broader area into three Landscape Character Zones (LCZs). The three LCZs identified include:

- LCZ1: Hume Industrial Estate.
- LCZ2: Undulating farmland.
- LCZ3: Undulating residential.

These LCZs covered an area extending to 5km from the MRF site. In addition, six immediate viewpoints plus three additional longer distance viewpoints were assessed. A summary of the GHD conclusions of their assessment of the landscape character and local viewpoints is provided in Table 1 and Table 2.

Table 1: Summary of landscape impacts

LCZ	Description	Sensitivity to change	Magnitude of change	Overall Rating
LCZ1	Hume Industrial Estate	Low	Low	Low
LCZ2	Undulating rural	Low	Negligible	Negligible
LCZ3	Undulating residential	Low	Negligible	Negligible

Table 2: Summary of visual impacts

Viewpoint	Location	Sensitivity to change	Magnitude of change	Overall Rating
VP01	John Cory Road	Moderate	Low	Moderate-Low
VP02	Mugga Lane (east)	Low	Low	Low
VP03	Mugga Lane (west)	Low	Low	Low
VP04	Monaro Highway	Low	Low	Low
VP05	Wanniassa Hills Nature Reserve	Moderate	Low	Moderate-Low
VP06	Couranga Crescent	Negligible	Negligible	Negligible

The building will have a slightly smaller overall GFA than the concept building considered in the GHD assessment but will be taller at the peak roof ridgeline by 1.5m. Based on the minor change to the building design it is not considered that additional landscape character nor visual impact investigations are necessary for the revised Veolia design.

Assessment

GHD concluded the significance of impact for LCZ1 would be low, as the sensitivity is low and the magnitude is low. For LCZ2 and LCZ3 GHD concluded that the significance of impact would be negligible, as the sensitivity is low, and the magnitude is negligible.

The minor increase in height of the proposed building will not result in any changes to the GHD conclusions in regard to the Landscape Character Zones. The higher building is considered relatively consistent with other buildings in the Hume Industrial Estate (LCZ1). The building will be visible within the estate and add a new element to the immediate area. However, the area includes existing industrial buildings, including the existing MRF, and therefore has capacity for the changes proposed. There are no significant additional landscape and visual impacts due to the increase in building height under the Veolia proposed development plan.

As such, the proposed mitigation measures, which are repeated in Table 3 below, remain relevant for the Veolia MRF development proposal.

Table 3: Mitigation measures to be implemented for the proposal

Potential impact	Measures to reduce impact
Design materiality	<p>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.</p> <p>The DCP Guidelines states that ‘The roof should be of pre-coated metal of low reflectivity’. This should be taken into consideration when specifying colorbond metal roofing finishes.</p> <p>Avoid or minimise the use of shiny or reflective materials to minimise associated visual impacts on surrounding sensitive receivers..</p>
Landscaping	<p>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.</p> <p>Increasing the density of planting along the proposal site boundaries, to minimise visual impacts of the buildings, car parking, and ancillary structures and equipment, following DCP planting requirements.</p> <p>Planting screening vegetation within the proposal site boundary along John Cory Road, to minimise visual impacts experienced from the Tuggeranong Heritage Track.</p> <p>Avoid the clearing of trees where possible, to retain the existing character values.</p>
Signage and services	<p>Where possible, minimise visual impacts of signage by:</p> <ul style="list-style-type: none"> Minimising signage dimensions. Avoiding brightly illuminated signage. Employing high quality signage design. Locating signage on buildings rather than freestanding.
Construction activity and storage	<p>Take all practical measures to ensure construction equipment, storage areas, and other visible elements are located away from key views to or from the sensitive visual receivers identified in this assessment.</p> <p>Ensure general tidiness of the proposal site is maintained during construction.</p> <p>Avoid conducting works in evenings and nights where possible, to minimise impacts from lighting.</p> <p>Where works cannot be located away from trees, provide tree protection to ensure they are not damaged.</p> <p>All areas disturbed by construction and ancillary works are to be rehabilitated to their previous condition.</p> <p>During construction, employ screening measures to assist the site in blending into the surrounding area.</p> <p>Choice of screening is to be sympathetic to the existing rural setting (e.g. neutral colours or green depending on location).</p>

Conclusions

It is therefore concluded that the proposal is unlikely to have an additional adverse landscape or visual impact to that assessed in *Appendix G Landscape and Visual Impact Assessment Report* prepared by GHD for ACT NoWaste in 2023 and submitted with a draft EIS for a new Materials Recovery Facility (MRF) on Block 12 Section 25 Hume.



Hume Materials Recovery Facility

Landscape and Visual Impact Assessment


Transport Canberra and City Services

15 August 2023

→ The Power of Commitment



→ The Power of Commitment

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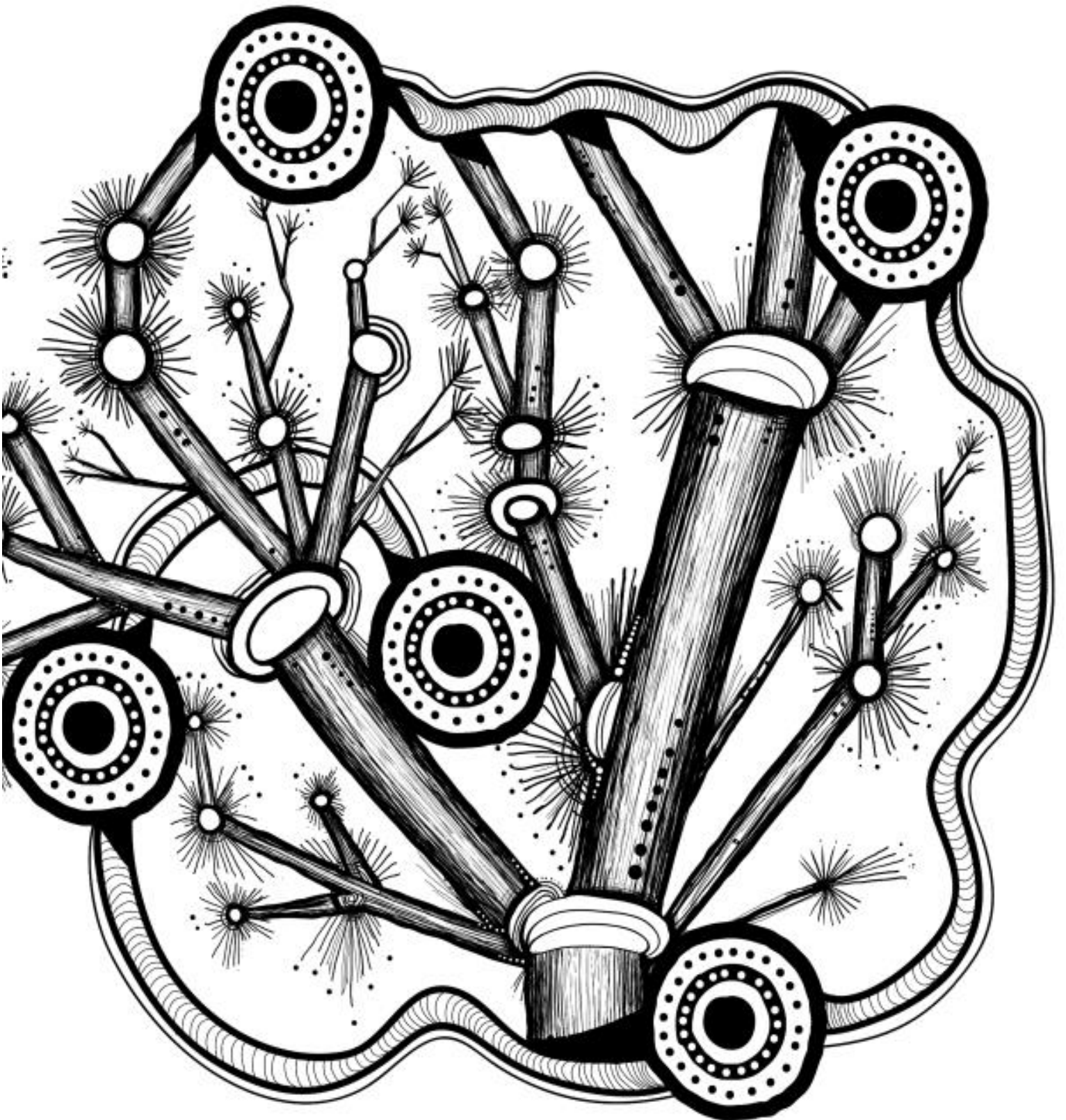
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Acknowledgement of Country

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, present and future, 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.



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Terminology

Terminology	Definition
Aesthetics	Relating to the sense of the beautiful or science of aesthetics, i.e. the deduction, from nature and taste, the rules, and principles of beauty
Impact	The effect of a project, which can be adverse or beneficial, when measured against an existing condition
Landscape	All aspects of a tract of land, including landform, vegetation, buildings, villages, towns, cities and infrastructure
Landscape character	The combined quality of built, natural and cultural aspects which make up an area and provide its unique sense of place
Landscape character zone	An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately nearby
Magnitude	The measurement of the scale, form and character of a development project when compared to the existing condition. In the case of visual assessment this also relates to how far the project is from the viewer. Combines with sensitivity, magnitude provides a measurement of impact
Proposal	The construction and operation of the proposed materials recovery facility in Hume, Australian Capital Territory
Proposal site	The area within which all the proposal construction and operational elements will be contained within
Sensitivity	The sensitivity of a landscape character zone or view and its capacity to absorb change of the nature of the Project. In the case of visual impact this also relates to the type of viewer and number of viewers. Combined with magnitude, sensitivity provides a measurement of impact
Significant	In the context of Environmental Impact Assessment, after analysing the extent (type, size, scope, intensity, and duration) and nature (predictability, resilience of the environment, reversibility, ability to manage/mitigate, level of public interest) of a project, an expected level of impact of a project which requires an EIS to be undertaken. The term should be avoided in landscape character and visual impact assessments if the expected level of impacts is below the threshold
Study area	Consists of land in the vicinity of, and including, the proposal site. The study area is a wider area surrounding the proposal site as defined in this assessment, including land that has the potential to be indirectly impacted by the proposal
View	The sight or prospect of a landscape or scene
Viewpoint	The point from which a view is observed that represents a visual receiver
Viewshed	The area within which a project can be seen at eye level above ground. Its extent will usually be defined by a combination of landform, vegetation and built elements
Visibility	The state or fact of being visible or seen
Visual impact	The impact on the views from residences, workplaces, and public places
Visual receiver	Individuals and/or defined groups of people who have the potential to be affected by a proposal
Zone of Theoretical Visibility	A map, usually digitally produced, showing areas of land within which, a development is theoretically visible

¹Partially adapted from: *Environmental impact assessment practice note EIA-N04 - Guideline for landscape character and visual impact assessment, Version 2.2* (Transport for New South Wales, 2020).

Abbreviations and meaning

Abbreviations	Meaning
3D	Three dimensional
AASC	Australian Archaeological Survey Consultants
ACT	Australian Capital Territory
AFAC	Australasian Fire and Emergency Service Authorities Council
AHD	Australian Height Datum
CAR	Civil Aviation Regulations
COAG	Council of Australian Governments
CHMA	Cultural Heritage Management Australia
CDS	Container deposit scheme
DCP	Development Control Plan
EIS	Environmental Impact Statement
ESRI	Environmental Systems Research Institute
FOGO	Food Organics and Garden Organics
GHD	GHD Pty Ltd
GIS	Geographic Information System
HRRE	Hume Resource Recovery Estate
IZ1	General Industry
km	Kilometre
LCZ	Landscape character zone
LGA	Local Government Area
LVIA	Landscape and visual impact assessment
m	Metre
MRF	Materials Recovery Facility
NCOSS	National Capital Open Space System
NCP	National Capital Plan
NPA	National Partnership Agreement
NSW	New South Wales
NUZ1	Non-Urban Broadacre
PAD	Potential Archaeological Deposits
TCCS	Transport Canberra and City Services
tpa	tonnes per annum
VP	Viewpoint
ZTV	Zone of theoretical visibility

1. Introduction

The following sections provide an overview of the proposal, the purpose and scope, and the structure of the report.

1.1 Overview

The ACT Government is proposing to replace and upgrade the existing Material Recovery Facility (MRF) on Block 12, Section 25 Hume, ACT (the proposal site). The proposal site is located to the north of the Monaro Highway in an industrial and rural area located approximately 12.5 km south of Canberra City. The existing MRF was extensively damaged due to fire on 26 December 2022 and the facility is non-operational. The main shed remains standing and is currently being used as a waste transfer station to accept recyclables, sort, and store materials before being shipped to other processing facilities.

The proposal would replace the existing MRF and provide technological improvements to facilitate greater resource recovery by both increasing the quality of recycled materials and by reducing the amount of nonrecyclable residual waste generated that is currently sent to landfill. The new Hume MRF would be one of the first advanced facilities in Australia to enable separation mixed plastics. Upgraded technology would also improve the quality and therefore marketability of paper and mixed cardboard, mixed plastics and glass that would be received from the Australian Capital Territory (ACT) and five regional New South Wales (NSW) councils.

The proposal would be designed to process up to 115,000 tonnes per year of mixed recyclables. The proposed capacity would provide for population growth and changing consumer behaviours which are expected to contribute to increases in recoverable materials over time.

Key features of the proposal include:

- Replacement of the existing MRF.
- Additional warehouse style facilities.
- Civil works and piling to support the dynamic loads imposed by rotating and high frequency vibrating equipment.
- Expansion of hardstand space towards the west of the proposal site.
- A trade waste system to capture contaminated stormwater runoff.

1.1.1 Approval and assessment requirements

This report has been prepared by GHD Pty Ltd (GHD) as part of the environmental impact assessment (EIS) for the proposal. The EIS supports the application for approval of the proposal and to address the requirements provided by the ACT Department of Environment, Planning and Sustainable Development Directorate dated 21 July 2022.

The proposal is subject to approval by the planning and land authority within the Environment, Planning and Sustainability Development Directorate.

The proposed relevant built area is estimated to be 3.5 hectares (ha) which includes the loading bay, processing area, and car park. The roadways on-site would be 0.5 ha, whereas the building would be 1.05 ha. The new MRF would be accessed via Recycling Road, which is situated at the east of the proposal site.

1.2 Purpose and scope of this report

GHD has been engaged by ACT NoWaste (under Transport Canberra and City Services (TCCS) Directorate) to prepare the EIS for the construction and operation of the proposal. This landscape and visual impact assessment (LVIA) report forms part of the EIS, under section 212(1) of the Planning and Development Act 2007.

The Scoping Document (Application Number: 202200011) for the proposal was issued on 8 June 2022 and provides requirements for information that is to be provided in the EIS to be submitted for planning approval.

Specific Scoping Document requirements relating to landscape and visual impacts have been provided in Table 1.1 with a cross reference to the relevant section within the report.

Table 1.1 ACT Government Scoping Document

Requirements – section 8.2.5 Landscape and Visual	Refer to section within this report
Undertake a visual assessment of the proposal site and surrounds to describe the current landscape character of the area	Section 2.3 Existing landscape and visual environment
Describe the predicted impacts the facility and its operations (such as incoming waste and material, potential stockpiling, artificial lighting) may have on the landscape character of the proposal site and surrounds	Section 2.4 Impact assessment Section 7 Visual impact assessment
Provide perspectives and/or a visual analysis of the proposal from local vantage points	Section 2.4 Impact assessment Section 7 Visual impact assessment
Consider visual impact to the Monaro Highway and consistency with Development Control Plan 171/09/001 (DCP)	Section 7.1.4 Viewpoint location 4: Monaro Highway Section 9 Response to policy
Consider lighting impacts in relation to pilot distraction	Appendix B Consideration of possible lighting impacts

This LVIA assesses the landscape character and visual impacts of the proposal, with particular consideration for sensitive landscape and visual receivers, in the area surrounding the proposal. The report comprises the following:

- An understanding of the landscape and visual attributes of the study area.
- Identification of sensitivities of landscape and visual receivers in the vicinity of the proposal.
- Assessment of potential landscape and visual impacts associated with the proposal.
- Provision of recommendations for mitigating or managing any identified landscape and visual impacts arising from the proposal.

1.3 Report structure

This report comprises of the following sections:

Section 1 – Introduction: provides background information and an overview of the proposal and assessment.

Section 2 – Methodology: describes the methodology used for the purpose of this report.

Section 3 – Proposal description: describes the proposed development, with emphasis on identifying the key sources of potential impacts relevant to this assessment.

Section 4 – Legislation and policy: provides an overview of relevant legislation and policy.

Section 5 – Existing Landscape and visual existing environment: provides an overview and describes the landscape and visual environment within the study area.

Section 6 – Landscape character impact assessment: landscape character zones are identified and assessed against the proposed development.

Section 7 – Visual impact assessment: representative viewpoint locations are identified and assessed against the proposed development.

Section 8 – Mitigation measures: recommendations and mitigation measures are provided in response to identified impacts as a result of the construction and operation of the proposal.

Section 9 – Response to policy: describes how the proposal responds to the Development Control Plan (DCP) requirements.

Section 10 – Conclusion: presents a summary of the Landscape and Visual Impact Assessment.

Section 11 – References

1.4 Scope and limitations

This report: has been prepared by GHD for Transport Canberra and City Services and may only be used and relied on by Transport Canberra and City Services for the purpose agreed between GHD and Transport Canberra and City Services as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Transport Canberra and City Services 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 (refer section(s) 1.5 of 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 Transport Canberra and City Services 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.

1.5 Assumptions

The methodology includes the following assumptions and limitations:

- There is no national guidance on the assessment of landscape and visual impacts specific to Australia, however, the industry typically refers to the guidelines as outlined in Section 2.1.
- The assessment aims to be objective and describe any changes factually. While potential changes resulting from the proposal are defined, the significance of these changes requires qualitative (subjective) judgements. This assessment's conclusion therefore combines objective measurement and professional interpretation. While this assessment aims to be objective, it is recognised that visual impact assessment can be subjective, and individuals are likely to associate different visual experiences to the study area.
- The assessment is based on the information provided to GHD at the time of writing.
- This assessment does not include landscape and visual impacts from lighting.
- Construction activities have not been confirmed at the time of writing. Standard construction practices have therefore been assumed to complete the assessment.
- Demolition activities have not been confirmed at the time of writing, therefore have not been assessed within this report.

2. Methodology

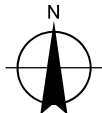
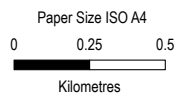
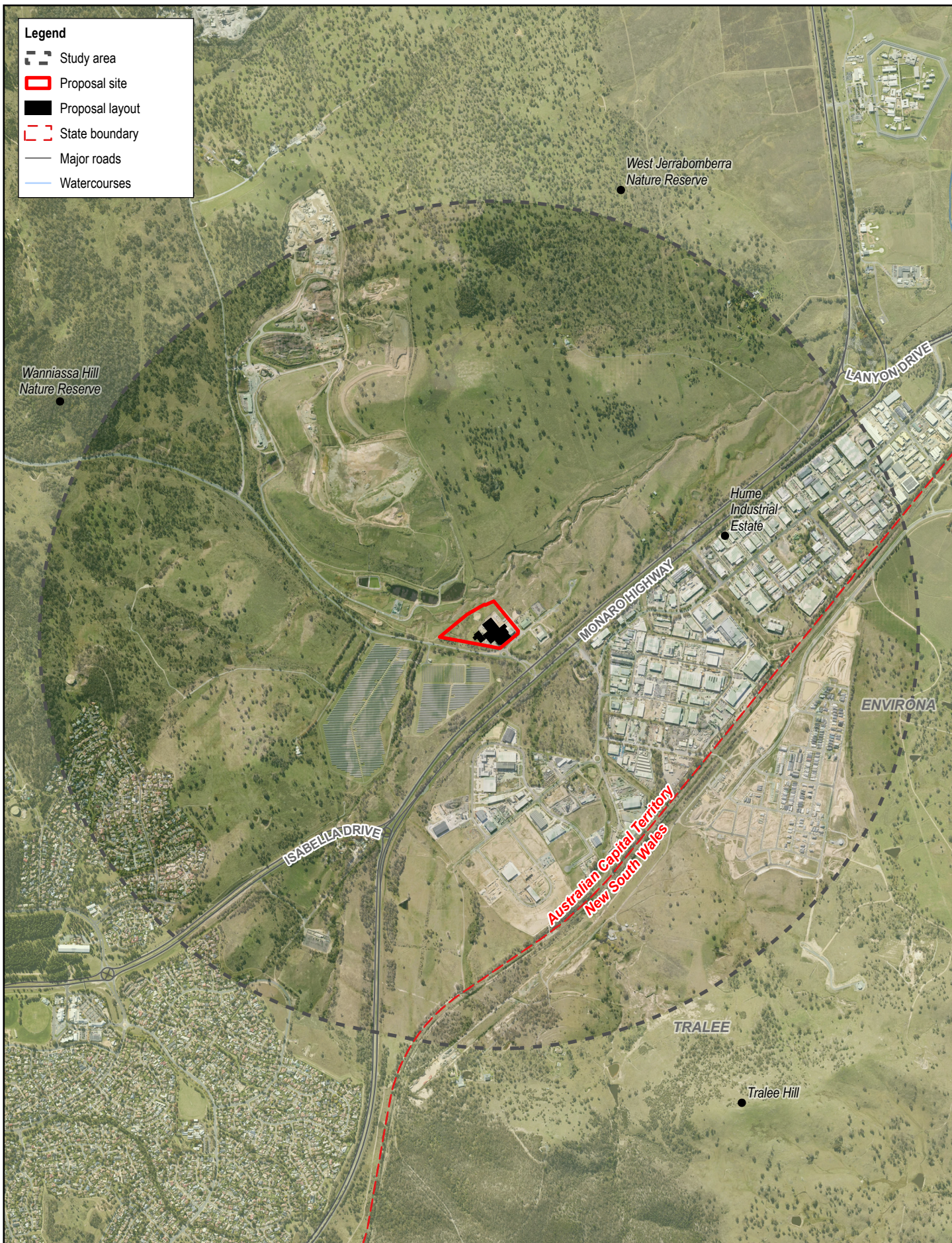
2.1 Standards and guidance

This landscape and visual impact assessment has been prepared in accordance with the following:

- *Guidelines for Landscape and Visual Impact Assessment, 3rd Edition* (Landscape Institute and Institute of Environmental Management & Assessment, 2013)

2.2 Study area

The study area is based on the proposal description, potential visual catchment of the proposal and a review of similar assessments. The study area used for this assessment was approximately two kilometres from the proposal boundary. Figure 2.1 shows the study area for this assessment.



Transport Canberra and City Services
 Hume Materials Recovery Facility
 Landscape and Visual Impact Assessment

Project No. 12540460
 Revision No. 0
 Date 16/08/2023

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

Study area

FIGURE 2.1

2.3 Existing landscape and visual environment

2.3.1 Review of legislation and policy

A review of key planning designations, policies and guidance was undertaken in relation to landscape and visual amenity within the study area. The emphasis of the review was to identify elements outlined within legislation, policy, and planning documents relevant to the landscape and visual character and identity of the study area.

2.3.2 Desktop analysis landscape and visual resources

Existing data was gathered and reviewed, including:

- The proposal design information
- Topography, land use, and vegetation maps
- Google Earth and Google Street View

Using this data, a preliminary assessment of the landscape and visual environment was undertaken to inform the site inspection.

2.3.3 Zone of theoretical visibility

Zone of theoretical visibility (ZTV) mapping is a computer-generated analysis which identifies land from which it is theoretically possible to view the components of the proposal. These have been used primarily to guide the area of site analysis and representative viewpoint selection.

ESRI (Environmental Systems Research Institute) ArcGIS software was used to model the ZTV of the proposal. A digital elevation model was produced using one metre contour intervals at a resolution of one metre. The ZTV was mapped using the following parameters:

- A viewing height of 1.7 metres, which is the average within the typical viewing level range of an adult.
- A proposed height of 12 metres for all proposed buildings.

The GIS software then digitally determines the likely extent over which the feature would be visible or not visible. In interpreting the ZTV, the following issues must be considered:

- It only takes into account the landform and does not include land cover factors such as the presence of buildings and trees, therefore it represents the worst-case scenario of potential visual impact.
- It does not take into account the effect of distance. The greater the distance from the proposal, the lower the impact, as the development will take up a smaller portion of the view, and atmospheric conditions may reduce the visual prominence of the proposal.
- The ZTV is only accurate to the resolution of the elevation model.

2.3.4 Site inspection

A site inspection was undertaken by two suitably qualified GHD representatives on 13 February 2023. The purpose of the inspection was to:

- Inspect the proposal site and appreciate views to/from sensitive visual receivers.
- Inspect publicly accessible locations identified in the desktop study as likely to provide views of the proposal.
- Identify sensitive visual receiver locations.
- Assess the landscape character of the study area and identify landscape sensitivities.
- Undertake proposal site photography suitable for viewpoint assessment and photomontage preparation.

The coordinates of each viewpoint were recorded during the site inspection.

2.3.5 Definition of existing landscape and visual environment

An assessment of the existing landscape and visual environment was undertaken to determine the existing natural, cultural, and visual features within the study area. This includes determination of key landscape and spatial elements, features and values. Aspects considered include:

- Land use and built form.
- Landform, topography, and hydrology
- Vegetation
- Historical features
- Indigenous cultural values
- Key visual features
- The proposal's viewshed and sensitive receivers

2.4 Impact assessment

2.4.1 Landscape character zones

Landscape character considers common landscape zones defined by typical features and characteristics identified during the desktop assessment and site inspection. Defining landscape character zones (LCZs) identifies areas sharing the same homogenous environmental or cultural qualities or pattern such as topography, vegetation, hydrology, land use and settlement, built form scale and character, cultural and recreational characteristics.

This approach has been used to establish the existing landscape character within the study area and to provide a framework for measuring the impact of the proposal. This assists in:

- Defining landscape elements that contribute to defining character.
- Defining landscape character attributes.
- Identifying landscape value.

The assessment of the existing environment also considers factors which have influenced landscape change in the past and those that are likely to do so in the future. The landscape character zones are defined in Section 6.1.

Landscape value

As part of the assessment of existing conditions, the value of the landscape is defined for each LCZ. Criteria for assessing the value of the landscape is defined in Table 2.1.

When defining LCZs, the value attached to the landscape also forms the baseline for which the significance of the impact is measured. Landscape value looks at designated and undesignated landscapes, and holistically at all the elements such as the environmental, cultural, historical, and visual/sensory elements that form the landscape. The value of the landscape from an international, national, local and community level is considered when applying a landscape value. The following factors are taken into consideration when defining landscape value (Natural England, Scottish Natural Heritage and Countryside Council, 2011):

- Landscape quality (physical state of the landscape)
- Scenic quality (appeal of the landscape to the senses)
- Rarity (presence of rare elements)
- Representativeness (distinct character or features of landscape)
- Conservation value
- Recreation value
- Perceptual aspects/qualities
- Associations (with particular people, artists, events in history)

The landscape values for each LCZ are described in Section 6. The landscape values for each LCZ are described in Section 6.

Table 2.1 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.

2.4.2 Landscape character impacts

An assessment of landscape impacts deals with the effect of change and development on a landscape as a resource. The concern is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. The consideration of potential impacts on landscape character is 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 address the following specific criteria:

- The landscape value (refer Table 2.1).
- The landscape’s susceptibility to change (refer Table 2.2) from the type of development proposed. A judgement on the level of sensitivity is made and a rating of high, moderate, or low applied.
- The magnitude of change to landscape character depends on the nature, scale and duration of the change expected to occur. The magnitude of change also depends on the loss, change or addition of any feature to the existing landscape (refer Table 2.3). It is based on the part of the landscape character zone which is likely to be impacted to the greatest extent by the proposal.

An assessment is made on the overall level of significance of the landscape impact in relation to the existing conditions.

Table 2.2 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 2.3 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

2.4.3 Viewpoint selection

Assessment of visual impacts deals with the effects of change and development on the views available to people and their visual amenity. It assesses how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views as a result of the change or loss of existing elements of the landscape and/or the introduction of new elements.

Visual receivers have been considered in terms of the views they are likely to obtain from within the study area including consideration of any key vantage points, such as lookouts, where there is particular interest in the view. Visual receivers are identified based on:

- Proximity of the receivers to the proposal, as the most affected visual receivers are anticipated to be located closest to the proposal, unless located at an elevated vantage point.
- Type of receiver, as different viewer types would have different perceptions of the change.

Based on the analysis of the existing landscape and visual environment, viewpoint locations were selected for assessment as representative of sensitive visual receiver locations. To best illustrate the likely visual impacts of the proposal, where appropriate, 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

2.4.4 Visual impacts

The evaluation of potential impacts on visual amenity is 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 assessment considers the likely impacts of the proposal. The level of effect on a view depends on factors such as the extent of visibility, degree of obstruction of existing features, degree of contrast with the existing view, angle of view, duration of view and distance from the proposal.

The sensitivity and magnitude of visual effects addresses the following specific criteria:

- The sensitivity of the viewpoint to proposed change considers the importance of the view, its existing scenic qualities, and the presence of other existing man-made elements in the view; the type and sensitivity of visual receiver and their likely interest in the view; the susceptibility of visual receivers to change; and the value attached to views (refer Table 2.4).
- The magnitude of change to views and visual amenity considers the size or scale of change; geographical extent of effects, and duration and reversibility of the change expected to occur (refer Table 2.5). It also depends on the loss, change or addition of any feature in the field of view of the receiver including an

assessment of the level to which the change contrasts with the existing view or expected view of the landscape.

An assessment is made on the overall level of significance of the visual impact in relation to the existing view.

Table 2.4 Sensitivity to change criteria (visual)

Rating	Criteria
High	<ul style="list-style-type: none"> – Occupiers of residential properties, at home or going to and from, with long viewing periods, within proximity of the proposed development. – Communities that place value upon the landscape and enjoyment of views of their setting.
Moderate	<ul style="list-style-type: none"> – Outdoor workers who have a key focus on their work who may also have intermittent views of the study area. – Viewers at schools, or similar, when outdoor play and recreation areas are located within proximity but viewing periods are limited. – Occupiers of residential properties with long viewing periods, at a distance from or screened from the study area.
Low	<ul style="list-style-type: none"> – 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. – Viewers indoor at their place of work, schools or similar.
Negligible	<ul style="list-style-type: none"> – Viewers from locations where there is screening by vegetation or structures where only occasional screened views are available and viewing times are short. – 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.

Table 2.5 Magnitude of change criteria (visual)

Rating	Criteria
High	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.
Moderate	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.
Low	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.
Negligible	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.

2.4.5 Significance of impacts

The combination of sensitivity and magnitude determines the significance of the impact on the landscape character or representative viewpoint. Refer to Table 2.6 for the matrix used to determine the significance of impact.

Table 2.6 Significance of impact matrix

		Magnitude of impact			
		High	Moderate	Low	Negligible
Sensitivity	High	High	High-moderate	Moderate	Negligible
	Moderate	High-moderate	Moderate	Moderate-low	Negligible
	Low	Moderate	Moderate-low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

2.4.6 Panorama and photomontage

All photographic images were captured using a 50-millimetre fixed focal length lens on a 35-millimetre full frame format camera at a camera height of 1.7 metres. All photograph locations were recorded and mapped.

A series of six viewpoint locations were chosen and existing views represented using a panorama technique. This technique involves the stitching together of a number of adjoining images using the Adobe Photoshop software program.

Of the six viewpoint locations, two viewpoints were selected for the production of photomontage images to represent proposed views following the completion of the proposal. The software used to model and render the photomontages was Autodesk 3D Studio Max. In order to achieve an accurate photomontage of the proposal and surrounding landscape, one metre contours with a digital terrain model to a resolution of one metre were used to model the surrounding landform.

Once the 3D model incorporating both the landscape and new proposal elements were created, a virtual camera was placed in the software at the same location the photographs were taken. The film, focal lens and height of the virtual camera matches the real camera utilised to take the photographs. The photographs of the proposal site were used in 3D Studio Max as a background to accurately match the 3D model with the proposal elements to the perspective of the photographs. From the camera view, rendered images of the proposal were produced to match the daylight exposure of the photographs. The rendered images were imported into Adobe Photoshop for post-production editing and collation of the photomontages.

The final result is the 3D model of the proposal shown in the correct 3D location in the photographs (refer Appendix A). The final images were produced to a high resolution, suitable for printing.

2.5 Mitigation measures

Mitigation measures were developed in response to the impacts identified within Section 6 and Section 7. Potential mitigation measures typically include:

- Adopting alternative designs or revisions to the basic engineering and architectural design to prevent and/or minimise negative impacts.
- Remedial measures such as colour and textural treatment of structural features.
- Compensatory measures such as landscape design to compensate for unavoidable negative impacts and to attempt to generate long-term positive impacts.

3. Proposal description

The following section provides a summary of the proposal and includes the detail relating to the main visual components that have potential to affect the landscape character and visual amenity of the study area.

3.1 The proposal site

The proposal is located in the suburb of Hume on the southern urban fringe of Canberra (refer Figure 3.1). Hume is a light-industrial suburb with minimal residential development.

The proposal site would be located within the current bounds of the Hume Resource Recovery Estate (HRRE) on the site of the existing MRF on Block 6 and extending over part of Block 10, Section 25 Hume, Recycling Road. The proposal site encompasses the existing Hume MRF and a currently vacant block adjacent to the northwest side. The total site area is approximately 4.5 hectares.

The proposal site is on the corner of John Cory Road and Recycling Road. John Cory Road is accessed from a dual lane roundabout on Mugga Lane. Mugga Lane is accessible from Long Gully Road to the west and the Monaro Highway from the east. The Mugga Lane Solar Park is located west of the proposal site across Mugga Lane. The nearest residential dwelling is approximately 1.5 kilometres to the north-west of the proposal site. Monaro Highway is situated to the south-east, and the proposal site is visible from the highway. To the south across Monaro Highway is the Hume Industrial Estate. The proposal site is approximately one kilometre from the New South Wales (NSW) border.

3.2 The proposal

The Hume MRF proposal is funded through a bilateral National Partnership Agreement (NPA) between the Commonwealth and ACT Governments. The infrastructure is intended to meet the challenges of the Council of Australian Governments (COAG) waste export bans. The intended purpose of the Hume MRF project is to improve and provide additional sorting capability for glass, paper, cardboard, and plastics.

The ACT MRF technological improvements will facilitate greater resource recovery by increasing the quality of recycled materials and reducing the amount of non-recyclable residual waste generated that is currently sent to landfill. The upgraded facility is intended to have an annual capacity to improve the quality and marketability of paper and mixed cardboard, mixed plastics, and glass from the ACT and five regional NSW councils.

The MRF would be designed and constructed to receive, sort and process municipal kerbside-collected comingled recyclable materials and selected materials collected from commercial premises, as well as container deposit scheme (CDS) containers.

Glass that is separated from the comingled stream in the processing building would be further processed onsite via washing, crushing, and screening to produce clean, dry, graded aggregate suitable for beneficial uses.

Plastic materials separated from the comingled stream would be sorted by polymer type and washed, chipped/flaked and possibly pelletised, depending on final design, and the specification requirements of the target markets and offtake facilities accepting the quality-managed recovered materials.

The MRF would also receive, process, temporarily store and progressively despatch sorted bulk, bagged, or baled recyclable commodities in accordance with Australasian Fire and Emergency Service Authorities Council (2022) *Fire safety in waste management facilities* (AFAC Publication No. 3095).

The total buildings footprint (per conceptual layout) of 2.67 ha, with a building height maximum 12 m overall in the processing building, in accordance with the Development Control Plan (DCP) for the precinct.

A stormwater management system would utilise existing infrastructure as well as new infrastructure to allow for the collection, conveyance, and treatment of stormwater. Rainwater tanks would allow for the collection and re-use of roof-water runoff.

Figure 3.2 shows the proposed concept design site layout.

3.2.1 Construction phase

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

- Demolition of existing MRF building
- 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 levelling
- 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 processing 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.

3.2.2 Operation phase

Staffing would generally be on a single shift operating basis in initial years of operation, with maintenance activities carried out after production during the day and on weekends. On commencement of operations, it is expected that processing of recyclable materials would typically occur between 4:00 am and 10:00 pm Monday to Saturday. Subject to detailed design, it is expected that the facility would receive deliveries of recyclable materials from municipal kerbside collections Monday to Friday (during the day) and some loads of commercial recyclables and CDS materials on weekdays and Saturdays.

Total truck movements inbound and outbound of the existing MRF site were estimated to average 375 per week during 2022. Scaled up to the year 20 design processing capacity of 115,000 tpa, truck movements would increase proportionately to around 665 inbound and 665 outbound movements per week, of which approximately 45 inbound and 45 outbound would be B-doubles or other large articulated vehicle configurations (e.g. truck and dog or walking floors).

Light vehicles would park in designated, marked bays adjacent to the workshop/store/office and amenities building. All vehicles would enter the proposal site via John Cory Road. Light vehicles and recyclable collection/delivery vehicles would exit via Gate 1, unless, subject to detailed design, the exit weighbridge is placed adjacent to Gate 2, in which case these vehicles would exit via Recycling Road.

The key visual project elements during operation would include the following:

3.2.2.1 Buildings

Buildings would be of steel framed and metal clad construction in Colorbond finish, with a maximum height of 12 m, in accordance with the DCP for the precinct.

Buildings would also be set back a minimum of 10 m from the boundary adjacent to Mugga Lane in line with the DCP.

Table 3.1 Key proposed buildings and heights

Building	Proposed height
Processing Hall	12 metres
Receival	8 metres (approximately)
Bale storage	8 metres (approximately)
Glass and plastic processing facilities	8 metres (approximately)
Water tanks	8 metres (approximately)
Administration building	7 metres (approximately)

3.2.2.2 Roads and hardstand areas

Access roads and pavements in areas that are not subject to lateral loads associated with turning and manoeuvring of heavy vehicles would be primarily constructed of asphalt on compacted graded aggregate basecourse material. Hardstand, access roads and pavements that would be regularly subjected to turning and manoeuvring of heavy vehicles, and/or impact loads, would be constructed from reinforced concrete.

3.2.2.3 Baled product storage and load-out

Subject to detailed design, baled products would be stacked by forklift in compartments that are each no greater than 1,000 m² and separated by a masonry wall. The bale storage area would be separated from the processing building by a fire-rated wall, unless otherwise designed to comply with the requirements of the AFAC guideline.

The hardstand areas around the MRF would be kept clear for heavy vehicle and maintenance access. These areas would also serve as open-area stockpiling capacity for emergency/contingency storage of baled products in the event of disruptions to scheduled removal of baled products.

Baled product (paper, cardboard, some plastics, steel cans, aluminium cans, selected CDS items) stacked in the bale storage area would be loaded via forklift onto articulated curtain-sided vehicles, including B-doubles, for transport to end markets and/or downstream processing facilities.

3.2.2.4 Hours of operation

Deliveries

Subject to detailed design, it is expected that the facility would receive deliveries of recyclable materials from municipal kerbside collections Monday to Friday (during the day) and some loads of commercial recyclables and CDS materials on weekdays and Saturdays. The Hume MRF currently accepts deliveries between 4 am and 10 pm. The operating hours will be subject to the contractor.

Operations

Staffing would generally be on a single shift operating basis in initial years of operation, with maintenance activities carried out after production during the day and on weekends. As recyclable material volumes increase, it is envisaged that operating hours would be progressively and incrementally increased. At full design capacity, it is envisaged that the facility would operate on a two-shift 6-day week basis, with each shift being of nominally 8-hours duration, with maintenance activities carried out between shifts and/or on weekends.

3.2.2.5 Maintenance

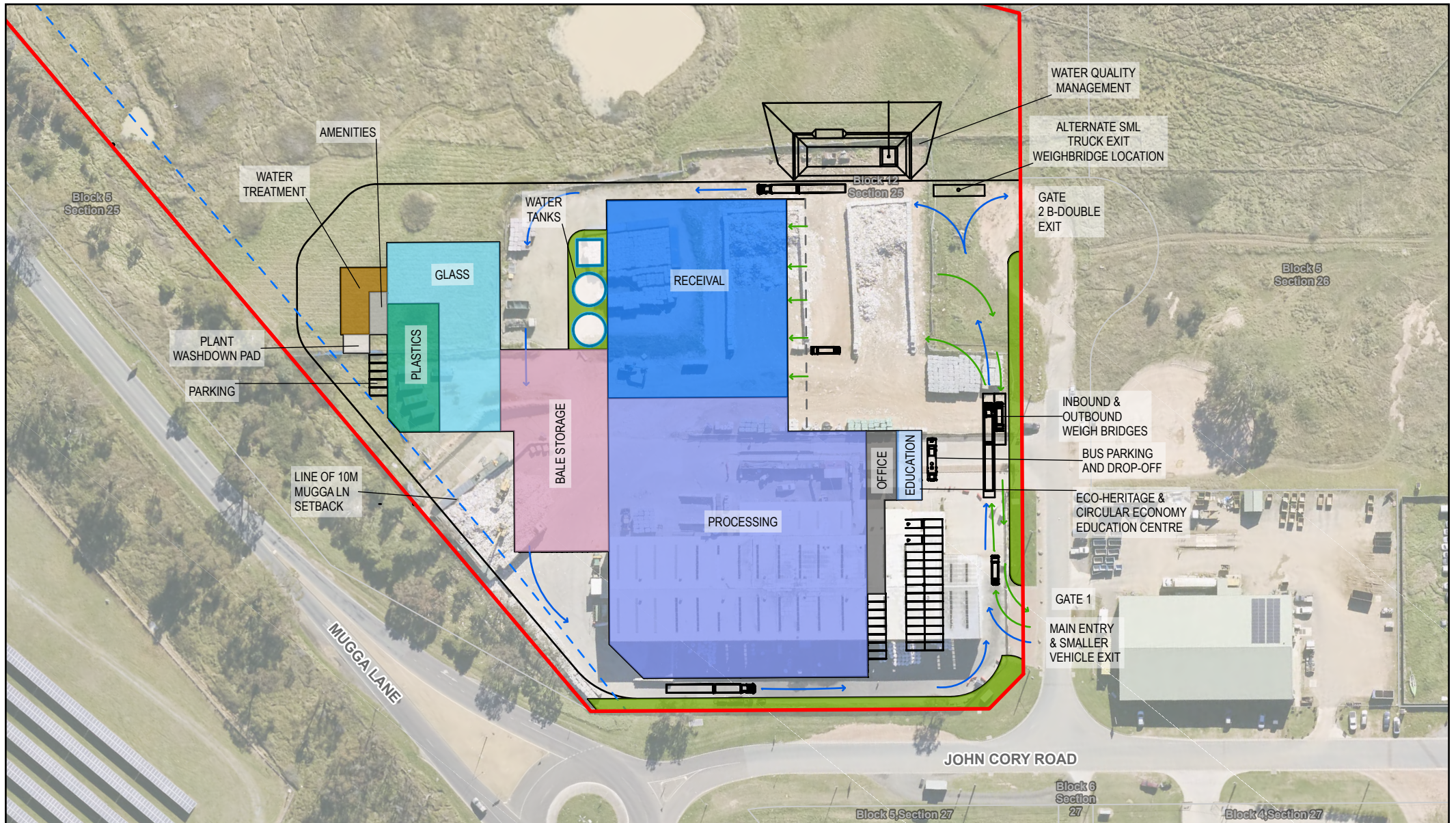
Facility maintenance would typically be carried out during periods when the facility is not actively processing materials, and this may therefore be occurring during evenings and/or on weekends. A workshop would be incorporated into the design of the facility for on-site storage of tools, critical spares, and wear components, as well as some consumables. Some minor mechanical repairs would be carried out within the workshop, and racking, space requirements, appropriate service connections and safety considerations would be addressed in detailed design.

3.2.3 Construction phase

Standard construction practices have been assumed for the assessment.

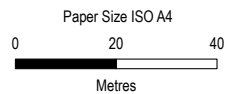
The visual impact to sensitive receptors and landscape impacts to LCZs during the construction phase would most likely consist of the following elements and activities:

- The presence of fencing, barricades and lighting at construction zones, site compounds and administration buildings.
- The temporary presence of work crew, vehicles and machinery at designated laydown areas and materials storage at designated stockpile areas.
- Construction vehicles moving along existing roads on route to the construction site.
- In-situ concrete pouring and construction of new structures.
- There may be additional dust generated as a result of construction works which may have a visual impact.



Legend

- | | | |
|---------------|----------------|-----------------|
| Proposal site | Education | Processing |
| Cadastre | Glass | Reival |
| Water Tanks | Office | Water Treatment |
| Amenities | Plant Washdown | Grass |
| Bale Storage | Plastics | |



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



**Transport Canberra and City Services
Hume Materials Recovery Facility
Environmental Impact Statement**

Project No. 12540460
Revision No. 0
Date 11/08/2023

Proposal concept layout

FIGURE 3.2

4. Legislation and policy

A detailed review of government policies was undertaken to inform and identify key objectives for the landscape and visual impact assessment.

This is not intended to be a thorough review of the planning scheme, mechanisms and planning related triggers. The emphasis of the review was to identify designations, protections, values, and objectives relevant to the landscape and visual environment of the study area, including scenic amenity values.

Summary of findings

The assessment of relevant legislation, policies and guidelines described below has identified that the study area's existing landscape character and views are valued, and some areas are protected.

A key policy that relates to this assessment is the proposal site is identified under the DCP 171/09/0001 (ACT Government, 2009) for Section 23, 25, 26 and 27 Hume. The DCP establishes planning and urban design provisions including building scale, setback, and landscape character. The design objectives within this policy have been reviewed and used to inform the mitigation in Section 8.

4.1 State legislation and policy framework

4.1.1 Planning and Development Act 2007

The *Planning and Development Act 2007* establishes a framework for planning the use, and development of the ACT to ensure sustainable and orderly development.

- Requirements have been met through proposal siting, design, landscape masterplan and retention of significant trees on site.

4.1.2 Nature Conservation Act 2014

The *Nature Conservation Act 2014* objective is to protect, conserve and enhance the biodiversity of the ACT. This includes the protection of landscapes of natural significance.

- Requirements have been met through landscape masterplan and retention of significant trees on site.

4.1.3 Heritage Act 2004

The *Heritage Act 2004* establishes a system for the recognition, registration and conservation of places and objects that have natural and cultural heritage significance and Aboriginal places and objects. The Act aims to provide 'a system integrated with land planning and development to consider development applications having regard to the heritage significance of places.'

- Requirements have been met through the assessment of views from heritage sites. Particularly the Tuggeranong Heritage Track.

4.1.4 Tree Protection Act 2005

The objective of the *Tree Protection Act 2005* is to protect individual trees in the urban area that contribute to the amenity of urban landscapes. The Act recognises the importance of the values of urban forest that contribute to the heritage significance of an area. The Act ensures that the values of trees are protected during periods of construction and activity and incorporated into the design and planning of development.

- Requirements have been met through landscape masterplan and retention of significant trees on site.

4.1.5 National Capital Plan 2019

The *National Capital Plan* (NCP) sets out the broad planning principles and policies for Canberra and the Territory to facilitate planning and development in accordance with Canberra's national significance.

The *National Capital Open Space System* (NCOSS) recognises the importance of the natural setting of the National Capital and is required to protect the nationally significant open-space framework, visual backdrop, and landscape setting for the National Capital. The NCOSS aims to blend city and country in a way that symbolises the character of the National Capital. The Inner Hills area is located within the LVIA study area. Relevant principles and policies include:

- *Hills, ridges, and buffer spaces 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.*
- *The hill tops will continue to be used as key vantage points for viewing and understanding the National Capital. Development will be sited so as to minimise its visual impact on the Central National Area and any environmental impact on the hill tops.*
- *The environment and Australian landscape character of the hills and ridges will be protected and enhanced to provide a unified landscape setting for the National Capital.*

The Monaro Highway is an Approach Route as defined in the plan and the proposal site which fronts directly onto the route and is not more than 200 metres from their middle lines is subject to Special Requirements which seek to 'enhance the surrounding rural character and landscape outside urban areas.'

4.1.6 Development Control Plan (DCP) 171/09/0001

The proposal site is identified under DCP 171/09/0001 (ACT Government, 2009) 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 and states that:

'The National Capital Authority's primary interest 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 Estate is also required to both reinforce the Highway landscaping and break up the visual expanse of the Estate.'

Planning and urban design objectives with the DCP include:

- *Development along the Monaro Highway is required to contribute to the architectural quality and amenity of the industrial estate.*
- *Buildings shall be of a high standard in terms of building form, material, and finishes.*
- *Building envelopes will be designed to enhance the visual amenity of the estate, particularly through the provision of generous landscaped external spaces.*
- *A consistency in architectural styles, colours and materials is required throughout the industrial estate.*

The DCP guidelines related to landscape and the proposal are:

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.

14.2 The objectives of the Landscape Master Plan are to:

- *Minimise the visual impacts of buildings, car parking, open activities and storage areas viewed from the Monaro Highway and Mugga Lane.*
- *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.*
- *Ensure consistency of street planting and landscaping.*
- *Encourage appropriate on-site landscaping.*

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.

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.

Additional relevant DCP guidelines are:

6. Building Height

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 roofline) above natural ground level and to a maximum height of 12 metres above natural ground level on blocks less than 5 hectares in area.

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.

7. Setbacks

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.

8. Site Coverage

8.1 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.

9 Materials/Colours

9.1 External walls should be generally masonry or pre-coated metal-cladding of low reflectivity. The roof should be of pre-coated metal of low reflectivity.

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.

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.

10. Fences

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.

4.1.7 Territory Plan

As the proposal site is within Territory Land, development applications will be assessed against the requirements of the Territory Plan (ACT Government, 2008). The Territory Plan is used to manage land use change and development within the ACT in a manner that is consistent with government strategy and legislation.

Defined zones located within the study area are provided with associated objectives relating to the landscape and visual environment including:

NUZ3 – Hills, Ridges, and Buffer Zone

- a. Conserve the environmental integrity of the hill system as a visual backdrop and a unified landscape setting for Canberra.
- b. Provide opportunities for appropriate recreational uses.

- c. *Conserve the significant cultural and natural heritage resources and a diversity of natural habitats and wildlife corridors.*
- d. *Provide predominantly open buffer spaces for the visual separation of towns and to provide residents with easy access to hills, ridges and buffer areas and associated recreation facilities.*

NUZ1 – Broadacre Zone

- a. *Make provision in a predominantly rural landscape setting for a range of uses which require larger sites and/or a location outside urban area.*
- b. *Make provision for activities requiring clearance zones or protection from conflicting development.*
- c. *Ensure that development does not adversely impact or visually intrude on the landscape and environmental quality of the locality.*

4.1.8 ACT Planning Strategy 2018

The ACT Planning Strategy aims to recognise and incorporate the social, economic, and environmental changes occurring in the growing city. The strategy reflects the vision and directions of the community in housing, transport and climate change. The vision for the strategy is as follows:

The development of a city which both respects environmental values and reflects national concerns with the sustainability of Australia’s urban areas.

Strategic directions relevant to this impact assessment are:

Sustainable and resilient territory:

- *3.3 Integrate living infrastructure and sustainable design to make Canberra a resilient city with the landscape.*
- *3.5 Protect biodiversity and enhance habitat connectivity to improve landscape resilience.*

Liveable Canberra:

- *4.3 Strengthen neighbourhoods and support their diverse character by creating strong local activity hubs.*

Within the *ACT Planning Strategy*, the proposal is identified as the ‘*Eastern Broadacre Area*’.

4.2 Other relevant policy

4.2.1 Eastern Broadacre, An Assessment of Visual Landscape Character (2008)

The ACT Planning and Land Authority commissioned an assessment of visual landscape character to identify land in the eastern broadacre area for future industrial growth and potential future employment nodes within the ACT. The study involves an assessment of existing environmental conditions in order to identify opportunities and constraints for development.

5. Existing landscape and visual environment

The following section provides a summary of the existing landscape and visual environment of the study area.

5.1 Land use and built form

The study area is located on the border of New South Wales (NSW) and the Australian Capital Territory (ACT) (refer Figure 3.1).

The proposal site is in the ACT, within the light-industrial suburb of Hume. It is surrounded by General Industry (IZ1) to the east, south and west, with Non-Urban Broadacre (NUZ1) located to the north of the proposal site. The area immediately south of the Monaro Highway is also IZ1. The study area is made up of industrial and open space land uses, with residential areas in the west and further east.

Residential development includes the existing suburbs of Macarthur and Gilmore, and the South Jerrabomberra Village development, currently under construction. Approximately 2 km northeast 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 is designated under the NCP as a major approach route to the city which links Canberra to NSW and the national highway network. The Monaro Highway also links South Canberra to the city and is an important commuter route. 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 100 metres south-west of the proposal site, across Mugga Lane. There are a few rural residential dwellings within the study area, most notably the Woden Homestead which is approximately two 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. John Cory Road, on which the existing MRF is located, is the starting place for the Tuggeranong Heritage Track (Refer to Figure 5.1) and is a popular destination among visitors.

5.2 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 proposal site ranges between 610-615 m above sea level, and slopes downwards gently towards the north, where Dog Trap Creek has cut a 6m deep but relatively narrow channel (no more than 30 metres wide) along the side of the valley. Also on site is a permanent man-made dam. This dam is located less than 100 metres from Dog Trap Creek.

There are multiple small fens and boggy patches in the proposal site but no larger surface waterbodies. Within the study area north of the industrial estate, the hills of the West Jerrabomberra Nature Reserve reach peaks of 720m above sea level. Outside of the study area, the terrain rises to form a series of hills and mountains such as Isaac's Ridge, Mt Wanniasa, Tralee Hill and Environa Hills (Refer Figure 3.1), providing a scenic backdrop to the study area.

5.3 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. This includes the proposal site, which features grassland in poor condition with scattered native trees and no mid-storey vegetation.

North of the proposal site, the West Jerrabomberra Nature Reserve is protected due to its endangered status as a remnant Natural Temperate Grassland. It features areas of grassland and woodland in good condition.

Given the lack of existing vegetation and historical development of the proposal site, the proposal is unlikely to have a significant ecological impact or provide habitat for any threatened flora and fauna species.

5.4 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 existing MRF 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 (refer to Photo 5.1).

The proposal site is in close proximity to Aboriginal Places HA12 and HAC2 and HA13 to the north of proposal site boundary.

It has been noted by archaeologists and Representative Aboriginal Organisations that these Aboriginal Places contain 'intact, dense and diverse artefact assemblages, likely evidence of intermittent use as campsites located along the broad Jerrabomberra Valley system' (ACT Heritage Council, 2020). Their intermittent use and location suggest they were utilised by Aboriginal people as they travelled between the ACT and Monaro and between Pialligo and Lanyon (AASC and CHMA, 2008).

Additionally, there are Aboriginal heritage Potential Archaeological Deposits (PAD) sites adjacent to the proposal site, namely Hume PAD4 and Hume PAD6 to the south of the proposal site across Mugga Lane.



Photo 5.1 Information plaque on Canberra's Aboriginal heritage located on John Cory Road

5.5 Key visual features

Based on the desktop review and proposal site inspection, the key visual features in the study area were identified as:

- 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 chains of ponds and 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:

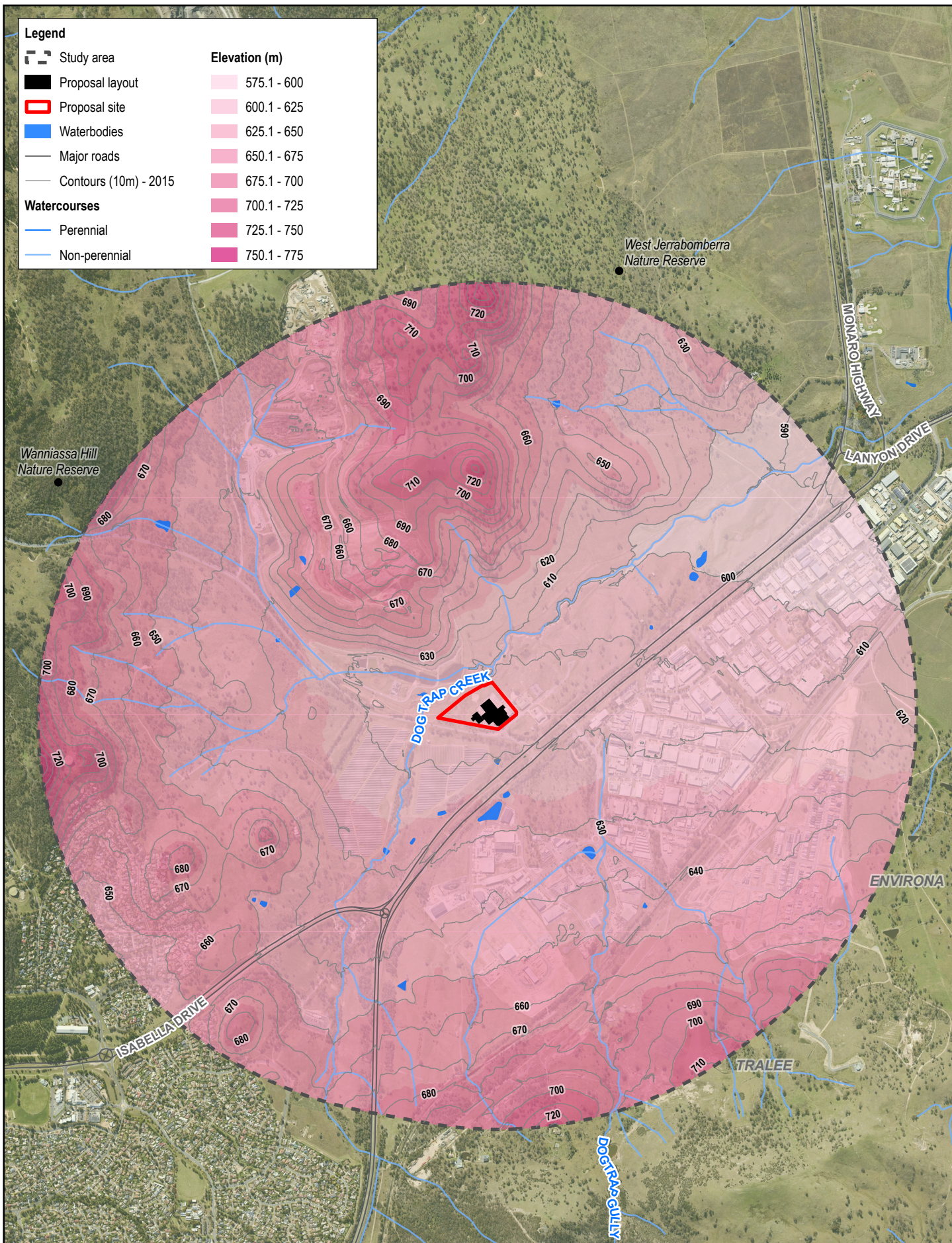
- Views from the West Jerrabomberra Nature Reserve across the surrounding landscape and distant ridgelines.
- Views from the Wanniassa Hill Special Purpose Reserve and Natural Reserve.
- Views from John Cory Road and Mugga Lane towards the gentle hills of the West Jerrabomberra Nature Reserve, rising to the north-east beyond Dog Trap Creek.
- Framed views of surrounding hills and mountains through trees and industrial buildings throughout the study area.
- Views from Macarthur and Gilmore towards the Hume Industrial Estate, surrounding broadacre land and distant ridgelines.

5.6 Proposal viewshed and sensitive visual receivers

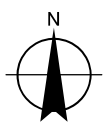
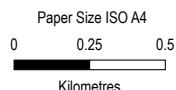
Zone of theoretical visibility (ZTV) mapping undertaken for the project revealed a high amount of theoretical visibility from the surrounding area to the proposal, as shown in Figure 5.5. As outlined in Section 2.3.3, this mapping does not take into consideration the presence of built form and vegetation. The presence of the Hume Industrial Estate to the south-east of the proposal would provide some screening of the project from this direction.

The site inspection revealed the likely viewshed for the proposal would primarily 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 Wanniassa Hills Nature Reserve in the west and West Jerrabomberra Nature Reserve to the north.

Based on the ZTV analysis, while views to the proposal are theoretically possible from the West Jerrabomberra nature Reserve, there is limited access for views within these areas due to screening vegetation, as shown in Section 7.



Legend	
	Study area
	Proposal layout
	Proposal site
	Waterbodies
	Major roads
	Contours (10m) - 2015
Watercourses	
	Perennial
	Non-perennial
Elevation (m)	
	575.1 - 600
	600.1 - 625
	625.1 - 650
	650.1 - 675
	675.1 - 700
	700.1 - 725
	725.1 - 750
	750.1 - 775



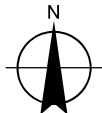
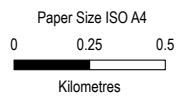
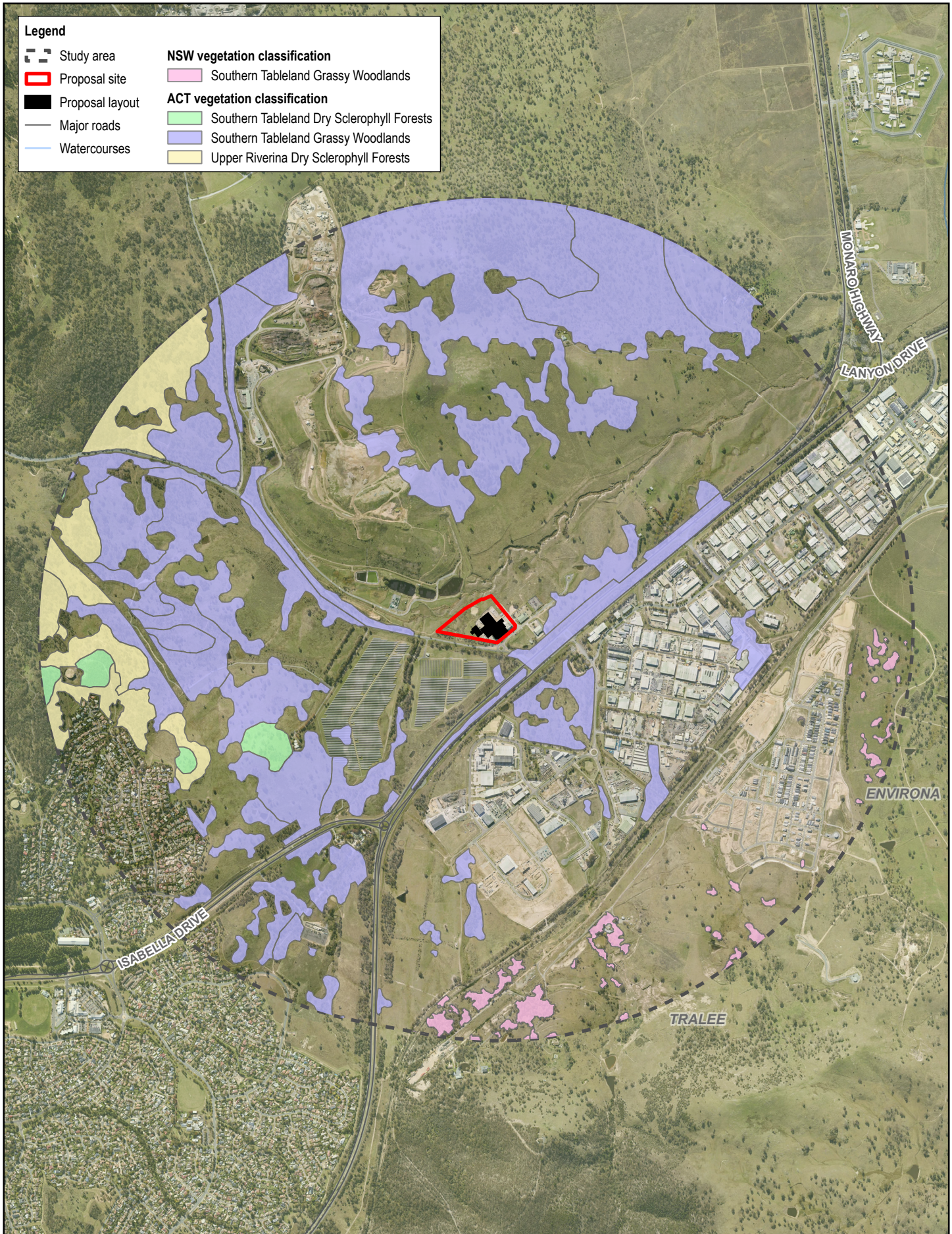
Transport Canberra and City Services
 Hume Materials Recovery Facility
 Landscape and Visual Impact Assessment

Project No. 12540460
 Revision No. 0
 Date 16/08/2023

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

Topography and hydrology

FIGURE 5.2



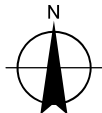
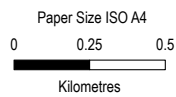
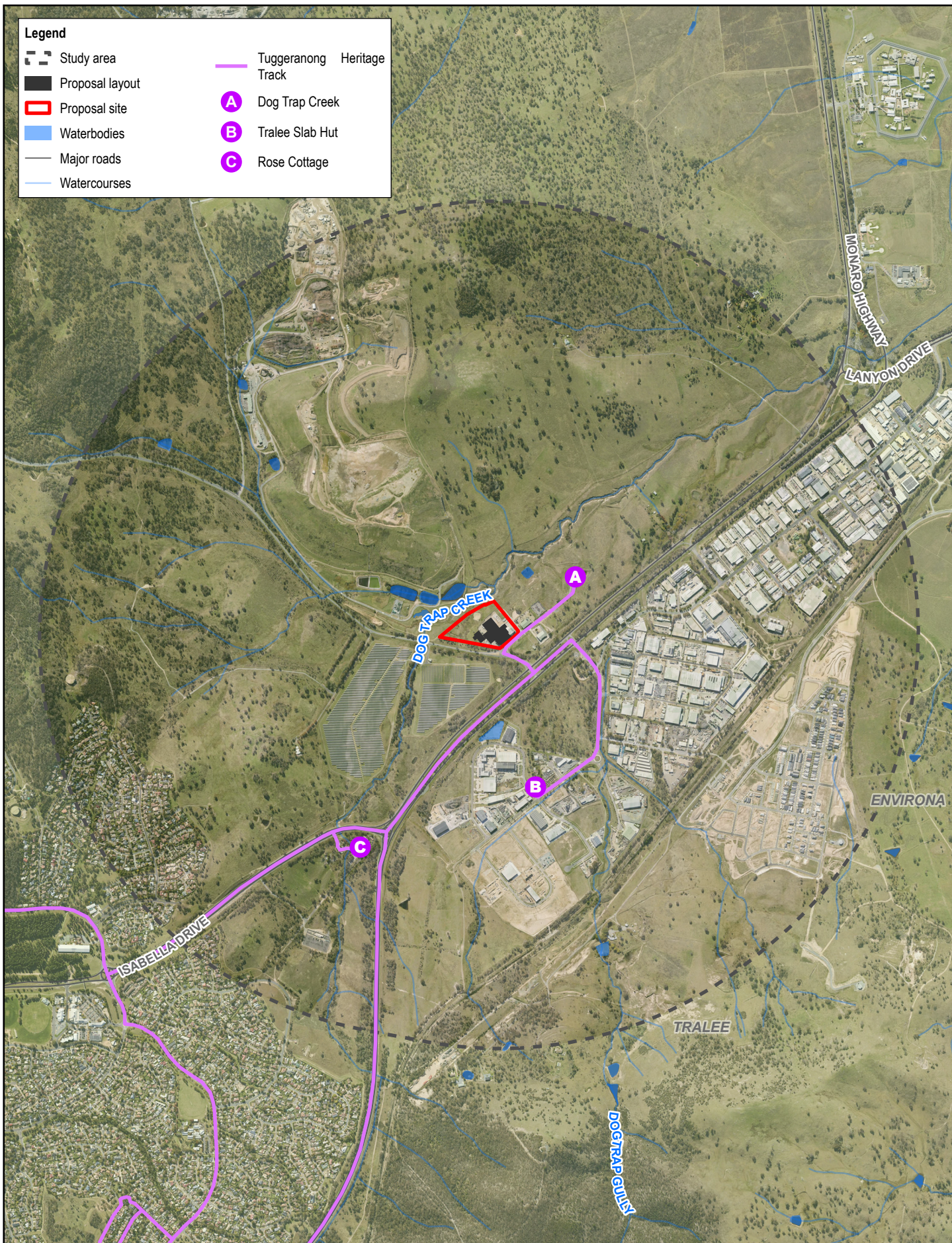
**Transport Canberra and City Services
Hume Materials Recovery Facility
Landscape and Visual Impact Assessment**

Project No. 12540460
Revision No. 0
Date 16/08/2023

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

Vegetation

FIGURE 5.3



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

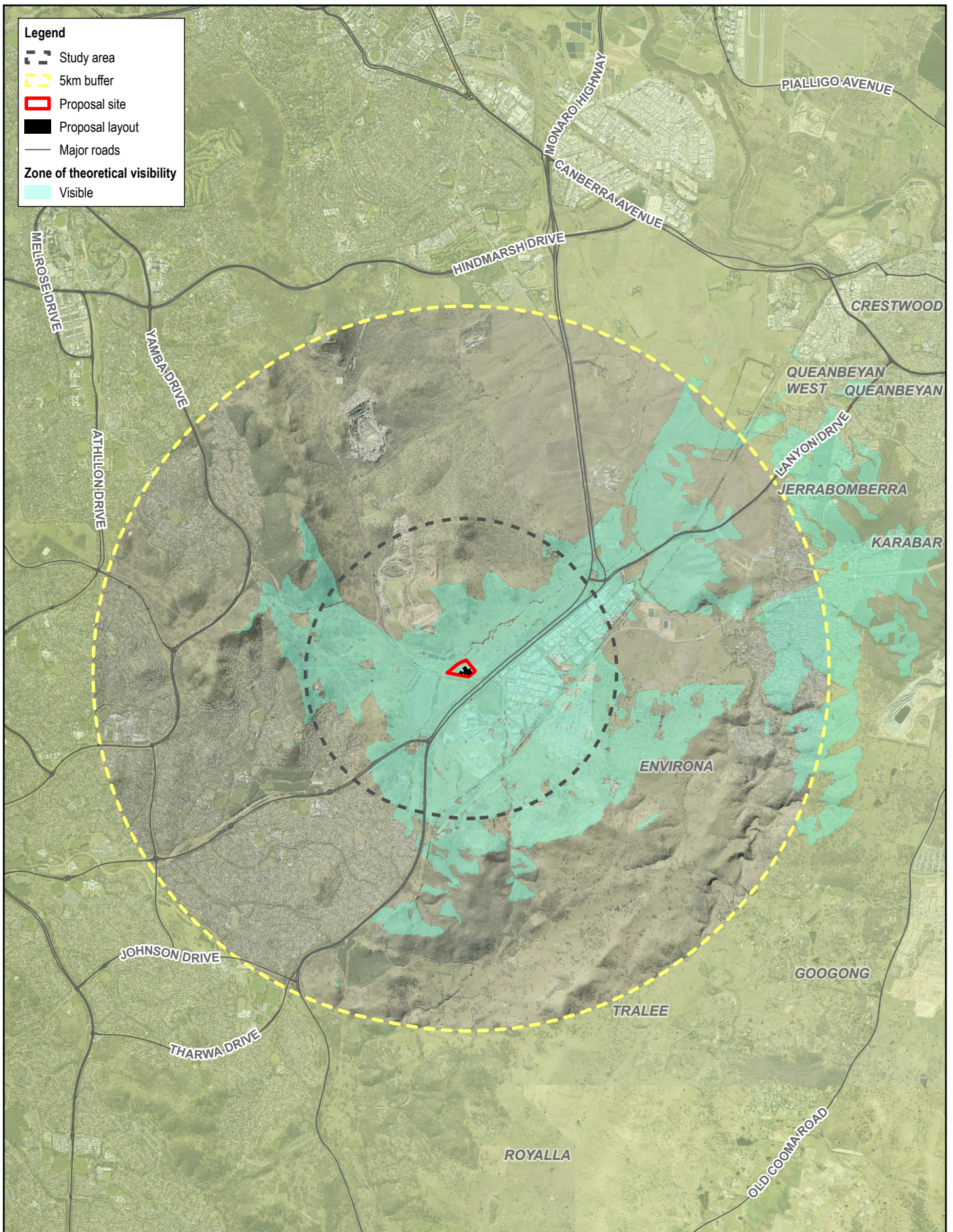


Transport Canberra and City Services
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Tuggeranong Heritage Track


FIGURE 5.4

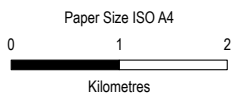


Legend

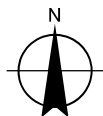
-  Study area
-  5km buffer
-  Proposal site
-  Proposal layout
-  Major roads

Zone of theoretical visibility

-  Visible



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



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Zone of theoretical visibility

FIGURE 5.5

6. Landscape character impact assessment

The study area has been classified into three Landscape Character Zones (LCZs).

These LCZs have different associated sensitivities to potential changes as a result of the proposal. Their sensitivities are discussed below and have informed the landscape impact assessment.

The three LCZs identified are illustrated in Figure 6.1, and are as follows:

- LCZ1: Hume Industrial Estate
- LCZ2: Undulating farmland
- LCZ3: Undulating residential.

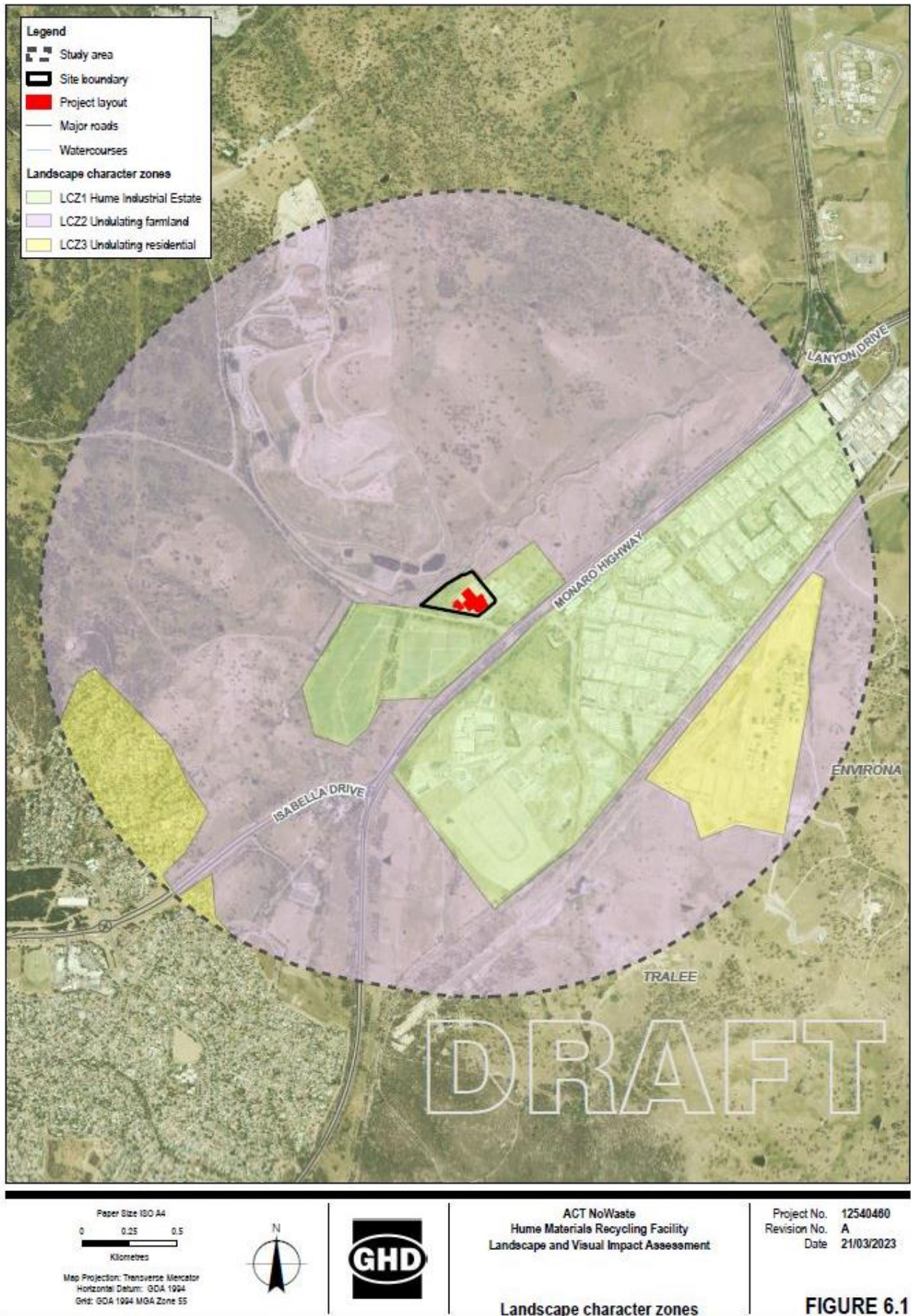


Figure 6.1 Landscape character zones

6.1 Landscape character zones

6.1.1 Landscape character zone 1: Hume Industrial Estate

The key features of LCZ1 are described below and illustrated in Photo 6.1 to Photo 6.6. The LCZ1 impact assessment is outlined in Table 6.1.



Photo 6.1 View of the Mugga Lane Solar Park and Environs Hills, facing southeast



Photo 6.2 Typical built form within the Hume industrial estate



Photo 6.3 View of the dilapidated Hill Station cottage, Sheppard Street



Photo 6.4 Typical view of a wide street with views of distant ridgelines



Photo 6.5 View of the National Library of Australia Repository, Tralee Street



Photo 6.6 View of a typical loading bay within the industrial estate

LCZ1 is located in 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.

Key characteristics of LCZ1 include the following:

- 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.
- The Monaro Highway runs through the centre of the LCZ in a north-easterly direction.
- Vegetation consists of occasional rows of native and non-native trees on roadsides.
- Within the industrial estate, views are open due to wide roads and wide building setbacks.
- Between the industrial buildings, the surrounding hills and mountains provide a scenic backdrop.
- Businesses are typically building and construction suppliers, vehicle dealers, home furnishing suppliers, goods wholesalers and similar.
- In the centre of the estate is Hill Station Homestead which was built in around 1862. Most recently functioning as a restaurant, surrounding industrial growth has led it to be abandoned.
- Dog Trap Gully runs north-to-south through LCZ1 and is partially culverted under roads in sections. It is in a very degraded condition.

Values associated with LCZ1:

- 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.
- 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.
- 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).

Landscape character elements are in a below average condition and make a limited contribution to the local landscape character. LCZ1 therefore has a **Low** landscape value.

Table 6.1 LCZ1 impact assessment

Landscape character zone 1: Hume Industrial Estate	
Anticipated change to landscape character	<p>The proposal site is located within LCZ1.</p> <p>Anticipated changes to landscape character during construction works will 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. 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>The hardstand areas around the MRF would be kept clear for heavy vehicle and maintenance access. These areas would also serve as open-area stockpiling capacity for emergency/contingency storage of baled products in the event of disruptions to scheduled removal of baled products.</p> <p>Plastic and glass facilities are proposed to the northwest of the proposal site and water tanks to the north behind the main building.</p> <p>The proposed built works are 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>
Susceptibility to change	LCZ1 has a Low susceptibility to change, 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.
Sensitivity to change	The sensitivity of a landscape is judged on a combination of the landscape value and the landscape's susceptibility to change from the type of proposed development. The sensitivity would be Low , as the landscape value is Low and the susceptibility to change is Low.
Magnitude of change	The magnitude of change would be Low , 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.
Significance of impact	The significance of impact would be Low , as the sensitivity is Low and the magnitude is Low .

6.1.2 Landscape character zone 2: Undulating rural

The key features of LCZ2 are described below and illustrated in Photo 6.7 to Photo 6.12. The LCZ2 impact assessment is outlined in Table 6.2.



Photo 6.7 A typical stream and views of distant ridgelines within the West Jerrabomberra Nature Reserve



Photo 6.8 View of a typical driveway, post-and-wire fencing, rounded hills and scattered vegetation



Photo 6.9 Typical long views from the West Jerrabomberra Nature Reserve, facing northeast



Photo 6.10 View along the Canberra Centenary Trail within the Wanniasa Hills Nature Reserve



Photo 6.11 Typical signage on the Canberra Centenary Trail



Photo 6.12 View from the Canberra Centenary Trail towards the Hume Industrial Estate and South Jerrabomberra Village

LCZ2 undulating rural is 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.

Key characteristics of LCZ2 include:

- Topography is characterised by undulating plateaus with rounded hills and peaks.
- Entrenched meandering streams with chains of ponds and tributaries flow through the landscape, most significantly Dog Trap Creek which has cut a deep but narrow channel through the landscape.
- The West Jerrabomberra Nature Reserve and Wanniasa Hill Special Purpose Reserve reach peaks of approximately 720m above sea level, featuring grassland and woodland vegetation in good condition.
- 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.
- 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.
- Scattered rural residential properties, including Rose Cottage and the heritage-listed Woden Homestead.
- The Rose Cottage estate is situated approximately 1km southwest of the proposal site on Isabella Drive. It was built in 1870 as part of the Tuggeranong Station. Contemporarily, it operates as a pub and function space, with an outdoor area for live entertainment.
- 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.
- Some large plots are occupied by industrial and commercial activities, including the Mugga Lane landfill site and the Corkhill Bros landscaping supply store.
- Fencing is mostly standard post and wire fencing around paddocks and property boundaries.

Values associated with LCZ2 include:

- Nature reserves are protected by the Nature Conservation Act 2014
- The Woden Homestead, Rose Cottage and Tralee and Couranga Homesteads are all heritage-listed sites significant for their cultural history and building styles.
- 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).
- In the west of the study area Wanniasa Hill Nature Reserve and Wanniasa Hill Special Purpose Reserve are also recognised as designated areas.
- Ecological values are associated with riparian vegetation along Dog Trap Creek Gully, as well as grassland and woodland vegetation in nature reserves.
- 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).
- 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.

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, therefore LCZ2 has a **Medium** landscape value.

Table 6.2 LCZ2 impact assessment

Landscape character zone 2: Undulating farmland	
Anticipated change to landscape character	<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> <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 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, views of buildings, vehicles and infrastructure associated with the proposal may be achieved.</p>
Susceptibility to change	<p>The susceptibility to change is Low, 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>
Sensitivity to change	<p>The sensitivity of a landscape is judged on a combination of the landscape value and the landscape's susceptibility to change from the type of proposed development. The sensitivity would be Low, as although the landscape value is Medium, the susceptibility to change is Low and the development is not within LCZ2.</p>
Magnitude of change	<p>The magnitude of change would be Negligible, 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.</p> <p>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>
Significance of impact	<p>The significance of impact would be Negligible, as the sensitivity is Low, and the magnitude is Negligible.</p>

6.1.3 Landscape character zone 3: Undulating residential

The key features of LCZ3 are described below and illustrated in Photo 6.13 to Photo 6.18. The LCZ3 impact assessment is outlined in Table 6.3.



Photo 6.13 View of a bus stop on Louisa Lawson Crescent with long views to distant ridgelines



Photo 6.14 Typical view over the MacArthur suburb and surrounding hills



Photo 6.15 Typical view of winding, hilly residential streets within MacArthur



Photo 6.16 View towards Merriman playground, MacArthur



Photo 6.17 Typical dwellings and vegetation in a cul-de-sac in MacArthur



Photo 6.18 View towards the South Jerrabomberra Village construction site

LCZ3 is located to the south-west and south-east of the study area. It includes the residential suburbs of MacArthur and Gilmore in the ACT, and the South Jerrabomberra Village development in NSW, which is under construction at the time of writing.

Key characteristics of LCZ3 include:

- The undulating topography within MacArthur has a consistent, gradual fall towards the southwest. The landscape descends from approximately 680 metres AHD, in the northeast around Wanniasa Hills Special Purpose Reserve to 650 to the southwest of the study area.
- The topography within the LCZ3 allows for partially concealed views towards surrounding reserves including Wanniasa Hill Nature Reserve and West Jerrabomberra Nature Reserve.
- Residential areas predominantly comprise 1-2 storey detached dwellings. The character of these residential neighbourhoods is generally consistent, typically following a curvilinear subdivision pattern.
- Dwellings were mostly constructed between 1980 to 2000. They are predominantly made from brick with the occasional weatherboard structure, located on spacious allotments in garden settings, due to wide side and rear setbacks from property boundaries.
- Two linear reserves are nestled within the MacArthur residential area, featuring the Merriman Playground, open lawn, and mature trees. Both reserves join the MacArthur ovals and playground just outside of the study area.
- The South Jerrabomberra Village, located 1.2km southeast of the proposal. It will be developed over the next 10 years and would comprise a mix of detached single dwellings, terraced houses, and townhouses. The development would also include community amenities such as supermarkets petrol stations, educational facilities, a business park and medical centres.

Values associated with LCZ3 include:

- Cultural value associated with Jackie Howe Crescent, Merriman Crescent and Carson Street which formed the Macarthur Park circuit between 1978 and 1982, used for motorcycle races organised by the Canberra Road Racing Club. The undulating nature of the course made it one of the most attractive roads courses in south-east Australia. A sign in the nearby pines explains the short history of the circuit and the riders that rode it.
- Scenic value is associated with the undulating topography allowing for long, scenic views, high-quality dwellings, and established planting along streets and within residential properties.
- Ecological value is associated with diverse, established, multi-storey vegetation within private gardens, along streets and within linear reserves.

Landscape character elements are in reasonably good condition and/or make an average contribution to the local character, including locally important landscape features, therefore LCZ3 has a **Medium** landscape value.

Table 6.3 LCZ3 impact assessment

Landscape character zone 3: Residential	
Anticipated change to landscape character	The proposal would occur outside LCZ3 and therefore would not directly impact the landscape character. During construction and operation distant, filtered views of the proposal may be achieved from South Jerrabomberra Village.
Susceptibility to change	Low , as the anticipated change would be unlikely to have a significant adverse effect on the landscape character, condition or value that could not be mitigated.
Sensitivity to change	The sensitivity of a landscape is judged on a combination of the landscape value and the landscape's susceptibility to change from the type of proposed development. The sensitivity would be Low , as the susceptibility to accommodate the proposed change is considered Low, the landscape value is medium, and the development is not within LCZ3.
Magnitude of change	The magnitude of change would be Negligible , as there would be no change to existing landscape character as the proposal is outside of LCZ3. Although views to the construction and operation of the proposal may be achieved, views to LCZ1 are not a key feature of LCZ3 and therefore the anticipated changes do not significantly impact the landscape character.
Significance of impact	The significance of impact would be Negligible , as the sensitivity is Low and the magnitude is Negligible .

7. Visual impact assessment

Based on the existing environment analysis, sensitive visual receivers were identified, and viewpoint locations selected for assessment.

Sensitive visual receivers within the proposal viewshed include the following:

- Residents in dwellings with views to the proposal.
- Road users along the Monaro Highway.
- Local road users along John Cory Road, Mugga Lane, Recycling Road, Tralee Street and Couranga Crescent.
- Nearby workers and patrons of businesses in the Hume Industrial Estate.
- Nearby workers and patrons of the solar farm and businesses on John Cory Road.
- Users of recreational areas such as parks and reserves.

7.1 Viewpoint locations

The following section provides a visual impact assessment of the proposal from the following selected representative viewpoint locations as shown in Table 7.1 and Figure 7.1. Refer to Section 7.1 for an assessment of the visual impact for each viewpoint location.

Viewpoints have been selected to appropriately represent the above sensitive visual receivers.

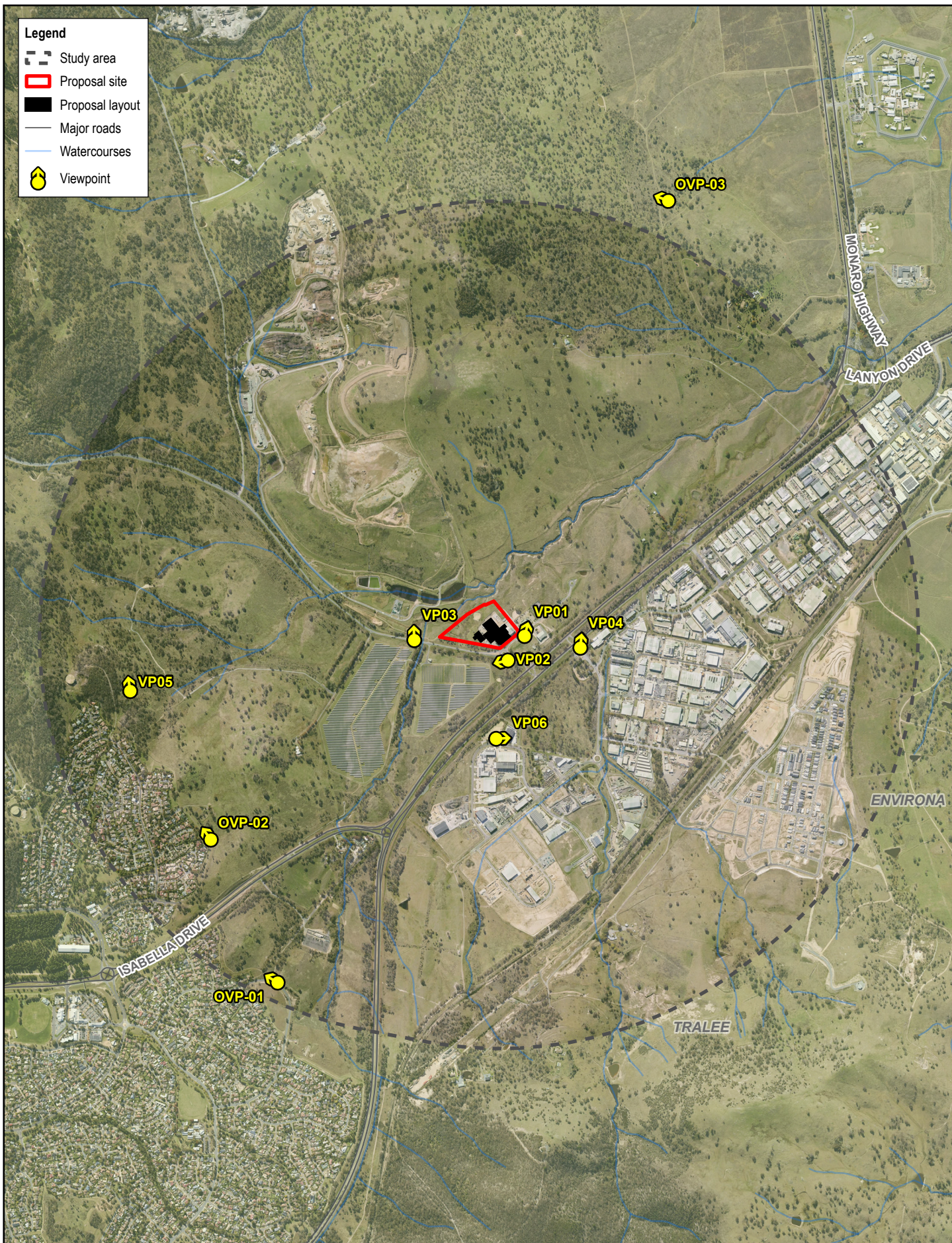
Table 7.1 Viewpoint locations

Viewpoint	Location
Viewpoint location 1 (VP01)	John Cory Road
Viewpoint location 2 (VP02)	Mugga Lane (west)
Viewpoint location 3 (VP03)	Mugga Lane (east)
Viewpoint location 4 (VP04)	Monaro Highway
Viewpoint location 5 (VP05)	Wanniassa Hills Nature reserve
Viewpoint location 6 (VP06)	Couranga Crescent

Three other viewpoint locations were initially considered due to their high elevations and sensitivity, however a full assessment was not completed due to the distance of the viewing location from the proposal site and limited viewing opportunity, therefore negligible visual effects were anticipated. Refer to Table 7.2 and Figure 7.1 Viewpoint locations, which show the other viewing locations that have been selected. Refer to Section 7.2 for photos and a brief description of other viewing locations.

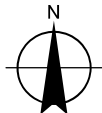
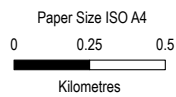
Table 7.2 Other viewing locations

Viewpoint	Location
Other viewpoint 1 (OV01)	Gilmore Paddocks
Other viewpoint 2 (OV02)	MacArthur hilltop
Other viewpoint 3 (OV03)	West Jerrabomberra Nature reserve



Legend

- Study area
- Proposal site
- Proposal layout
- Major roads
- Watercourses
- Viewpoint



**Transport Canberra and City Services
Hume Materials Recovery Facility
Landscape and Visual Impact Assessment**

Project No. 12540460
Revision No. 0
Date 16/08/2023

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

Viewpoints

FIGURE 7.1

7.1.1 Viewpoint location 1: John Cory Road

VP01 is located on John Cory Road and is facing southwest, as shown in Figure 7.2. Refer to Table 7.3 for assessment.

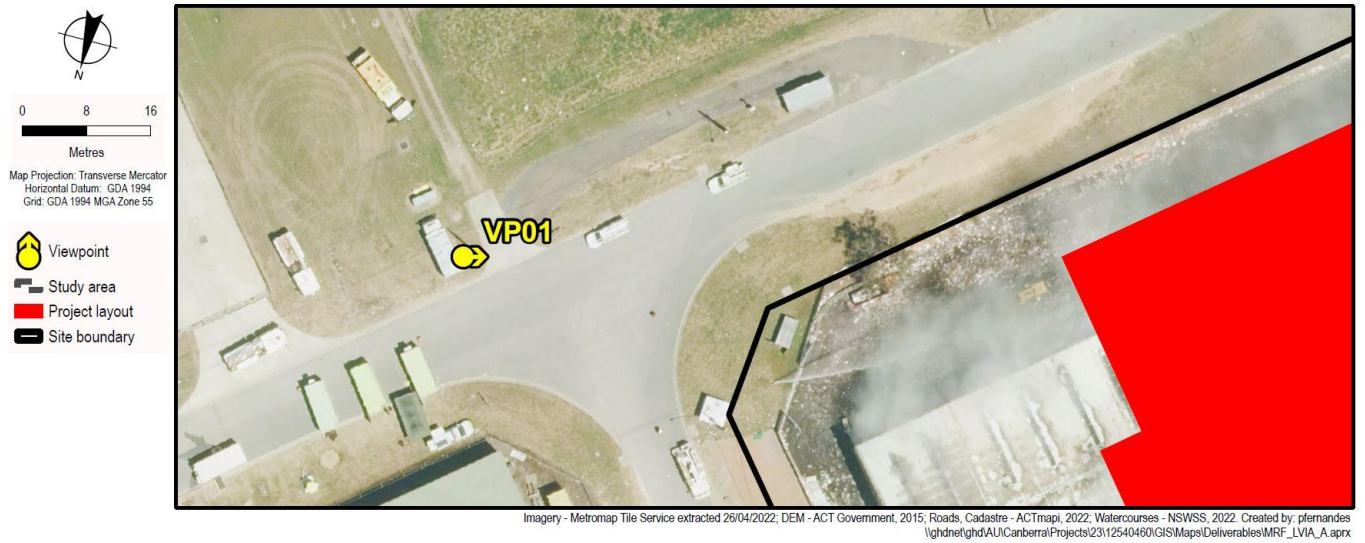


Figure 7.2 VP01 location map



Photo 7.1 Viewpoint location 1: John Cory Road - existing view

Table 7.3 Viewpoint location 1 assessment

Criteria	Comments
Location and view direction	Location (MGA Zone 55); E: 695700. N: 6081166, Elevation: 621.8 m VP01 is situated approximately 30 meters from the proposal, at the intersection of John Cory Road and Recycling Road, 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.
Description of existing view	In the left of the foreground John Cory Road extends away from the view. The bitumen road is lined with a wide mown grassed verge behind the concert kerb. Looking across John Cory Road, in the centre of the midground, is the existing corrugated iron shed of the MRF. The MRF is partially screened by a translucent construction hoarding wire fence and an existing tree to the left of the view. To the right of the foreground is an industrial shed with a green, steel corrugated façade. The verge is interrupted by existing driveways and parking areas for the adjoining industrial uses and the Recycling Road intersection. Also present along both roads are electricity poles, powerlines, streetlights, and street signs. In the left of the background, rows of established native trees conceal the views to the solar park. To the right, in the background view, the grassy undulating hills of Isaacs Pines are partially visible between the industrial sheds in the foreground and midground.
Anticipated change to view	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 proposal 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. During operation in the centre of the midground the corrugated steel façade of the processing building, and main parking would be visible, as well as the main entry gate, administration building and other ancillary structures and vehicles. As the introduced components would have a similar materiality and character to the existing MRF, they would not be uncharacteristic within the existing view.
Sensitivity to change	The sensitivity is Moderate , as pedestrians on the Tuggeranong Heritage Track are located within close proximity to the proposal, however viewing periods are limited and the key focus is away from the proposal site. Road users on John Cory Road have short-term, passing views of the proposal site.
Magnitude of change	The magnitude of change is Low as the introduced facility would not be uncharacteristic within the existing view. Construction impacts are short-term and therefore do not significantly impact the magnitude of change.
Significance of impact	The significance of impact is Moderate-Low , as the sensitivity to change is moderate and the magnitude of change Low .

7.1.2 Viewpoint location 2: Mugga Lane (east)

VP02 is located on Mugga Lane and is facing northeast, as shown in Figure 7.3. Refer to Table 7.4 for assessment.

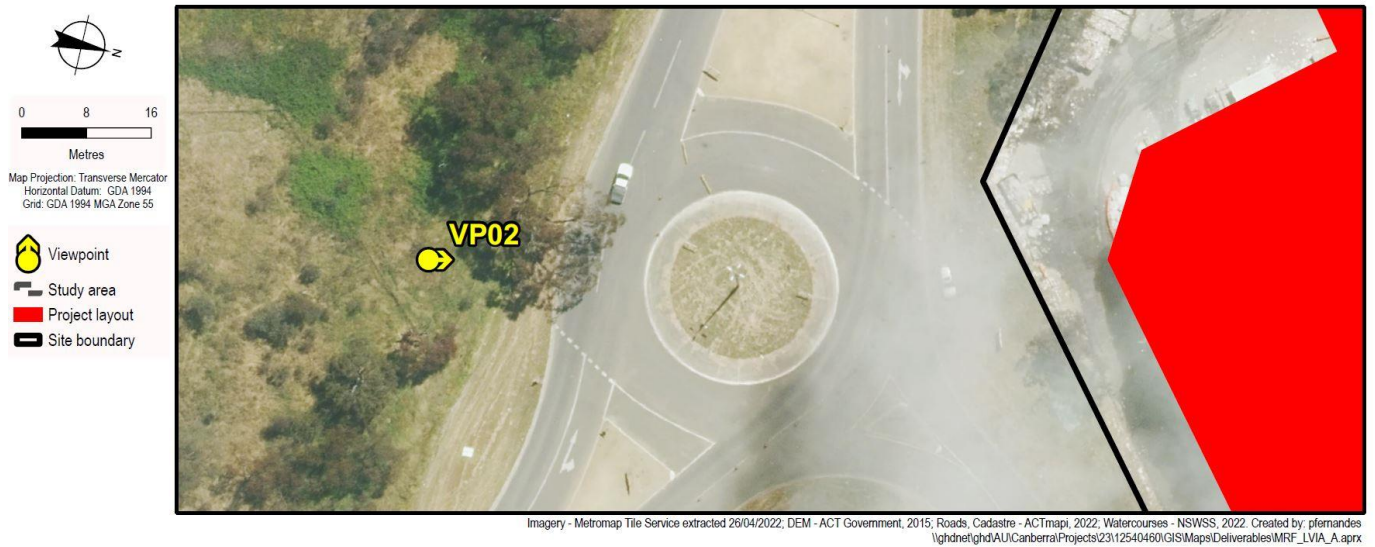


Figure 7.3 VP02 location map



Photo 7.2 Viewpoint location 2: Mugga Lane (east) – existing view



Photo 7.3 Photomontage showing proposed view from Mugga Lane

Table 7.4 Viewpoint location 2 assessment

Criteria	Comments
Location and view direction	Location (MGA Zone 55) ; E : 694921 N : 6080870, Elevation : 621.6 m VP02 is situated approximately 50 meters from the proposal and is facing north. This viewpoint is representative of views experienced by road users on Mugga Lane and workers at the solar park.
Description of existing view	In the centre of the foreground is a grassed roundabout, located at the intersection of Mugga Lane and John Cory Road. Mugga Lane and the grassed verge extend from the roundabout into the left of the background. John Cory Road and its associated road verge extends to the right and centre of the midground. The existing MRF is in the centre right of the midground behind the wide grassed verge and perimeter wire fencing. Throughout the field of view, streetlights and road signs line the roads and roundabout. Views to the grassy undulating topography of the background are partially concealed by the recycling facility and mature trees lining Mugga Lane.
Anticipated change to view	During construction, visual impacts would 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 proposal 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. During operation, a group of large metal-clad buildings would be visible to the left of the existing MRF. 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. Proposed buildings would be set back a minimum of 10 metres from the boundary adjacent to Mugga Lane, in line with the DCP requirements. 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.
Sensitivity to change	The sensitivity is Low , as road users have passing, distant, filtered views of the proposal site. The focus of the road users is away from the proposal site.
Magnitude of change	The magnitude of change is Low , as although the introduced facility would be visible, it would not be uncharacteristic within the existing view. Construction impacts are short-term and therefore do not significantly impact the magnitude.
Significance of impact	The significance of impact is Low , as the sensitivity and magnitude are both Low .

7.1.3 Viewpoint location 3: Mugga Lane (west)

VP03 is located on Mugga Lane and is facing northeast, as shown in Figure 7.4. Refer to Table 7.5 for assessment.

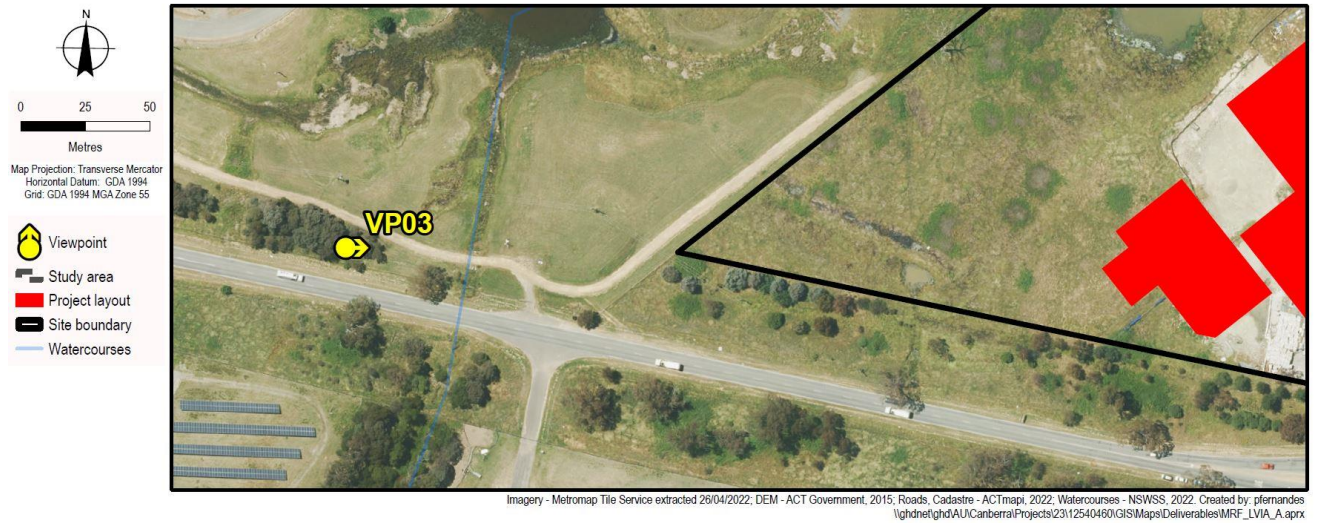


Figure 7.4 VP03 location map



Photo 7.4 Viewpoint location 3: Mugga Lane (west) – existing view



Photo 7.5 Photomontage showing proposed view from Mugga Lane (west)

Table 7.5 Viewpoint location 3 assessment

Criteria	Comments
Location and view direction	<p>Location (MGA Zone 55) ; E : 694921. N : 6080870, Elevation : 621.6 m</p> <p>VP03 is situated approximately 60 meters from the western corner of the proposal and is facing east. This viewpoint is representative of views experienced by road users on Mugga Lane and workers at the nearby landfill site.</p>
Description of existing view	<p>In the right of view, Mugga Lane and the grassed road reserve extend into the background, with rows of established, native trees on the right side and scattered medium size trees to the left. Long views to the right are restricted by the tree canopies. To the left of the road reservation behind the wire fence is a large, grassy plain which extends into the background, with a gentle incline to the left. Beyond the plain in the centre of the background, the existing MRF is visible. In the left of the background are numerous canopy trees, and behind them a faded ridgeline is visible in the distance.</p>
Anticipated change to view	<p>During construction, visual impacts would 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 proposal 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 background the main processing building, the plastic and glass facility, bale storage would be visible as well as other ancillary structures and vehicles. No access road or gates are proposed on Mugga Lane, and all existing vegetation on the Mugga Lane verge will be maintained.</p> <p>As the introduced components would have a similar materiality and character to the existing MRF, they would not be uncharacteristic within the existing view.</p> <p>Proposed buildings would be set back a minimum of 10 metres from the boundary adjacent to Mugga Lane, in line with the DCP requirements.</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>
Sensitivity to change	<p>The sensitivity is Low, as road users have passing, distant, filtered views of the proposal site. The focus of the road users is away from the proposal site.</p>
Magnitude of change	<p>The magnitude of change is Low, as although the introduced facility would be visible, it would not be uncharacteristic within the existing view. Construction impacts are short-term and therefore do not significantly impact the magnitude.</p>
Significance of impact	<p>The significance of impact is Low, as the sensitivity and magnitude are both Low.</p>

7.1.4 Viewpoint location 4: Monaro Highway

VP04 is located on the intersection of Tralee Street and Monaro Highway and is facing northwest, as shown in Figure 7.5 . Refer to Table 7.6 for assessment.



Figure 7.5 VP04 location map



Photo 7.6 Viewpoint location 4: Monaro Highway – existing view

Table 7.6 Viewpoint location 4 assessment

Criteria	Comments
Location and view direction	Location (MGA Zone 55) ; E : 695784 N : 6082166, Elevation : 631 m VP04 is situated approximately 350 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 and Tralee Street, and workers in the Hume Industrial Estate.
Description of existing view	In the foreground Tralee Street meets the Monaro Highway at an intersection. The dual-carriageway highway extends left to right across the field of view. On the near side of the highway, on the view's left, is a wide road reserve with tall, dry grasses and a row of established native trees. On the central median of the highway is mown grass and another row of established buffer trees. Streetlights, street signs, electricity poles and overhead powerlines are visible along Tralee Street and the highway. To the centre and left of the midground are partially concealed views to the steel frame industrial sheds of the MRF and the mattress recycling centre. In the right of the background, behind the tree buffer, are filtered views to the surrounding undulating grassy hills.
Anticipated change to view	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 proposal 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. During operation, filtered views of the main processing 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 waste collection trucks, and smaller vehicles. Views of new components would be significantly screened by the existing Soft Landing Mattress Recycling facility and the rows of established trees in the Monaro Hwy central median and verge. The concept design is consistent with the DCP requirements (refer to Section 4.1.6).
Sensitivity to change	The sensitivity is Low , as road users on the Monaro Highway pass by at high speeds and have brief, indirect, filtered views of the proposal site.
Magnitude of change	The magnitude of change is Low , 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 filtered by the two rows of buffer vegetation. Construction impacts are short-term and therefore do not significantly impact the magnitude.
Significance of impact	The significance of impact is Low , as the sensitivity and magnitude are both Low .

7.1.5 Viewpoint location 5: Wanniassa Hills Nature Reserve

VP05 is located on Wanniassa Hills, adjacent to Centenary Trail and is facing southeast as shown in Figure 7.6. Refer to Table 7.7 for assessment.

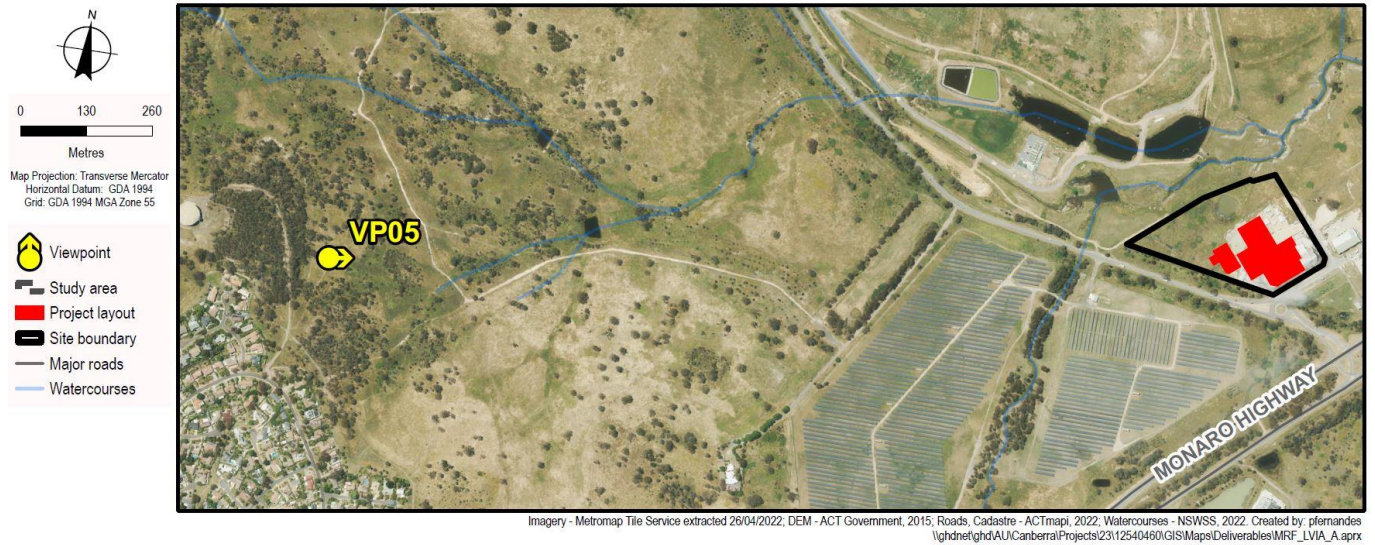


Figure 7.6 VP05 location map



Photo 7.7 Viewpoint location 5: Wanniassa Hills Nature Reserve – existing view

Table 7.7 Viewpoint location 5 assessment

Criteria	Comments
Location and view direction	<p>Location (MGA Zone 55) ; E : 695784.471 N : 6082166.697, Elevation : 631 m</p> <p>VP05 is situated approximately 1.8 km from the proposal and is facing east. This viewpoint is representative of views experienced by visitors of the Canberra Centenary Trail - Tuggeranong Town Centre to Parliament House (Section 7) and the Wanniasa Hills Nature Reserve.</p> <p>Wanniasa Hills Nature Reserve is a 262-hectare protected area, adjacent to the Macarthur suburb.</p>
Description of existing view	<p>The viewpoint presents a relatively open woodland setting. In the foreground and extending into the midground is a gently sloped grassed hill with scattered mid-height native trees. Heavily vegetated patches of native forest cover the sloping topography which extends into a low-lying area in the middle of the background. Here the Hume Industrial Estate is partially visible, including the existing MRF and adjacent industrial sheds, though views are filtered by the vegetation. Also present among the vegetation across the midground are electricity poles and powerlines.</p> <p>In the background beyond the industrial estate, views comprise undulating topography with vegetated ridge lines and no development on the upper landscapes.</p>
Anticipated change to view	<p>During construction, visual impacts may be associated in-situ concrete pouring and the establishment of new structures. Construction vehicles and machinery may be temporarily visible within the proposal 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 main processing 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, bale storage building, waste collection trucks, and smaller vehicles. Views of new components would be significantly screened by foreground and midground vegetation.</p>
Sensitivity to change	<p>The sensitivity is Moderate, as the Canberra Centenary Trail is a popular cycling and walking route in the region and is experienced by local and regional tourists. Visitors place significant value upon the enjoyment of the open views of the existing setting and experience long viewing periods.</p>
Magnitude of change	<p>The magnitude of change is Low, 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 existing vegetation. Construction impacts are short-term and therefore do not significantly impact the magnitude.</p>
Significance of impact	<p>The significance of impact is Moderate-Low as the sensitivity is Moderate and magnitude of change is Low.</p>

7.1.6 Viewpoint location 6: Couranga Crescent

VP06 is located on Couranga Crescent and is facing north as shown in Figure 7.7. Refer to Table 7.8 for assessment.



Figure 7.7 VP06 location map



Photo 7.8 Viewpoint location 6: Couranga Crescent - existing view

Table 7.8 Viewpoint location 6 assessment

Criteria	Comments
Location and view direction	Location (MGA Zone 55); E: 693826 N: 6080030, Elevation: 651.4 m VP06 is situated approximately 500 metres from the proposal and is facing in north. This viewpoint is representative of views experienced by road users on Couranga Crescent, and nearby workers in the industrial area.
Description of existing view	Situated within an industrial setting this view is reflective of other man-made industrial ponds within Hume. The foreground consists of an industrial pond with aquatic grasses and mix of native and exotic planting bordering the pond. Beyond the pond, in the midground, are tall streetlights and native trees associated with the Monaro Highway corridor. Views to the existing MRF are almost entirely screened by the bushy shrubs and mature canopy trees lining Monaro Highway, though glimpses of the shed are visible. A rounded, vegetated hill is also visible in the background over the midground vegetation. To the right of the view is a two-storey large shed made from corrugated steel, glass, and red brick. It is surrounded by black wire fencing and a grassed verge. The shed obstructs long views to the right of the background.
Anticipated change to view	It is unlikely that the construction and operation of the proposal would cause any changes to the view from this location, due to the existing vegetation significantly screening the view. Any changes to the view would be almost imperceptible through the foliage and among the cluster of other buildings within the industrial estate.
Sensitivity to change	The sensitivity is Negligible , as from this location the proposal site is almost entirely screened by vegetation. Views would be short-term, heavily screened and at a significant distance.
Magnitude of change	The magnitude of change is Negligible as there is no change to the key elements, features, or characteristics of the existing view.
Significance of impact	The significance of impact is Negligible , as the sensitivity to change and magnitude of impact are both Negligible .

7.2 Other viewpoint locations

7.2.1 Other viewpoint 1: Gilmore Paddocks

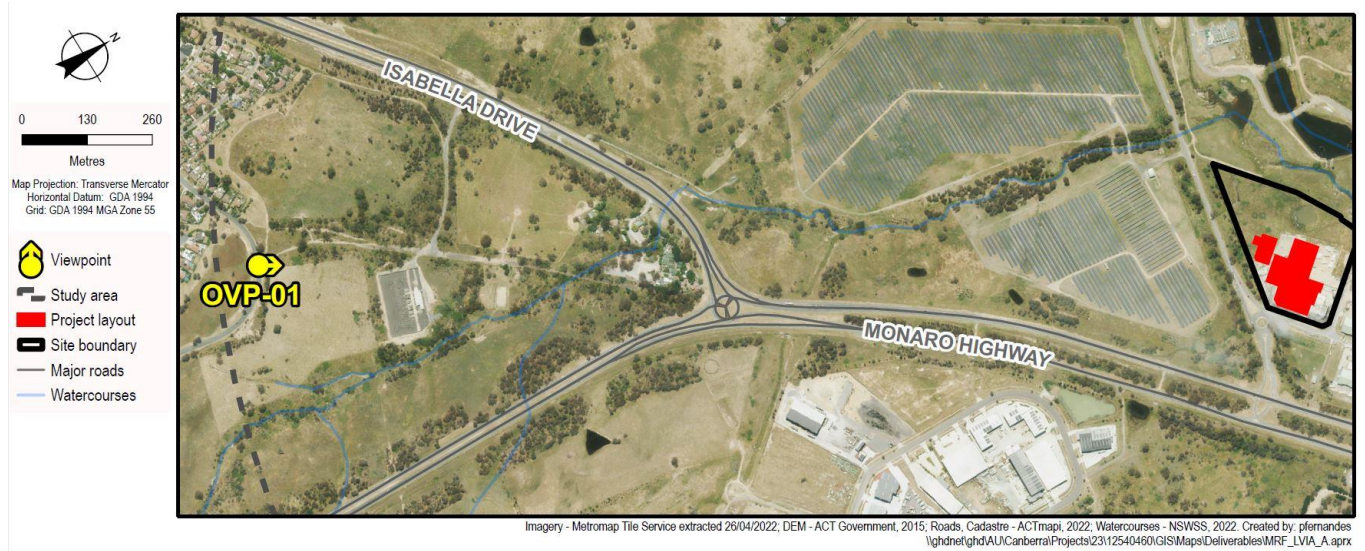


Figure 7.8 OV01 location map



Photo 7.9 Other viewpoint 1: Gilmore

OV01 is located approximately 1.9 km from the proposal and is facing in a northeast direction. The viewpoint is situated on Louisa Lawson Crescent, overlooking Gilmore Paddocks with filtered views of the Hume Industrial Estate in the background. The assessment deemed that the proposal will not be visible from this location due to the vegetation blocking the view, as seen in Photo 7.9. The magnitude and significance of change associated with the proposal would therefore be **Negligible**.

7.2.2 Other viewpoint 2: MacArthur hilltop

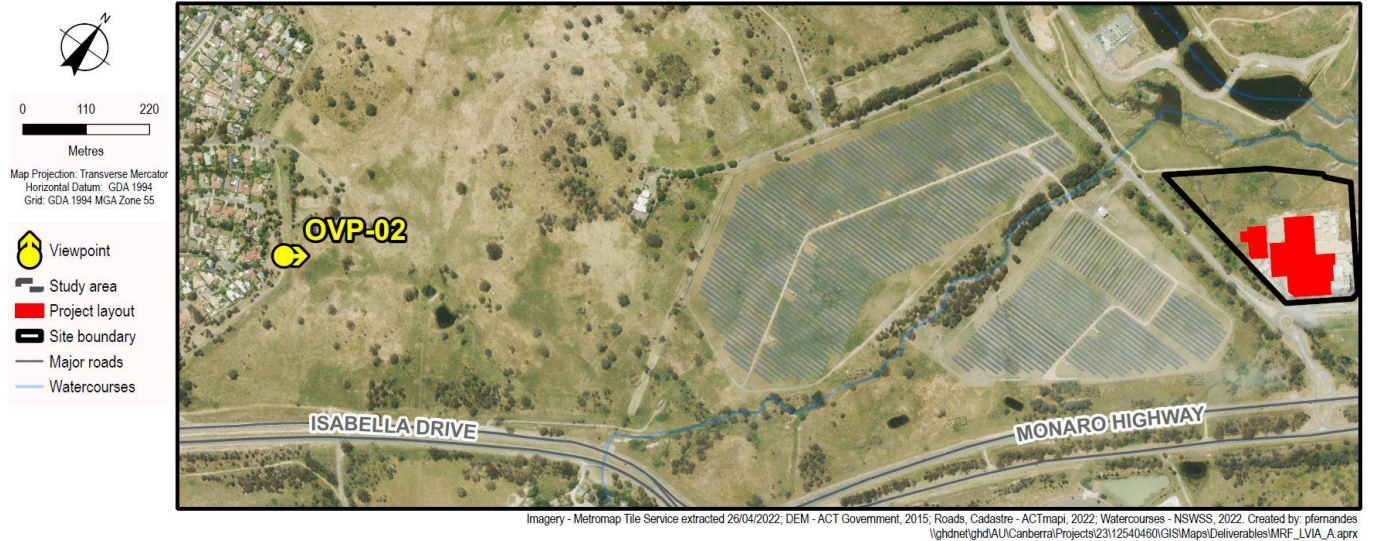


Figure 7.9 OV02 location map



Photo 7.10 Other viewpoint 2: MacArthur hilltop

OV02 is located approximately 1.7 km from the proposal and is facing in a northeast direction. The viewpoint is situated on a gravel track on the edge of the residential area, overlooking the Wanniasa Hill Special Purpose Reserve. The assessment deemed that the proposal will not be visible from this location due to the terrain and vegetation blocking the view, as seen in Photo 7.10. The magnitude and significance of change associated with the proposal would therefore be **Negligible**.

7.2.3 Other viewpoint 3: West Jerrabomberra Nature Reserve

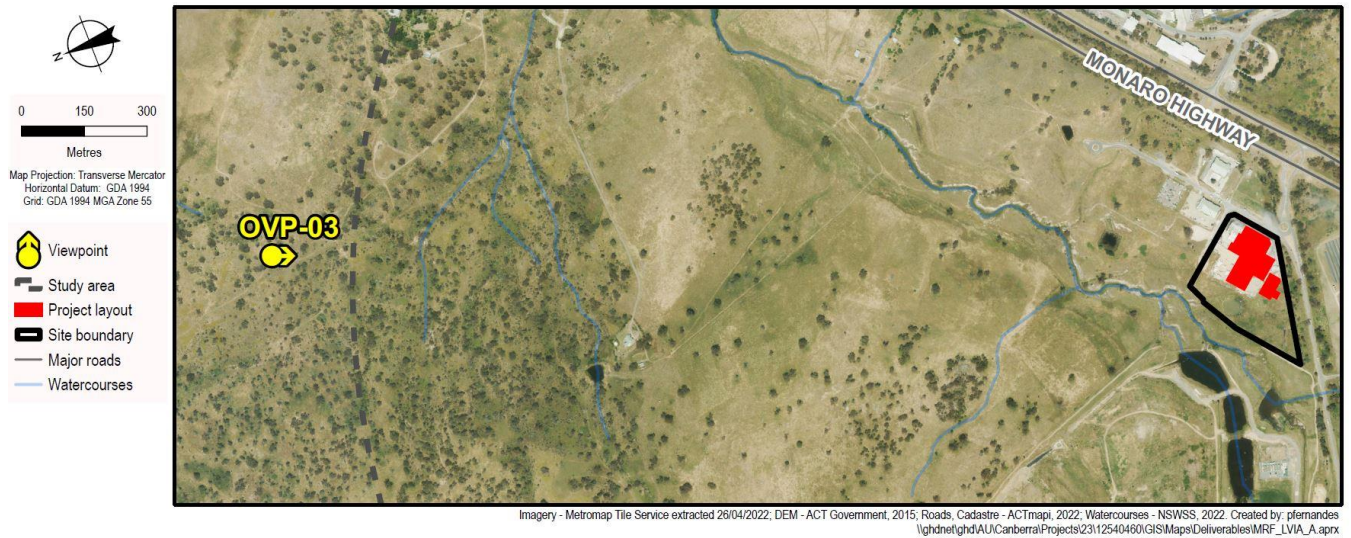


Figure 7.10 OV03 location map



Photo 7.11 Other viewpoint 3: West Jerrabomberra Nature Reserve

OV03 is located approximately 2.4 km from the proposal, outside of the study area, and is facing in a southwest direction. West Jerrabomberra Nature Reserve is a popular tourist destination and is valued for its natural open setting and high-quality woodland of mature trees and saplings. The assessment deemed that the proposal will not be visible from West Jerrabomberra Nature Reserve, as seen in Photo 7.11. The magnitude and significance of change associated with the proposal would therefore be **Negligible**.

8. Mitigation measures

This section recommends mitigation measures that respond to issues arising within the assessment that have potential to adversely impact on:

- The character of the landscape
- Views from nearby sensitive visual receivers

The following mitigation recommendations address the most visual elements of the proposal as well as referencing any relevant considerations drawn from the legislation and policy review, in particular the requirements of the DCP outlined in Section 4.1.6.

8.1 Mitigation recommendations

8.1.1 Design materiality

General considerations for the detailed design phase include:

- 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.
- The DCP Guidelines states that '*The roof should be of pre-coated metal of low reflectivity*'. This should be taken into consideration when specifying colorbond metal roofing finishes.
- Avoid or minimise the use of shiny or reflective materials to minimise associated visual impacts on surrounding sensitive receivers.
- 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. See Photo 8.2 for an example of sensitive external cladding.
- If custom-designed cladding is not possible, consider using a green colour for the roof and external colorbond steel façade walls of the facility to ensure it is in keeping with nearby structures, reducing the landscape and visual impacts. See Photo 8.3 for an example of a green façade.

8.1.2 Landscaping

- 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.
- Increasing the density of planting along the proposal site boundaries, to minimise visual impacts of the buildings, car parking, and ancillary structures and equipment, following DCP planting requirements.
- Planting screening vegetation within the proposal site boundary along John Cory Road, to minimise visual impacts experienced from the Tuggeranong Heritage Track.
- Avoid the clearing of trees where possible, to retain the existing character values.

8.1.3 Signage and services

Considerations for the detailed design phase include:

- Where possible, minimise visual impacts of signage by:
 - Minimising signage dimensions.
 - Avoiding brightly illuminated signage.
 - Employing high quality signage design.
 - Locating signage on buildings rather than freestanding.

8.1.4 Construction activity and storage

General considerations for construction activity and storage include:

- Take all practical measures to ensure construction equipment, storage areas, and other visible elements are located away from key views to or from the sensitive visual receivers identified in this assessment.
- Ensure general tidiness of the proposal site is maintained during construction.
- Avoid conducting works in evenings and nights where possible, to minimise impacts from lighting.
- Where works cannot be located away from trees, provide tree protection to ensure they are not damaged.
- All areas disturbed by construction and ancillary works are to be rehabilitated to their previous condition.
- During construction, employ screening measures to assist the site in blending into the surrounding area. Choice of screening is to be sympathetic to the existing rural setting (e.g. neutral colours or green depending on location). See Photo 8.1 for an example.



Photo 8.1 Sensitive screening in Flagstaff Gardens, Melbourne



Photo 8.2 Sensitive external cladding on a Brunswick utility building, Image source: Google Maps Street View



Photo 8.3 Green, low-reflective cladding in a rural setting adjacent to the proposal site

9. Response to policy

Table 9.1 Response to relevant policy

Policy	Response
Development Control Plan (DCP) 171/09/0001	The Hume MRF concept design is consistent with the DCP requirements (refer to Section 4.1.6). Proposed buildings will be limited to a maximum height of 12 meters and would be set back a minimum of 10 metres from the boundary adjacent to Mugga Lane in line with the DCP. Proposed façade materials and colours comply with DCP relevant guidelines. Main vehicle access routes are located on Recycling Rd and John Cory Rd, complying with the DCP access requirements.

10. Conclusion

This LVIA study has been prepared to understand the potential landscape and visual impacts as a result of the proposal, and forms part of the broader EIS. At the time of writing, the proposal was in the concept design phase.

The proposal is located within the light-industrial suburb of Hume. Key components of the MRF include a processing hall, receival building, bale storage, glass and plastic processing facilities, water tanks and ancillary infrastructure and administration building. Proposed building heights reach a maximum of 12 metres and are set back a minimum of 10 metres from the boundary adjacent to Mugga Lane, in line with the DCP requirements (refer to Section 4.1.6).

The assessment study area extends up to two kilometres from the proposal site, including the Hume Industrial Estate, the Mugga Lane Solar Farm, South Jerrabomberra Village and parts of the Monaro Highway, Wanniasa Hill Nature Reserve, and the residential areas of MacArthur and Gilmore. The landscape character is a combination of industrial and semi-rural landscapes. The topography features undulating plateaus with rounded hills and peaks, and tributaries that flow through the landscape. Distant views can be achieved between high points across the landscape.

A total of three landscape character zones were identified within the study area: Hume Industrial Estate (LCZ1), undulating rural (LCZ2) and undulating residential (LCZ3). Impacts on LCZ1 were deemed low, as it is anticipated that the proposal would not be out of character within the industrial area. Impacts on LCZ2 and LCZ3 were generally negligible.

Six viewpoints were chosen for discussion within the proposal viewshed, incorporating a range of receptor types and distances from the proposal site. Viewpoint locations include John Cory Road, Mugga Lane east, Mugga Lane west, Monaro Highway, Wanniasa Hills Nature Reserve and Couranga Crescent.

Visual impacts at viewpoint locations are generally 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 existing MRF and surrounding existing infrastructure. The highest visual impacts are 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, Viewpoints 1 and 5 have a Moderate-Low overall impact rating.

Visual considerations should include appropriate built form mitigation and the retention of existing vegetation as recommended in Section 8.

Table 10.1 and Table 10.2 provide a summary of landscape and visual impacts for the proposal.

Table 10.1 Summary of landscape impacts

LCZ	Description	Sensitivity to change	Magnitude of change	Overall Rating
LCZ1	Hume Industrial Estate	Low	Low	Low
LCZ2	Undulating rural	Low	Negligible	Negligible
LCZ3	Undulating residential	Low	Negligible	Negligible

Table 10.2 Summary of visual impacts

Viewpoint	Location	Sensitivity to change	Magnitude of change	Overall Rating
VP01	John Cory Road	Moderate	Low	Moderate-Low
VP02	Mugga Lane (east)	Low	Low	Low
VP03	Mugga Lane (west)	Low	Low	Low
VP04	Monaro Highway	Low	Low	Low
VP05	Wanniassa Hills Nature Reserve	Moderate	Low	Moderate-Low
VP06	Couranga Crescent	Negligible	Negligible	Negligible

11. References

- ACT Government, 2008. *Territory Plan 2008*, s.l.: s.n.
- ACT Government, 2009. *Development Control Plan No: 171/09/0001* , s.l.: s.n.
- ACT Heritage Council, 2020. *BACKGROUND INFORMATION ABORIGINAL PLACES HA12 AND HAC2*, s.l.: s.n.
- Anon., 1979. *Environmental Planning and Assessment Act*, s.l.: NSW Governmnet.
- EPA Victoria, 2021. *Stacks*. [Online]
Available at: <https://www.epa.vic.gov.au/for-business/find-a-topic/odour/advice-for-businesses/control-details/stacks>
- GHDWOODHEAD, 2022. *FOGO PROCESSING FACILITY HUME ACT PMCA*. s.l.:s.n.
- Government Architect New South Whales , 2020. *Better placed draft connecting with country* , s.l.: s.n.
- Government Architect NSW, 2017. *Better Placed*, s.l.: s.n.
- Landscape Institute and Institute of Environmental Management & Assessment, 2013. *Guidelines for Landscape and Visual Impact Assessment (Third edition.)*, s.l.: Routledge.
- Natural England, Scottish Natural Heritage and Countryside Council, 2011. *Landscape Character Assessment Guidance*, s.l.: s.n.
- Northern Beaches Council, 2021. *Public Space Vision & Design Guidelines* , s.l.: s.n.
- NSW Department of Environment, C. C. a. W., 2011. *Mitchell Landscapes NSW*, s.l.: s.n.
- NSW Government, 2019. *Local Character and Place Guideline*, s.l.: s.n.
- NSW Government, 2019. *Local Character and Place Guideline 2019*, s.l.: s.n.
- NSW Government, 2021. *Planning, industry and Environment, Design and Place State Environment Planning Policy- Draft*, s.l.: s.n.
- Scottish Natural Heritage , 2012. *Assessing the Cumulative Impact of Onshore Wind Energy Developments* , s.l.: Scottish Natural Heritage .
- Transport for New South Wales, 2020. *Beyond the Pavement*, s.l.: s.n.
- Transport for New South Wales, 2020. *Environmental impact assessment practice note EIA-N04 - Guideline for landscape character and visual impact assessment, Version 2.2*, s.l.: s.n.
- Transport for NSW, 2017. *Sustainable Design Guidelines (Version 4.0)*, s.l.: s.n.
- Wimpenny, C., Howland, B. and Fletcher, D., 2015. *A simple but useful map of vegetation structure in and near Canberra*, Canberra : Environment and Planning Directorate, ACT Government.

Appendices

Appendix A

Photomontages

EXISTING VIEW



PROPOSED DESIGN



KEY PLAN



Concept Design illustrated.
The final design will be reviewed during the detailed design phase and is subject to change.

View Direction: 32° - 112°
Horizontal Field Of View: 80°
Camera Height: 1.7 m
Camera Type: Canon 6D
Lens Type: 50 mm
Photograph Time & Date: 10:48, 13th February 2023

Location: Mugga Lane, Hume, A.C.T
Coordinates: 695378, 6080753 (GDA 2020 MGA Zone 55)
Viewpoint Elevation: 616 m
Date of Photomontage: 31st March 2023
Issue: v 01

**Hume Materials Recovery Facility
ACT NoWaste**
Viewpoint 02 : Mugga Lane East
GHD GHD Pty Ltd
 Level 8, 180 Lonsdale Street
 Melbourne VIC 3000
 T 61 3 8687 8000 E melmail@ghd.com.au W www.ghd.com

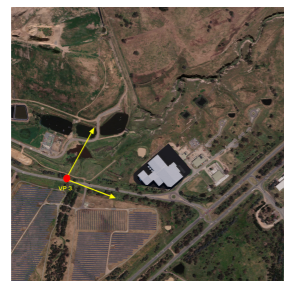
EXISTING VIEW



PROPOSED DESIGN



KEY PLAN



Concept Design illustrated.
The final design will be reviewed during the detailed design phase and is subject to change.

View Direction: 301° - 21°
Horizontal Field Of View: 80°
Camera Height: 1.7 m
Camera Type: Canon 6D
Lens Type: 50 mm
Photograph Time & Date: 11:10, 13th February 2023

Location: Mugga Lane, Hume, A.C.T
Coordinates: 694925, 6080874 (GDA 2020 MGA Zone 55)
Viewpoint Elevation: 625 m
Date of Photomontage: 31st March 2023
Issue: v 01

**Hume Materials Recovery Facility
 ACT NoWaste**
Viewpoint 03 : Mugga Lane West
 **GHD Pty Ltd**
 Level 8, 180 Lonsdale Street
 Melbourne VIC 3000
 T 61 3 8687 8000 E melmail@ghd.com.au W www.ghd.com

Appendix B

**Consideration of possible lighting impacts
on pilot distraction by the GHD Hazard
team**

Consideration of possible lighting impacts

The following high-level consideration of *lighting impacts in relation to pilot distraction* has been provided by the GHD Hazard team on the 20 April 2023.

“The MRF is similar to others in the area and would offer no significant extra lighting or have lighting that differs from other industrial buildings. Deliveries for the existing MRF are currently between 4:00am and 10:00pm. Lighting may be used in the earlier hours and would be minimized once there is adequate daylight. Lighting outside would be capped so the direct lighting cannot be viewed from above.

Canberra airport is 14km away, which is more than twice the 6km 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.”

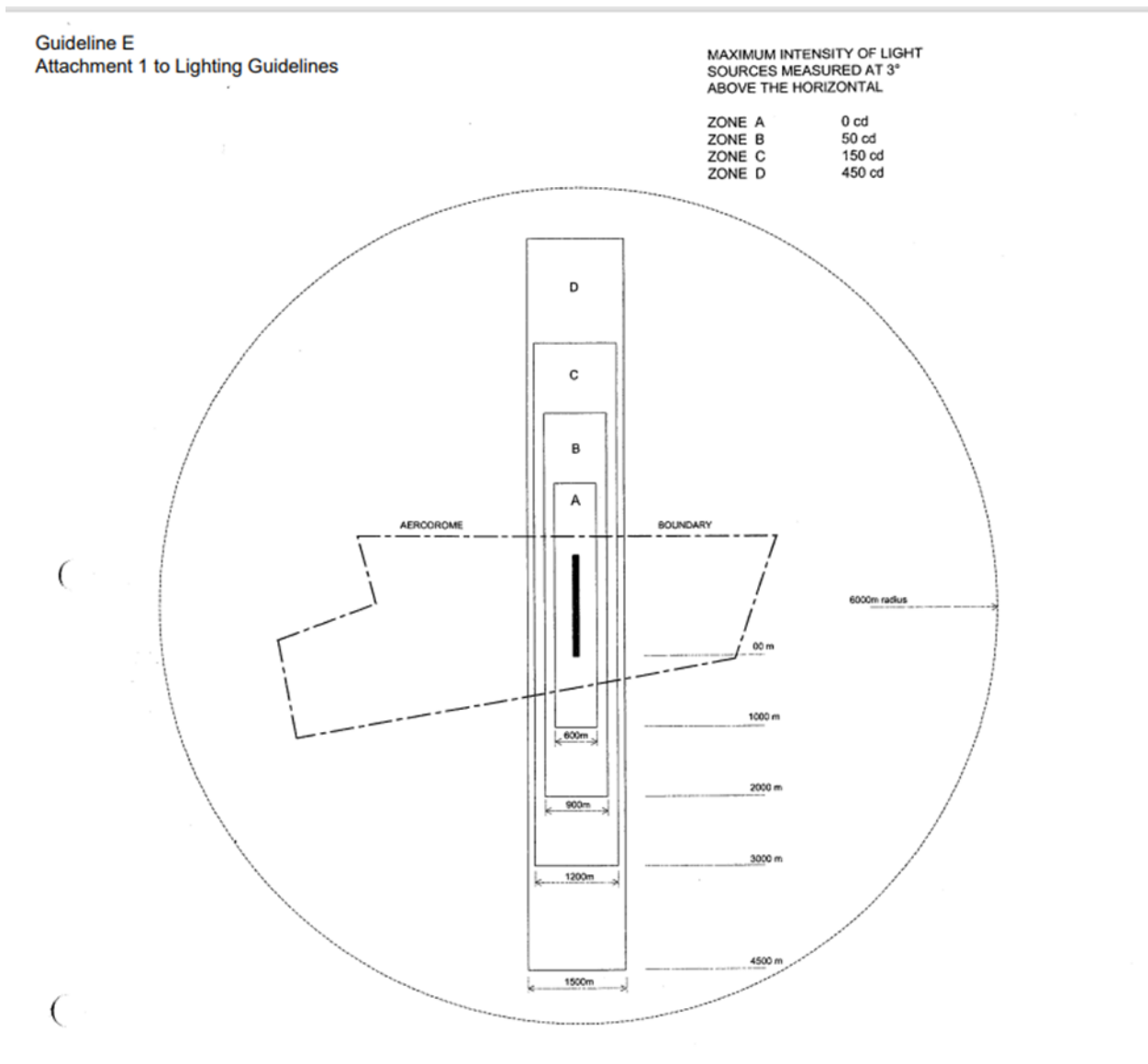


Figure 11.1 Anticipated impact of proposal site lighting on Canberra airport aerodrome

Reference

- Guideline E – National Airports Safeguarding Framework – Managing the Risk of Distraction to Pilots from Lighting in the vicinity of Airports.



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