

Ballarat North PSP

Final Landscape and Visual Assessment

Victorian Planning Authority

April 2025

An abstract geometric design featuring a series of intersecting grey lines that create a mesh-like pattern. Three specific line segments are highlighted in a vibrant orange color: one near the top right, one on the left side, and one in the lower right quadrant. The word 'mesh' is written in a large, lowercase, orange sans-serif font in the bottom left corner.

mesh

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Victorian Planning Authority

April 2025

Client	Victorian Planning Authority
Project	Ballarat North PSP
Version	1
Prepared By	Amy Garrett & Neha Juddoo
Reviewed By	Neha Juddoo & Jacob Peterson
Date	April 2025

Acknowledgement
Mesh acknowledges the Wadawurrung Traditional Owners of the lands on which this project is located, and we pay our respects to Elders past, present and emerging.

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Level 2, 299 Clarendon Street South Melbourne VIC 3205
office. +61 3 9070 1166 | meshplanning.com.au

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0 EXECUTIVE SUMMARY

Mesh Planning was engaged in October 2023 by the VPA to undertake a Landscape and Visual Assessment for the Ballarat North Precinct Structure Plan (PSP) area.

The fundamental importance of a high-quality landscape and visual assessment is to provide a meaningful analysis of valuable landscape features to be incorporated into the future development of the area. These features quickly become core elements to the vision of a PSP, providing clear net community benefits through the extension of trails, increased public parkland, premium residential and employment precincts with views and enhanced biodiversity. These are the elements of the PSP that are inspirational, exciting, and purposeful, particularly from the general public perspective.

From Mesh's experience working on many PSPs, we would go as far to say that, done well, the landscape and visual assessment provides the most meaningful inputs regarding urban design and neighbourhood character direction.

The key objectives of this landscape and visual assessment are to clearly identify the key landscape / visual character features and significant views to provide high-level recommendations that will inform the future urban design and the appropriate expanded development boundary of the Ballarat North PSP area.

The project commenced with building up an understanding of the site through undertaking the analysis of background documentation, spatial desktop analysis, a site visit and understanding the PSP development proposed. Comprehensive mapping of the existing views was completed (Figures 19-24), with the supporting photographic inventory in the Appendix to aid readers in further understanding the experience and importance of each view and the role it plays in the PSP.

With the combined desktop and in-person experience and understanding of the site, this forms the basis of identifying the potential landscape opportunities for the PSP. In response to each of these listed opportunities, high-level recommendations are provided for how these may be implemented or achieved within the future design of the PSP and any relevant additional consultations or experts that may need to be engaged to achieve them. A high-level mapping has been produced to spatially demonstrate the potential locations and outcomes of the recommendations (Figure 33).

Some of the key opportunities and recommendations identified for the Ballarat North PSP are as follows:

- Create a well-considered, well-connected open space network, taking into consideration relationships between internal and external landscape features and movement networks.
- Proposed retention of key views of significant landscape features.
- Proposed retention of existing trees where possible to retain existing landscape character and provide immediate natural amenity to new development within the PSP.
- Re-naturalisation of the Burrumbeet Creek and surrounding environs.
- Protection and continued maintenance of existing wetland landscapes.
- Consideration of utilising Water Sensitive Urban Design (WSUD) strategies, and strategically located wetlands and open space to combat flooding.
- Create better and safer connections across high-speed roads for pedestrians and cyclists.
- Provide a connected network for active transport and a pleasant pedestrian experience that connects people with nature.
- Implement strategies to combat climate change.

Identifying any resulting residual impacts, is the final stage of the assessment. This section relates to actions that are outside of the project scope and risks identified following this scope of works. These recommendations should be considered in conjunction with the opportunities and recommendations. At the time this report has been written, some of the 'residual impacts' that have been identified are currently being undertaken by the VPA.

This Ballarat North PSP Landscape and Visual assessment will address the identified PSP core and expanded areas both separately and holistically combined, ensuring the ongoing relevance of this document for the VPA and State Government.

More importantly however, the recommendations proposed within this Ballarat North PSP Landscape and Visual assessment will be used to create meaningful inputs into the future of the PSP with regards to urban design, landscape, and neighbourhood character direction.

1 INTRODUCTION

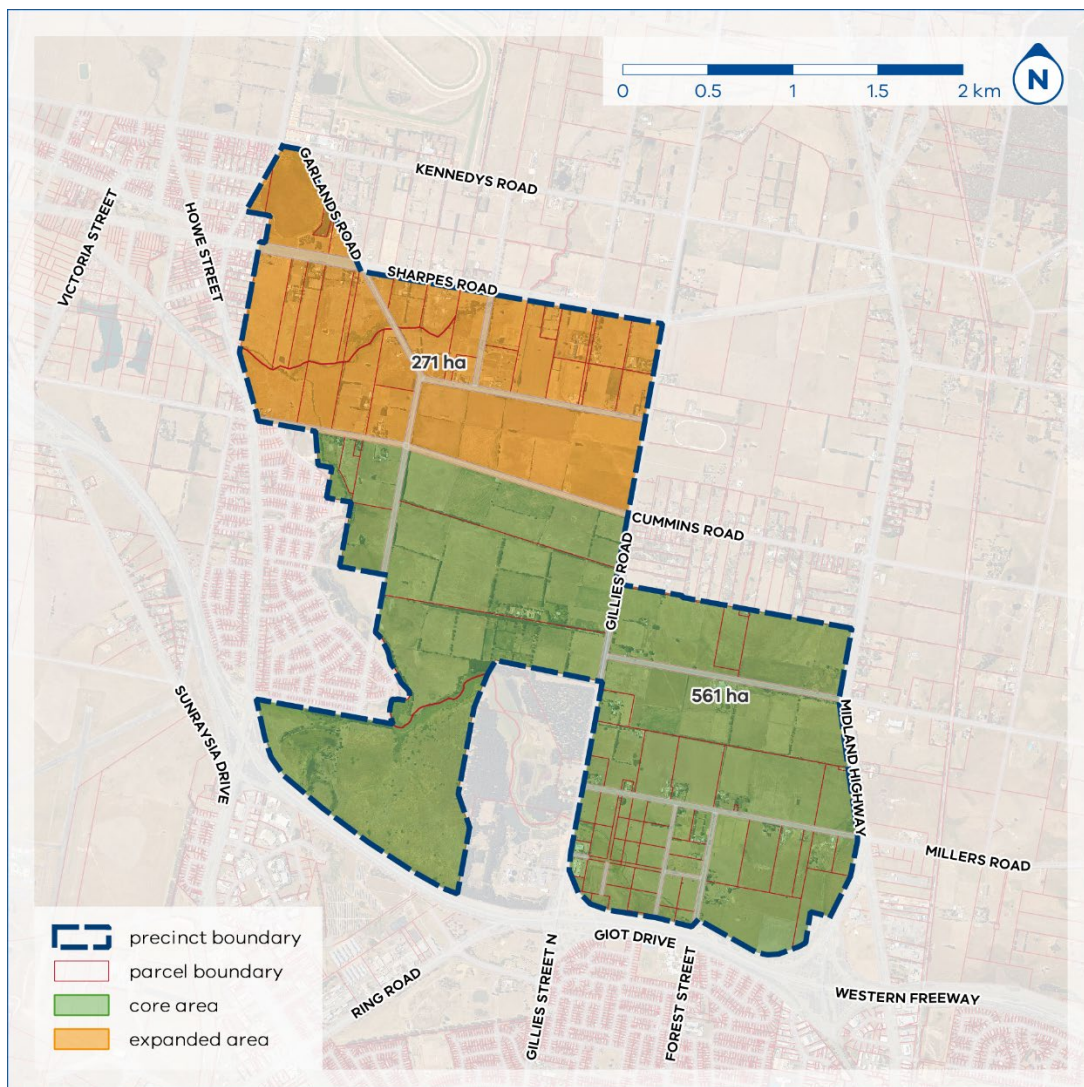
1.1 PROJECT INTRODUCTION

Mesh Planning was engaged by the Victorian Planning Authority (VPA) to prepare a landscape and visual assessment for the identified preferred future growth area of Ballarat North Precinct Structure Plan (PSP) area as shown in Figure 1. Figure 1 also indicates the precinct is currently divided into the 'Core Area' at approx. 561 hectares and 'Expanded Area' at approx. 271 hectares. The expanded area has been included within this landscape and visual assessment but is not formally considered a part of the PSP boundary and is subject to further investigation by the VPA and will require formal inclusion into the PSP area by State Government. This report will address the core and expanded areas separately, as well as holistically combined, to ensure the ongoing relevance of this document if the VPA and State Government decide to include or exclude the expanded area as part of the final PSP site boundary.

The Ballarat North PSP landscape and visual assessment endeavours to identify and assess the key landscape features and visual connections within and extending from the PSP area that are integral to the character of the site and establish recommendations as to how these features and visual connections can be incorporated into the future design of the PSP area.

Figure 1: Ballarat North Precinct Structure Plan area. 'Core' and 'Expanded' Areas identified.

Source: Victorian Planning Authority



This report bases its understanding of the site through undertaking the analysis of background documentation, spatial desktop analysis, a site visit and understanding the PSP development proposed.

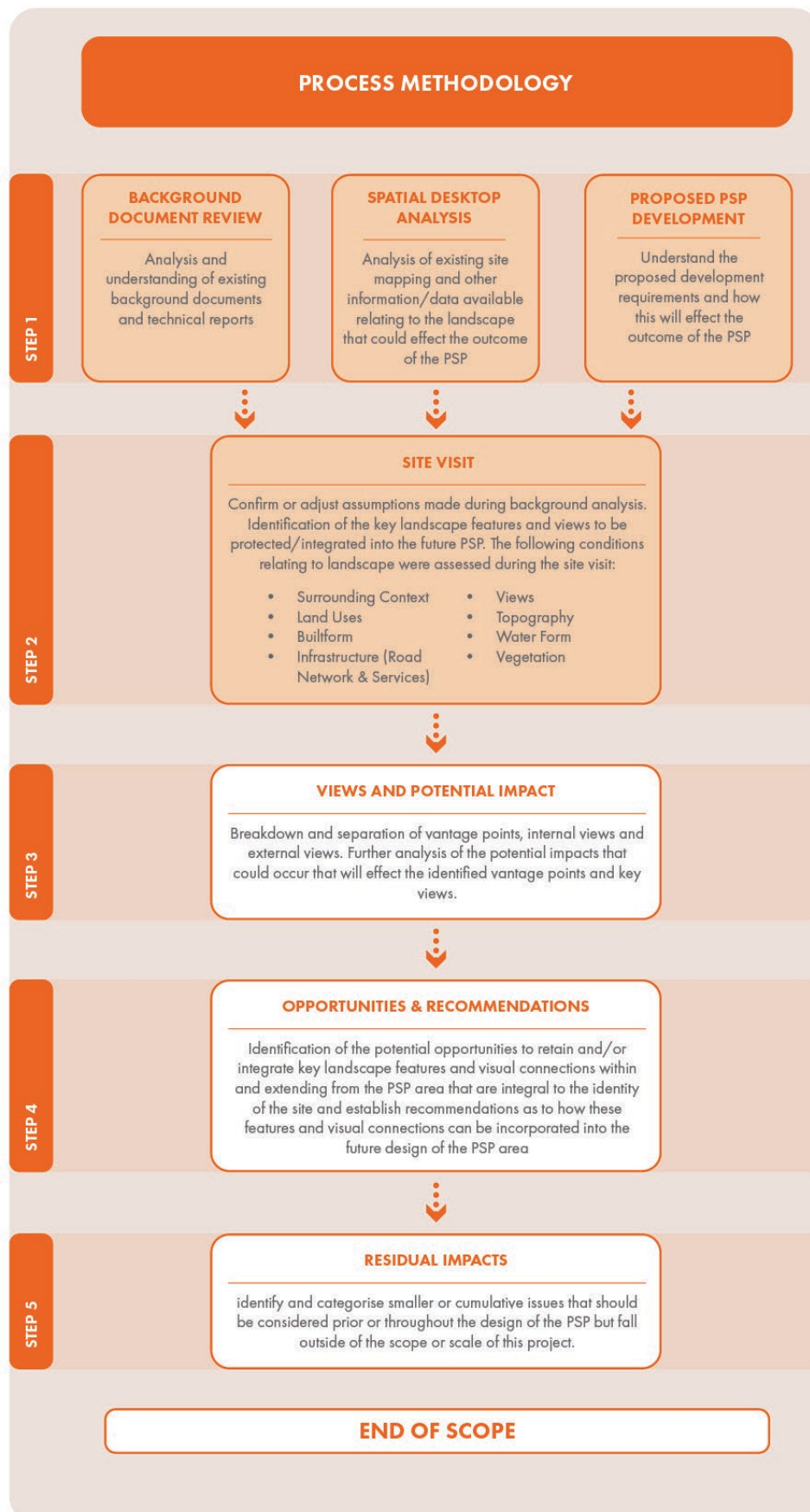
A comprehensive site visit of the Ballarat North PSP and its surroundings was undertaken in November 2023 to further confirm the findings from the background research and desktop analysis. This site visit revealed key landscape features and in particular, the key vantage points and views within and extending from the PSP that were vital to the landscape character and 'sense of place' that made up the PSP area.

The combined research, analysis and site visit revealed the opportunities where the landscape features should be protected/integrated into the future design of the PSP as well as identify if there are any missing gaps in the open space network. Informed by the opportunities, a thorough and considered list of recommendations was developed to advise on how the landscape features and views should be protected and/or integrated into the design of the future PSP area.

The final section of the report relates to the residual impacts, which will identify and categorise smaller or cumulative issues that should be considered prior or throughout the design of the PSP but fall outside of the scope or scale of this project.

Figure 2: Ballarat North PSP LVA – Project Methodology

Source: Mesh Planning



1.2 GLOSSARY & ABBREVIATIONS

Based on the Australian Institute of Landscape Architects (AILA) Guidance Note for Landscape and Visual Assessments, the following list provides a number of general terms and definitions that are important to remain consistent across the Ballarat North PSP Landscape and Visual Assessment (LVA):

- **Amenity:** The pleasantness of a place as conveyed by desirable attributes including views, noise, odour etc.
- **Character:** A distinct, recognisable, and consistent pattern of elements in the landscape that makes one landscape different from another, and often conveys a distinctive 'sense of place'. This term does not imply a level of value or importance.
- **Effect:** The landscape or visual outcome of a proposed change. It may be the combined result of sensitivity together with the magnitude of the change.
- **Impact:** The categorisation of effects. Legislative context should be considered in defining 'impacts' and their significance.
- **Landscape:** Landscape is an all-encompassing term that refers to areas of the earth's surface at various scales. It includes those landscapes that are: urban, peri-urban, rural, and natural; combining bio-physical elements with the cultural overlay of human use and values.
- **Mitigation:** Measures to avoid, reduce and manage identified potential adverse impacts.
- **Offset:** Measures to compensate for potential adverse impacts that cannot be otherwise mitigated.
- **Scenic amenity:** A measure of the relative contribution of each place to the collective appreciation of the landscape. The term scenic amenity has a specific meaning and application in GIS mapping (a combination of visual exposure and scenic preference) and has been incorporated into several local planning schemes across Queensland.
- **Sensitivity:** Capacity of a landscape or view to accommodate change without losing valued attributes. Includes the value placed on a landscape or view by the community through planning scheme protection, and the type and number receivers.
- **Values:** Any aspect of landscape or views that people consider to be important. Landscape and visual values may be reflected in local, state or federal planning regulations, other published documents or be established through community consultation and engagement, or as professionally assessed.
- **View:** Any sight, prospect or field of vision as seen from a place, and may be wide or narrow, partial or full, pleasant or unattractive, distinctive or nondescript, and may include background, mid ground and/or foreground elements or features.
- **Viewpoint/Viewline:** The specific location of a view, typically used for assessment purposes.
- **Visual amenity:** The attractiveness of a scene or view.
- **Visual catchment:** Areas visible from a combination of locations within a defined setting (may be modelled or field validated).

The following lists of abbreviations are used across the Landscape and Visual Assessment (LVA):

- **PSP:** Precinct Structure Plan
- **CBD:** Central Business District
- Overlays
- **ESO:** Environmental Significance Overlay
- **SLO:** Significant Landscape Overlay
- **DDO:** Design & Development Overlay
- **EMO:** Erosion Management Overlay
- **FO:** Flood Overlay
- **LSIO:** Land Subject to Inundation Overlay
- **BMO:** Bushfire Management Overlay
- **SCO:** Specific Controls Overlay
- **EA0:** Environmental Audit Overlay

1.3 BACKGROUND DOCUMENTS

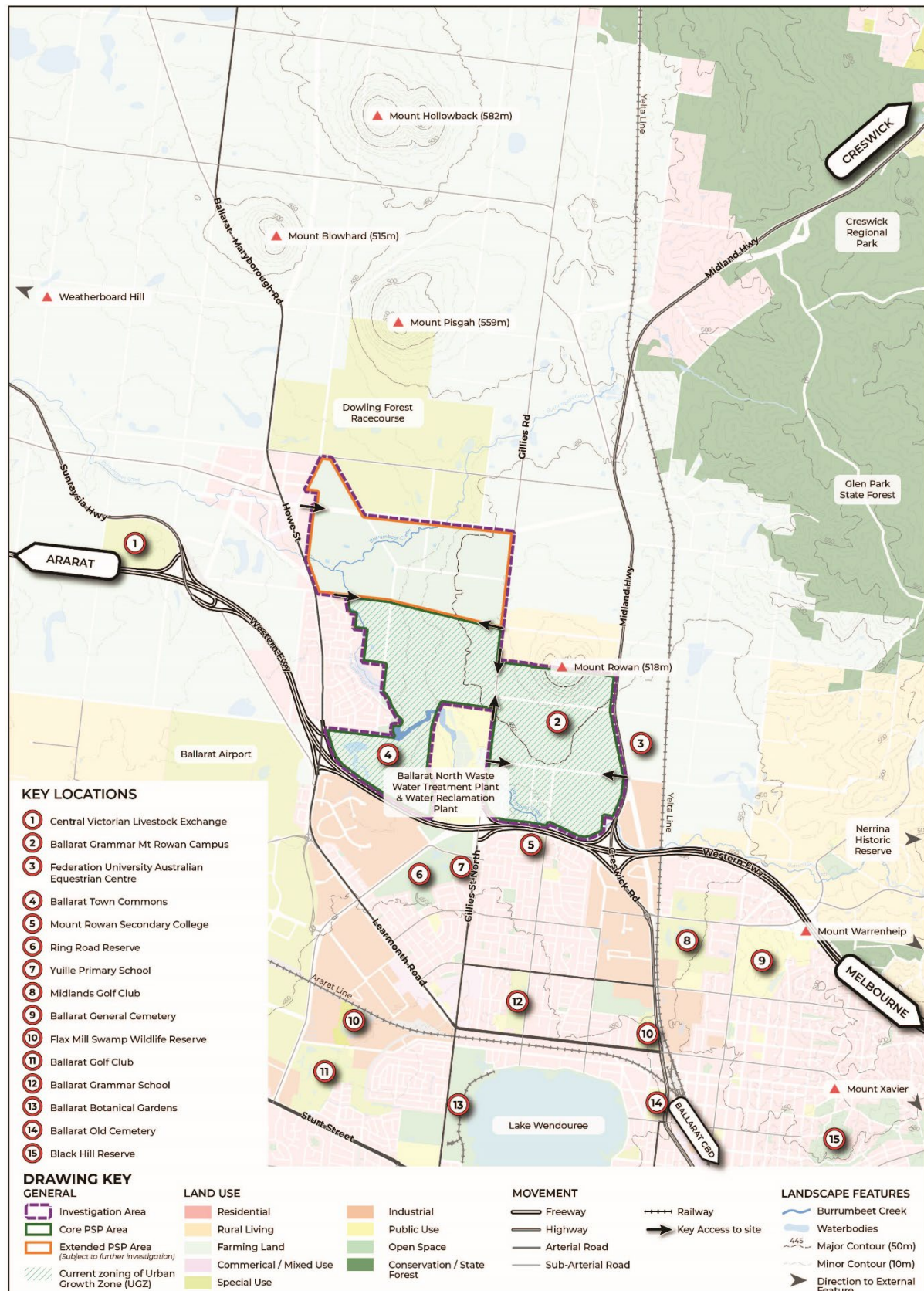
Below is the list of background documents that were reviewed to assist in informing this Landscape Visual Assessment of Ballarat North PSP alongside the site analysis and site visit:

- **Ballarat North Precinct Structure Plan: Landscape and Open Space Assessment – Consultation Inception Meeting Presentation** – Victorian Planning Authority (2 October 2023)
- **Ballarat & Queen's Anglican Grammar School Foundation Ltd, Lot 2 (PS622085) Gillies Road, Mount Rowan** – Incorporated Document: Clause 52.03 (9 April 2013)
- **Ballarat Growth Area Review Submissions Summary** – SD Planning (30 April 2021)
- **Ballarat Long Term Growth Options Investigation** – Hansen Partnership ARUP & Tim Nott Economics (August 2018)
- **Flora & Fauna Assessment and Net Gain Analysis, Ballarat Resort Site, Cardigan** – Practical Ecology Pty Ltd (24 February 2009)
- **Ballarat Greenfields Investigation Areas Review: Part A Analysis Report** – ARUP (16 June 2018)
- **Ballarat Greenfields Investigation Areas Review: Part 2 Analysis Report - Appendix B: Preliminary Geotechnical Desktop Study Assessment** – ARUP (16 June 2018)
- **Ballarat Greenfields Investigation Areas Review: Part 2 Analysis Report - Appendix C: Infrastructure Demand and Costs** – ARUP (16 June 2018)
- **South West Victoria Landscape Assessment Study** – Planisphere (June 2013)
- **Urban Forest Action Plan** – City of Ballarat (March 2019)
- **City of Ballarat Open Space Strategy** – City of Ballarat (March 2008)
- **Heathly Streets Principles**: <https://www.healthystreets.com/what-is-healthy-streets>

interfaces the established northern outskirts of Wendouree and Ballarat with a mixture of industrial land, public open space and residential properties to which Gillies Street creates the direct connection into.

Figure 4: Ballarat North Regional Context Plan

Source: Mesh Planning



2.2 LOCAL CONTEXT & CONDITIONS

The PSP area is predominantly comprised of active farming and agricultural land mostly utilised for grazing livestock. The paddocks are framed with planted tree rows of *Cypress sp.* or *Eucalyptus sp.* to create privacy and windbreaks.

CORE PSP AREA

To the west the core area is naturally bordered by the Burrumbeet Creek. Extending west from the creek is an established residential development, sensitively designed in adjacency to the creek and to maximise frontages and outlooks into the natural amenity and with the addition of trails and drainage reserves created along the waterway for recreation. Similar principles should be considered to any development proposed for the eastern interface of the Burrumbeet Creek within the Ballarat North PSP area.

Although being the main access route into the core area and being the most direct route down to Wendouree, Gillies Street is used by a large number of vehicles which results in a distinct separation between the western and eastern sides of the core PSP area.

The Ballarat North Wastewater Treatment Plant sits in the middle of core area extent and the PSP boundary raps around the perimeter of the plant, this results in a further divide in the eastern and western sides due to the lack of public accessibility to the plant. The PSP interfaces directly with the extensive *Pinus sp.* plantations that border the treatment plant and bushfire management overlay is applied to these plantations and will need to be a consideration as to how to interface any future development. Burrumbeet Creek also runs through the middle of the treatment plant and due to the lack of accessibility this creates an abrupt disconnect along waterway and removes the potential for a continuous green link to be provided.

Contained within the south-eastern portion of the core area is the Ballarat Town Commons, Council owned land with no future development planned for this area, rather it to be protected for habitat value. Other than for maintenance the Commons is not easily accessible or visually open to the general public.

EXPANDED PSP AREA (Subject to further investigation)

Burrumbeet Creek cuts east-west through the centre of the expanded area, this results in some irregular lot fragmentation, but also noting the added benefit it provides as natural amenity to the area to the potential future residential development area.

Looking north and externally from the expanded PSP area there are large, green rolling volcanic rises that form and dominate the horizon line. To the north of the expanded PSP area is also considered the Equine Precinct for the Ballarat region, with well-established stables immediately adjacent to the northern boundary and further north the Dowling Racecourse is nestled amongst the hills however not visible from the site.

The west is bordered by a sub-arterial road to which the adjacent residential development has a larger setback with a shared path. Located in the top north-west corner is the Miners Rest Wetland, creating a visual and amenity break between the residential development and farming.

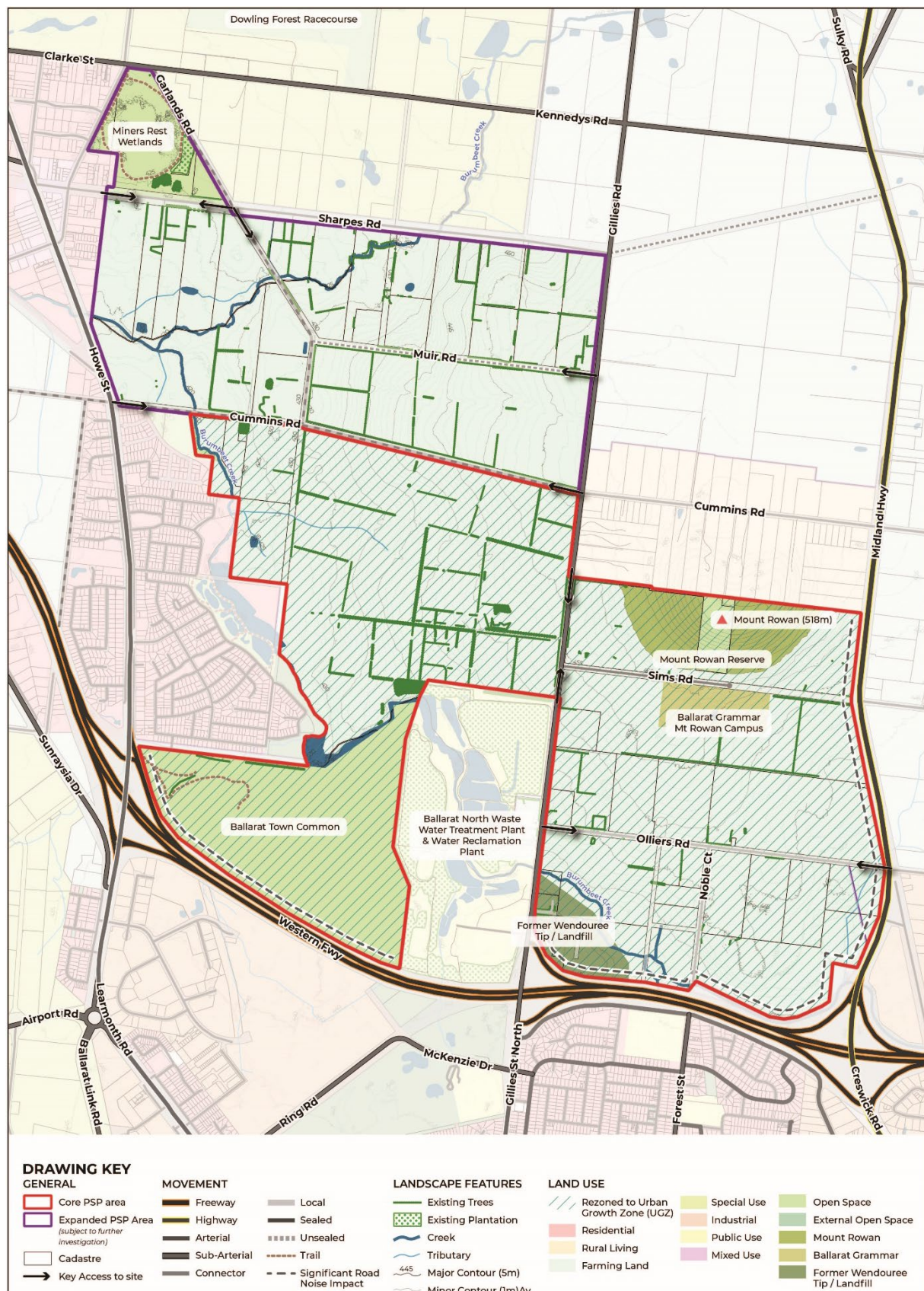
The eastern portion of the expanded area could be considered scenic agricultural land with pristine undulating landscapes, host to domestic livestock with open paddocks and property boundaries planted with seemingly evenly spaced native *Eucalyptus sp.* trees to create privacy and windbreaks for the residents and livestock.

This northern expanded area is located 250m east of the Miners Rest mixed use zone which mostly consists of residential properties but also contains local services and venues such as the Miners Rest Community Hall, Miners Rest Tavern, Miners Rest Local Post Office, Miners Rest General Store and Ritchies IGA Miners Rest.

The overall structure of the road network makes this area quite accessible however, unsealed roads frequent this area of the PSP. Therefore, road upgrades and further breakdown of the road hierarchy will be required to accommodate for any future development.

Figure 5: Ballarat North PSP - Local Context Plan

Source: Mesh Planning



2.3 OTHER EXISTING CONDITIONS MAPPING

2.3.1 Land Use

CORE AREA – Land Use

The land uses contained within the core area of the PSP is predominately farming land. Open spaces identified in this PSP are the Ballarat Town Commons, covering the entirety of the south-western corner of the PSP and considered to be crown land, and Mount Rowan Reserve located in the north-eastern portion of the core area. Ballarat Grammar's Mount Rowan Campus is south of the Mount Rowan Reserve. A small wedge of industrially zoned land was identified on the far eastern side of the core area boundary prior to the core area being rezoned to UGZ. Located on the north-east corner of Gillies Road and the Western Freeway is the Former Wendouree Tip / Landfill, which is now a capped grassy mound that sits unused at a key gateway of the PSP.

EXPANDED AREA (Subject to further investigation) – Land Use

Farming land dominates the percentage of land use across the expanded area with only the Miners Rest Wetlands being the only other land use and under Council/crown land ownership.

Source: Ballarat Long Term Growth Options Investigation – 2018



2.3.2 Overlays

CORE AREA - Overlays

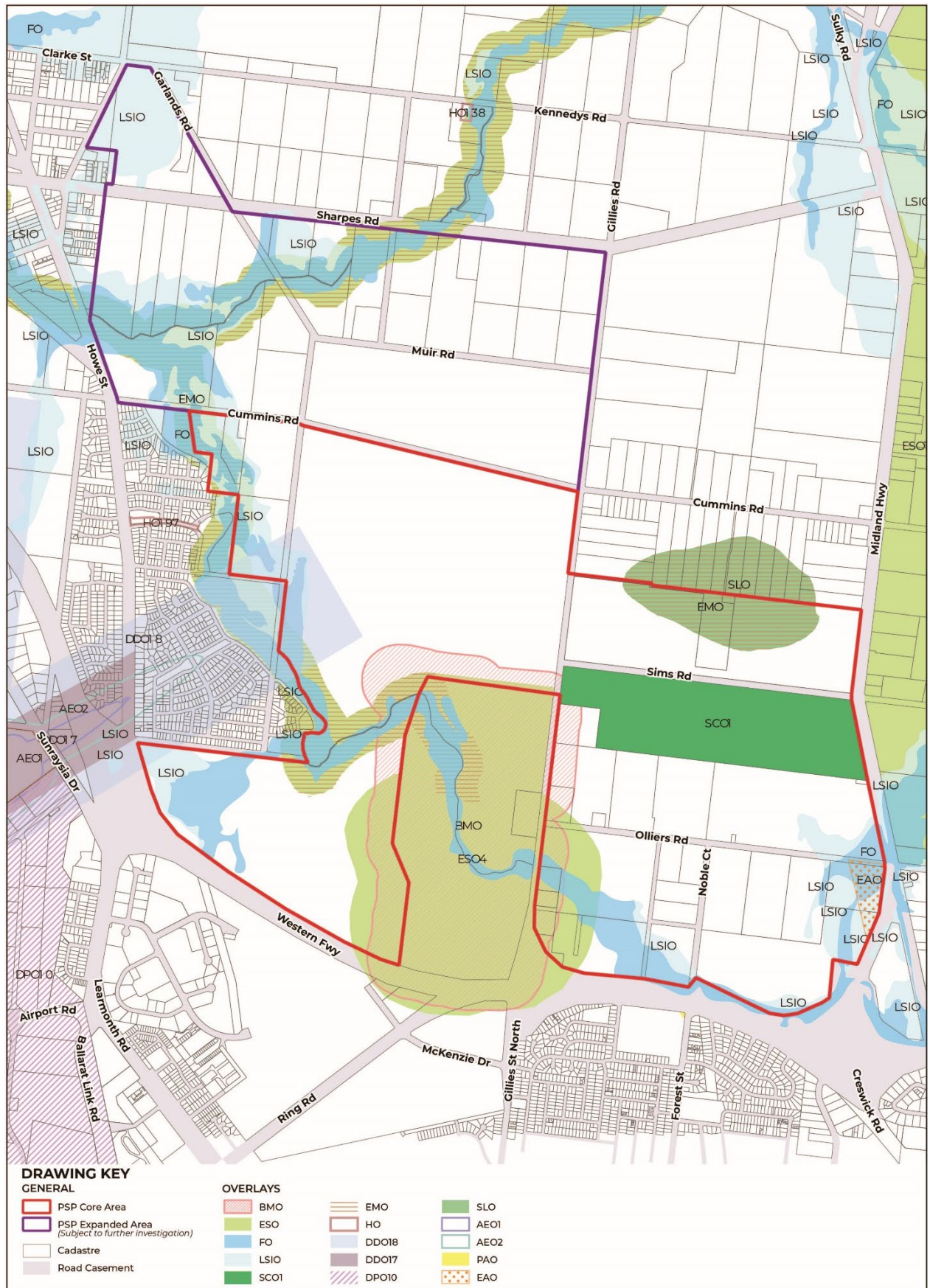
- Environmental Significance Overlay (ESO):
 - Exists along the western boundary of the core area and follows the Burrumbeet Creek watercourse north-south, before linking east to the Ballarat North Water Treatment Plant.
 - The ESO also covers the Water Treatment Plant and further extends east and west into the adjacent Ballarat North PSP area.
- Significant Landscape Overlay (SLO):
 - Mount Rowan is identified as a significant landscape.
- Design and Development Overlay (DDO) – Schedule 18:
 - The DDO18 encroaches on a smaller western portion of the core PSP area as an extension from the Airport Environs, this will restrict built form to less than 15m high to ensure that flight paths from the Ballarat Airfield are protected from the invasion of hazardous obstacles and to enable the safe operations to and from the Airfield.
- Erosion Management Overlay (EMO):
 - Exists along the western boundary of the core area and follows the Burrumbeet Creek watercourse north-south before linking east into the Ballarat North Water Treatment Plant.
 - The EMO is also applied to Mount Rowan.
- Flood Overlay (FO):
 - Follows along the entirety of the Burrumbeet Creek watercourse in the core area and includes the wetland area of the Ballarat Town Commons and through the Ballarat North Water Treatment Plant to follow the waterway long the Western Freeway.
- Land Subject to Inundation (LSIO):
 - Expands east from the Flood Overlay along the Burrumbeet Creek at the western boundary of the PSP.
 - Expands west from the wetland area located in the Ballarat Town Commons
 - Extends partially from the Flood Overlay following Burrumbeet Creek adjacent to the Western Freeway.
- Bushfire Management Overlay (BMO):
 - The BMO is applied to the Ballarat North Water Treatment Plant due to the high density of vegetation that has been planted, this overlay further expands into the adjacent core PSP area with considerations of buffer treatments to be recommended within these areas when designing the future PSP.
- Specific Controls Overlay (SCO):
 - Refer to SCO1 document – ‘Ballarat & Queen's Anglican Grammar School Foundation Ltd. Lot 2 (PS622085) Gillies Road, Mount Rowan, April 2013’.
- Environmental Audit Overlay (EAO):
 - Small wedge of land sitting along the eastern boundary of the core area to undergo preliminary risk screen assessment or environmental audit to ensure that the potential contaminated land is suitable for a use which could be significantly adversely affected by any contamination.

EXPANDED AREA (Subject to further investigation) - Overlays

- Environmental Significance Overlay (ESO):
 - Follows the watercourse of the Burrumbeet Creek east-west in the expanded area and linking south along the western boundary of the core PSP area.
- Erosion Management Overlay (EMO):
 - Follows the watercourse of the Burrumbeet Creek east-west in the expanded area and linking south along the western boundary of the core PSP area.
- Flood Overlay (FO):
 - Follows along the entirety of the Burrumbeet Creek watercourse within the expanded area.
- Land Subject to Inundation (LSIO):
 - Covers the entirety of the Miners Rest Wetlands in the top left corner of the expanded area.
 - Expands in moments from the Flood Overlay along the Burrumbeet Creek.

Figure 7: Ballarat North PSP – Overlays Plan

Source: Mesh Planning



2.3.3 Cultural Significance

CORE AREA - Cultural Significance

Locations considered of Aboriginal Cultural Significance include Mount Rowan, the Burrumbeet Creek and directly surrounding environs and a few artefact sites located centrally within the core PSP area.

The core PSP area also contains three sites that are listed in the Historical Inventory from the Victorian Heritage Database:

- Former House Site, Wyndholm Park, Miners Rest (Address: 171 Gillies Road, Miners Rest) – Located in the west of the PSP area.
- Mount Rowan House Remains (Address: Gillies Road Mount Rowan, Ballarat City) – Centrally located to within the core PSP area and north of the Former Wendouree Tip site.
- Mount Rowan Mullock Heap 1 (Address: 15 Olliers Road Mount Rowan, Ballarat City) – Located close to the south-eastern boundary of the core PSP area.

Identified in the eastern portion of the core PSP area are six past historical mining activity sites. This flags the potential issues for contamination and possibly the exacerbation of geological issues. Neither of these issues are evident on the site however this may require further studies and investigations to be performed.

The VPA is currently undertaking further studies on Cultural Heritage, as well as European Heritage that will further investigate and consider the above identified sites and potentially result in the investigation of additional significant sites.

The VPA are also currently preparing work on land capability to understand more about the contamination and potential geological risks that might occur throughout the PSP area.

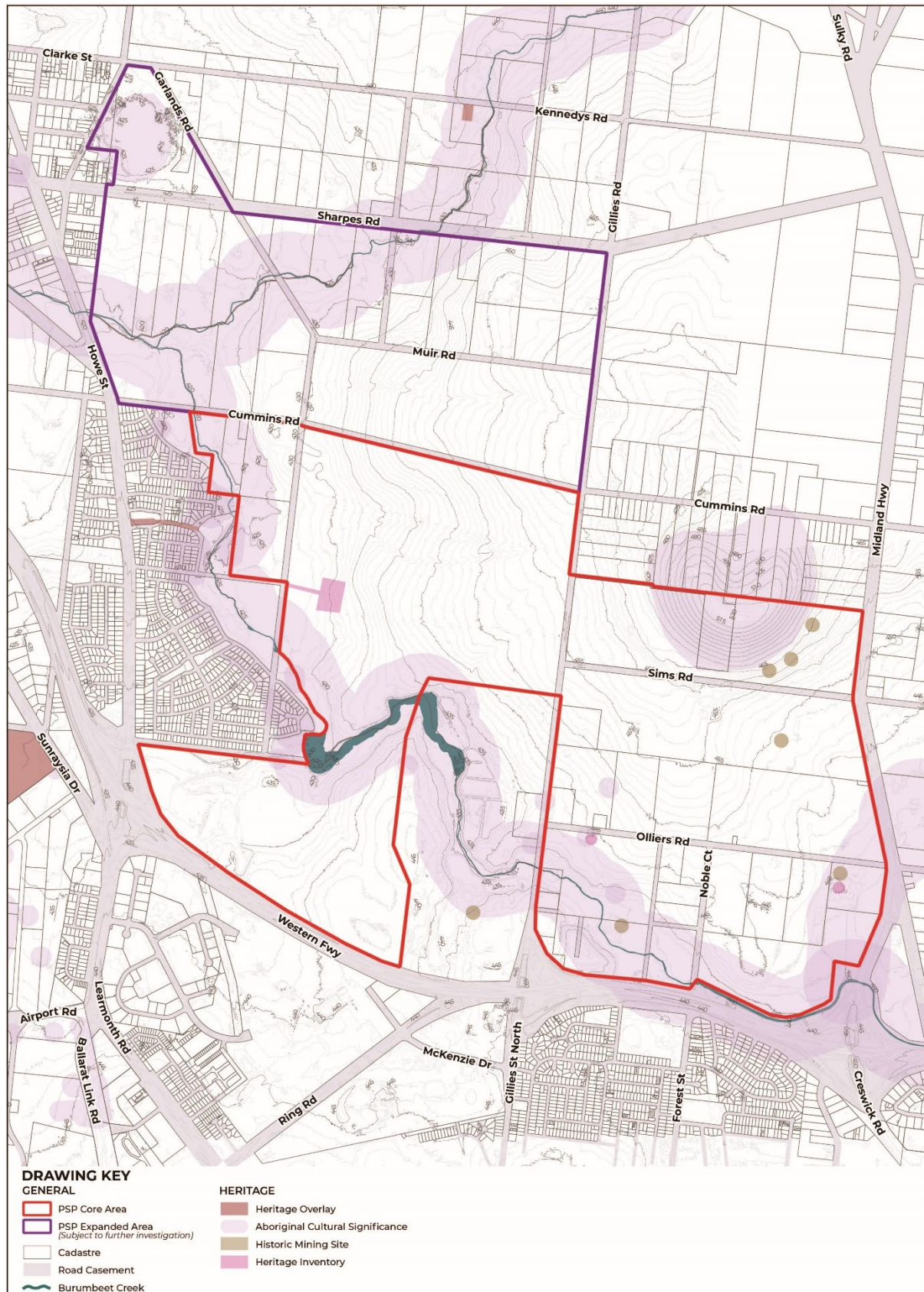
All these future studies will provide any opportunities and recommendations that will inform any future actions to be taken upon these significant sites within the PSP area.

EXPANDED AREA (Subject to further investigation) - Cultural Significance

Locations considered of Aboriginal Cultural Significance include the Miners Rest Wetlands, the Burrumbeet Creek and surrounding environs, as well as some possible scattered artefact sites. Further consultation and assessments are required by the Wadawurrung Traditional Owners, to determine the significance and stories behind the sites to better understand the history and how they may be further incorporated into the future PSP design.

Figure 8: Ballarat North PSP - Cultural Significance and Heritage Plan

Source: Mesh Planning



2.3.4 Infrastructure

CORE AREA – Infrastructure

The core area bound to the south by the Western Freeway and to the east by the Midland Highway. Cummins Road and Gillies Road also form the northern boundary. Most access into the core comes from Gillies Road and Midland Highway, with a minimal amount of more internal local roads. Currently no active transport routes have been designated for this PSP area however there are some existing routes to the south of the Western Freeway that presents the opportunity to connect into and extend north from. Road infrastructure is a mixture of sealed and unsealed roads, which will require upgrades to the movement network for future development.

The current community infrastructure existing in the core PSP area are the Ballarat Town Commons, Mount Rowan Reserve, and the Ballarat Grammar Mt Rowan Campus. Further studies and investigations will be required to fully understand the potential community needs of the Ballarat North PSP.

Limited major utility services are available, with water supply and electricity being the most easily accessible and less so by way of sewerage and telecommunications. There is no formal stormwater drainage or sewer reticulation infrastructure in existence on the site. However, the proximity to the Ballarat North Water Treatment Plant has promise to aid the PSP if the available processing capacity were to increase.

EXPANDED AREA (Subject to further investigation) – Infrastructure

The expanded area is bounded by Gillies Road to the east, Cummins Road to the south and Sharpes Road to the north, from each of these roads the area is accessible however there is a minimal number of local roads that present the opportunity to do so, and a lot of the driveways already interface the outer roads to provide access to the properties. Other than a loop trail around the Miners Rest Wetlands, there are no other active transport routes that have been designated for this PSP area however there are some opportunities to connect into the core PSP area or to make meaningful connections to the Miners Rest township. Road infrastructure is a mixture of sealed and unsealed roads, which will require upgrades to the movement network for future development.

The current community offering of the expanded PSP area include only the Miners Rest Wetlands. Further studies and investigations will be required to fully understand the potential community needs of the Ballarat North PSP.

The expanded area has limited access to all major utilities, however the proximity to Miners Rest township may serve as a good connection point to existing services as well as to the south.

Figure 9: Map 43 Northern GIA Access and Movement

Source: Ballarat Long Term Growth Options Investigation – 2018

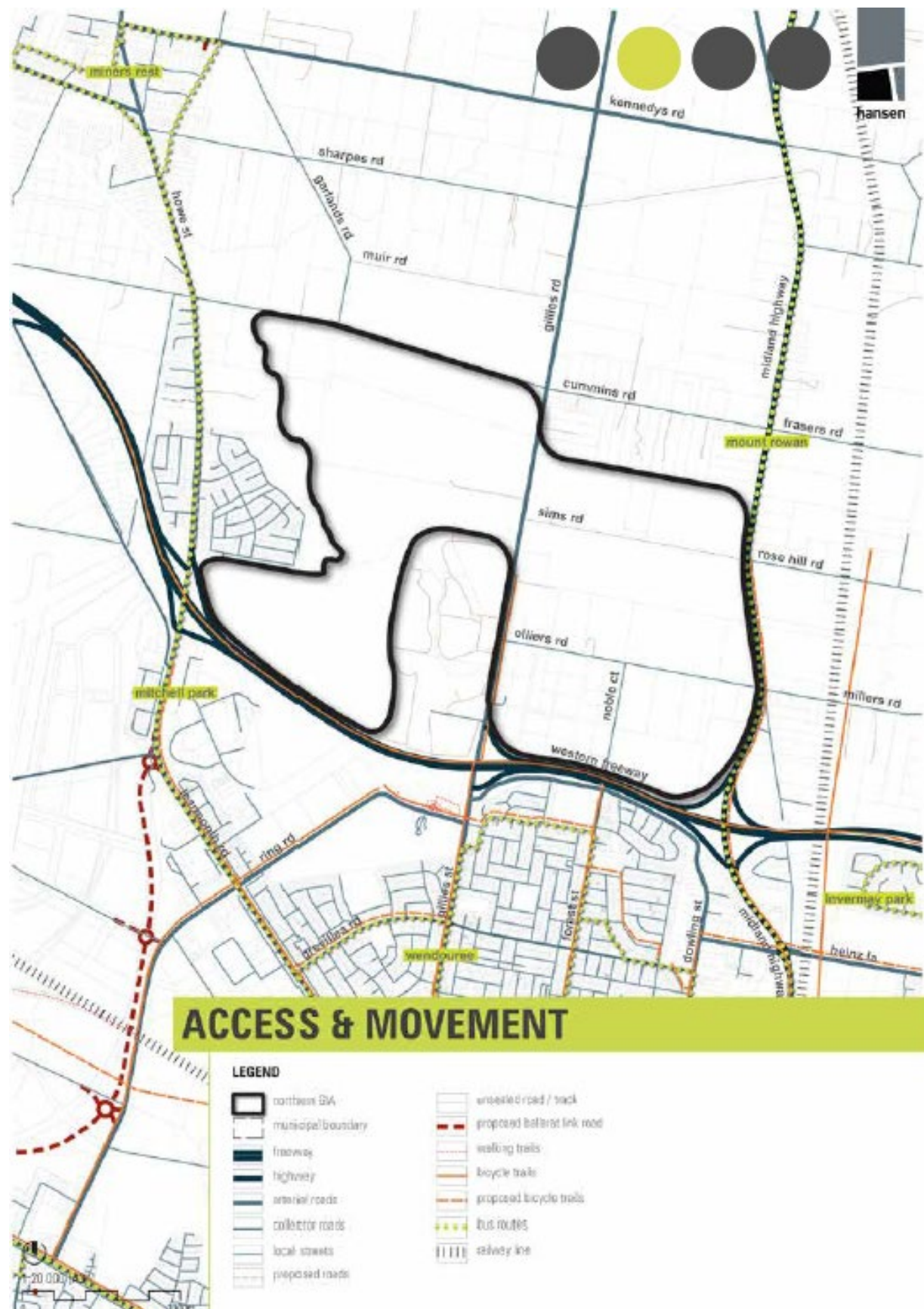


Figure 10: Map 37 Northern GIA Community Infrastructure

Source: Ballarat Long Term Growth Options Investigation – 2018

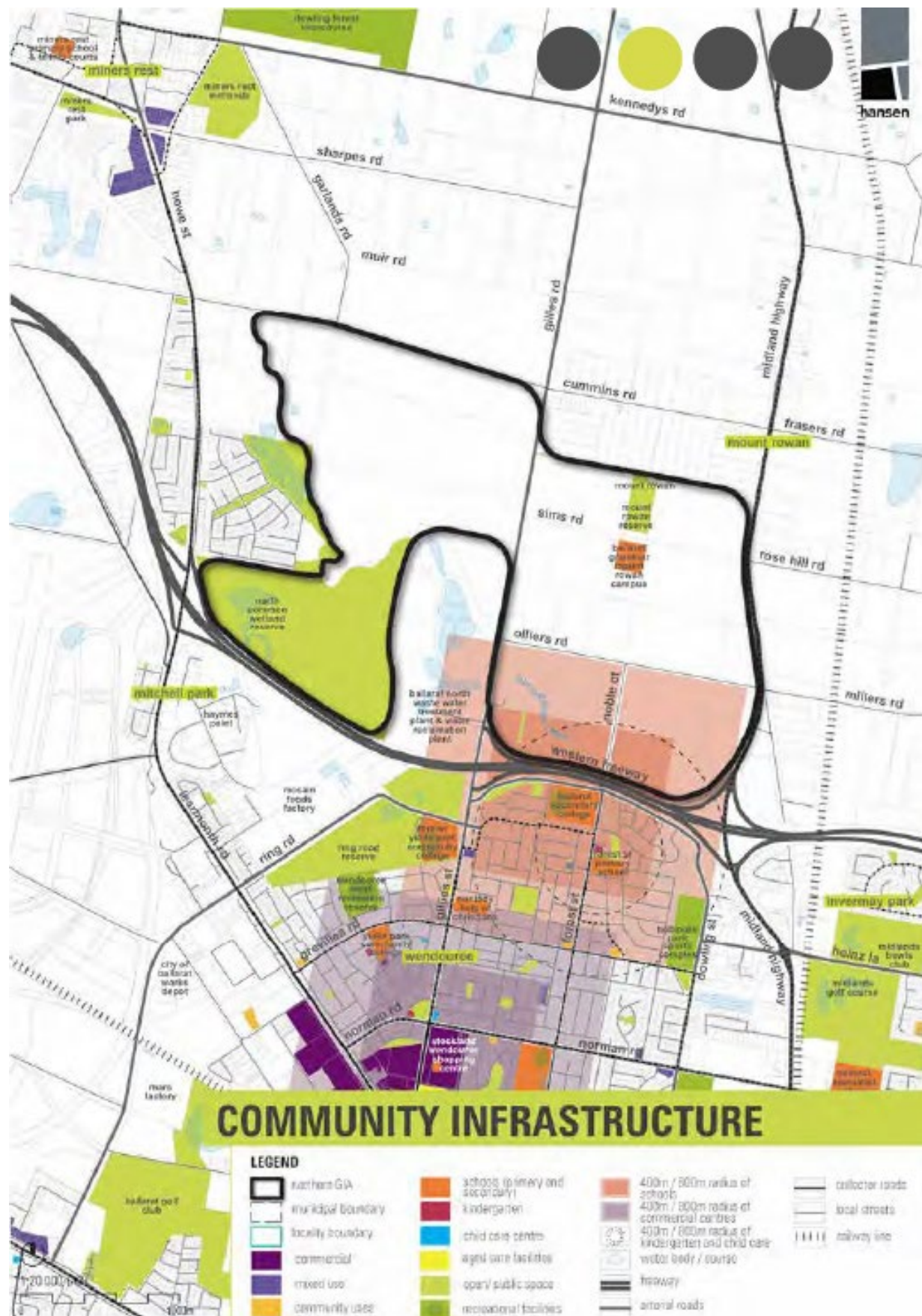
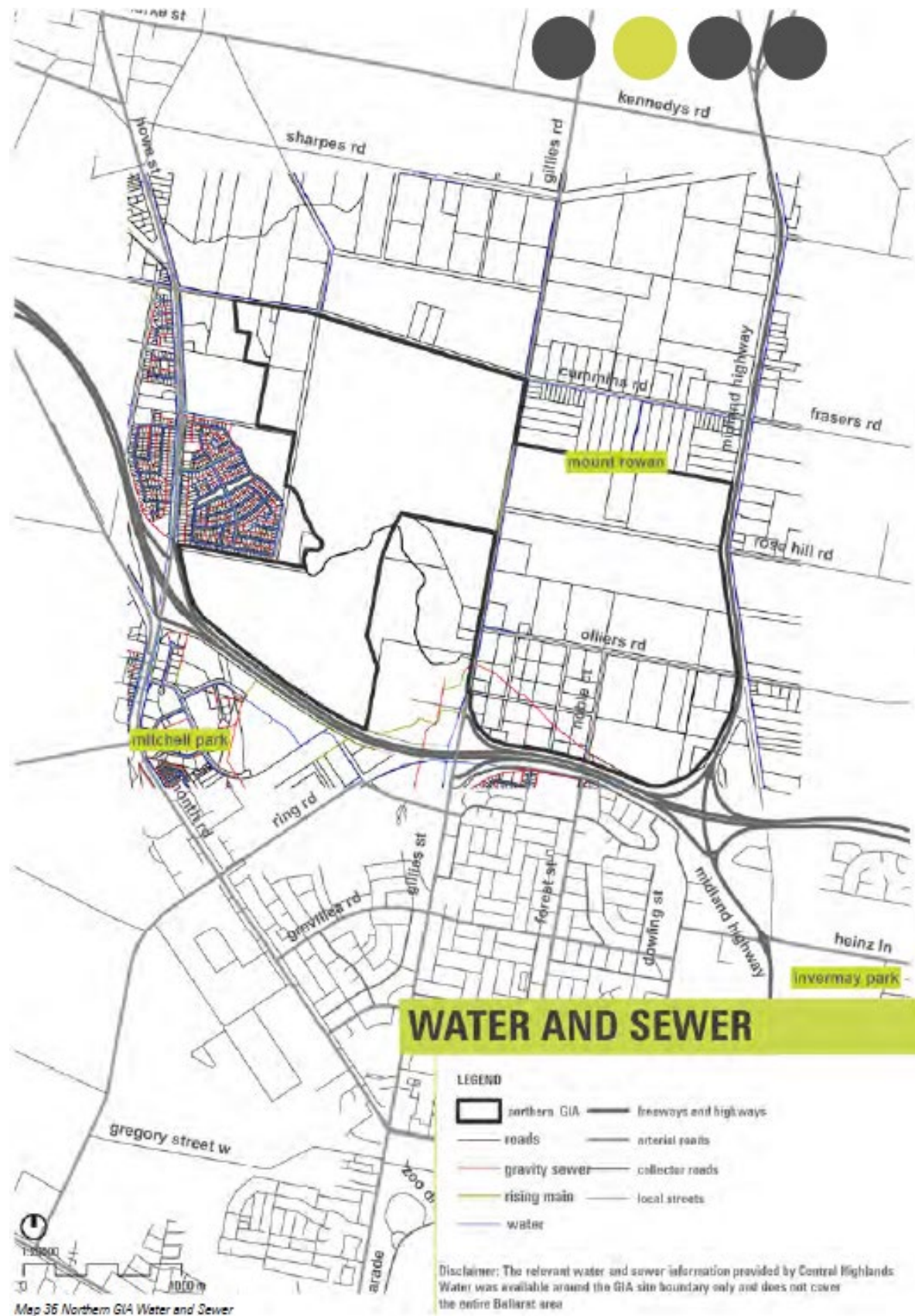


Figure 11: Map 36 Northern GIA Water and Sewer

Source: Ballarat Long Term Growth Options Investigation – 2018



2.3.5 Topography

CORE AREA - Topography

Located in the north-east of the core PSP area is Mount Rowan, this is a significant and distinct topographic feature and has a steeper slope up to 25% to reach an elevation 519m. Mount Rowan's dominating height encompasses multiple view lines from the south and east of the PSP.

From Mount Rowan, the topography generally falls gently to the west and south, to meet Burrumbeet Creek, of which creates a series of low points across the site.

Travelling along Gillies Road, the experience of looking east across a short valley out to the Glen Park State Forest is evident between Sims Road and Olliers Road.

At the entry and exit to the core PSP area along Gillies Road, the mound of the Former Wendouree Tip/Landfill has an imposing presence and an abrupt experience of increased elevation.

A low point experience was identified at the end of Noble Court, this correlates with being in close proximity to the Burrumbeet Creek which further decreases in elevation to the south. From this location, the Western Freeway appears to sit quite elevated to the south of the PSP, and to the north experiencing an incline along Noble Court however not quite seeing Mount Rowan due to the obstruction of trees and topography.

Although generally sloping gently to the west to Burrumbeet Creek, the farming land between Cummins Road and the Water Treatment Plant, is experienced as undulating landform, this feeling is further exaggerated by the tree row planting throughout the open paddocks.

The western portion of the Ballarat Town Commons is experienced as quite low in relation to its surroundings, particularly from the Western Freeway which is slightly elevated and allowing moments to look down into the Commons.

Coming out onto Gillies Road from Olliers Road feels like vantage point whilst looking across to the solar panel field within the Water Treatment Plant, which sits slightly lower in the west.

EXPANDED AREA (Subject to further investigation) – Topography

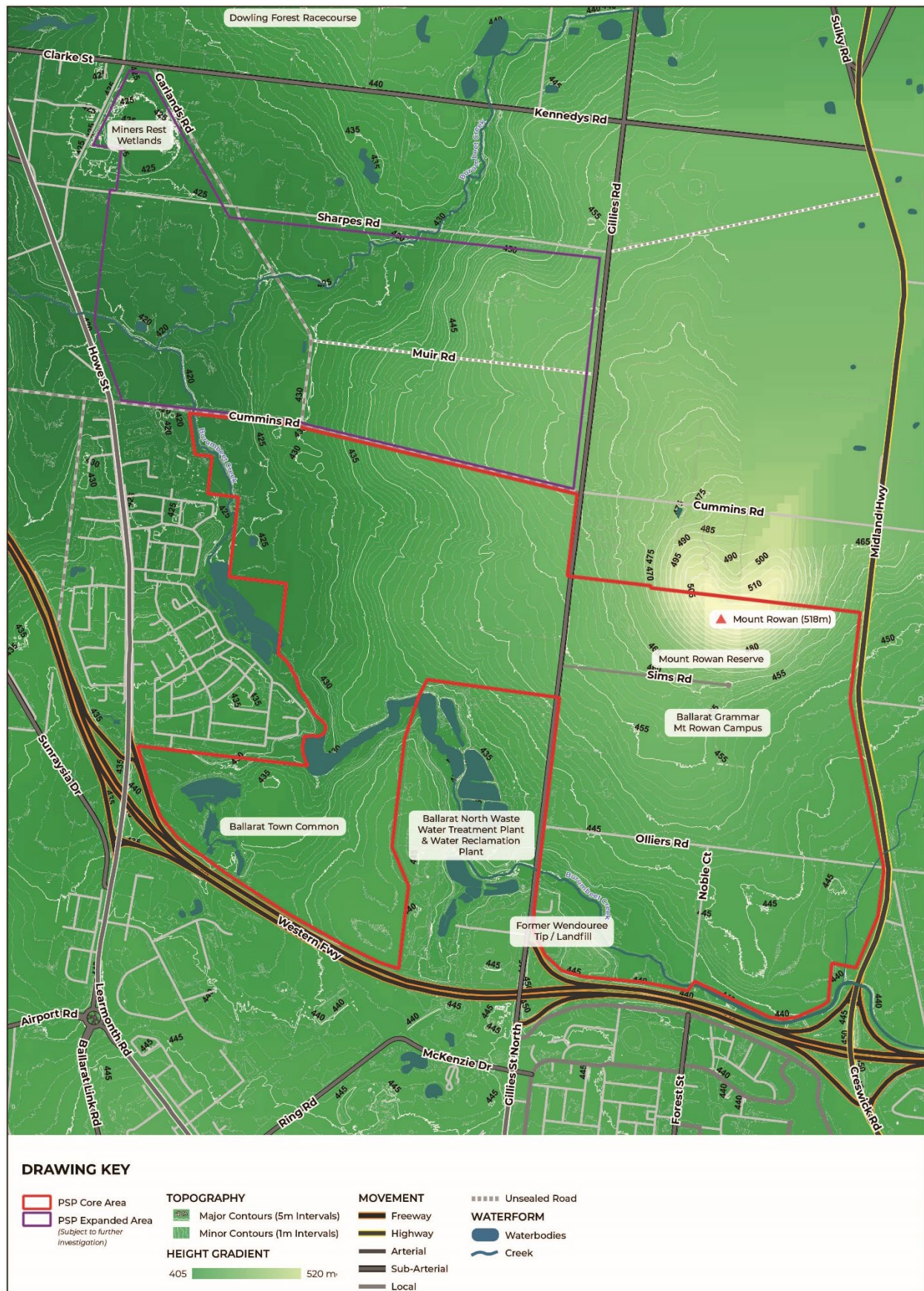
The Miners Rest Wetland is experienced as relatively flat and at a lower elevation in comparison to its surrounds. This could be due to the landscape being quite open, and being fairly unobstructed across the wetland, as well as its surroundings of tall Pinus sp. plantation at the east side and significant volcanic rises to the north.

An experience of undulating topography was identified for the farming land to the south of Muirs Road and north of Cummins Road. This experience is escalated by the uniform and evenly spaced tree rows along the property boundaries.

The intersection of Garlands Road and Cummins Road is experienced as a low point in the expanded area, with looking north to the volcanic rises and a sense of steepness whilst travelling east along Cummins Road from Garlands Road.

Figure 12: Ballarat North PSP – Topographical Mapping

Source: Mesh Planning



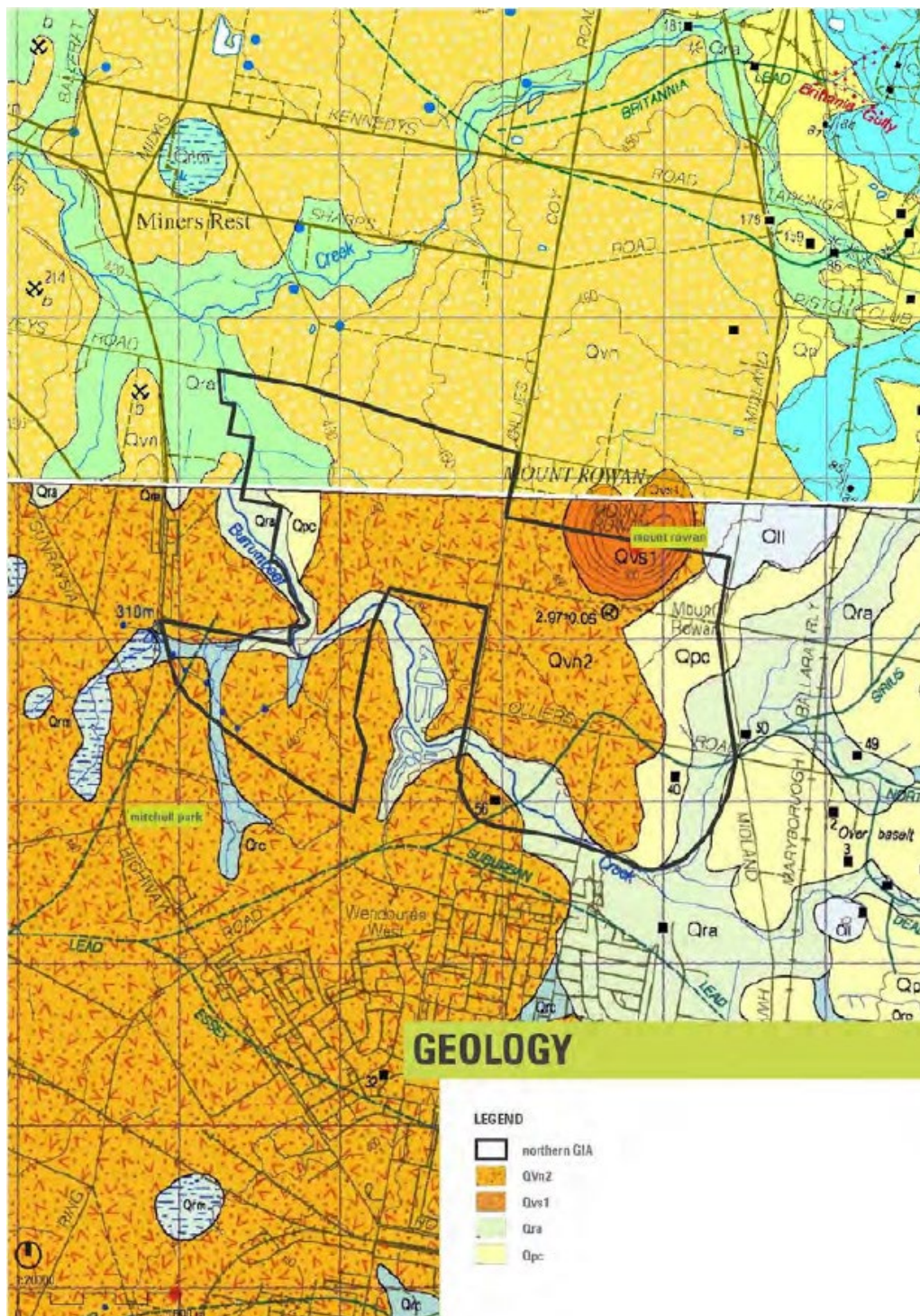
2.3.6 Geology

CORE AND EXPANDED AREA - Geology

Most of the site is made up of newer volcanic material (Qvn2), generally consisting of basaltic clay overlaying basalt rock. Mount Rowan's geology is a volcanic cone (Qvs1). The presence of alluvium (Qra) and colluvium (Qpc) occurs around the Burrumbeet Creek, Miners Rest Wetland and the Ballarat Town Commons.

Figure 13: Ballarat North PSP – Northern GIA geology based on the 1:50,000 Ballarat Geology Map ((Geological Survey of Victoria, June 1996).

Source: Ballarat Greenfields Investigation Areas Review: Part 2 Analysis Report – ARUP (16 June 2018)



2.3.7 Waterform

The main hydrological features throughout both areas of the PSP site are the Burrumbeet Creek, the Ballarat Town Commons wetlands and Miners Rest Wetlands. The areas covered by the combined LSIO and FO correspond with these landscape features and present both opportunities for a visually enhanced waterway and the potential for re-naturalisation to occur where possible. These overlays also constrain development and will require consultation with drainage and engineering to potentially mitigate and minimise any issues.

CORE AREA - Waterform

The features within the core PSP area includes Burrumbeet Creek and the Ballarat Town Commons wetland area. The creek forms the western boundary of the core PSP area.

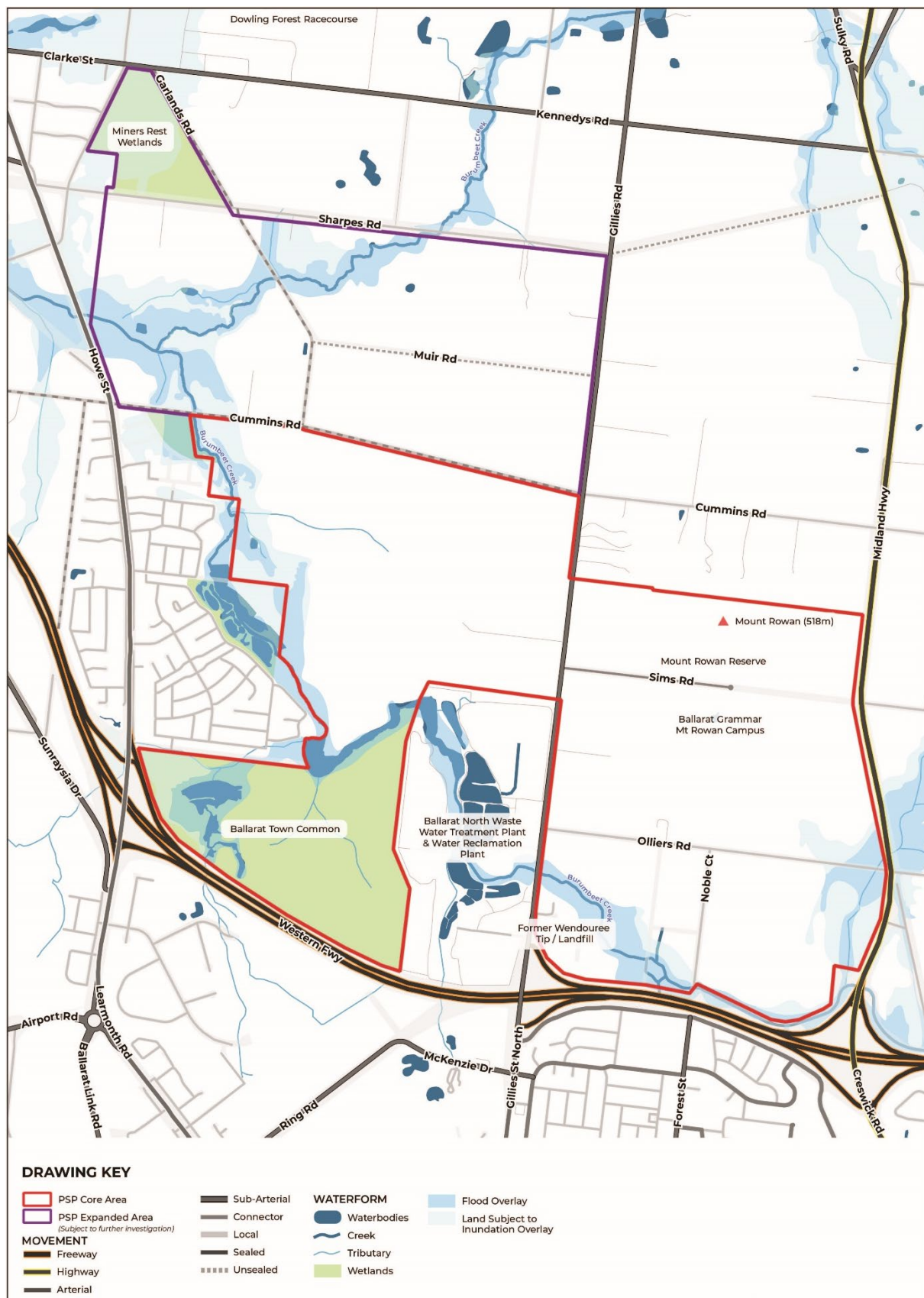
The Ballarat Town Common is bound to the north by the Burrumbeet Creek of which some tributaries and overland flow from the creek settles in the western corner of the Commons. This is mostly flatter topographically with open grassy plains and ephemeral planting within and around the wetland itself. This area as a whole will be untouched by development.

EXPANDED AREA (Subject to further investigation) - Waterform

The hydrological features within the expanded PSP area includes Burrumbeet Creek and Miners Rest Wetlands. In the expanded area, the creek runs east west through farming land, with a less dramatic slope and predominately grassy surface with the occasional scattered remnant ephemeral vegetation.

Figure 14: Ballarat North PSP – Waterform

Source: Mesh Planning



2.3.8 Vegetation

CORE AREA - Vegetation

The core area of the Ballarat North PSP is predominantly cultivated and/or grazed by domestic livestock. The paddocks are often framed with *Cypress sp.* or non-native *Eucalyptus sp.* as windbreaks. Some native vegetation exists throughout the site; however, they are predominately scattered remnant trees and small patches of grassland and riparian/wetland vegetation, often occurring along the extent of Burrumbeet Creek or within the Ballarat Town Commons. The 2005 ecological vegetation class data set identifies sparse, scattered remnant plains grassy woodland vegetation across the site, with a denser occurrence within the Ballarat Town Common near the water treatment facility.

EXPANDED AREA (Subject to further investigation) - Vegetation

The expanded area of the PSP is predominantly cultivated and/or grazing paddocks for domestic livestock frequently framed with *Cypress sp.* or non-native tree rows. South of Muir Road the occurrence of picturesque, uniformly shaped trees that appear evenly spaced was observed. Sparser plantings of non-native *Eucalyptus sp.* occur in the breaks between the densely planted *Cypress sp.* tree rows along Muir Road and Sharpes Road. Riparian/wetland vegetation also occur along the extent of Burrumbeet Creek and through the Miners Rest Wetland. The 2005 ecological vegetation class data set identifies sparse, scattered remnant plains grassy woodland vegetation throughout the expanded area.

Figure 15: Map 33 Northern GIA Flora and Fauna

Source: Ballarat Long Term Growth Options Investigation – 2018

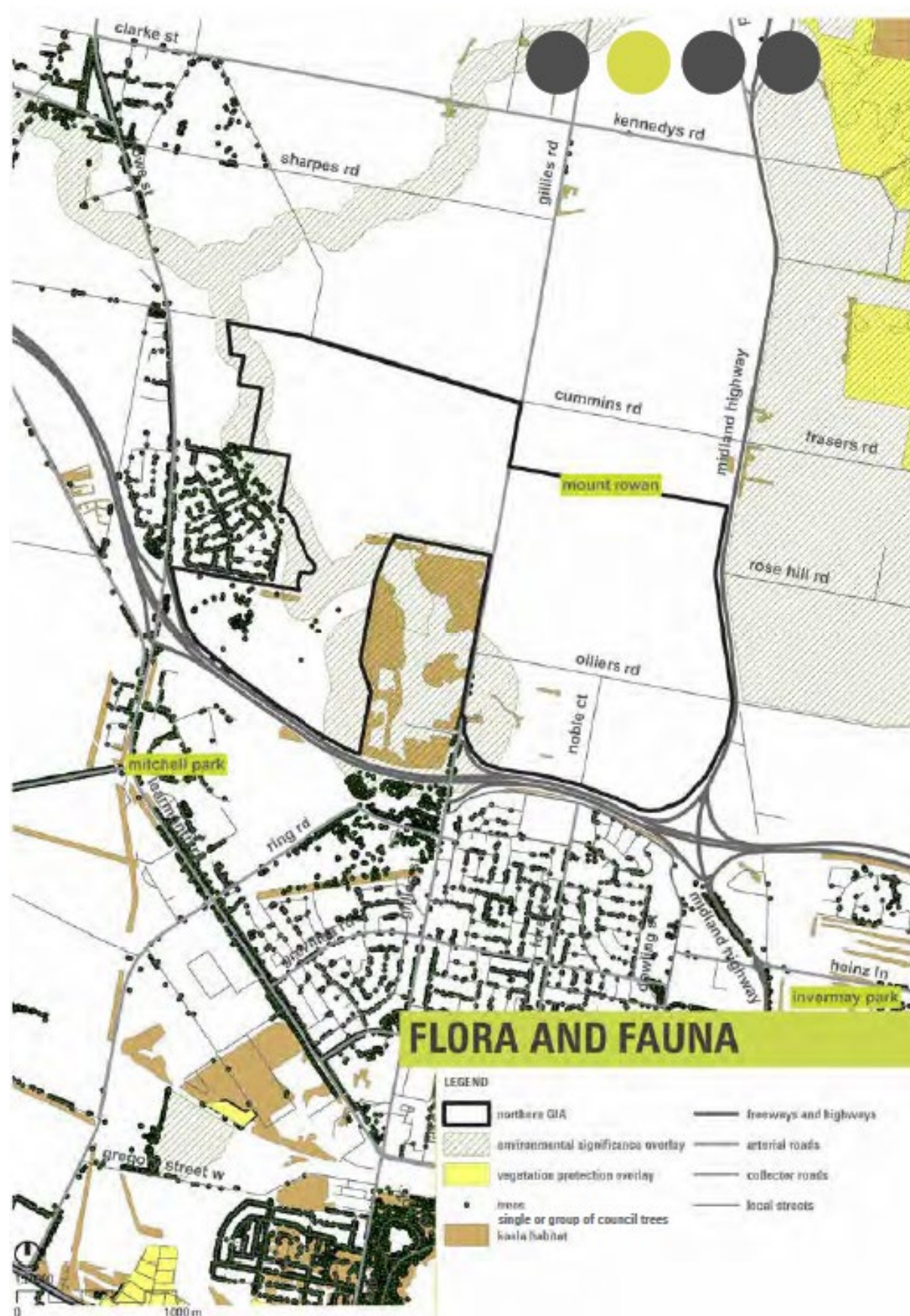


Figure 16: Northern GIA – Ecological Vegetation Classes

Source: Ballarat Greenfields Investigation Areas Review: Part 2 Analysis Report – ARUP (16 June 2018)

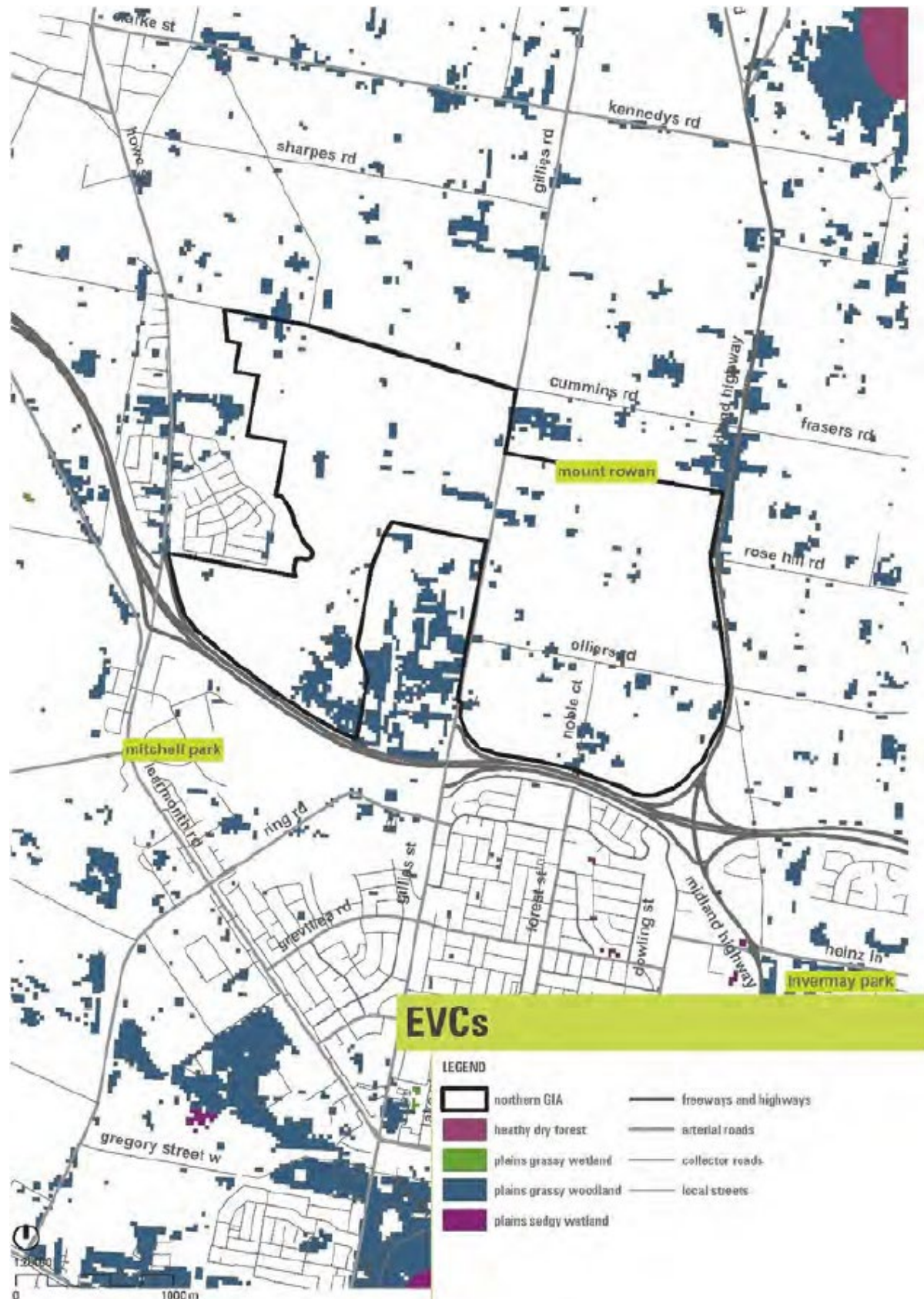
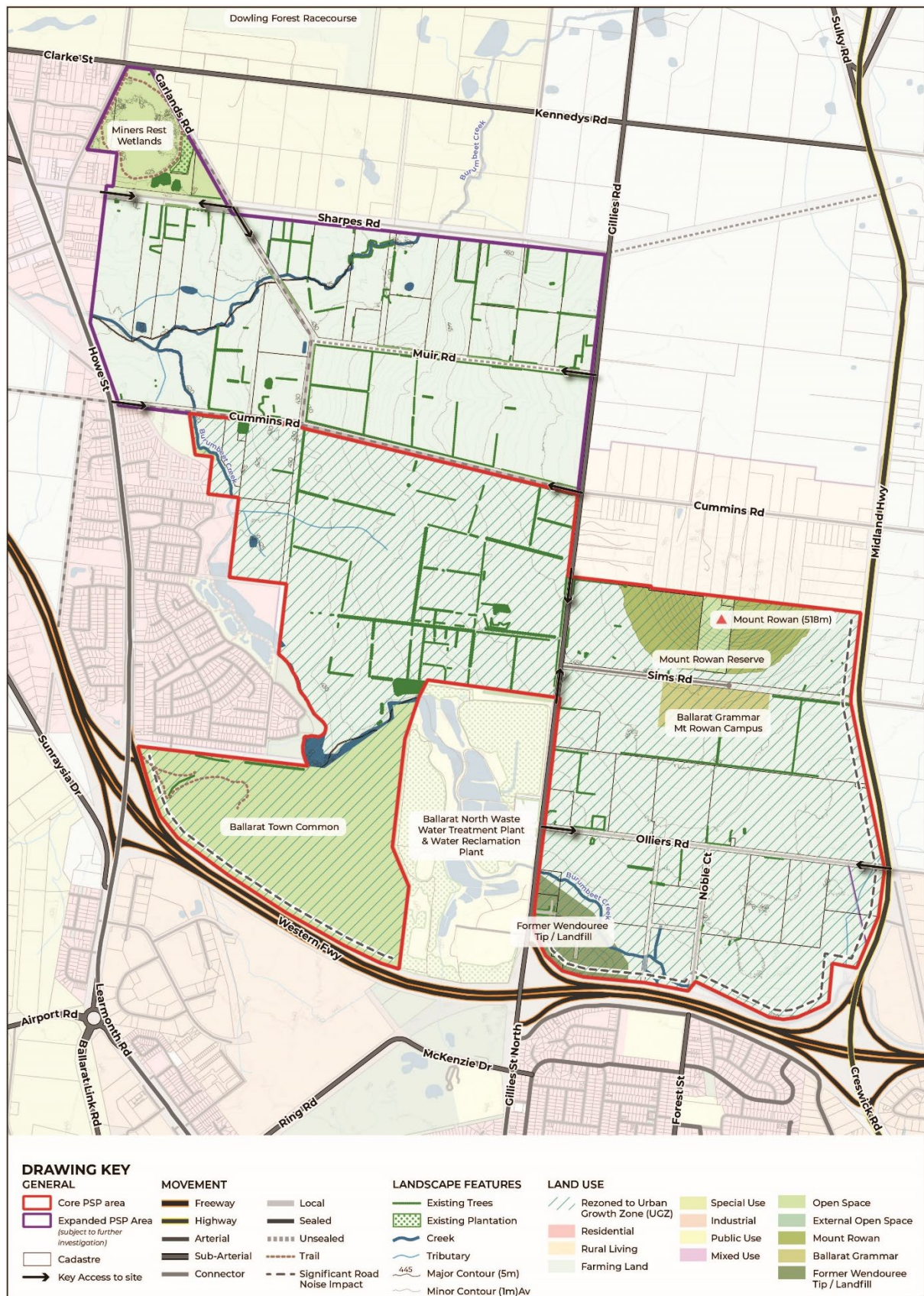


Figure 17: Ballarat North PSP - Local Context Plan

Source: Mesh Planning



2.3.9 Built Form

CORE AREA – Built Form

To the west of the core area and the Burrumbeet Creek there is the newly established general residential development. Large established rural living housing and properties are located on the northern side of Mount Rowan and north of Cummins Road east of Gillies Road.

Infrequent occurrences of single storey rural houses and farming facilities, such as sheds were the dominant built form across the site, with most of the land dedicated to active farming.

EXPANDED AREA (Subject to further investigation) – Built Form

The expanded area also has infrequent occurrences of single storey rural houses and farming facilities, such as sheds were the dominant built form across the site, with most of the land dedicated to active farming.

To the west of the expanded area, Miners Rest North has the Neighbourhood Residential Zoning applied to ensure the protection of the rural township character. To the north of the expanded area is the Equine precinct, and as such the built form reflects this relationship with the frequency of stables and other racing and training facilities as well as rural living housing incorporated. To the east of the PSP there are rural houses and farming facilities which reflect the existing character of the PSP.

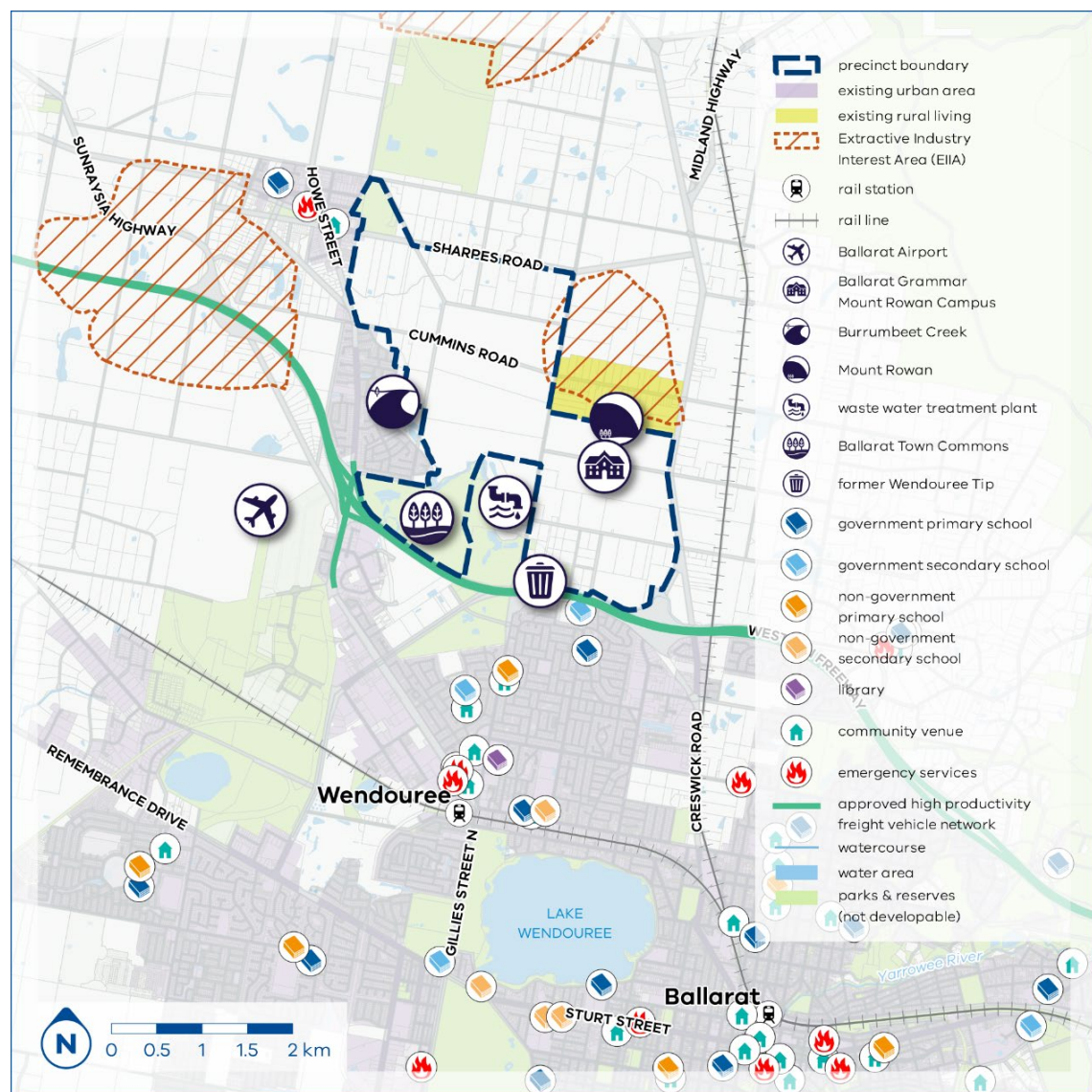
3 Proposed Development Assumptions

3.1 Ballarat North PSP – General Proposed Development Assumptions

In 2018, the proposed combined 832ha of the core and expanded areas of the Ballarat North PSP is located 8 km north of the Ballarat CBD and is earmarked as the preferred growth area direction in the Ballarat region. This could result in a total potential increase of residential lots of 6,600-10,100 lots this will depend on the density requirements and whether the PSP boundary will include the expanded area. The final PSP boundary is yet to be determined at the time that this report has been written and the inclusion of the expanded area is subject to further investigation with the requirement of a formal decision by State Government. The further technical assessments including this Landscape and Visual assessment will aid in informing the decision to include or exclude the expanded area within the final precinct boundary.

Figure 18: Ballarat North Precinct Structure Plan area – Key features and Current Assumptions

Source: Ballarat North PSP Landscape and Open Space Assessment: Consultant Inception Meeting Slide Deck - Victorian Planning Authority (2 October 2023)



3.2 CORE AREA – Proposed Development Assumptions

The designated 'core' area (561ha) has been rezoned to Urban Growth Zone and has the potential for 6,600 residential lots. The proposed residential will likely be predominately single or double storey detached dwellings.

The PSP boundary cuts right through the middle of Mount Rowan, considered to be a significant landscape feature in the region. Despite the northern side of the hill being well-established existing Rural Living lots, no development is to occur on the southern side. Potential expansion of the already existing reserve may occur within the PSP process to provide additional protection of Mount Rowan and the views into and from it.

The Burrumbeet Creek interface provides instant amenity and opportunity to front lots onto the open space; ensure the protection and retention of the natural amenity as a significant feature of the PSP site. Burrumbeet Creek is considered a floodway and therefore residential development should not occur within these areas. Works will be required to mitigate and minimise the flood occurrences with the creation of strategically located retarding basins or wetlands along the waterway that could double as linear corridor open space inclusive of an active transport or walking trail route.

The Ballarat Town Commons has no future development planned, which provides opportunity for future integration with the extended open space network and integration with the PSP site.

Ballarat Airport is located to the south-west of the PSP area, and this will restrict development not building above 15m high to cause any obstructions to the flight paths, still making this an appropriate location for future general residential growth. This area is also likely to incur noise impact from the flight tracks that will occur above.

The Ballarat North Wastewater Treatment Plant creates a distinct divide between the eastern and western portions of the core area. The site has a Bushfire Management Overlay and therefore a buffer treatment will need to be considered for any future residential development that interfaces the plant.

Improvement to the road network and infrastructure will be required for future development. Additionally utility services, in particular stormwater drainage and reticulated sewerage, will have to be upgraded/integrated in the future development to accommodate for the increased population.

The VPA is of the understanding that the future of the Ballarat Grammar Mount Rowan Campus is still yet to be determined. One outcome being that the Ballarat Grammar Mount Rowan Campus and surrounding land holdings for education in agricultural practices will be retained and unchanged within the PSP. Otherwise, this campus may be relocated, and the land could be acquired for residential development. Given the immediate proximity south of Mount Rowan, ensure to maintain long views through to the rise with possible utilisation of the road and movement network or open spaces.

3.3 EXPANDED AREA (Subject to further investigation) – Proposed Development Assumptions

The identified 'expanded' area (271ha) for this PSP has the potential for 2,600-3,500 residential lots. This area is not included within the official Ballarat North PSP extent and is currently zoned as Farming Zone (FZ), this will require future rezoning to UGZ, if to be developed in the future. Proposed residential development will likely be predominately single or double storey detached dwellings.

The morphology of Burrumbeet Creek has resulted in fragmented residual land in some areas, which could provide additional open space.

The road infrastructure and network will need to be upgraded alongside major utility services to the expanded area with any new development proposed.

4 Views and Potential Impacts

The following section identifies views that are all notable and relate to various landscape features across and extending from the PSP site. Each view could potentially be retained through the strategic design and considered to be a part of the future development of the PSP.

Most of the precinct's landscape character is homogeneous in nature, predominately made up of large, open expanses of farmed pastoral land. Within the precinct there are few internal views to landscape features such as the Burrumbeet Creek, the Ballarat Town Commons and Mount Rowan. With most of the main key view lines extending externally to the surrounding key landform features within both close and far proximity to the site,

'Key Views' are identified at only specific locations that allow for views of significant landscape features to be more pronounced as indicated in the following sections and mapping. These features may be existing within or outside of the PSP boundary but contribute to the overall landscape character of the growth area. These key views are inclusive of moments along the Burrumbeet Creek, the Ballarat North Water Treatment Plant, Creswick Regional Forest, Glen Park State Forest, Nerrina Historic Reserve as well as multiple volcanic rises and mountains including Mount Hollowback, Mount Blowhard, Mount Pischah, Weatherboard Hill, Mount Xavier and Mount Warrenheip.

'External views' refer to vantage points from within or along the bounds of the PSP boundary looking outside the precinct that are not of key significance or as pronounced as the 'key views', however do add some value and contribution of the overall landscape character that should be considered as part of the PSP's development. Some of the external views that have been identified are of moments along the Burrumbeet Creek, the Ballarat North Water Treatment Plant, Creswick Regional Forest, Glen Park State Forest, Nerrina Historic Reserve and the small wetland area outside the top west corner of the core area, south of Cummins Road.

'Internal views' refer to vantage points looking into the precinct that are mostly landscape features within the PSP. These views are generally identified as not being of as high significance or as pronounced as the 'key views', however like the external view they provide value and contribute to the overall landscape character of the PSP and can be taken into consideration with any future development. Most of the internal views were identified along the Burrumbeet Creek, Mount Rowan, and vegetated vistas along existing road reserves.

4.1 CONSOLIDATED VIEWS

Below is the consolidated list of the vantage points and key internal and external views that corresponds to Figure 19 identified as important and notable to the PSP area. Some of these sightlines have the potential to be protected and strategically incorporate into the future design of PSP areas.

KEY VIEWS

- A** Northern / north-western views out to hills, including Weatherboard Hill, Mount Hollowback, Mount Blowhard and Mount Pisgah
- B** Northern views up Mount Rowan and incorporated reserve
- C** Eastern views out to the Creswick Regional Forest, Glen Park State Forest and Nerrina Historic Reserve
- D** South-eastern views to distant hill range, including Mount Xavier and Mount Warrenheip
- E** Potential western views into the Burrumbeet Creek
- F** Potential western views into wetland reserve along Burrumbeet Creek
- G** Long view north of Mount Pisgah
- H** View of solar panel field within Ballarat North Water Treatment Plant
- I** Elevated vantage point looking north from Gillies Rd crossing Western Freeway capturing views to the Former Wendouree Tip/landfill and Mount Rowan in the distance
- J** Clear and direct views of Mount Rowan along most of Midland Highway travelling north

EXTERNAL VIEWS

- K** Views north of remnant vegetation along Burrumbeet Creek
- L** View of wetland and new residential estate south of Cummins Rd
- M** Long views of Glen Park State Forest across open paddocks from Noble Ct
- N** Vegetated view into the pine plantation of the Water Treatment plant as well as glimpses of waterbody through vegetation whilst travelling along Gillies Rd
- O** Long views of Creswick Regional Forest and Glen Park State Forest across open paddocks from Gillies Rd

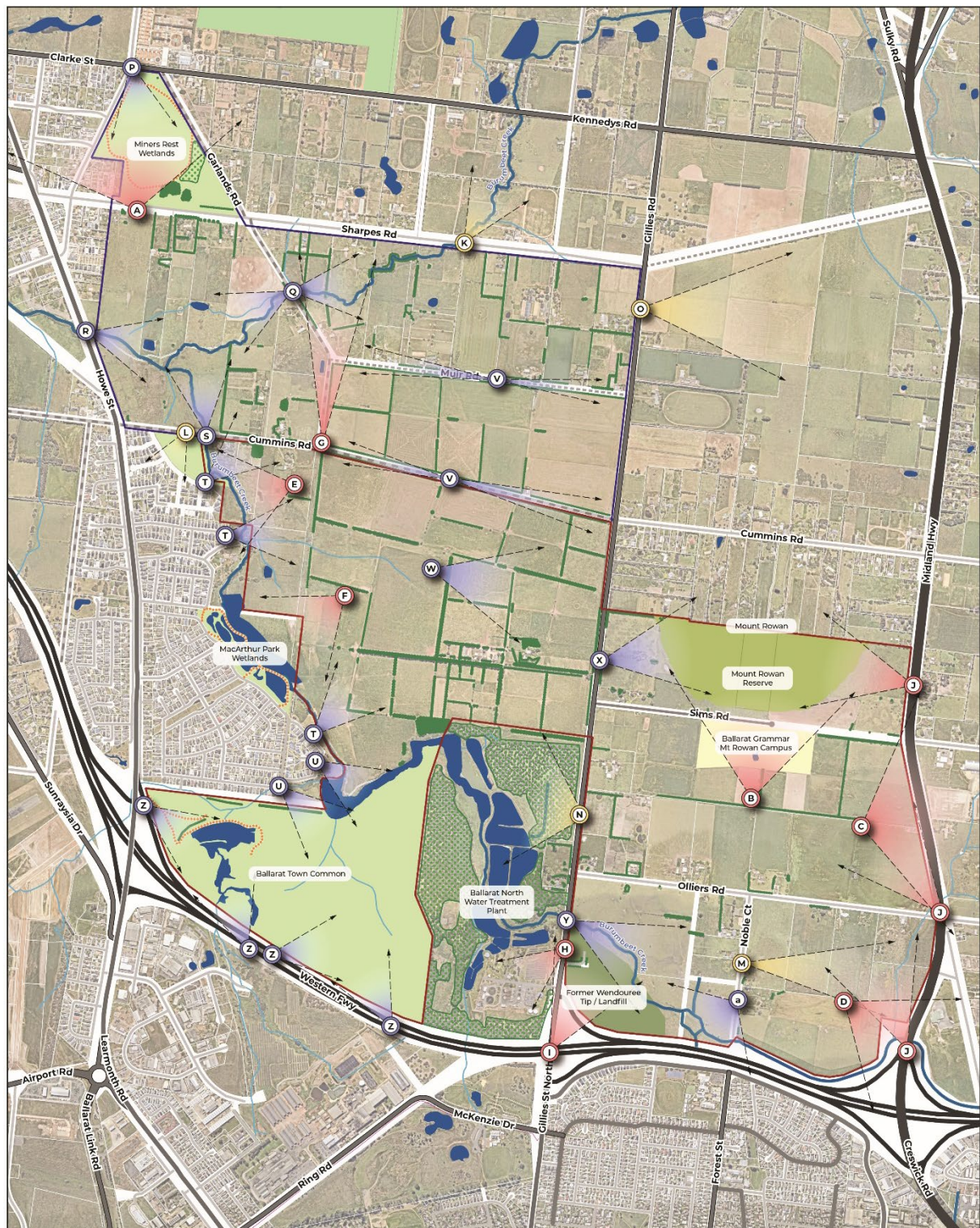
INTERNAL VIEWS

- P** Southern view into the Miners Rest Wetland
- Q** Vegetated views along Burrumbeet Creek from culvert on Garlands Rd
- R** Vegetated views along Burrumbeet Creek and into the farming land of the expanded area from Howe Street
- S** Vegetated views along Burrumbeet Creek and into the farming land of the expanded area from Cummins Rd
- T** Views east from western residential estate across Burrumbeet Creek and into the farming land of the core PSP area

- U** Views south from western residential estate across Burrumbeet Creek and into the Ballarat Town Commons
- V** Planted tree rows along Muir Rd and Cummins Rd properties to create vegetated vistas
- W** Densely planted *Cypress* sp. tree rows obstructing views east to Mount Rowan
- X** Break in vegetation to open up views east to Mount Rowan
- Y** Eastern views down into Burrumbeet Creek, farm land and distant view of Glen Park State Forest
- Z** Direct views into Ballarat Town Commons from multiple points along the Western Freeway, occasionally obstructed by vegetation
- a** View of sunken Burrumbeet Creek waterway, Western Freeway and Former Wendouree Tip/landfill

Figure 19: Ballarat North Precinct Structure Plan – Consolidate Views Plan

Source: Mesh Planning



4.2 INTERNAL VIEWS

4.2.1 Core Site – Internal Views

Figure 20: Ballarat North Precinct Structure Plan – Core Area Internal Views

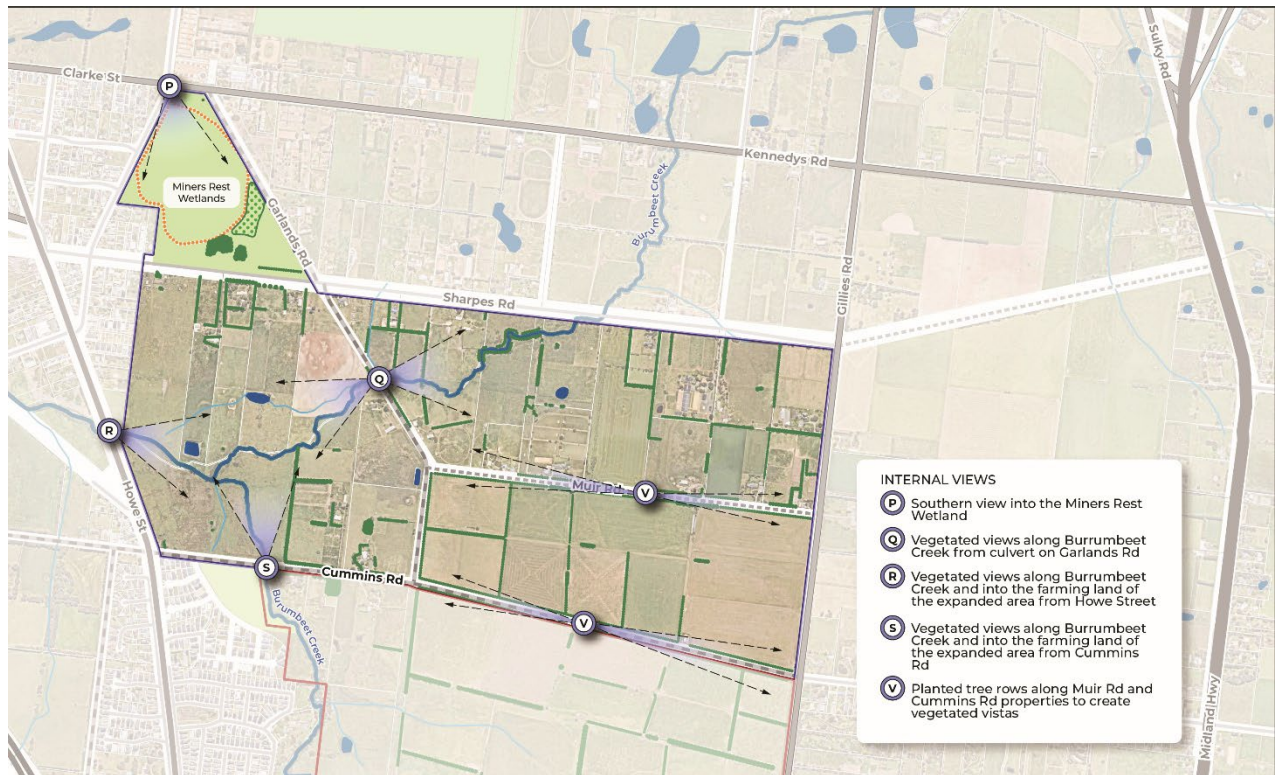
Source: Mesh Planning



4.2.2 Expanded Site (Subject to further investigation) – Internal Views

Figure 21: Ballarat North Precinct Structure Plan – Expanded Area Internal Views

Source: Mesh Planning

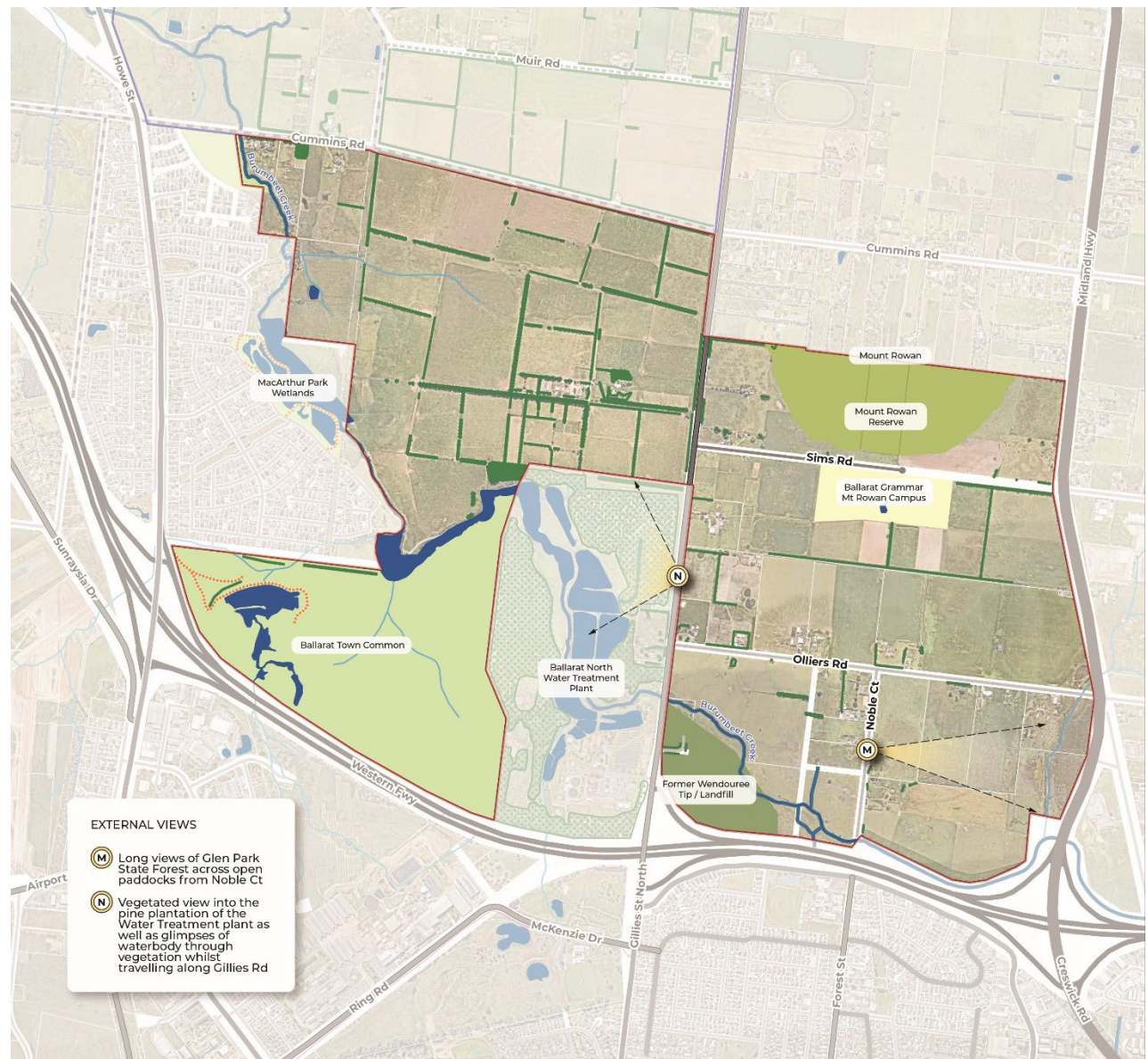


4.3 EXTERNAL VIEWS

4.3.1 Core Site – External Views

Figure 22: Ballarat North Precinct Structure Plan – Core Area External Views

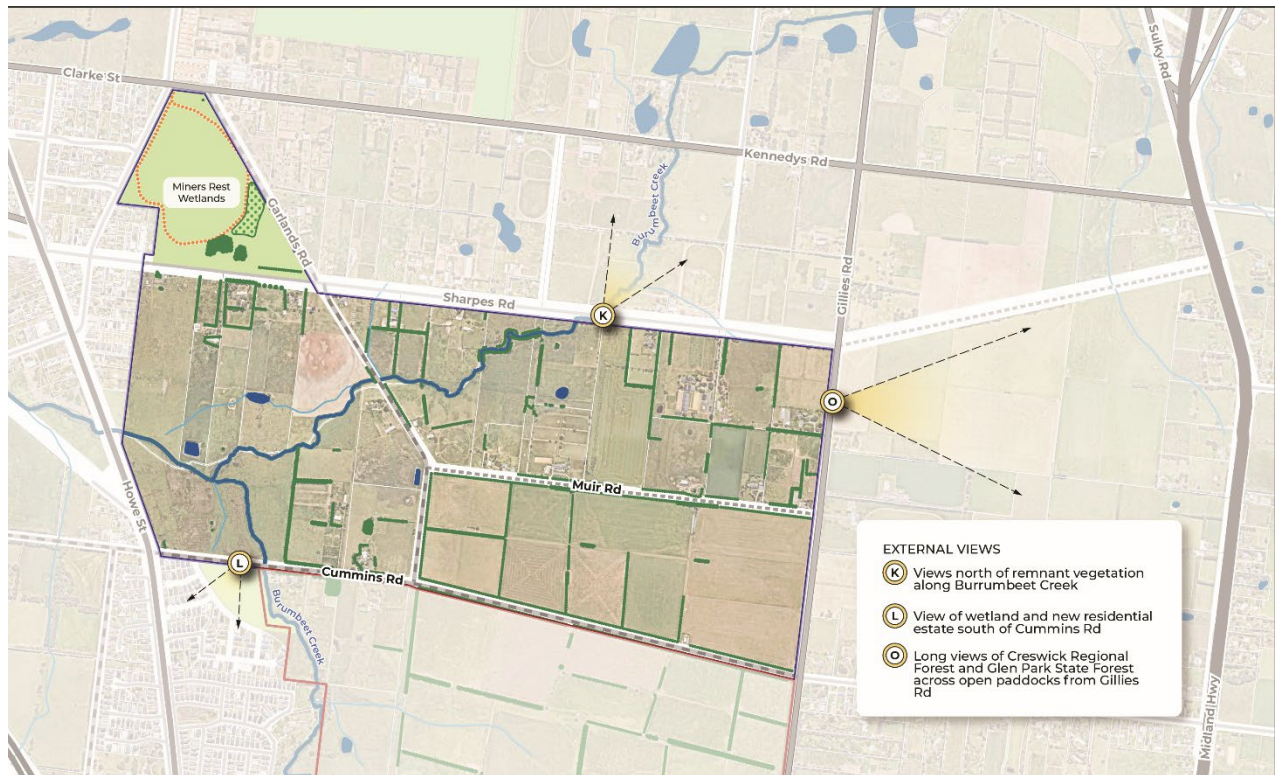
Source: Mesh Planning



4.3.2 Expanded Site (Subject to further investigation) – External Views

Figure 23: Ballarat North Precinct Structure Plan – Expanded Area External Views

Source: Mesh Planning

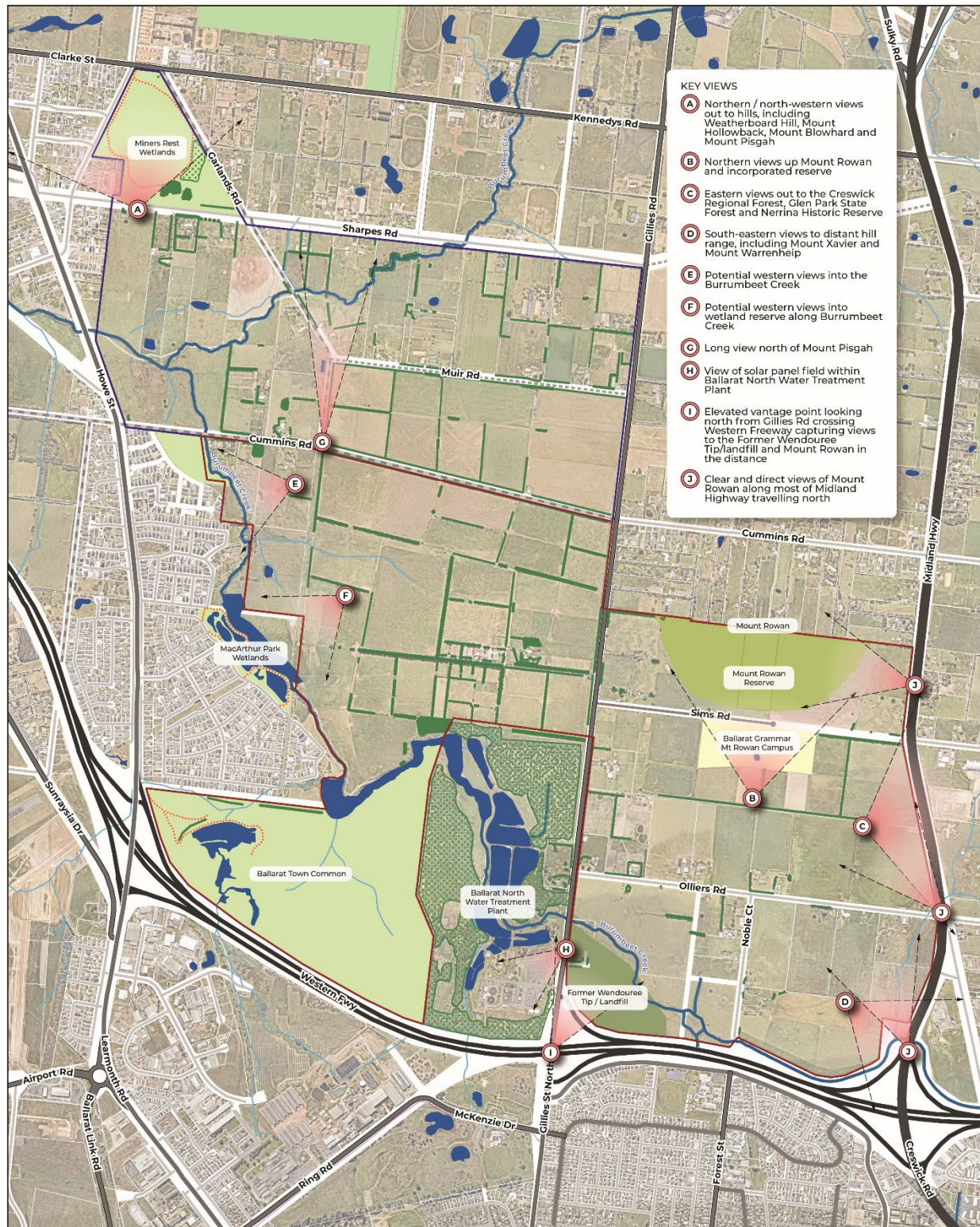


4.4 KEY VIEWS & POTENTIAL IMPACTS

The following plan depicts the key vantage points and views that were identified on site and of particular importance to retain when designing the future PSP development.

Figure 24: Ballarat North Precinct Structure Plan – Key Views Plan

Source: Mesh Planning



- A. Views north to the hills (Mount Pissgah & Mount Blowhard) & further west is Weatherboard Hill over Miners Rest Wetland.

Low flat topographic landform of Miners Rest wetlands is subject to inundation, hence the location of the centralised wetland itself and the slightly elevated gravel pathway that loop the naturalise landscape feature. Some remnant vegetation scattered across this location and a dense abundance of it is located to the south of the wetland, and as shown in the right-hand side of the image below. In this southern location we can see the effect of a revegetation process occurring and some revegetation. This wetland site has low riparian planting that allows multiple uninterrupted views north and north-west to the volcanic rises of Mount Pissgah, Mount Blowhard and Weatherboard Hill. The views from Miners Rest Wetland will remain protected as it is a natural asset to the site which should not be developed upon.

Figure 25: Key View A – Overlooking Miners Rest Wetlands with distant views out to Mount Pissgah, Mount Blowhard and Weatherboard Hill

Source: Mesh Planning – Site Visit on 2 November 2023



- B. View of the south side of Mount Rowan, viewed from Olliers Road.

From the south and looking to the north there are multiple views to the exposed south side of Mount Rowan. These views are generally uninterrupted across farming paddocks however occasionally obstructed by large mature trees and vegetation. Other locations of vantage where visitors can experience the full significance and impact of Mount Rowan, apart from directly to the south, include traveling north along Midland Highway from Ballarat CBD, the bridge crossing over the Western Freeway on Gillies Road travelling north; and directly to the west off Mount Rowan along Gillies Road there are breaks in the vegetation and built form to allow views through to the topographical feature. Any potential future development to the south of Mount Rowan will likely block the long views to the feature landform. Through the design of the PSP allow for the consideration of the built form height, as well as potentially providing wider north-south road and movement connections and/or strategically locating open spaces to protect these long views.

Figure 26: Key View B – South side of Mount Rowan, viewed from Olliers Road

Source: Mesh Planning – Site Visit on 2 November 2023



C. Key View C – Eastern views out to the Creswick Regional Forest, Glen Park State Forest and Nerrina Historic Reserve

From Midland Highway, broad views east across open paddocks of farm land to the heavily vegetated Creswick Regional Forest and Glen Park State Forest. Impacted views from tree rows obstructing views in parts from the eastern farming land of the PSP. Future development and or street tree planting may impact views.

Figure 27: Key View C – Eastern views out to the Creswick Regional Forest, Glen Park State Forest and Nerrina Historic Reserve

Source: Mesh Planning – Site Visit on 2 November 2023



D. Key View D - South-eastern views to distant hill range, including Mount Xavier and Mount Warrenheip

Views south-east across farming land and rural living properties to the Nerrina Historic Area and captures views to two distinct mountains, possibly Mount Xavier & Mount Warrenheip. Impacted views from tree rows obstructing views in parts from the eastern farming land of the PSP. Future development and or street tree planting may impact views, consider wider key streetscapes and no central medians to retain views.

Figure 28: Key View D – South-eastern views to distant hill range, including Mount Xavier and Mount Warrenheip

Source: Mesh Planning – Site Visit on 2 November 2023



G. Key View G - Long view north towards Mount Pisgah

Turning off Cummins Road and travelling north along Garland Road, there is a partially obstructed distant view of Mount Pisgah due to planted tree rows. If development were to occur within the expanded area, consider retaining the alignment of this north-south portion of Garland Road and wider road reserve. Selective removal of exotic planted tree rows and clearly consider placement, height and density of any new tree planting along this streetscape. Relocation of overhead powerlines underground within this location will also aid in the creating a less encumbered streetscape.

Figure 29: Key View G – Long view north of Mount Pisgah

Source: Mesh Planning – Site Visit on 2 November 2023



H. Key View H – View of solar panel field within Ballarat North Water Treatment Plant

A large expanse of solar panels can be seen from the Gillies Road along the eastern boundary of the Ballarat North Water Treatment and Reclamation Plant. Despite this not being of significance with regards to landscape character value, the presence of the solar panels highlights and emphasises the important role to which green energy initiatives such as solar panels can play within creating sustainable and climate resilient developments within new growth areas. Potential streetscape works along Gillies Rd may impact this view, however there is the opportunity to allow for breaks in street tree planting providing subtle views to the solar panels.

Figure 30: Key View H – View of solar panel field within Ballarat North Water Treatment Plant

Source: Google Maps Street View sourced on 4 December 2023



- I. Key View I – Elevated vantage point looking north from Gillies Rd crossing Western Freeway capturing views to the Former Wendouree Tip/landfill and Mount Rowan in the distance.

Looking north-east from the elevated vantage point crossing the Western Freeway on Gillies Road views are captured of the Form Wendouree Tip/landfill mound, as well as more distant views to Mount Rowan and the Glen Park State Forest and Creswick Regional Forest through breaks in the vegetation. Due to the elevated height of the vantage point and the prominence of the features captured in this view, it is likely that any future residential development will cause minimal obstruction to the view point. The landfill site itself is not suited for development other than for open space purposes and also has the potential to be a key arrival feature as people drive to the PSP.

Figure 31: Key View I – Elevated vantage point looking north from Gillies Rd crossing Western Freeway capturing views to the Former Wendouree Tip/landfill and Mount Rowan in the distance

Source: Google Maps Street View sourced on 4 December 2023



- J. Key View J – Clear and direct views of Mount Rowan along most of Midland Highway travelling north

Travelling north along Midland Highway coming from Ballarat CBD, there are multiple clear views of Mount Rowan. With the likelihood of the farm land south of Mount Rowan to become residential development and disrupted views from Midland Highway of the feature landform, consider how strategic design and placement of the open space and movement networks may create and retain some of these views to Mount Rowan, inclusive of road reserve widths and tree heights and densities.

Figure 32: Key View J – Clear and direct views of Mount Rowan along most of Midland Highway travelling north

Source: Google Maps Street View sourced on 4 December 2023



5 Opportunities and Recommendations

The following opportunities listed below were identified in response to the background documents review, desktop spatial mapping, site visit and analysis of views and potential impacts. These opportunities were then further refined and developed into recommendations to help guide the design and development of the Ballarat North PSP, but more importantly these recommendations are to help protect and enhance the key landscape feature and character of the site and ensure that a strong sense of place and identity is considered, developed, and delivered during the preparation and outcome of the PSP. Some of the key objectives of the recommendations include:

- Protect, retain, and enhance existing open space and natural landscape character features.
- Protect, retain and enhance existing visual amenity and key vantage points.
- Ensure the future development is enhance by the future landscape and helps facilitate appropriate urban development to create a cohesive precinct character and identity.
- Facilitate movement and circulation, inclusive of vehicular, active transport and pedestrian scales.

Further studies and assessments are currently being prepared by VPA or earmarked for future preparation and may result in an alteration to or override a recommendation identified in this report.

The numbering for both the opportunities and recommendations are spatially located and correspond directly to the following recommendations plan (Figure 33).

Figure 33: Ballarat North PSP – Opportunities and Recommendations Plan

Source: Mesh Planning



Table 1: General Opportunities and Recommendations (applicable to both the core and expanded PSP areas)

Note: Opportunities and Recommendations references 5-6 & 9-13 are generalised points and applies generally across the whole PSP. These points are therefore not spatially identified on the Opportunities and Recommendation Plan (Figure 33).

PLAN REF NO.	OPPORTUNITIES	RECOMMENDATIONS
1	O1: Potential opportunity to relocate the existing powerlines underground moving forward with new development. This will help further open up views to key landscape features, enhance vegetated vistas along the existing street network and provide shade and cooling opportunities. Tree health and growth will be improved as a result.	R1: Relocate existing and future services underground to facilitate uninterrupted views and accommodate for ideal tree conditions to create enhanced vegetated vistas and connections.
2	O2: Potential to retain existing high quality tree rows occurring along property and paddock boundaries as well as existing roads.	R2: Pending an arboricultural assessment, where possible retain significant existing tree rows within existing and newly established road reserves for immediate landscape amenity within the new development as tree reserves.
3	O3: Consider and test lot orientation with regards to undulating topography and maximising housing layout to achieve ideal north-south solar orientation.	R3: Orientate lots to accommodate undulating topography and maximise north-south solar orientation.
4	O4: Opportunity to protect and re-naturalise Burrumbeet Creek within the expanded area and the extent adjacent the Western Freeway.	<p>R4.1: Retain and protect Burrumbeet Creek. Re-naturalise and revegetate the waterway environs where possible and/or necessary (mostly occurring within the expanded area and the extent adjacent the Western Freeway).</p> <p>R4.2: Strengthen green corridor links and connections along and/or to the Burrumbeet Creek.</p> <p>R4.3: Planting endemic species to improve biodiversity and habitat for the local flora and fauna.</p>
5	O5: Opportunity to implement ESD practices where possible through the future development.	R5: Establish ESD practices, such as urban cooling, solar energy, etc, that can be implemented within the future design of the PSP.
6	O6: Where flooding occurs, consider creating wetlands/retarding basins to provide open space amenity whilst also address any flooding uses.	R6: Engage Drainage Consult to advise on flooding issues and provide recommendations for wetlands/retarding basins in flood prone areas and provide natural amenity.
7	O7: Opportunity to connect and create meaningful links between existing high valued landscape features within PSP area	R7: Create an open space network that links Miners Rest Wetland, Burrumbeet Creek, Ballarat Town Commons and Mount Rowan as part of the open space network of the PSP site. Ensure connections to surrounding context beyond PSP site boundary. Potential opportunity to provide shadeways along these links to aid in improving pedestrian experience.

8	O8: Existing road network primarily unsealed, will require upgrades for future development	R8: Improve movement network with upgrades to existing roads and provide new supporting connections. Use these networks to also provide a consistent shadeway for urban cooling of the new development and improve pedestrian experience.
9	O9: Opportunity to adopt the 'Healthy Street Principles' for all residential streetscapes.	R9: Investigate, integrate and design the future PSP residential streetscape to address the following 'Healthy Streets Principles': <ul style="list-style-type: none"> • Easy to cross • Shade & Shelter • Places to stop and rest • Not too noisy • People choose to walk & cycle • People feel safe • Things to see & do • People feel relaxed • Clean air
10	O10: Opportunity for the overall improvement of the biodiversity, habitat pathways and conservation areas throughout the PSP.	R10: Improve biodiversity, habitat pathways and conservation areas where possible and appropriate. A particular focus for this will be along the Burrumbeet Creek and the Ballarat Town Commons. Retain any existing valued trees that provide habitat to wildlife, pending arborist report and ecological assessment.
11	O11: Opportunity to consider different factors and approaches when selecting species for certain locations within the PSP.	R11: Development of criteria for species selection within certain locations of the PSP. These criteria might address heritage values, landscape character, the role of native species, climate resilience, biodiversity, community preferences, and more.
12	O12: Opportunity to integrate and contribute to the broader Ballarat Urban Forest targets and objectives.	R12.1: Understand the percentage of tree canopy cover that is required for the future PSP. R12.2: Establish a comprehensive tree inventory of the PSP for future measurement and management. R12.3: Develop tree precinct plan/s for the future PSP.
13	O13: Opportunity to provide a well-considered and integrated open space network throughout the future PSP.	R13: Integrate overarching objectives and principles with any relevant Open Space Strategy provided by Council.

Table 2: Core Area - Opportunities and Recommendations (applicable to the core PSP area only)

PLAN REF NO.	OPPORTUNITIES	RECOMMENDATIONS
14	O14: Potential installation of culverts/bridges across the Burrumbeet Creek to connect into the existing trail network along the western side of the Burrumbeet Creek.	R14: Create key connections across Burrumbeet Creek into existing trail network in the west. Careful consideration to minimising structural impact and disturbance to existing riparian environs when creating any future crossings over the creek.
15	O15: Consideration to create a vegetated buffer treatment along the northern boundary of the Water Treatment Facility. Consultation will be required with EPA to determine minimum buffer width required. Ensure that Bushfire mitigation strategies are also considered and potential to abut an edge road to create a fire break.	R15.1: Provide required buffer to the northern boundary of the Water Treatment Plant, with regards to the ESO and BMO which overlay the plant. Further investigate the possibility of the buffer treatment being a managed vegetated corridor and/or an edge road, that offers additional amenity and connections across the PSP.
16	O16: Potential expansion of the Mount Rowan Reserve. No development occurring on steeper slope of the topographic feature.	<p>R16.1: Expand the Mount Rowan Reserve, further consultation will be required to confirm the extent in which the reserve will increase and where the edge of development may occur.</p> <p>R16.2: Make the Reserve more accessible to the general public such as creating a lookout point, and/or active recreational walking or cycling trails. Further exploration will need to be undertaken for alternative active recreation opportunities that may be able to occur within this site.</p> <p>R16.3: Mount Rowan is a cultural significant site for First Nations. Ensure to consult and collaborate with First Nations to determine the best outcome for the Mount Rowan Reserve.</p>
17	O17: Need for better connectivity to and from the Ballarat Grammar Mount Rowan Campus.	R17: Create better vehicular and active transport route upgrades and connections to and from Ballarat Grammar Mount Rowan Campus.
18	O18: Ballarat Town Commons to be retained and protected with no future development to occur in this location. Opportunity to provide additional access points into and pedestrian connections throughout the Town Commons.	<p>R18.1: Protect, retain and maintain the Ballarat Town Commons and wetlands for ecological values and future open space opportunities.</p> <p>R18.2: Investigate future additional access points into the Commons and where new pedestrian connections may be suitable to occur throughout to tie into the broader open space network internally and externally to the PSP area.</p>
19	O19: Opportunity for an activity centre with a civic open space component, providing a destination for the future new community.	R19: Further investigation into a centralised location and extent of potential activity centre with a civic open space. Intention for this

		centre to serve as a destination for the new local community to gather and connect.
20	O20: Buffer required to Midland Highway, either a 2-3m high noise wall or a vegetation buffer to mitigate road traffic noise. (Noise wall height sourced from Ballarat Greenfields Investigation Areas Review: Part A Analysis Report)	R20: Investigate a proposed vegetation buffer to create a sound barrier to the Midland Highway, ensure there are breaks throughout to allow for view lines east through to Creswick Regional Park and Glen Park State Forest, as well as north to Mount Rowan. Final design of noise wall or vegetated buffer to factor impacts to views.
21	O21: 30m buffer required from Western Freeway to any future residential development in the Ballarat North PSP, a 2-4m high noise wall or a vegetation buffer may also be required to mitigate road traffic noise. (noise wall height sourced from Ballarat Greenfields Investigation Areas Review: Part A Analysis Report)	R21: Investigate a proposed vegetation buffer over the noise wall to create a sound barrier to the Western Freeway which will also contribute to the naturalisation of the Burrumbeet Creek along the southern boundary of the PSP.
22	O22: Potential for repurposing of the land use of the Former Wendouree Tip/landfill	R22.1: Former Wendouree Tip/Landfill to be assessed by environmental specialists to determine level of contamination and the potential future uses, short to long term. R22.2: Repurpose Former Wendouree Tip/ Landfill land use to open space, revegetation, or entry feature to the PSP.
23	O23: Opportunity to address any potential contamination and flooding issues, plus retain key views to the east.	R23.1: Pending an assessment for any contamination, there is the potential to explore the suitability for this location to be an open space or wetland area given the LSIO and FO overlays, the low topography and the intersection with the Burrumbeet Creek. This location has the potential also to protect views out to Nerrina Reserve, Creswick Regional Park and Glen Park State Forest and potentially mitigate any flooding/drainage concerns.
24	O24: Opportunity to provide safe pedestrian connections across the Western Freeway.	R24: Further studies into the appropriate approach to providing a safe pedestrian link crossing over the Western Freeway at key locations. These locations could be at the Ballarat Town Commons connecting south to Pioneer Park and/or at the eastern edge of the Former Wendouree Tip/Landfill connecting south to the Mount Rowan Secondary College. This could possibly take form as a raised pedestrian footbridge, etc.
B,I,X,J	O-B,I,X,J: Multiple viewing opportunities to south side of Mount Rowan.	R-B,I,X,J: Retain existing views to Mount Rowan, utilise strategic placement of future open space to retain these view lines or placement of north-south road/movement network.

C	O-C: Potential improvement to eastern views out to Creswick Regional Park and Glen Park State Forest.	<p>R-C.1: Pending arborist report and recommendations, explore the possible clearing of trees and have strategic breaks in the potential highway vegetated buffer to increase views out to Creswick Regional Park and Glen Park State Forest.</p> <p>R-C.2: Ensure to take into consideration the placement of any new street tree planting along the eastern boundary of the PSP to provide strategic views out to Creswick Regional Park and Glen Park State Forest.</p>
D	O-D: Potential improvement to south-eastern views out to Nerrina Historic Area, Mount Xavier and Mount Warrenheip	<p>R-D: Pending arborist report and recommendations explore the possible clearing of trees and have strategic breaks in the potential highway vegetated buffer to allow for increase moments to view out to Nerrina Historic Area, Mount Xavier and Mount Warrenheip</p> <p>R-C.2: Ensure to take into consideration the placement of any new street tree planting along the eastern boundary of the PSP to provide strategic views out to Nerrina Historic Area, Mount Xavier and Mount Warrenheip</p>
E & F	O-E,F: Potential view lines into the Burrumbeet Creek.	R-E,F: Protect future view lines to Burrumbeet Creek, with potential inclusion of local roads and landscape amenity. Future development to front onto Burrumbeet Creek and environs interface.
H	O-H: South-western views from Olliers Road of the solar panel field.	R-H: With any new street tree planting along Gillies Road ensure to consider placement and spacing to be able to retain the views to solar panels in the Ballarat North Water Treatment Plant. This will inadvertently retain the passive promotion of green energy initiatives and climate resilience within the growth area.
M	O-M: Long view across to Glen Park State Forest from Noble Court	R-M: Use road network and open space to retain these views from Noble Court to the Glen Park State Forest.
W	O-W: Sparse tree rows blocking any opportunity to see Mount Rowan in the west	R-W: Pending the arborists report and recommendations, further investigate the selective removal of trees from existing tree rows to reveal key views of Mount Rowan from the west.

Table 3: Expanded Area (subject to further investigation) - Opportunities and Recommendations (applicable to the expanded PSP area only)

PLAN REF NO.	OPPORTUNITIES	RECOMMENDATIONS
25	O25: Location at junctions of the Burrumbeet Creek, more susceptible to flooding and inundation. Opportunity to mitigate through the creation of drainage reserve or wetlands.	<p>R25.1: Locate open space, drainage reserve and/or wetland at the junction of Burrumbeet Creek to mitigate flooding.</p> <p>R25.2: Consultation and collaborate with First Nation to determine any particular cultural significance or stories at the junction of the waterways.</p> <p>R25.3: Integrate with long views to the north to the volcanic rises (Mount Pissgah, Mount Blowhard & Mount Hollowback)</p>
26	O26: Smaller township of Miners Rest located to the west of the expanded area	R26: Improve connections to Miners Rest and the broader open space network linked with shared paths.
27	O27: Existing Miners Rest Wetland	R27: Maintain and protect Miners Rest Wetland and the walking trail. Opportunity for interpretive signage explaining the biodiverse and water story of the site.
28	O28: Consideration of location for potential non-urban uses, such as an active recreational reserve, and/or water management/flooding mitigation opportunities.	<p>R28.1: Further investigations to occur to consider the location of potential non-urban uses north of the Burrumbeet Creek.</p> <p>R28.2: One direction to explore with non-urban use for this location is to create an active recreational reserve/precinct. This location would be ideal to fill the gap in AOS provision in the area, due to the proximity to the established township of Miners Rest and being on the northern side of the Western Freeway which allows for the residents in the new PSP area to have easy access to Active Open Space facilities.</p> <p>R28.3: Further investigate the opportunities and/or need for water management and/or flooding mitigation strategies within this location adjacent to and connecting into the Burrumbeet Creek water story, such as wetlands, raingardens, linear open space network, active transport network, etc.</p>
29	O29: Opportunity to provide safe pedestrian connections across Howe Street and/or Cummins Road.	R29: Further studies into the appropriate approach to providing a safe pedestrian link crossing over Howe Street and/or Cummins Road at Burrumbeet Creek junction. This could possibly take form as a wombat crossing, zebra crossing, signalised intersection or raised pedestrian footbridge.
A	O-A: Views from Miners Rest Wetlands north to Mount Pissgah, Mount Blowhard & Mount Hollowback	R-A: Protect views to northern volcanic rises to the north by retaining the Miners Rest Wetlands

		(Mount Pissgah, Mount Blowhard & Weatherboard Hill).
K, S & Q	O-K,S,Q: Vegetated views into the Burrumbeet Creek from culvert	R-K,S,Q: Protect vegetated views of the Burrumbeet Creek when crossing at the culverts.
O	O-O: Opportunity to open up more views to the east of the expanded area to look out to the Creswick Regional Park and Glen Park State Park	R-O: Selective removal of tree rows to reveal additional views to the east of the expanded area to look out towards Creswick Regional Park and Glen Park State Park.
V	O-V: Vegetated vistas along Muir Road and Cummins Road	R-V: Pending arborist report and recommendations, explore the potential retention of the vegetated vistas along Muir Road and Cummins Road where possible.

6 Residual Impacts

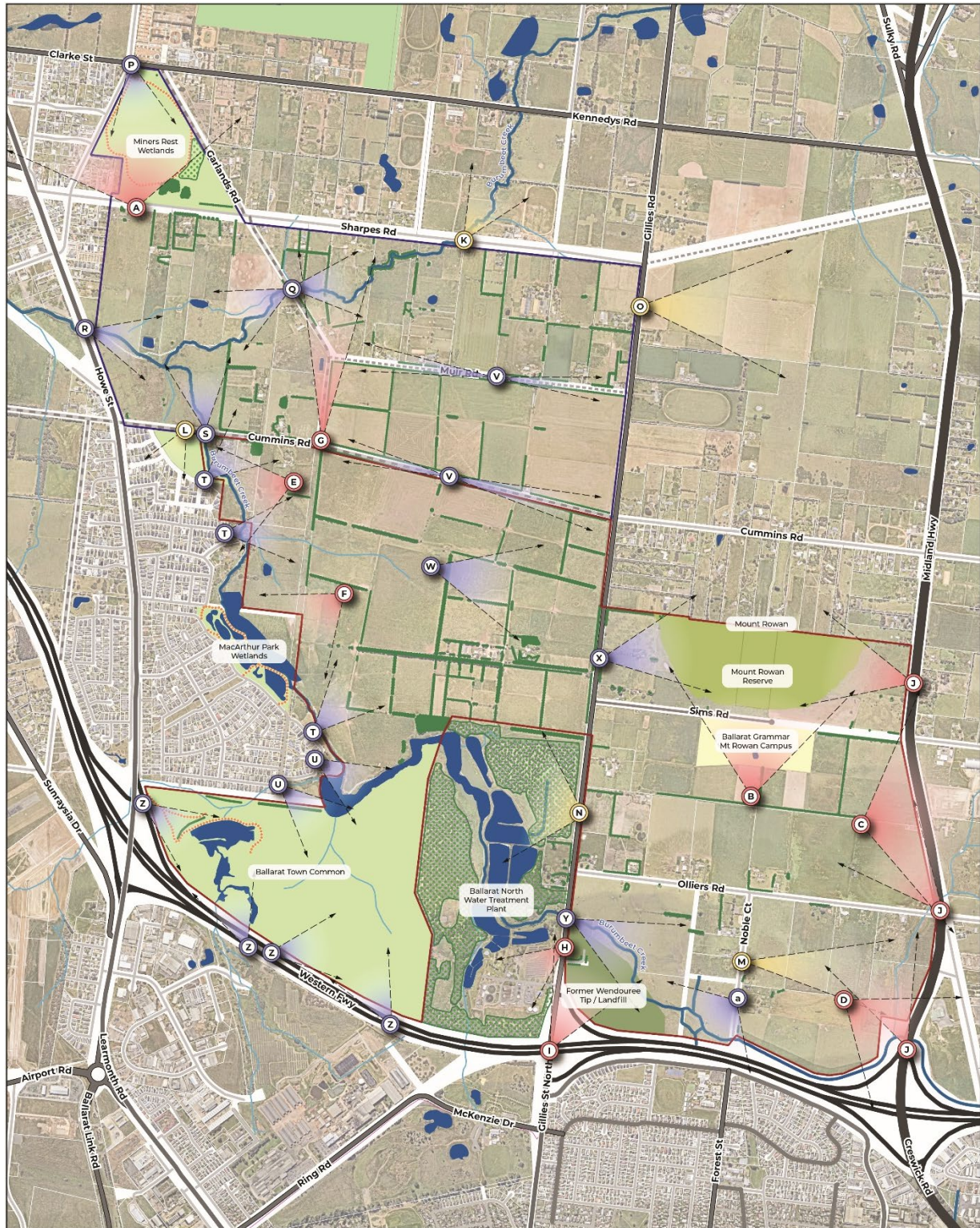
This section refers to 'residual impacts' as it relates to actions that are outside of the project scope and risks identified following this scope of works. These recommendations should be considered in conjunction with the opportunities and recommendations as stated in the previous section of this report. Some of these are currently being prepared with the VPA. Note that the pending further investigation regarding the inclusion or exclusion of the expanded area within the final PSP boundary by the VPA and final following formal decision from State Government, this may affect the extent of works for any current or future studies/assessment undertaken or override the need for some of the following residual impacts if the expanded area is to be excluded.

- **RI-01:** Engagement and consultation with sound engineering to determine the need for recommended setbacks or sound barrier required where residential development is proposed along the southern and eastern interfaces of the Western Freeway and Midland Highway.
- **RI-02:** Engagement and consultation with civil and drainage engineers to determine the location of outfall pipes.
- **RI-03:** Engagement and consultation with traffic consultants to determine the access opportunities into the future development from the freeways and any necessary structural infrastructure upgrades that are required to the existing road network to accommodate the predicted population growth.
- **RI-04:** Engagement and consultation with CFA/Bushfire to perform a bushfire risk assessment for both core and expanded areas. Consultant to provide mitigation recommendations that will assist the design of the PSP area.
- **RI-05:** Engagement and consultation with arborist to perform an arboricultural assessment. Identification of all existing trees in both the core and expanded area of the PSP, assessment of the trees' health, 58 diameter at breast height (DBH), dimensions and retention value to be included. Further recommendations could be provided to the VPA as to the potential tree species that will be suitable for planting in the further development.
- **RI-06:** Consultation with relevant specialists is required regarding the potential contamination of the former landfill site at the south-east corner of Gillies Street and the Western Freeway, to determine the possible future potential uses to be considered in the short to long term with a specific understanding of remediation techniques and timeframes. This has the potential to provide a sense of entry into the future growth area.
- **RI-07:** Preparation of a Cultural Heritage and Values Assessment by the Wadawurrung Traditional Owners to be undertaken to highlight and identify any valued sites and emerging stories, including Burrumbeet Creek and Mount Rowan. Potential opportunity to integrated co-design with First Nations for the design of the PSP.
- **RI-08:** Engagement and consultation with drainage consultants to further understand the flooding and inundation issues of the site and the possible recommendations for mitigation and limitations of the design for the future PSP.
- **RI-09:** Previously zoned industrial land along the eastern boundary of the core area to undergo preliminary risk assessment or environmental audit to determine and ensure that the potentially contaminated land is suitable for any future use which could be significantly adversely affected by any contamination.
- **RI-10:** Engage and consult Biodiversity / Ecologist to perform a biodiversity / ecological assessment of the PSP area. Consultant may also be able to assist with recommendations for the potential re-naturalisation of the Burrumbeet Creek environs.
- **RI-11:** Undertake an Adverse Amenity Impact Assessment to determine the potential buffer treatments opportunities for the Ballarat North Water Treatment Plant.
- **RI-12:** Opportunity to consult ESD specialist to provide recommendations for designing PSP with consideration of ESD practices at the earlier masterplan level.

7 Appendix A – Photographic Inventory

Ballarat North Precinct Structure Plan – Consolidated Views Plan

Source: Mesh Planning



Viewpoint A	
Photo Location	Miners Rest Wetland
Date	02.11.2023
Source	Mesh Planning
Direction	North, North-west
Comments	Northern / north-western views out to hills, including Weatherboard Hill, Mount Hollowback, Mount Blowhard and Mount Pisgah



Viewpoint B	
Photo Location	Olliers Road
Date	02.11.2023
Source	Mesh Planning
Direction	North
Comments	Northern views up Mount Rowan and incorporated reserve



Viewpoint C	
Photo Location	Midland Highway
Date	02.11.2023
Source	Mesh Planning
Direction	East
Comments	Eastern views out to the Creswick Regional Forest, Glen Park State Forest and Nerrina Historic Reserve



Viewpoint D	
Photo Location	Midland Highway
Date	02.11.2023
Source	Mesh Planning
Direction	South-East
Comments	South-eastern views to distant hill range, including Mount Xavier and Mount Warrenheip



Viewpoint G	
Photo Location	Cummins Road
Date	02.11.2023
Source	Mesh Planning
Direction	North
Comments	Long view north of Mount Pisgah



Viewpoint H	
Photo Location	Gillies Road
Date	4.12.2023
Source	Google Map Street view
Direction	South
Comments	View of solar panel field within Ballarat North Water Treatment Plant



Viewpoint I	
Photo Location	Gillies Road
Date	4.12.2023
Source	Google Map Street view
Direction	North
Comments	Elevated vantage point looking north from Gillies Rd crossing Western Freeway capturing views to the Former Wendouree Tip/landfill and Mount Rowan in the distance



Viewpoint J	
Photo Location	Midland Highway
Date	04.12.2023
Source	Google Maps Street View
Direction	North, North-west
Comments	Clear and direct views of Mount Rowan travelling north along most of Midland Highway





Viewpoint K	
Photo Location	Sharpes Road
Date	02.11.2023
Source	Mesh Planning
Direction	North
Comments	Views north of remnant vegetation along Burrumbeet Creek



Viewpoint L	
Photo Location	Cummins Road
Date	04.12.2023
Source	Google Maps Street View
Direction	South
Comments	View of wetland and new residential estate south of Cummins Rd



Viewpoint M	
Photo Location	Noble Court
Date	02.11.2023
Source	Mesh Planning
Direction	East
Comments	Long views of Glen Park State Forest across open paddocks from Noble Ct



Viewpoint N	
Photo Location	Gillies Road
Date	02.11.2023
Source	Mesh Planning
Direction	West
Comments	Vegetated view into the pine plantation of the Water Treatment plant as well as glimpses of waterbody through vegetation whilst travelling along Gillies Rd



Viewpoint O	
Photo Location	Gillies Road
Date	02.11.2023
Source	Mesh Planning
Direction	East
Comments	Long views of Creswick Regional Forest and Glen Park State Forest across open paddocks from Gillies Rd



Viewpoint P	
Photo Location	Clarke Street
Date	02.11.2023
Source	Mesh Planning
Direction	South
Comments	Southern view into the Miners Rest Wetland



Viewpoint Q	
Photo Location	Garland Road
Date	02.11.2023
Source	Mesh Planning
Direction	Left: East. Right: West
Comments	Southern view into the Miners Rest Wetland



Viewpoint R	
Photo Location	Howe Street
Date	02.11.2023
Source	Mesh Planning
Direction	East
Comments	Vegetated views along Burrumbeet Creek and into the farming land of the expanded area from Howe St. Distant views across to the Glen Park State Forest.



Viewpoint S	
Photo Location	Cummins Road
Date	02.11.2023
Source	Mesh Planning
Direction	North
Comments	Vegetated views along Burrumbeet Creek and into the farming land of the expanded area from Cummins Rd



Viewpoint T	
Photo Location	Jurify Road
Date	02.11.2023
Source	Mesh Planning
Direction	North-east
Comments	Views east from western residential estate across Burrumbeet Creek and into the farming land of the core PSP area



Viewpoint U	
Photo Location	Delaney Drive
Date	02.11.2023
Source	Mesh Planning
Direction	East
Comments	Views south from western residential estate across Burrumbeet Creek and into the Ballarat Town Commons



Viewpoint V	
Photo Location	Cummins Road
Date	02.11.2023
Source	Mesh Planning
Direction	West
Comments	Planted tree rows of Cypress sp. along Cummins Rd properties to create vegetated vistas



Viewpoint X	
Photo Location	Gillies Road
Date	04.12.2023
Source	Google Maps Street View
Direction	North-east
Comments	Break in vegetation to open up views east to Mount Rowan



Viewpoint Y	
Photo Location	Gillies Road
Date	02.11.2023
Source	Mesh Planning
Direction	East
Comments	Eastern views down into Burrumbeet Creek, farm land and distant view of Glen Park State Forest



Viewpoint Z	
Photo Location	Western Freeway
Date	04.12.2023
Source	Google Maps Street View
Direction	North-east
Comments	Direct views into Ballarat Town Commons from multiple points along the Western Freeway, occasionally obstructed by vegetation



Viewpoint a	
Photo Location	Noble Court
Date	02.11.2023
Source	Mesh Planning
Direction	North-east
Comments	Break in vegetation to open up views east to Mount Rowan

