

**Bannockburn
South East
Precinct Structure Plan
Wadawurrung Country**

Background Report

APRIL 2025

The **Victorian Planning Authority proudly acknowledges** Victoria's Aboriginal community and their rich culture and pays respect to their Elders past and present.

We acknowledge Aboriginal people as Australia's first peoples and as the Traditional Owners and custodians of the land and water on which we rely.

We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life and how this enriches us.

We embrace the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.

We acknowledge the Wadawurrung people as the Traditional Owners of the land to which the Precinct Structure plan applies.

The Bannockburn SE PSP is located on the traditional lands of the Wadawurrung people. The Wadawurrung People are represented by the Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC).

We acknowledge the Wadawurrung People as the Aboriginal Traditional Owners of their unceded Country. We acknowledge their ongoing connection to this land, and we pay our respects to their Elders past and present.

We thank Wadawurrung Traditional Owners Aboriginal Corporation for their engagement throughout this project.

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1 INTRODUCTION

The Victorian Planning Authority (VPA) in partnership with Golden Plains Shire Council (Council) has prepared a Precinct Structure Plan (PSP) for the Bannockburn South East Precinct (the Precinct). A PSP is a land use and infrastructure plan that guides the development of an area over time. It provides certainty to community members by offering a long-term vision for how an area will develop in the future.

Bannockburn South East is one of the precincts identified in the [Bannockburn Growth Plan \(2021\)](#) which sets out a high-level framework for the long-term development of Bannockburn.

In summary, the Bannockburn South East PSP:

- Sets out plans to guide the delivery of quality urban environments in accordance with the [Precinct Structure Planning Guidelines: New Communities in Victoria \(October 2021\)](#) (the PSP Guidelines) and associated [Guidance Note: Applying the PSP Guidelines in regional areas](#) (Regional PSP Guidelines).
- Enables the transition of non-urban land to urban land.
- Sets the vision for how the land should be developed and the outcomes to be achieved.
- Outlines the infrastructure projects required to ensure that future residents and visitors within the area can have timely access to services and transport necessary to support a quality and affordable lifestyle.
- Sets out objectives, requirements, and guidelines for land use, development and subdivision.
- Provides government agencies, the council, developers, investors and local communities with certainty about future development.

1.1 Purpose of this report

The Background Report summarises the key planning assessments and outcomes that have informed the preparation of the Bannockburn South East PSP.

More specifically, this report:

- Summarises the strategic and physical context of the precinct.
- Identifies the land use and development needs for the precinct.
- Outlines how various assessments have been considered to develop a balanced planning outcome to mitigate key issues impacting the PSP.
- Outlines how the precinct performs against the PSP Guidelines' performance targets.
- Outlines how the technical studies have helped to inform the preparation of the PSP.

This report and the PSP document adopt the hallmarks of the 20-minute neighbourhood framework as per the PSP Guidelines. The hallmarks are set by the Victorian Government to identify the outcomes that make a 20-minute neighbourhood. Chapter 4 of this report is structured to follow these hallmarks, which include the following for Bannockburn South East:

- 1 Viable densities
- 2 Safe, accessible, and well-connected
- 3 Connect people to jobs, higher order services and thriving local economies
- 4 High-quality public realm

- 5 Services and destinations
- 6 Infrastructure coordination

1.2 PSP Guidelines & PSP 2.0 process

The PSP Guidelines are a Victorian Government initiative to ensure the VPA and other planning authorities prepare plans for places that enable best practice liveable new communities. The PSP Guidelines ensure a consistent, best-practice approach to the PSP process and outline the intended performance of new 20-minute neighbourhoods to be articulated by PSPs.

In accordance with Ministerial Direction 12 Urban Growth Zone, “in preparing an amendment to incorporate a precinct structure plan in the scheme, or change an incorporated precinct structure plan, a planning authority must demonstrate and show in the explanatory report that the precinct structure plan or any changes to it are in accordance with any applicable Precinct Structure Plan Guidelines approved by the Minister for Planning”

The PSP 2.0 process is established under the PSP Guidelines and sets aspirational targets including co-design of the PSP, streamlining PSP preparation, and optimising the PSP product to embrace innovation in delivering government policy.

The PSP 2.0 process aims to:

- Achieve up-front, early resolution of issues.
- Gain better and earlier information on infrastructure demands to inform agency planning and budget bids.
- Update guidance on PSP content reflecting new government policy and promoting innovation.
- Provide stronger guidance in PSPs for staging of development.

Further information on the PSP 2.0 process can be found on the [VPA website](#).

1.3 Target Adaptation in Regional Areas

The PSP Guidelines identify 20 performance targets to deliver improved outcomes and achieve the hallmarks. The Guidelines acknowledge the diversity of new communities, particularly in Regional Victoria. The Guidelines state:

While the Guidelines maintain a focus on preparing PSPs in Melbourne’s new communities, PSPs will also be prepared across regional Victoria’s growing cities and towns. While a more nuanced approach to the application of the Guidelines in these areas is required, the same principles, features and targets should be considered in the regional context, particularly where larger growth areas are proposed.

The Regional PSP Guidelines provide guidance to the Planning Authority when applying the PSP Guidelines, allowing for adaptations to performance targets in a way that supports the existing character and values of the township, while meeting the needs of future communities. Regional adaptation means that not all PSPs will achieve 100% of the performance targets and therefore justification is required for adapting a target. It should be noted that many of these targets are already mandated through the Victorian Planning Provisions, meaning they are already requirements of the planning permit process.

Table 1 sets out which targets must be met and those which can be varied and the status of the target in the context of the Bannockburn South East PSP. There are several targets that are

proposed to be varied for the precinct. Reasons why these have been varied are noted in relevant sections of the report.

Table 1 PSP targets and regional adaptability

#	Target Summary	Adaption supported?	How is it applied to the precinct?
T1	Amenity areas	✓	Regional Specific Adaptation*
T2	Density Target	✓	Regional Specific Adaptation*
T3	Housing Typologies	✗	Target achieved
T4	Affordable Housing	✗	Target achieved
T5	Arterial Network	✗	Target achieved
T6	Bicycle Paths	✗	Target achieved
T7	Pedestrian Paths	✗	Target achieved
T8	Pedestrian/Cycling Crossings	✓	Achieve at planning permit
T9	Public Transport	✓	Target achieved
T10	Local Employment	✓	Regional Specific Adaptation*
T11	Open Space Land Take	✓	Regional Specific Adaptation*
T12	Open Space Catchments	✗	Target achieved
T13	Tree Canopy Coverage	✗	Achieve at planning permit
T14	Passively Irrigated Street Trees	✗	Achieve at planning permit
T15	Solar Orientation	✗	Achieve at planning permit
T16	Conservation Areas	✗	Target achieved
T17	IWM Solutions	✗	Achieve at planning permit
T18	Education and Community Facilities	✓	Target achieved
T19	Activity Centres	✓	Regional Specific Adaptation*
T20	Basic and Essential Infrastructure	✗	Achieve at planning permit

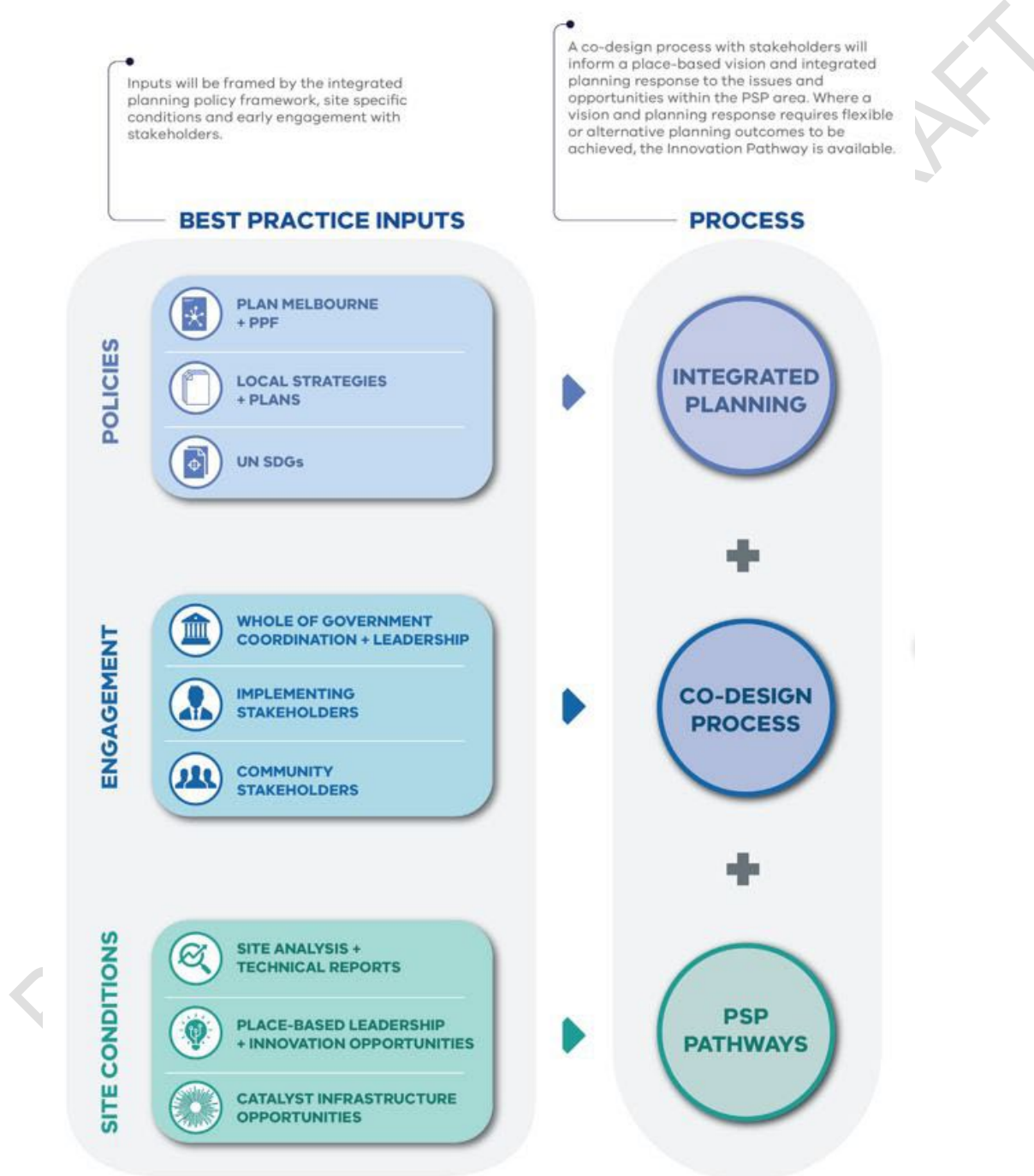
* Regional Specific Adaptation has been made. Further details and rationale on these metrics can be found from Section 4 onwards.

1.4 PSP Guidelines in Bannockburn South East

Bannockburn South East is a Regional PSP that seeks to deliver outcomes responsive to the precinct features and the surrounding area. The context of the surrounding area is set out within this report and rationalises the nuanced approach undertaken in this PSP.

Figure 1 illustrates how best practice inputs identified through the PSP process feed into the PSP Guidelines Integrated Framework to deliver a PSP.

Figure 1 Framework for delivering PSPs



Framework for delivering PSPs (Source: VPA)

Bannockburn South East is a Regional PSP that seeks to deliver outcomes responsive to the precinct features and the surrounding area. The context of the surrounding area is set out within this report and rationalises the nuanced approach undertaken in this PSP.

The PSP Guidelines has a hierarchy of elements to explain what needs to be considered and delivered in a PSP. Elements are grounded in state policy and strategy or key future directions for greenfield precincts as determined by the VPA through the preparation process.

The framework for delivering PSPs in accordance with the PSP Guidelines includes a purpose and place-based vision, place-based objectives, principles and performance targets which sit within the hierarchy of elements under the 20-minute neighbourhood metric. Successful implementation of both the coordination and innovation pathways will require significant stakeholder buy-in, and a greater effort and commitment from stakeholders will be required to pursue the innovation pathway for desired outcomes.

PUBLIC CONSULTATION DRAFT

2 STRATEGIC CONTEXT

2.1 Policy and legislative context

2.1.1 Plan for Victoria

Plan for Victoria was released by the Victorian Government in March 2025. It sets out a long-term plan for the state, particularly for Melbourne, regional cities and centres and small towns across regional and rural Victoria.

Planning for Bannockburn South East implements the pillars identified in *Plan for Victoria*, particularly Pillar 1: Housing for all Victorians. Map 2 of *Plan for Victoria* identifies where most homes are to be accommodated, this includes Melbourne, and the three major regional cities of Ballarat, Bendigo and Geelong. Map 2 also identifies several regional greenfield projects, which includes Bannockburn South East.

Map 4 of *Plan for Victoria* also identifies housing targets for 2051 for each local government area including Golden Plains Shire, which has a housing target of 12,500 homes.

2.1.2 G21 Regional Growth Plan

The *Geelong G21 Regional Growth Plan, 2013* (the Regional Growth Plan) covers the municipalities of the City of Greater Geelong, Colac Otway Shire, Surf Coast Shire, Borough of Queenscliff and the southern portion of Golden Plains Shire. The plan provides broad guidance for land use and development in the G21 region. The Regional Growth Plan acknowledges Bannockburn's provision of relatively affordable housing options as a major drawcard for growth in the area.

2.1.3 Bannockburn Growth Plan

In 2020, the VPA in partnership with Council prepared the *Bannockburn Growth Plan* (the Growth Plan), a high-level and broad strategy that:

- Sets out the future vision for sustainable growth and land use planning in Bannockburn.
- Identifies future residential and employment areas (including this south-west precinct) to ensure adequate land supply for the next 30 years to 2050.
- Identifies the key considerations for further detailed planning and development of growth areas.
- Defines the key projects and infrastructure to deliver and support growth.
- Provides a more certain environment for both public and private investment decisions.

The *Bannockburn Growth Plan* will be used to coordinate, guide and inform the preparation and consideration of future, more detailed local plans and planning permit applications.

The Growth Plan identifies five precincts for planning and development, for which the South-east precinct is one.

Bannockburn South East PSP (this Plan)

The Bannockburn South East precinct was identified as a priority PSP in the Growth Plan to provide residential growth in a sustainable and well serviced way in the short to medium term.

The VPA is the planning authority for the Bannockburn South East precinct.

The Growth Plan identifies key connection points from Bannockburn South East into adjacent future growth precincts and logical extensions of key north–south connector routes into the precinct from the existing Bannockburn township.

Figure 2 Bannockburn Growth Plan



Bannockburn South West PSP

The Growth Plan anticipates that the south- west precinct will deliver housing and employment opportunities in the medium to long-term and will benefit from connections to new infrastructure and facilities in the south-east precinct.

The South West precinct is bound by Bannockburn–Shelford Road and the existing Bannockburn Business Park to the north, Bruce Creek to the east, a proposed arterial road to the south, and the Bannockburn Flora and Fauna Reserve to the west.

The Growth Plan estimates the South West Precinct will:

- Be an area of 161 hectares
- Have a developable area of 97 hectares
- Facilitate the development of 1,159 dwellings

Bannockburn Future Growth Option South

In accordance with the Growth Plan, a future growth option in the south of Bannockburn has been identified as a suitable location for long term residential land supply. The land was confirmed as suitable for urban development as part of the investigation completed for the Growth Plan Investigation area.

Future Growth Option South is best suited as a long-term supply option as it is not currently connected to existing urban development in Bannockburn. A strategic planning process will need to take place at the appropriate time to address constraints and opportunities.

The Growth Plan estimates the Future Growth Option South will:

- Be an area of 374 hectares
- Have a developable area of 234 hectares
- Facilitate the development of 2,693 dwellings.

Bannockburn Future Growth Option East

In accordance with the Growth Plan, a future growth option in the east of Bannockburn has also been identified as suitable for long term residential land supply. This land is an extension of the existing urban area and interfaces with the proposed South East Precinct. This land's inclusion ensures a growth boundary for Bannockburn that is consistent with local policy, to maintain a separation distance of 1km between Bannockburn and Gheringhap. A strategic planning process will need to take place at the appropriate time to address constraints and opportunities.

The Growth Plan estimates the Future Growth Option East will:

- Be an area of 122 hectares
- Have a developable area of 73 hectares
- Facilitate the development of 878 dwellings.

2.1.4 Gheringhap Structure Plan

The *Gheringhap Structure Plan* identifies the town of Gheringhap as a location for a future employment precinct. The employment precinct requires proponent-driven investment to facilitate its development. The growth proposed in Geelong and Bannockburn will increase the importance and urgency of the development of this precinct to provide local employment opportunities.

There are no formalised job estimates for Gheringhap; however, Council estimates up-to 1,300 jobs may be created in the precinct.

2.1.5 Planning Policy Framework

The Planning Policy Framework (PPF) contains state-wide, regional and local planning policies, which articulate the land use and development outcomes sought by the *Golden Plains Shire Planning Scheme* (the Planning Scheme).

Clause 11 Settlement sets out the policy for directing growth in Victoria. Bannockburn is identified as a peri urban town/district town on the Victoria Settlement Framework plan at Clause 11.01-S.

Clause 11.01-R sets regional policy in accordance with the G21 Regional Growth Plan, consistent with State Policy to focus investment and growth in places of state significance, which includes the area of Geelong. The Growth Plan identified Bannockburn as an area to "support planned growth and reinforce the role of district towns".

Clause 11.01-1L Settlement, supports "a progressive series of land rezoning within Bannockburn, in line with the Bannockburn Growth Plan (Victorian Planning Authority, May 2021)."

Other relevant Settlement Policy being implemented by this draft Amendment include:

- Clause 11.02 Managing Growth

- Clause 11.03-3S Peri-urban areas
- Clause 11.03-6L-01 Bannockburn

Clause 12.01 Biodiversity sets policy that broadly aims to protect areas of biodiversity and landscape values.

Clause 12.03-1R Rivers of the Barwon seeks *"to maintain and enhance the natural landscape, biodiversity, cultural and social values, and the Traditional Owner living cultural heritage values of the Rivers of the Barwon, comprising... their tributaries and wetlands."*

Bruce Creek is a tributary of the Barwon River and forms the Western Boundary of the precinct.

Other relevant biodiversity policy being implemented by this draft Amendment include:

- **Clause 12.03-1L** Waterways and Wetlands

Clause 13 Environmental Risks seeks to strengthen the resilience and safety of communities. It includes relevant Policy at:

- Clause 13.01 Climate Change Impacts
- Clause 13.02 Bushfire
- Clause 13.04 Soil Degradation
- Clause 13.07 Amenity, Human Health and Safety.

These state policies are implemented via this draft Amendment, including the use of the bushfire planning provisions, environmental controls, climate change considerations and response.

Clause 15 Built Environment and Heritage seeks to (amongst other policy directions) ensure all land use and development appropriately responds to its surrounding landscape and character, built form and cultural context. It includes relevant Policy at:

- Clause 15.01 Built Environment
- Clause 15.03 Heritage

Clause 16 Housing seeks to provide for housing diversity and ensure the efficient provision of supporting infrastructure. It includes relevant Policy at Clause 16.01 Residential Development.

Clause 17 Economic Development provides policies aimed at providing strong and innovative economies, where all sectors are critical to economic prosperity. It includes relevant Policy at Clause 17.02 Commercial.

Clause 18 Transport seeks to ensure a safe, integrated and sustainable transport system. It includes relevant Policy at:

- Clause 18.01 Land Use and Transport
- Clause 18.02 Movement Networks

Clause 19 Infrastructure includes policy that ensures social and physical infrastructure is provided in a way that is efficient, equitable, accessible and timely. It includes relevant Policy at:

- Clause 19.02 Community Infrastructure
- Clause 19.03 Development Infrastructure

2.2 Local context

2.2.1 Current conditions

The Bannockburn South East precinct covers an area of 524 hectares of land, consisting of 19 landholdings, ranging in size from 2 to 200 hectares. Most of these parcels are cropping or pasture land with no existing dwellings, except for one rural residential property at 418 Burnside Road. The precinct is best described as agricultural or rural with a broadly unfragmented land ownership pattern.

Similarly, the precinct is bound by rural uses to the south, west and south-east. To the north and north-east, the precinct is adjacent to residential rural land uses, with densities typical of a regional town approximately between 5 and 11 dwellings per hectare, within the Bannockburn township. To the west is Bruce Creek, which partially includes Crown Land.

The main Bannockburn township is a rural township characterised by a relatively small high street, and larger residential lots.

Bannockburn South East is immediately adjacent to intensive agriculture uses south of the freight line, including a chicken hatchery operated by Turosi Foods south of the precinct. The precinct is also bisected east to west by a 500kV transmission line. Within the precinct boundary, it runs approximately 2.6 kilometres across and 60 metres wide.

Further details of existing site features can be found in the *Bannockburn South East Precinct Soil Desktop Assessment* (WSP, 2022) and *Bannockburn Growth Plan Land Capability Assessment* (Meinhardt 2020).

2.2.2 Wadawurrung living cultural values

The precinct is on Wadawurrung Country, and as such all features of its landscape may feature not only tangible cultural values e.g. artefacts but also represent intangible values that demonstrate Wadawurrung peoples' connection to Country and continuing relation to the land, skies, waters and ecology.

Intangible cultural values have been identified and associated strongly with the wider Bruce Creek corridor, the area of the stony rise, indigenous vegetation shelterbelts and view lines across Country such as those connecting the precinct to *Wurdi Youang* and the Barrabool Hills

Regarding tangible cultural features, several Victorian Aboriginal Heritage Register Places are within the PSP area. These places are identified on Figure 3 Precinct Features and will need to be managed under the Cultural Heritage Management Plan process. This is in accordance with S.61 of the Aboriginal Heritage Act 2006 and consultation with Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC).

Further, within the precinct there are two areas that have been identified with a particularly high likelihood of containing artefacts:

- Bruce Creek corridor serves as the key conservation corridor for cultural heritage protection, and storytelling within the landscape. Bruce Creek is historically the key movement corridor for people, with a connection to the waterway, this element should be reinforced through the place-based plan. Floodplain, terraces and escarpment edges were found to have a high to very high archaeological sensitivity.
- Stony Rises were found to have moderate archaeological sensitivity. Additional investigations are required to understand the value of this area.

2.2.3 Post-contact cultural heritage

There is one registered/listed heritage site located within the precinct with several other local historic places that did not meet the threshold for inclusion on the Victorian Heritage Inventory. There are seven registered historic heritage sites and one registered historic precinct within the wider region, all being approximately north of the precinct.

The following historic places, sites and features were identified within the precinct:

- One archaeological site (H7721-0541 - Bruce Creek Pastoral Outstation, Harvey Road), located along Bruce Creek at the western boundary of the precinct, and now listed on the Victorian Heritage Inventory.
- One historic place, a historic farmhouse with an associated dairy, barn, and dry stone wall (Grayson's Farm, 430 Burnside Road, Bannockburn). As a result of this assessment, it is recommended that a place specific heritage study be undertaken of this heritage place to clarify the significance of the place and determine it if meets the criteria for inclusion in the Heritage Overlay.
- A dry stone wall, part of Grayson Farm, but also holding individual significance as an example of an early-nineteenth century constructed dry stone wall in Bannockburn region.

2.2.4 Topography

Most of the precinct is relatively flat, with surface gradients not exceeding 5%. The Bruce Creek corridor forms the western boundary of the precinct and is an exception to the flat surfaces within the precinct. The beginning of the corridor in the northwest corner of the precinct, is marked by an extensively steep escarpment, with gradients exceeding 20%. However, as the creek corridor continues south the gradient decreases, with averages ranging between 5% to 10%. See Appendix 1: Slope map.

2.2.5 Flora and fauna

The Bruce Creek corridor presents high ecological values as demonstrated by the presence of Ecological Vegetation Classes (EVCs), which are classifications used to categorise different plant communities. EVCs are also prevalent in smaller scatters and roadside reserves across the precinct.

Three EVCs were identified and recorded within the study area, totalling an area of 8.4 hectares and comprising of:

- Plains Grassland (EVC 132),
- Creekline Grassy Woodland (EVC 68)
- Plains Grassy Woodland (EVC 55).

More generally, there are 66 flora species (37 indigenous and introduced) and 21 species of fauna (16 native species and 5 introduced species) within precinct.

An arboriculture assessment of extant vegetation identified a total of 1,456 trees within the precinct, with the vast majority being planted or introduced species with low to no retention value.

Furthermore, following species were recorded on site:

- Golden Sun Moth (nationally significant) within the Bruce Creek corridor and along properties adjacent Bruce Creek
- Growling Grass Frog (nationally significant) within Bruce Creek corridor
- Tussock Skink (endangered species).

No striped legless lizards were recorded.

At the time of targeted flora and fauna surveys in 2020, no surveys were undertaken for the Victorian Grassland Earless Dragon (VGED), which were thought to be extinct. Following its rediscovery in 2023, there is likely habitat identified in the precinct in accordance with DEECA's habitat distribution model. The VPA will not undertake an assessment of VGED habitat, however the developers will need to undertake targeted VGED surveys at the time of a planning permit.

2.2.6 Water

The precinct is within the Corangamite Regional Catchment. Corangamite Catchment Management Authority (CCMA) is one of the key agencies responsible for the health of waterways and plays a key role in ensuring the precinct does not negatively impact waterways.

Bruce Creek is part of a broader catchment. It connects to Moorabool River and Barwon River, which ultimately flow to Lake Connewarre, which is recognised as a Ramsar wetland. The Ramsar Convention encourages the designation of sites containing representative, rare or unique wetlands, or wetlands that are important for conserving biological diversity. Once designated, these sites are added to the Convention's List of Wetlands of International Importance and become known as Ramsar sites. These waterways are important and should therefore be protected.

Barwon Water are responsible for the provision of sewer, potable water and recycled water supply infrastructure to the Bannockburn South East precinct. Detail on the existing conditions of these services can be found in *Bannockburn South East PSP Utility Servicing Assessment* (SMEC, August 2024). A summary is noted below:

- Potable water – Bannockburn is currently serviced by the Bannockburn basin, which is supplied via the Sheoaks pipeline from the Moorabool Water Treatment Plant. All water supply is delivered by pumping in the township. Servicing may evolve as Bannockburn develops.
- Recycled water – Bannockburn currently has no recycled water infrastructure outside for use in agriculture and the golf course.
- Sewer – A reticulated sewer network is not currently available within the precinct and septic tank systems are likely currently used. The existing Bannockburn township is currently serviced by a reticulation system that gravitates to the Bannockburn Sewer Pump Station No. 1 on Shelford Road. Sewerage is then pumped to the Water Reclamation Plant, located west of the Bannockburn township. The current system caters for approximately 1500 homes.

2.2.7 Stormwater drainage

Existing conditions relevant to stormwater drainage were explored in detail and noted in the *Bannockburn South East PSP Stormwater Drainage Design* (Alluvium, March 2025). Key existing features that will affect drainage as the precinct develops are:

- Topography
- Bruce Creek to the west
- Flooding and overland flow paths
- Existing railway culverts to the south
- Railway line to the south
- Existing residential areas to the north
- Transmission easement
- 'Culturally and / or environmentally sensitive area'

These are further discussed in Section 4.4.8 Stormwater drainage of this report.

2.2.8 Existing transport network

Burnside Road

Burnside Road is a council controlled local access street that extends between Bannockburn-Shelford Road to the north and Hamilton Highway to the south.

Through the precinct (south of the electricity easement), it has a sealed rural standard carriageway with one traffic lane in each direction within a 20 metre wide road reserve.

Further north on the approach to Bannockburn Shelford Road, the road reserve increases to 60 metres.

Burnside Road intersects with the Gheringhap to Maroona freight railway line to the south of the precinct. The railway intersection is at-grade with flashing lights. There are currently no boom gates or designated pedestrian access.

Levy Road

Levy Road is a council controlled local access street that extends south from Burnside Road and terminates at the electricity easement.

Through the precinct (south of Charlton Road) it is a gravel local access road (private) within a 20 metre wide road reserve.

Further north between Charlton Road and Burnside Road it has a sealed, council controlled rural standard carriageway sufficient for two way traffic.

Charlton Road

Charlton Road is a council controlled local access street that extends from Burnside Road and terminates at Glenbrae Court. The 20 metre wide road reserve sits wholly outside the precinct boundary. It has a sealed rural standard carriageway sufficient for two way traffic.

Bus routes

The Bannockburn township has a single local bus service (Route 19) providing a two-way service to Geelong on weekdays and no services on weekends.

A V/Line coach operates daily between Bendigo and Geelong via Ballarat with a stop in Bannockburn.

No buses currently service the Bannockburn South East precinct and its immediate surrounds.

Walking and cycling

There are currently no pedestrian or cycle paths through the Bannockburn South East precinct. There are some footpaths and shared paths in the established residential areas to the north, but overall facilities are limited.

An off-road shared path has recently been constructed in the northern section of Burnside Road (beyond the precinct), extending between Yverdon Drive and Bannockburn Shelford Road.

Railway lines

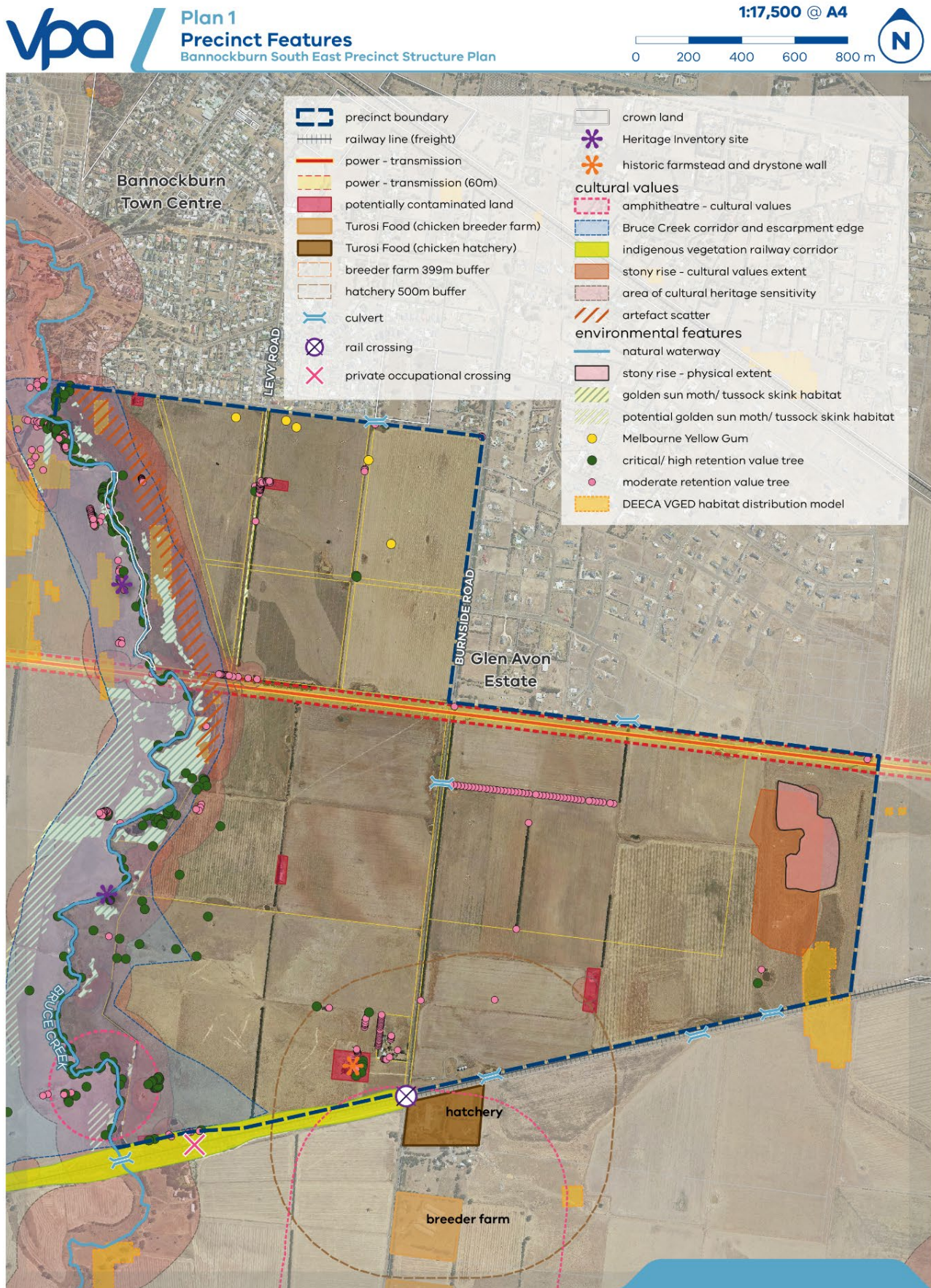
The Geelong-Ballarat railway line traverses the central Bannockburn township on a north-west to south-east alignment. The line is managed by V-Line. It crosses High Street at-grade and is controlled with level crossing signage and warning lights/bells.

Further south of the town and south of the Bannockburn South East precinct is the Gheringhap to Maroona freight railway line connecting to the State's central west. It crosses Burnside Road at-grade and is controlled by level crossing signage and warning lights/bells. There are no boom gates. The railway is owned by VicTrack and managed by the Australian Rail Track Corporation (ARTC).

Both rail lines are identified on Victoria's Principal Freight (Rail) Network.

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Figure 3 Precinct Features

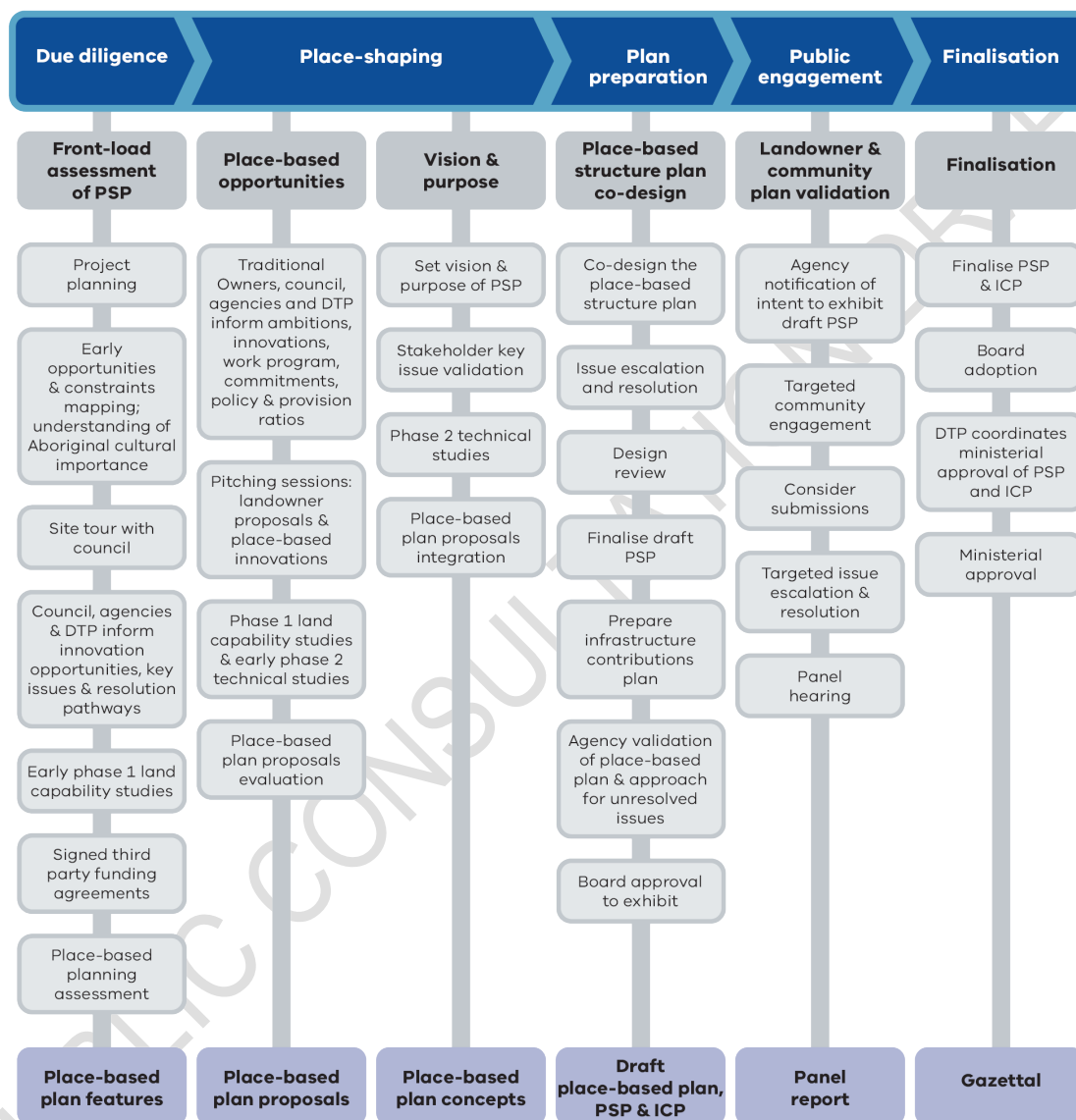


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3 BANNOCKBURN SOUTH EAST PSP PREPARATION

This section provides an overview of the PSP process for preparation of the Bannockburn South East PSP, including details of the background reports used to inform the PSP. The Bannockburn South East PSP was prepared in line with the PSP 2.0 process shown in Figure 4.

Figure 4 PSP 2.0 Process



3.1 Vision & purpose for Bannockburn South East PSP

PSP Vision

The Bannockburn South East PSP Vision has evolved with an initial vision established during the Pitching, and Vision and Purpose phases, and was refined through the Co-design process.

The Bannockburn South East Vision is included in the PSP document. The vision is summarised below:

- Bannockburn is Wadawurrung Country. The precinct will place Wadawurrung culture, heritage and values at the centre of its design.
- The precinct will incorporate cultural heritage places, waterways, environs, vantage and viewing points, flora and fauna that make up Wadawurrung Country.
- Bruce Creek is known for its ecological and intrinsic cultural values. It will be protected and enhanced to form an open space, environmental and active transport spine for the precinct.
- New community master planning will reflect comprehensive urban and landscape design guidelines that incorporate built form that is consistent with Bannockburn's treasured open rural township character.
- The precinct will connect schools, recreation spaces, community hubs and the new local town centre by way of active transport corridors and green corridors and to act as a magnet for community life, events and cultural expression.

PSP Purpose

A Vision and Purpose online workshop was held on the 19th of May 2022. Its objective was to validate key themes, opportunities and issues that were raised at the pitching sessions and confirm the vision and purpose for the precinct. The output of the sessions provided validation for the themes below as the purpose of the PSP, building on the themes set out in the *Bannockburn Growth Plan (2021)*.

- Theme 1 – Environment and Water
- Theme 2 – Housing and Community
- Theme 3 – Transport and Movement
- Theme 4 – Rural Character and Context

3.2 Co-design workshop

The VPA, in partnership with Golden Plains Shire Council held an online Co-Design workshop on 25th August 2022 to inform preparation of the Bannockburn South East PSP.

The workshop involved collaboration and input from various stakeholders, including landowners, state government agencies, Golden Plains Shire Council, and the VPA, and provided a clear direction for the development of the PSP to highlight alignments, key issues, and opportunities to be addressed for the precinct.

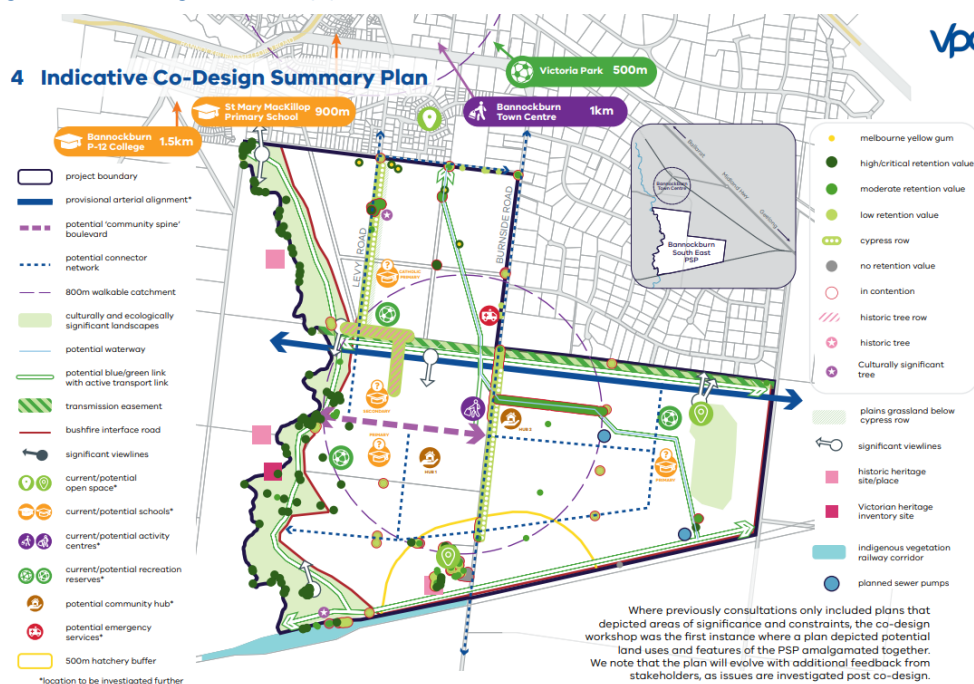
The purpose of the Co-Design Workshop was:

- To highlight what was previously heard during the Vision and Purpose Workshop.
- To provide an update on the status of the project and summarise the background technical studies.
- To provide an opportunity for key stakeholders and landowners to visually map out key constraints, opportunities, features, transport connections and land uses.

- To encourage innovative ideas in determining the urban structure for Bannockburn South East.
- To provide strong, transparent, and inclusive consultation opportunities.
- To collaboratively develop and inform the preparation of a conceptual place-based plan for the Bannockburn SE PSP.
- To outline the next steps for the Bannockburn SE PSP.

The Indicative Co-Design Summary Plan (see Figure 5) provides a summary of the potential opportunities and outcomes participants raised at the Co-design Workshops.

Figure 5 Co-design summary plan



3.3 Plan preparation and agency validation

Agencies and council are integral participants, and essential to validate and support the opportunities presented through the PSP. Following the Co-Design workshop, a working draft Place-based Plan, PSP, and planning ordinances were prepared by the VPA for consultation with key agencies and stakeholders. The VPA commenced the agency validation process in mid-2023. During this phase, the VPA held regular discussions with council and key agencies:

3.4 Background reports and technical studies

The technical studies listed in Table 2 provide detail on the key elements outlined in this background report. A summary of these reports is at Appendix 1 and reports are available on the [Bannockburn South East PSP webpage](#).

Preparation of a PSP is an iterative process. At times, the net developable area and population or job projections used in the technical reports may differ slightly from one another and from the exhibited PSP. This reflects the fact that some reports identify areas as unsuitable or suitable for development, which then informs subsequent work. As a result, the place-based plan including assumed net developable area and population projections are refined over time.

Some technical work procured also uses varied person per household assumptions. The variation is either due to a different statistical catchment, or a different development horizon (e.g. 20 vs 30

years). The persons per household vary between 2.0 persons per dwelling and 3.1 persons per dwelling. For the purpose of the PSP the VPA have assumed 2.95 persons per household as per VIF (2019), consistent with the Growth Plan.

These differences are generally minor and do not underestimate the needs of the future community. The table below outlines the key assumptions used in the technical reports:

Table 2 Summary of technical reports

Bannockburn South East Technical Report	Net Developable Area	Dwellings projection	Population projection
Utility Servicing Assessment	319 – 346	4,800 – 5,200	14,000 – 15,000
Integrated Transport Assessment	345	5,400	15,750
Bannockburn South East PSP Community Infrastructure Assessment	314 (317 with town centre)	5,238	15,452
Economic & Retail Assessment	314	3,766	11,109
Bushfire Assessment	NA	Approx. 5,200	16,000
Social and Affordable Housing Strategy	NA	at least 3,766	NA
Existing Ecological Conditions Report: Bannockburn Growth Area (Bruce Creek West)	NA	NA	NA
Soil Desktop Assessment – Sodic/Dispersive Soils and Contamination Risks (i.e. Land Capability)	NA	NA	NA
Sodic/Dispersive Soils Testing and Assessment Bannockburn South East Precinct	NA	NA	NA
Cultural Values Assessment	NA	NA	NA
Historical Heritage Assessment	NA	NA	NA
Stormwater Drainage Design	NA	NA	NA
Bridges Feasibility Assessment	NA	NA	NA
Preliminary Integrated Water Management Issues and Opportunities Report	NA	NA	NA
Land Assessment – Valuation Report	NA	NA	NA
Infrastructure Development Staging Plan Background Document	NA	NA	NA

4 PSP HALLMARKS AND VPA POSITION

This section describes how the VPA has provided a place-based response to the features and performance targets within the Bannockburn South East PSP and therefore follows the PSP and PSP Guidelines structure. Some of the PSP Guidelines' targets have been re-ordered within the PSP for simplicity.

4.1 Viable densities

PSP Performance Targets

#Target	Target	Target Achieved?
T1	<p>The PSP should facilitate increased densities with an average of 30 dwellings or more per Net Developable Hectare (NDHA) within:</p> <ul style="list-style-type: none"> 400m walkable catchment of an activity centre or train station 50m of open space, (both credited and encumbered open space), boulevards and major public transport routes, including but not limited to the Principal Public Transport Network (PPTN) or similar. 	<p>Regional Specific Adaptation</p> <p>Standard amenity catchments have been applied, with a varied density target of 17 dwellings per NDHA</p>
T2	<p>The PSP should facilitate increased densities with an average of 20 dwellings or more per NDHA across the entire PSP area.</p>	<p>Regional Specific Adaptation</p> <p>Varied density target of 14 dwellings per NDHA</p>
T3	<p>The PSP should facilitate increased housing diversity, with at least three distinct housing typologies to be included in higher density areas (defined by T1).</p>	<p>Target achieved</p>
T4	<p>Set a minimum target for provision of affordable housing in accordance with affordable housing policy, evidence, and guidance.</p>	<p>Target achieved</p> <p>6.5% target provision</p>

4.1.1 Housing density

Planning assessment

The Regional PSP Guidelines provide guidance on what matters to consider when varying Standards T1 and T2:

1. Considering the policy and growth

The Growth Plan proposes a dwelling density of approximately 11 dwellings per hectare. It is considered that over the lifetime of the development of the precinct, the density rate will exceed 11 dwellings per hectare.

2. Identifying the growth pattern and development setting of the site

The development density in the surrounding area is typical of a peri urban township. The density varies between 4 and 11 dwelling per hectare.

3. Planning for place

The more township style development of larger lots is preferred by Council and aligns with market expectations held by landowners. On this basis, a reduction from the PSP Target is considered appropriate.

4. Adapting the target

The adapted target of 14 dwellings per hectare in balance areas and 17 dwellings per hectare in amenity areas is consistent with State Policy at Clause 11.03-2S which encourages an average overall residential density in the growth areas of a minimum of 15 dwellings per net developable hectare. Although not specifically relevant to Bannockburn, it provides an important reference point.

A higher density target than the existing township will allow for densification over time and more diverse housing product.

VPA Position

The VPA consulted with landowners and Council to better understand the unique market factors and drivers for housing within Bannockburn. Based on discussions and the context of Bannockburn, the PSP facilitates the following outcomes:

- An average of 17 dwellings per net developable hectare (dw/NDHA) within amenity areas, which include the 400m walkable catchment of the local town centre and 50m catchment from open space.
- An average of 14 dw/NDHA across the remainder of the residential area.

The average density is 15 dwellings per NDA.

The local town centre catchment of 400m is roughly a 5-minute walking distance. The purpose of this catchment is to:

- Encourage diversity via a mix of lots and typologies from conventional to higher density (e.g. not all lots must be high density within this area).
- Ensure accessibility by allowing more residents to be closer to everyday services and amenities.
- Encourage walking and cycling to everyday services and amenities.

This 400m catchment is supported by PSP targets and *Urban Design Guidelines for Victoria* (Victorian State Government 2016).

4.1.2 Housing diversity

Planning assessment

The PSP includes three types of residential catchments:

- the Activity Centre catchment within 400 metres of the Local Town Centre,
- an Amenity area catchment within 50 metres of areas with higher amenity such as public open space; and

- the balance area, which includes the remaining residential areas outside the other two catchments.

The preferred residential type differs within the three catchments to facilitate diverse housing options and create unique character within the precinct itself.

Retirement villages, residential aged care facilities, disability, and special needs housing should be included within the Bannockburn South East via private development.

VPA Position

The PSP includes *Table 1 Housing Density and Diversity* which specifies the target typologies encouraged within the development areas. The PSP will facilitate the delivery of at least three different housing typologies within the residential development areas of the precinct.

Requirements and guidelines are in the PSP to help implement the objectives of housing diversity. The objectives will also be achieved through subdivision planning with varied lot size, use of the Small Lot Housing Code which is also to be incorporated into the Scheme, and subsequent permits which may be issued over time.

4.1.3 Affordable housing

Planning assessment

The VPA commissioned Urbanxchange to prepare a *Social and Affordable Housing Strategy* (August 2023) to determine the demand for provision of social and affordable housing in the Bannockburn South East precinct. This supports Target 4 of the PSP Guidelines. The assessment found that without intervention, the precinct will not be affordable to low or very low-income households as defined in Section 3AA of the *Victorian Planning and Environment Act 1987*. The assessment identified various approaches and levels of intervention, which require negotiation between Golden Plains Shire Council, developers and housing providers.

The VPA has also developed an internal model with SGS to determine demand for affordable housing including breakdowns of income levels and dwelling bedroom numbers. As the Urbanxchange assessment predates the finalisation of this model, it was not utilised to determine the social and affordable housing target. A hybrid approach has been utilised with both the Urbanxchange and internal SGS models to determine guidance for the breakdown of income bands and housing type for affordable housing delivery.

The work commissioned by the VPA seeks to meet the objectives of the *Planning and Environment Act 1987* as defined in Section 4 of the Act, which includes "to facilitate the provision of affordable housing in Victoria". Given the wording in the Act, VPA is not mandating the provision of affordable housing. The VPA assessments provides guidance to help Council and landowners negotiate and reach a mutual agreement at the subdivision phase.

VPA Position

The PSP includes an objective to facilitate 6.5% of affordable and social housing in accordance with the *Bannockburn South East Social and Affordable Housing Strategy* (Urbanxchange, 2023). This aligns with Golden Plain Shire Council's current strategy and action plan.

The VPA has provided further guidance on the potential breakdown by income band and housing type for this target, informed by the internal SGS model. The breakdown is included in Table 5 of the PSP and captured in the PSP as a guideline:

Where affordable housing is provided, consideration should be given to meeting the needs of different income ranges and household sizes generally in accordance with Table 5. (*Bannockburn South East Precinct Structure Plan*, Guideline 5)

There are no requirements or conditions included in the UGZ schedule given provision of affordable housing cannot be mandated unless with mutual consent between Council and landowners.

4.1.4 Railway noise

Planning assessment

The precinct abuts the Gheringhap to Maroona freight railway line to the south. The VPA has engaged with the Environment Protection Authority (EPA) and sought its advice in the preparation phase of the draft amendment.

The EPA recommended that the VPA conduct an acoustic assessment in support of the draft amendment to demonstrate that internal noise levels set out in Planning Practice Note 83 (PPN83) can be achieved, and to address outdoor amenity.

The VPA has taken a different approach and considers that noise amenity can be appropriately dealt with at the permit application stage using guidance from the VicTrack Rail Development Interface Guidelines (Aug 2010), and the noise impacts objectives Clause 58.04-3 of the Scheme.

VPA Position

The VPA has included an application requirement in the Urban Growth Zone schedule for the use, subdivision or construction of a building for sensitive uses on land within 80 metres of the railway line to be accompanied by an acoustic assessment report. The report should assess noise levels for the proposed uses and identify and mitigation measures to meet the applicable noise level objectives.

4.2 Safe, accessible, and well connected

PSP Performance Targets

#Target	Target	Target Achieved?
T5	The arterial road network should provide a 1.6km road grid with safe and efficient connections, adjusted where necessary to reflect local context.	Target achieved
T6	Off-road bicycle paths should be provided on all connector streets and arterial roads, connecting where possible with the Principal Bicycle Network and Strategic Cycling Corridors.	Target achieved
T7	All streets should have footpaths on both sides of the reservation.	Target achieved

T8	Pedestrian and cyclist crossings should be provided every 400-800m, where appropriate, along arterial roads, rail lines, waterways, and any other accessibility barriers.	Achieve at planning permit
T9	95% of dwellings should be located within either of the following walking distances: <ul style="list-style-type: none"> 800m to a train station 600m to a tram stop or 400m to a future bus route or bus capable road 	Target achieved

4.2.1 Road network and infrastructure

Planning assessment

The VPA commissioned Stantec to prepare the *Bannockburn South East PSP Integrated Transport Assessment* (December 2024) to inform the transport infrastructure needed for the PSP and DCP. The report builds on the objectives of the Growth Plan. Key features of the Growth Plan considered in the transport assessment are discussed below.

East-west link road

The Growth Plan identified the need for an east-west road to accommodate future traffic generated by growth areas within Bannockburn and alleviate traffic issues at full build out of the Growth Plan (Figure 6).

The alignment shown in the Growth Plan starts from Bannockburn-Shelford Road and passes through the growth areas, future growth options, Bruce Creek, and connects to the Midland Highway and Gheringhap Employment Precinct to the east.

Figure 6 Bannockburn South East in the context of the Bannockburn Growth Framework Plan



The Growth Plan notes the following:

The term arterial is used as a description of the road's functional operation, rather than that prescribed for administrative purposes in the Road Management Act (2004), for road declaration. The connection point of the proposed arterial to the Midland Highway or Fyansford-Gheringhap Road Roundabout is currently being investigated. This connection will require a grade separated rail crossing.

(*Bannockburn Growth Plan*, Plan 1, page 4)

Stantec's *Integrated Transport Assessment* (December 2024) explored two development scenarios: with and without the arterial road to understand the comparative impacts on the PSP transport network and Bannockburn place making and the township transport network more broadly.

At full build-out of the Growth Plan

With the arterial road:

- The majority of High Street can be expected to operate well, with potential to further reduce the eastern section traffic volumes by encouraging traffic associated with the North West PSP to utilise the future east-west link road to access Midland Highway instead of McPhillips Road and Geelong Road.
- Geelong Road can suitably accommodate the additional traffic.
- Burnside Road can suitably accommodate the additional traffic.

Without the arterial road:

- High Street or Bannockburn-Shelford Road will experience high congestion, exceeding its theoretical capacity and limit. It will negatively impact the amenity of Bannockburn's town centre at full build out of the Growth Plan.
- Geelong Road will come close to its theoretical capacities.
- Kelly Road will come close to its theoretical capacities.
- Burnside Road will exceed its theoretical capacity for a rural road.
- Upgrades to four (4) state roads would be required at full build out of the Growth Plan. These roads include High Street, north-western leg of Midland Hwy and Fyansford-Gheringhap Road roundabout intersection and Hamilton Hwy east of Burnside Road.

Indicative Bruce Creek crossings

The *Bannockburn Growth Plan* showed three bridge crossings over Bruce Creek to provide east-west connections. Following further assessment through the Bannockburn South East PSP process, VPA found that only one crossing is needed from a transport perspective, which is to connect the east-west link road. The Growth Plan nominated an indicative location for the bridge, but no detailed assessments were undertaken on the most appropriate location.

WTOAC advised that not enough is known about cultural heritage around Bruce Creek. Therefore, without further information, the level of harm of a bridge crossing Bruce Creek is unclear.

The VPA explored an alternative road alignment that would avoid crossing Bruce Creek by using Burnside Road. However, it presented poor transport outcomes.

Burnside Road railway crossing

At ultimate build out of the Growth Plan, Burnside Road is estimated to accommodate up to 5,650

vehicles per day with the east-west link road, and approximately 21,450 vehicles per day. Without the east-west link road. There will likely be a need to review the existing Burnside Road railway crossing controls.

Road alignment and railway crossings to the east

The east-west link road must connect to Midland Highway and provide access to Gheringhap Employment Precinct. This requires crossing a railway line. Following general feedback from stakeholders, the transport modelling assumed the southernmost alignment to logically connect with Gheringhap Employment Precinct.

VPA Position

East-west link road

The east-west link road would meet the intention of PSP Performance Target T5 by planning for regularly spaced arterial roads at approximately 1.6km spacings. The east-west link road also ensures that:

- There is an efficient and safe connection for Bannockburn's growth areas and Gheringhap Employment.
- Traffic is managed on existing state and local roads.
- An alternative arterial route for heavy vehicles is provided and provide scope to improve general traffic operations and safety in the township.
- There is opportunity to improve the safety and amenity of the central township.
- Traffic conditions can be re-addressed to improve the imbalance in the existing movement and place priorities through the High Street.
- Placemaking improvements in the central township can be facilitated.
- The needs of future public transport services can be supported.

The PSP shows the east-west link road as a four-lane road (two each way).

Bridge location and bridge investigation area

The bridge investigation area demonstrates that the exact location of the bridge is subject to further work, in particular cultural heritage investigations and relevant biodiversity approvals. The PSP requires that final siting and design will be determined through consultation with the Registered Aboriginal Party and must comply with relevant *Aboriginal Heritage Act 2006* (Vic) and all relevant statutory requirements.

VPA identified an indicative location for a high structure bridge south of the transmission easement to inform the DCP based on findings from the *Bannockburn South East Bridges Feasibility Assessment* (2025) by Jacobs and a "bridge investigation area".

A high-level structure is preferred given it will result in less impact on Growling Grass Frog habitat and cultural heritage. DEECA also supports a high-level structure and an option that results in the least native vegetation removal (both for the bridge and resulting road alignment), reduced earthworks and increased height to allow for wildlife corridors and reduced shading (i.e. in accordance with the principles of the *Growling Grass Frog Crossing Design Standards – Melbourne Strategic Assessment* (DELWP, 2017)

The indicative location for the bridge crossing Bruce Creek is one of several options explored in the *Bridge Feasibility Assessment* (Jacobs, 2025), which adopted the following methodology in their assessment:

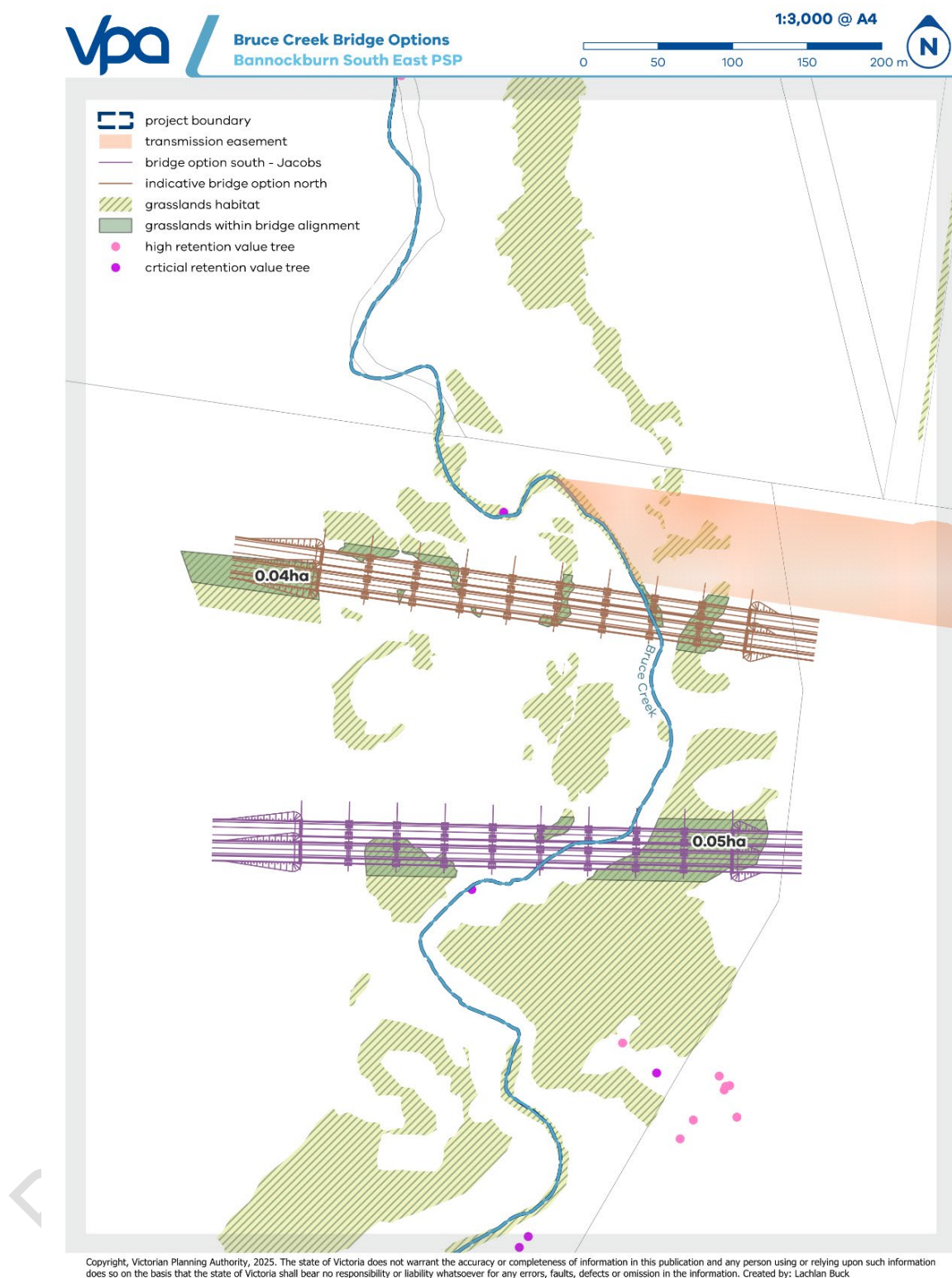
- Site Investigation – Assessed terrain, ecological constraints, and existing infrastructure.
- Constraints Analysis – Identified key issues (biodiversity impact, heritage sites, vegetation, flood risks).
- Bridge Options Assessment – Evaluated feasibility, structural types, and environmental impact.
- Concept Development – Selected best location based on topography and minimised constraints.
- Cost & Design Refinement – Developed high-level bridge concept, considering staging and structural efficiency.

The *Bridge Feasibility Assessment* (Jacobs, 2025) assessed the most logical location based solely on engineering considerations.

The VPA also considered other factors in locating the bridge BR-01 and BR-04 of the *Bridge Feasibility Assessment* (Jacobs 2025) were shortlisted and compared based on the following:

- Cultural heritage impacts – Currently unknown for both and will be further investigated when applications are prepared for areas within the “bridge investigation area”
- Biodiversity impacts – As shown in Figure 7, BR-01 requires the removal/offset of approximately 0.04ha of grasslands habitat, this includes Tussock Skink, and Golden Sun Moth habitat. The habitat potentially impacted by BR-01 are fragmented. BR-04 intersects a slightly larger but cohesive habitat area (approx. 0.05ha).
- Cost – BR-01 is 40m longer in span than BR-04 and therefore is likely to be more expensive.
- Urban design impacts – BR-01 allows for a straight alignment for the east-west link road, while BR-04 requires a slightly skewed alignment that will create an unusable area between the east west link road and the transmission line easement.

Figure 7 Bruce Creek bridge shortlisted options and biodiversity

**Burnside Road railway crossing**

Upgrades to the existing Burnside Road railway crossing are likely required. The extent of the upgrade cannot be confirmed until a Railway Risk Assessment is undertaken based on advice from the Australian Rail Track Corporation. VPA proposes that this is undertaken during the permit application process before a permit is issued for subdivision.

Given the rural context and the expected number of vehicles, VPA anticipates that upgrades would be in the form of boom gates and safe pedestrian access.

4.2.2 Walkability and safe cycling networks

Planning assessment

Key ideas supported during plan preparation, particularly the Co-Design workshop included:

- Key activities and features across the precinct should be interconnected with strong active transport links.
- Bruce Creek corridor should be utilised for north-west active transport routes. Bruce Creek on the western boundary of the precinct provides an opportunity for an integrated walking and cycling network. The existing Principal Bicycle Network and the future connection from the South East Precinct will provide a comprehensive and effective active transport network for all of Bannockburn.
- The transmission easement could also be utilised for east-west active transport connections.
- Connector streets play a key role in ensuring permeable transport links.

Stakeholders identified the need for off-road bicycle paths on connector and arterial roads to connect with the Principal Bicycle Network and Strategic Cycling Corridors. Key design principles supported by stakeholders include creating direct, comfortable pathways for pedestrians and cyclists, ensuring safe crossings, and minimising obstacles on busy routes. A permeable street network was a key focus particularly in areas with higher density and intensity of land use, to improve access to services and facilities such as schools, town centre and community facilities.

VPA Position

The Movement and Network Plan meets PSP performance targets T6, T7 and T8. Relevant cross sections are also provided in the PSP document. To ensure that pedestrian and cycling networks are well connected and purposeful.

The precinct is expected to include:

- Off-road bicycle paths on all connector roads, which connect to key schools, the local town centre, community facilities, open space and Bruce Creek.
- Off-road shared path within the transmission easement and along the constructed waterway to the east.
- Walking and/or cycling transport connections within the Bruce Creek corridor for recreational use, with location subject to detailed master planning of the future Bruce Creek reserve.
- Local access streets with footpaths on both sides of the reservation, where development is on both sides.

4.2.3 Local public transport

Planning assessment

The town of Bannockburn has very low levels of public transport services. There is an infrequent bus and coach service to Geelong from the central township. There is no active passenger rail service at Bannockburn.

There are no existing train stations, tram stops, or bus routes in the precinct.

VPA Position

Almost all dwellings will be within 400m of a bus capable road. However, there is currently no planned public transport for the precinct. The provision of future bus capable roads will future proof the precinct and ensure that bus services can be accommodated on the road network when provided.

The network of bus capable Connector Streets through the PSP will provide approximately 98% of dwellings with access to potential future bus routes in accordance with PSP Performance Target T9.

4.3 Connect people to jobs, higher order services and thriving local economies

PSP Performance Target

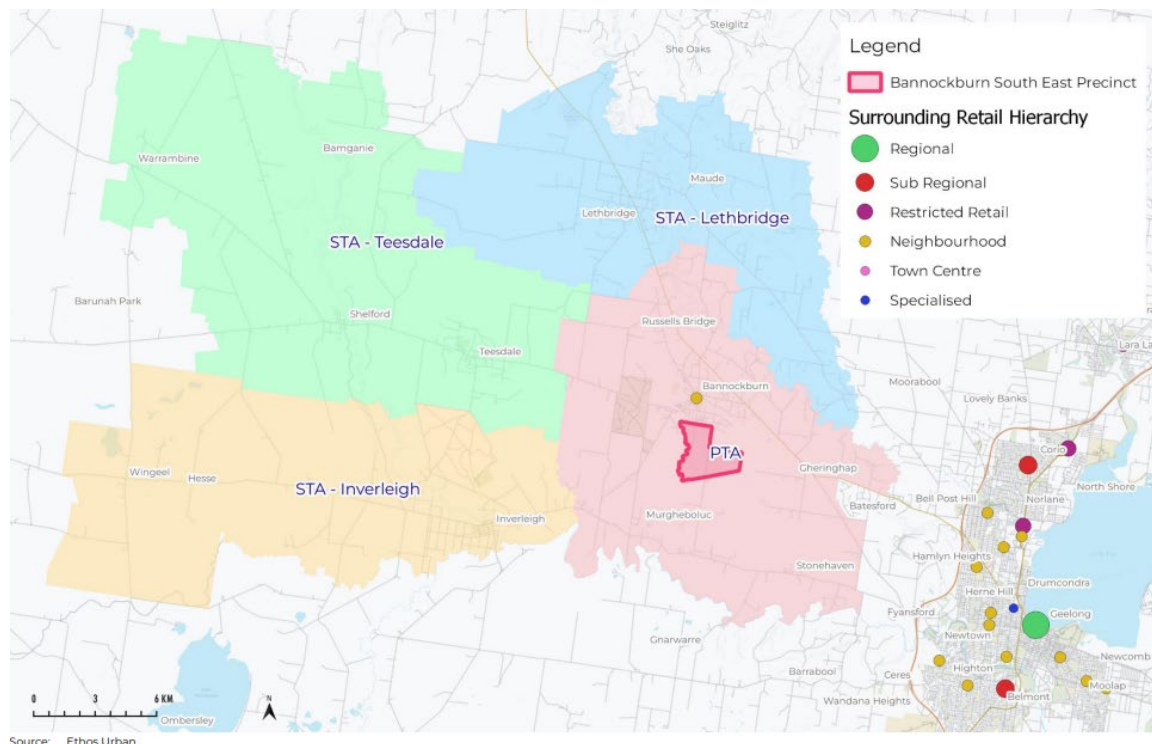
#Target	Target	Target Achieved?
T10	Land provided for local employment and economic activity should be capable of accommodating the minimum job density target of one job per dwelling located within the wider growth corridor.	Regional Specific Adaptation Employment land is considered in the wider Growth Plan and Golden Plains Shire local policy. Local employment precinct is being planned for concurrently or in the future at the Bannockburn Business Park and Gheringhap.
T19	80-90% of dwellings should be located within 800m of an activity centre.	Regional Specific Adaptation Provision of new activity centres has prioritised maintaining the role of High Street as Bannockburn's main centre. Additional centres in the PSP to meet this target would likely undercut High Street's viability.

4.3.1 Activity centres

Planning assessment

The Bannockburn South East precinct requires an activity centre to facilitate local employment and services, ensure 20 minute neighbourhood outcomes and accommodate as the existing Bannockburn Town Centre is not of sufficient scale to support this residential community (see Figure 8).

Figure 8 Retail hierarchy and local catchment



Analysis undertaken by Ethos Urban through the *Bannockburn South East Economic and Retail Assessment* (July 2024) allows for 7,650 square metres of leasable floorspace plus allowances for a pad site restaurant, childcare centre and come community uses across 2.2 to 2.7 hectares, as seen in Table 3. This allows for a population capacity of around 16,000 residents in the precinct.

Table 3 Indicative activity centre land take

Description	Estimated Land Area (m ²)
Ground floor GLA for the main centre	7,650
Circulation and the loading dock	2,700
Approx. 340 car spaces and internal roads	10,100
Restaurant pad site (incl carparking)	2,800
Childcare centre	2,300
Community uses	800
Open space	600
Total land required	26,950 (2.7 hectares)

Source: Ethos Urban

The location of the activity centre is prioritised to ensure that it is sufficiently distanced from the existing Bannockburn town centre to maintain the centre hierarchy, and to ensure convenient access both within and outside the precinct. A key consideration was a location near Burnside Road, south of the proposed east-west link road. The proposed local activity centre is located

centrally within the precinct to maximise its accessibility and is to be supported by higher density within the 400-metre walkable catchment.

VPA Position

The VPA determined that the activity centre will be 2.2-2.7 hectares in size to support the estimated population of approximately 16,000 residents within the Bannockburn South East precinct.

The activity centre location has been chosen to maximise the amount of the precinct's residents within its walkable catchment; however, the PSP does not achieve the PSP target of 80-90% of dwellings located within 800m of an activity centre, with 52% of dwellings being within this catchment. As a regional setting, this target is flexible to accommodate for market differences that preclude the provision of additional centres that would be able to meet this target.

Other factors that contributed to the location include:

- Urban Design
- These should be focal points of the local community and should therefore be centrally located to service a greater residential catchment with minimal physical barriers.
- The centre should be sited and designed to reduce car dependency. Moving to an arterial road does not support this objective.
- Drainage – Following preliminary drainage advice, the local town centre should be situated away from natural low points and connection to the constructed waterway.

4.3.2 Local employment opportunities

Planning assessment

The VPA commissioned Ethos Urban to undertake an *Economic and Retail Assessment* (July 2024) for the Bannockburn South East PSP. The assessment provides an employment forecast for the precinct based on benchmarks and projections for commercial and community uses. It is estimated that the precinct will deliver 750 direct ongoing jobs, including 360 through the local town centre and 270 through schools. There is potential for an additional 120 jobs if potential emergency services move or expand into the precinct.

A majority of further employment opportunities in the immediate region will be facilitated through commercial and industrial uses via the expansion of the Bannockburn Business Park and development of the Gheringhap Structure Plan, and through consolidation and expansion of commercial uses and services in the existing Bannockburn town Centre.

It is expected that many Bannockburn's residents will continue to find employment opportunities in Geelong, including in future employment growth precincts. In accordance with the Bannockburn Growth Plan, approximately currently 80% of Bannockburn's residents commute to Geelong for work.

VPA Position

Adaption for this target is required.

Adaptations should facilitate access to quality transport that connects people to jobs and higher order services. Local employment in regional settings, such as Bannockburn, needs to consider the entire township and the rural surrounds, and should be considered at a municipal level.

4.4 High quality public realm

PSP Performance Targets

#Target	Target	Target Achieved?
T11	<p>The open space network should seek to meet the following minimum targets:</p> <ul style="list-style-type: none"> • Within residential areas (including activity centres): <ul style="list-style-type: none"> ○ 10% of net developable area for local parks and sports field reserves. ○ 3-5% of net developable area set aside for local parks. ○ 5-7% of net developable area set aside for sports field reserves. • Within dedicated employment and/ or economic activity areas, 2% of the net developable area for local parks. 	<p>Regional Specific Adaptation</p> <p>The minimum areas will not be met by credited open space.</p> <p>A significant portion of the precinct will be dedicated to high amenity open space in encumbered land such as the Bruce Creek corridor.</p>
T12	<p>Open space and sports reserves should be located to meet the following distribution targets:</p> <ul style="list-style-type: none"> • A sports reserve or open space larger than 1 hectare within an 800m safe walkable distance of each dwelling • A local park within a 400m safe walkable distance of each dwelling. 	Target achieved
T13	Potential canopy tree coverage within the public realm and open space should be a minimum of 30% (excluding areas dedicated to biodiversity or native vegetation conservation).	Achieve at planning permit
T14	All streets containing canopy trees should use stormwater to service their watering needs.	Achieve at planning permit
T15	Design of the street network should be capable of supporting at least 70% of lots with a good solar orientation.	Achieve at planning permit
T16	All conservation areas identified in relevant Commonwealth, state and local government strategies should be retained in accordance with relevant legislation.	Target achieved
T17	IWM solutions should meaningfully contribute towards the actions and targets from the relevant Catchment Scale Public Realm & Water Plans and any relevant water-related strategies, plan, or guideline (including the Healthy Waterways Strategy 2018–2028).	Achieve at planning permit

4.4.1 Culturally and/or environmentally sensitive area near Bruce Creek

Planning assessment

The development line to Bruce Creek has not been explicitly determined at the boundary between the future Bruce Creek reserve and the start of residential development east of the reserve. There is approximately a 200m buffer for cultural heritage and biodiversity values that generally applies to Bruce Creek. Encroaching within this buffer for development requires detailed assessments that consider the following:

- Cultural heritage via Cultural Heritage Management Plans (CHMPs) under the *Aboriginal Heritage Act 2006*.
- Biodiversity via approvals under the *Environmental Protection and Biodiversity Protection Act 1999* (EPBC Act).
- Management of erosion.

The above items are typically undertaken at the permit stage, after gazettal of the PSP.

The VPA assessed these matters at a precinct-level by undertaking the assessments below:

- Aboriginal Cultural Heritage Impact Assessment
- Cultural Values Assessment
- Biodiversity Assessments
- Sodic Soil Assessment.

Cultural heritage near Bruce Creek

As defined in the *Aboriginal Cultural Heritage Act*, 200 metres of a waterway, such as Bruce Creek is a culturally sensitive area that triggers a Cultural Heritage Management Plan (CHMP) at the planning permit phase. In the Bannockburn South East Precinct, this is defined as areas of Aboriginal Cultural Heritage Sensitivity that applies to the Bruce Creek waterway, and the registered Aboriginal Places (see Figure 3).

The WTOAC initially expressed preference for a voluntary CHMP to be done at the PSP stage to ensure that uses and infrastructure shown in the PSP can avoid harming culturally significant sites. The VPA has worked closely with the WTOAC to determine an alternate method that would not require a voluntary CHMP at the PSP stage whilst also ensuring WTOAC concerns are seriously considered. The Place Based Plan includes an additional layer called the 'culturally and / or environmentally sensitive area' which seeks to work with the existing controls of the *Aboriginal Heritage Act*. This is further discussed in Section 4.4.1 - VPA Position.

Biodiversity near Bruce Creek

The precinct-wide biodiversity assessment found that Growling Grass Frog (GGF) exist within Bruce Creek. VPAs biodiversity consultants recommend applying at least a 200m buffer from Bruce Creek, which is confirmed GGF habitat. This mitigates against a potential impact to and associated habitats as per *Significant impact guidelines for the vulnerable growling grass frog (Litoria raniformis)* (DEWHA, 2009). Whilst the guidelines are not prescriptive, further work is needed to determine ability to encroach within the recommended 200m buffer.

Ramsey Property Group noted that the 200m buffer does not consider on-ground site specific features. Therefore, Ecology & Heritage Partners undertook further assessment on Ramsey Property Group's behalf and propose a 100m variable buffer from Bruce Creek (i.e. predominantly

100m from the creek but has sections of less than 100m). This considered land use, topography, habitat availability and habitat type, which influence the movement of GGF.

Erosion risk management

Precinct-level soils assessment found that the precinct is primarily sodic with varying salinity and pH levels. The risk of erosion is especially high along Bruce Creek's steeper slopes and that proper management plans would be required to mitigate the risk of erosion.

Bruce Creek Catchment and CCMA advice

The VPA engaged Corangamite Catchment Management Authority (CCMA) to determine the required setback distance for Bruce Creek from CCMA's perspective. The setback distance includes a CFA road. During construction, mitigation measures to prevent the transport of sediment either into the waterway or downstream of the construction site must be in place. These measures may include, but are not limited to, sediment fences of detention/sedimentation basins.

Furthermore, the Victorian Planning Scheme refers to the 30m setback from banks and drainage corridors in Clause 14.02-1S (Catchment planning and management) and Clause 12.03-1S (River and riparian corridors, waterways, lakes, wetlands and billabongs).

VPA Position

1. **Encumbered open space between Bruce Creek and the developer's proposed "development line"** – VPA, GPSC and developers agree that these areas must be protected along Bruce Creek. The Place Based Plan will show approximately 100m of this area from Bruce Creek as uncredited open space. Therefore, despite being zoned as Urban Growth Zone with an applied Public Park and Recreation Zone (PPRZ). No development can occur in this area because of the following:
 - Engineering challenges due to slope or soil
 - Bushfire management
 - Biodiversity considerations.
2. **Culturally and / or environmentally sensitive area** – No subdivision or development can occur in these areas unless proponents can demonstrate that development has sought the relevant approvals (e.g. CHMPs, conservation management plans and/or referrals and approvals of the EPBC Act). The General Residential Zone (GRZ) would be the applied zone for culturally and / or environmentally sensitive areas to allow the potential for future development (subject to requirements being met). If no development can occur the applied zone can be retained as GRZ (similar to local parks), whilst the plan of subdivision would show these areas as a 'reserve' to be handed over to the acquiring authority. This is a similar zoning approach to active open spaces and local parks in PSP settings. Culturally and / or environmentally sensitive areas near Bruce Creek were determined based on:
 - the extent of known culturally sensitive areas (beyond 200m from Bruce Creek in some parts)
 - 200m from Bruce Creek, which contains confirmed growling grass frog habitat and potentially other Matter of National Environmental Significance (MNES).
3. **No drainage within encumbered open space or culturally and / or environmentally sensitive areas** unless otherwise agreed through relevant permit approvals.
4. **No key infrastructure except Bruce Creek bridge crossing the encumbered open space or culturally and / or environmentally sensitive areas**, unless otherwise agreed through relevant permit approvals. Note the bespoke approach to the depiction of the Bruce Creek bridge discussed in Section 4.2.

5. **The culturally and / or environmentally sensitive areas are not included in net developable area.** However, should development occur in these areas following further investigations mentioned above, it is within Council's discretion to apply the same development infrastructure levy rate to any land gained by a developer via a S173 agreement or permit conditions. It is normal for net developable areas to be adjusted through the application and design phase to account for constraints or efficiencies.
6. **The existing ESO2 is proposed to be removed to avoid duplication.** The amendment proposes the deletion of the ESO2 from the planning scheme maps from within the precinct boundary. The existing ESO2 contains objectives broadly aimed at maintaining water quality within the Bruce Creek, conserving floral and faunal habitat and restricting the intensity of use and development of land. The ESO2 introduces a permit requirement for most buildings and works and an informal referral requirement to DEECA and the relevant water board or supply authority. While the ESO2 is appropriate for the existing conditions of the land, the PSP and UGZ1 are more appropriate tools to guide the urban development of the precinct.

The requirements in the PSP and UGZ1 will ensure the design of any subdivision or works extending into culturally and / or environmentally sensitive areas minimises the impact on biodiversity and the health of the waterway and aligns with any approvals required under biodiversity and Aboriginal heritage legislation. The ESO2 objective aimed at restricting the intensity of use and development is inconsistent with the PSP's approach to the development of land in the 'culturally and/or environmentally sensitive' area along the Bruce Creek corridor. The ESO permit trigger for buildings and works and the informal referral provision under the ESO2 also add an unnecessary administrative burden.

4.4.2 Culturally and/or environmentally sensitive areas around the stony rise

Planning assessment

A Cultural Values Assessment (CVA) was prepared for the VPA by Unearthed Heritage. It was approved by the WTOAC in December 2022. The CVA is confidential and has been redacted. It identifies several significant features including a stony rise to the east of the precinct (Figure 3). The CVA identified approximately 13.9ha as the extent of the stony rise and recommended protecting this area for passive recreation that prioritises indigenous vegetation restoration and to use the "Outer Zone" recommendations in the *Bruce's Creek Master Plan* (2009), in particular section 3.2.1 and Table 6.

Following further discussions, a proponent proposed an alternative stony rise extent that follows the contours at approximately 6.65ha in size (smaller than what was identified in the CVA). Mapping of the Stony Rise was completed based on the data currently available, however a CHMP may result in a different area for protection.

The CVA also identified a row of trees for protection within the development area of the precinct, however they were later identified as an introduced species and therefore did not warrant protection from a Cultural Values perspective.

VPA Position

Given there are two varying extents to the stony rise, the VPA proposes to show both extents within the culturally and / or environmentally sensitive areas. Therefore, the PSP shows the largest possible extent of the stony rise, approximately 16ha. The exact extent for passive recreation will be determined via a future CHMP via the subdivision planning process.

Any cultural conservation designation would need to consider its ownership and ongoing land management. There is currently no approved land acquisition or management agreement prepared at the precinct level.

4.4.3 Environmental and biodiversity values

Planning assessment

The VPA commissioned a biodiversity assessment and an arboriculture assessment for the Bannockburn South East precinct.

Through the biodiversity assessment, three EVC's were identified and recorded within the study area, totalling 8.4 hectares and comprising of:

- Plains Grassland (EVC 132),
- Creekline Grassy Woodland (EVC 68)
- Plains Grassy Woodland (EVC 55).

In addition, a total of 6.37 hectares of Natural Temperate Grassland of the Victorian Volcanic Plain and 7.804 hectares of the Western Basalt Plains Grassland Community were identified and recorded.

The majority of EVC area is located within the Bruce Creek corridor, however strips of EVC are also prevalent in smaller scatters and roadside reserves across the precinct.

The significant ecological values present in the Bannockburn South East precinct are also represented through the sixty-six flora species (37 indigenous and introduced) and 21 species of fauna (16 native species and 5 introduced species). An arboriculture assessment of extant vegetation identified a total of 1,456 trees within the precinct, with the vast majority being planted or introduced species with low to no retention value.

High and critical retention value trees were found to be largely concentrated on the Bruce Creek corridor, with a small number of scattered trees across the remainder of the precinct including several Melbourne Yellow Gums.

Within the precinct, targeted surveys identified 8 individuals of the nationally listed Golden Sun Moth along the properties adjacent to Bruce Creek and 5 individuals of the nationally listed Growling Grass Frog along the extent of Bruce Creek.

The Tussock Skink is listed as endangered under the FFG Act was recorded within the study area as part of the targeted striped legless lizard surveys. The report recommended to reduce the overall impacts to the species from proposed future development, areas of preferred habitat within the study area (i.e. the Plains Grassland, Creekline Grassy Woodland and Plains Grassy Woodland areas), should be retained and appropriate pre-clearance mitigation measures must be implemented to encourage Tussock Skink to move outside of impact areas into adjacent suitable habitat.

The biodiversity assessment and subsequent walkovers on the site conducted by Council and the VPA have confirmed the presence of several Wedge Tailed Eagles within and adjacent to the precinct, supported by one active nest two further potential nests all located in proximity to Bruce Creek.

At the time of targeted surveys in 2020, no surveys were undertaken for the Victorian Grassland Earless Dragon (VGED), which were thought to be extinct. Following its rediscovery in 2023, DEECA's Habitat Distribution Model (HDM) identifies likely VGED habitat within the precinct.

VPA Position

Several biodiversity values within the precinct have been identified and will be protected through the Place Based Plan.

Key considerations will be the protection of habitat areas (including but not limited to) of the Golden Sun Moth, Tussock Skink and Growling Grass Frog, which are primarily located within the Bruce Creek corridor.

The Place Based Plan and PSP provisions respond to the protection of significant trees, including Melbourne yellow gums and those identified and critical or high retention value. The Bannockburn South East precinct provides areas of conservation and public open space to enhance, support and protect the unique environmental features present. The PSP places emphasis on the need to retain these features to strengthen the wellbeing of the environment and community.

The PSP protects confirmed areas of Golden Sun Moth, Tussock Skink and Growling Grass Frog Habitats within the Place Based Plan through the reservation of land for passive recreation and conservation along the Bruce Creek corridor.

It will connect this corridor with a network of cycle and pedestrian paths, including lower impact paths closer to habitat values, to promote awareness and utilise these spaces for high quality amenity value.

Areas of high and critical retention value trees will be protected within open space; road easements or suitable community uses.

Surveys for VGED will need to be undertaken at permit stage.

4.4.4 Open space targets

Planning assessment

Local parks

Local parks or passive open space are considered credited land and are treated separately to uncredited open space such as the Bruce Creek reserve, which is considered as primarily a waterway corridor.

Based on Target 11 of the PSP Guidelines, a minimum of 3% of NDA (9.35ha) should be set aside for local parks or passive open space. The *Community Infrastructure Assessment* (ASR, 2024) applies 4% of NDA as the target for local park provision.

Active open space

Active open spaces also refer to sports reserves, which are credited land. Based on Target 11, a minimum of 5% of NDA (17.25ha) should be set aside for active open space. The *Community Infrastructure Assessment* (ASR, 2024) applies 6% of NDA as the target for local park provision, allocated to one 10ha reserve and two 6ha reserves.

Open space distribution

Target 12 sets out the requirements for the distribution of open space. This target cannot be varied. It has been applied as an and/or target to the Bannockburn South East, whereby open space and sports reserves should be located to meet and/or the following:

- A sports reserve or open space larger than 1 hectare within an 800m safe walkable distance of each dwelling
- A local park within a 400m safe walkable distance of each dwelling.

VPA Position

Open space targets regarding quantum or land take (Target 11) are lower for Bannockburn South East given the likely lower demand generated by lower dwelling densities of 14-17 dwellings per NDA as opposed to 20-30 dwellings. See Table 4 for a summary of how the precinct compares to the targets.

There may be opportunities to increase the open space to achieve the minimum or come closer to the minimum. Further discussions would be required with Council.

Table 4 Open space targets and precinct application

	Quantum (% and min. ha)		Distribution	
Credited open space	Target	Precinct application	Target	Precinct application
Local parks / passive open space)	3-5% 10.35ha	1.97% of NDA 6.11ha	95% of dwellings within 400m of a local park	98% of dwellings within 400m of a local park
Active open space / sports reserves	5-7% 17.25ha	7.11% of NDA 22ha	100% of dwellings within 800m of a sports reserve	100% of dwellings are within 800m of a sports reserve
Combined open space	10% 34.5ha	9.09% of NDA 28.11ha	NA	100% of dwellings are within an open space catchment.

A further estimated 33.95% or 105.06ha of the precinct NDA will be set aside for uncredited open space, of which most will be high amenity in the form of drainage and waterways areas, including the Bruce Creek uncredited open space. All if not most uncredited open space will include walking and cycling networks to promote passive recreational use.

The breakdown of proposed uncredited open space is as follows (as percentages of NDA):

- 0.64% (1.99ha) of linear conservation area
- 29.16% (90.24ha) in drainage land i.e. wetland/retarding basins which includes Bruce Creek uncredited open space
- 4.15% (12.83ha) in the electricity transmission easement, including approximately 1ha of sports reserve to be facilitated within the easement.

VPA notes that the application of culturally and / or environmentally sensitive areas should also be considered.

Under this approach, 16.01% (49.55ha) of NDA has been set aside as culturally and / or environmentally sensitive areas due to their high cultural heritage and biodiversity value potential. Development of this land is subject to further detailed investigation at subdivision, with it being likely that portions of the land will eventually be utilised for high amenity open space.

98% of dwellings are within 400m of a local park and 100% of dwellings are within 800m from a sport reserve/open space over 1ha, meeting Target 12 for 100% of dwellings within the catchments of either/or of these open spaces. These metrics do not include encumbered open space such as the waterway corridor and Bruce Creek, or consideration of likely future open space outcomes in

culturally and / or environmentally sensitive areas such as the Stony Rises which may also provide additional high amenity open space outcomes for residents.

4.4.5 Green streets and spaces

Planning assessment

The PSP Guidelines stipulate a 30% canopy coverage across all PSPs and allows this coverage to include trees located in passive open space as well as road reserves. As Bannockburn South East includes various drainage and utilities constraints, the VPA commissioned a report from SMEC to clarify planned future services and therefore assist their coordinated future locations. Cross sections, potential services easements and future planned substations were highlighted, allowing the VPA to assess the capacity for the PSP to cater for the 30% canopy coverage.

VPA Position

Guidelines and requirements in the PSP are tailored to promote good solar orientation and ensure that applications to subdivide land are accompanied by a landscape plan illustrating a tree canopy coverage of an average of 30%. The PSP also includes cross sections that identify protected trees within central medians and nature strips, and local parks are located where possible to include existing large trees.

4.4.6 Electricity transmission easement – proposed land use

Planning assessment

The VPA consulted with Golden Plains Shire Council, Ausnet and key landowners to determine the most appropriate uses to be located within the electricity transmission easement. The powerline easement is held in private ownership, with the easement in favour of AusNet.

AusNet has no objections in principle to the establishment of the PSP, with the following points to be considered for any development of the land affected by the easement:

1. Roads that run parallel to the line are not permitted within the easement.
2. Roads that cross generally perpendicular to the easement are acceptable provided that they are at least 30m away from towers.
3. Lighting poles are permitted, with pole heights determined by available clearances to the overhead lines and must be of a hinged design that lowers to ground for maintenance.
4. Subdivision of the land is acceptable however residential or commercial lots must not cross the easement creating inaccessible and unmanageable smaller sections of easement.
5. Wetlands and reserves are permitted subject to acceptance of designs by AusNet. No water bodies within 30m of towers.
6. Any underground services within the easement are subject to acceptance of designs by AusNet. Nothing permitted within 30m of towers.
7. Solar panels are not permitted in the easement.
8. Buildings are not permitted in the easement.
9. Structures are subject to acceptance of design by AusNet.

10. Use of vehicles and equipment over 3m in height is subject to written approval from AusNet.
11. Planting of vegetation is restricted to lower height species with reduced planting density to ensure that a fire cannot spread throughout the easement. Acceptance of designs is required by AusNet.

VPA Position

The following land uses are proposed within the easement:

- A shared path
- Part of an active open space
- Part of drainage assets such as retarding basins
- Other open space and recreation, including but not limited to dog parks, bike tracks and playgrounds.

The VPA and Council discussed the possibility of including private uses within the electricity transmission easement and found that private uses are not preferred due to potential conflicts with maintenance and poor urban design outcomes (e.g. extensive walls and blank fences). Public uses within the easement may be considered if it allows access, improve urban design by minimising blank fences or walls, can include key assets such as pedestrian footpaths, pedestrian links, open space network and drainage assets.

4.4.7 Integrated Water Management

Planning assessment

Spiire prepared an *Integrated Water Management Issues and Opportunities Report* (December 2024) or IWM report for the VPA that provided recommendations that could be undertaken within the Bannockburn South East PSP. The report identified several strategic opportunities at various scales (lot scale, precinct scale and regional scale), which can contribute to improved outcomes for water use and management. These will be identified in the PSP.

Barwon Water has advised the VPA that dual pipe or Class A recycled water is not a requirement for this PSP

VPA Position

The IWM report provided opportunities to establish good practice scenarios, which refers to meeting waterway protection targets with the least risks, complexity, and cost. These opportunities would include passive irrigation, rainwater tanks on lot, and local stormwater harvesting. In addition, the assessment also provided opportunities for leading edge practices, which refers to meeting the waterway protection targets whilst enhancing a range of other metrics including water security, agricultural productivity and community literacy.

These opportunities would include but are not limited to establishing rainwater tanks, passively irrigating streets trees, digital water meters and recycling water for agricultural uses. The PSP will identify these opportunities and include relevant provisions via PSP objectives, requirements and guidelines to support their delivery. The IWM report does not provide responsibilities to specific agencies, this will need to be implemented by various agencies working together post-PSP approval.

4.4.8 Stormwater drainage

Planning assessment

The VPA commissioned Alluvium to prepare a *Stormwater Drainage Assessment and Functional Design and Costings* (March 2025). The assessment sought to meet the following objectives:

- Ensure flooding is no worse either upstream or downstream of the precinct due to the proposed drainage assets for Bannockburn South-East precinct
- Within the agricultural land to the South of the rail line, avoid any increase in the annual volume of stormwater runoff emanating from the Bannockburn South-East post-development conditions
- Minimise and avoid where possible, outfall drainage beyond the PSP boundary
- Protect Bruce Creek, Moorabool River and Lake Connewarre (Ramsar identified).

Alluvium's drainage assessment considers the stormwater drainage requirements set out in the Victorian Planning Provisions, in particular:

- **Clause 14.02-1S-2S** (Catchment planning and management) – To assist the protection and restoration of catchments, waterways, estuaries, bays, water bodies, groundwater, and the marine environment.
- **Clause 53.18** (Stormwater management in urban development) – To ensure that stormwater in urban development, including retention and reuse, is managed to mitigate the impacts of stormwater on the environment, property and public safety, and to provide cooling, local habitat and amenity benefits.
- **Clause 56.07-04** (Stormwater management objectives):
 - *To minimise damage to properties and inconvenience to residents from stormwater.*
 - *To ensure that the street operates adequately during major storm events and provides for public safety.*
 - *To minimise increases in stormwater and protect the environmental values and physical characteristics of receiving waters from degradation by stormwater.*
 - *To encourage stormwater management that maximises the retention and reuse of stormwater.*
 - *To encourage stormwater management that contributes to cooling, local habitat improvements and provision of attractive and enjoyable spaces.*

There are several features that influence drainage for the precinct:

- **Topography** – The ridgeline adjacent Bruce Creek splits stormwater flows. Areas east of the ridgeline flow south-easterly through to an unnamed manmade waterway that continues to a culvert under the railway. Areas west of the ridgeline flow directly to Bruce Creek. The topography also creates smaller catchments.
- **Bruce Creek** – This is a designated waterway under the *Water Act 1989*. It is ecologically, culturally and socially important. There are several threats to the Creek including development, degrading water quality, bank erosion and native vegetation degradation, which must be considered in any planning that impacts Bruce Creek. There are many farm dams in valley lines sitting above the Bruce Creek corridor. There may be an opportunity to have wetlands in these same locations.

- Flooding – Approach to flood management is to equate post development and pre development peak flow rates for the 1% Annual Exceedance Probability (AEP) event such that the development is not having an adverse impact on downstream flooding. Typically achieved through retention or detention storage within relevant catchments. For the 1% AEP, the flood extent is contained within Bruce Creek given the steep escarpments on both sides of the creek. See Figure 9 .
- Existing railway culverts – There are several existing culverts under the railway line that are very small and shallow. There are two culverts that carry flows from the PSP area. However, they are small with shallow invert levels, meaning they are not appropriately sized to drain natural flows as shown on flood mapping in Figure 10 and sub catchments for hydrologic modelling Figure 11 .
- Railway line – VicTrack advised that excess water and flooding can damage track infrastructure and in a worst-case scenario, lead to derailment. Therefore, any drainage adjacent the rail corridor must address flooding but also limit the potential for excess water collecting on land near the railway. Therefore, the drainage concept must address flooding and decrease the prospect of excess water collecting and sitting on land near the corridor.
- Existing residential areas to the north – Glen Avon Estate is a residential area to the north of the precinct. A channel runs adjacent to the northern boundary in the northeast of the precinct, capturing flows from Glen Avon Estate. These flows are then transferred south via another channel to the existing channel which eventually outfalls via the railway. These flows will need to be catered for in any future designs from a conveyance perspective.
- Transmission easement – The existing transmission easement has the potential to accommodate wetlands and waterway assets, subject to meeting Ausnet's conditions and requirements.
- Culturally and/or environmentally sensitive area – This covers approximately 49.55 hectares of land that is potentially undevelopable subject to approvals that consider cultural heritage, biodiversity and risk of erosion. Alluvium's assessment has excluded sensitive areas from the developable area.

Figure 9 Existing flood conditions - 1% AEP (1-in-100 year) flood (Source: Regional Floodplain mapping project, Barwon 2016)

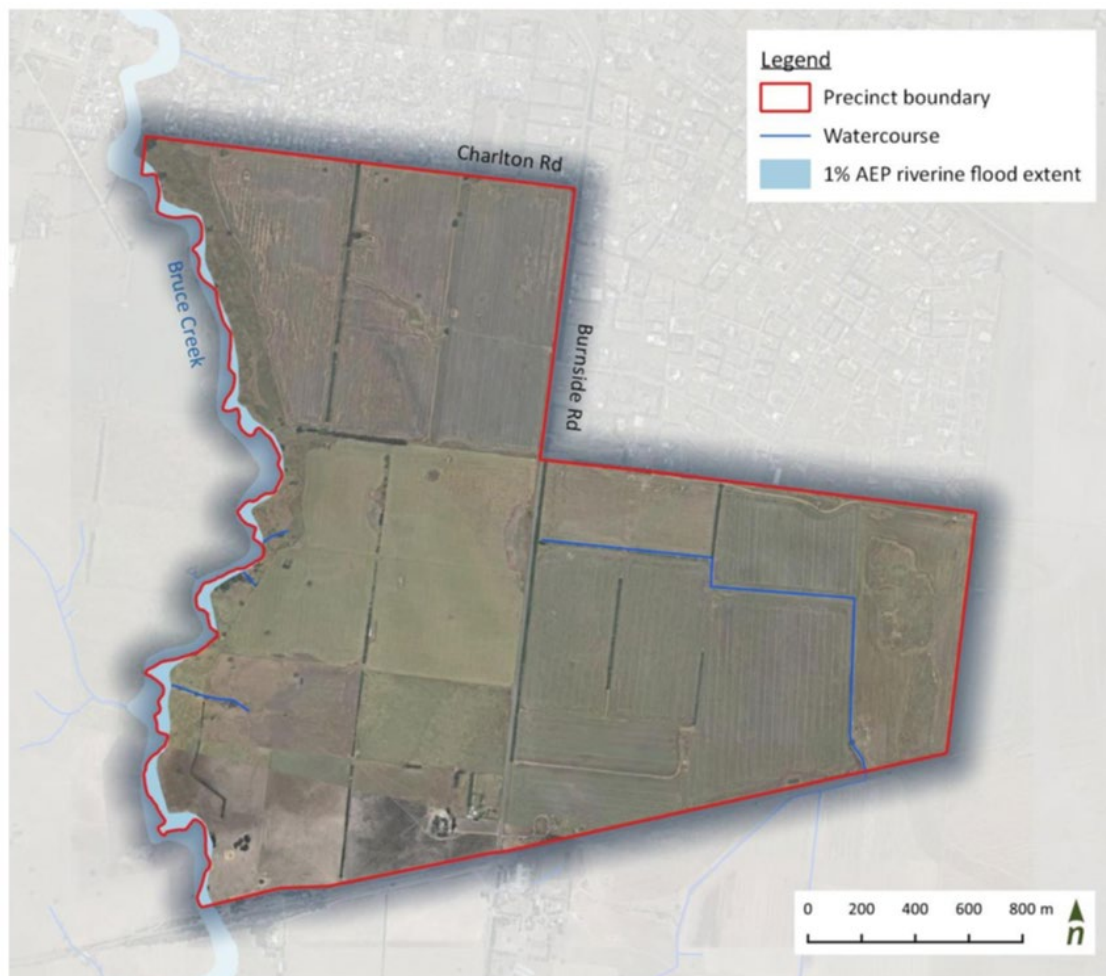


Figure 10 Rain on grid mapping showing overland flow paths (Source: Regional Floodplain Mapping Project, Barwon, 2016)

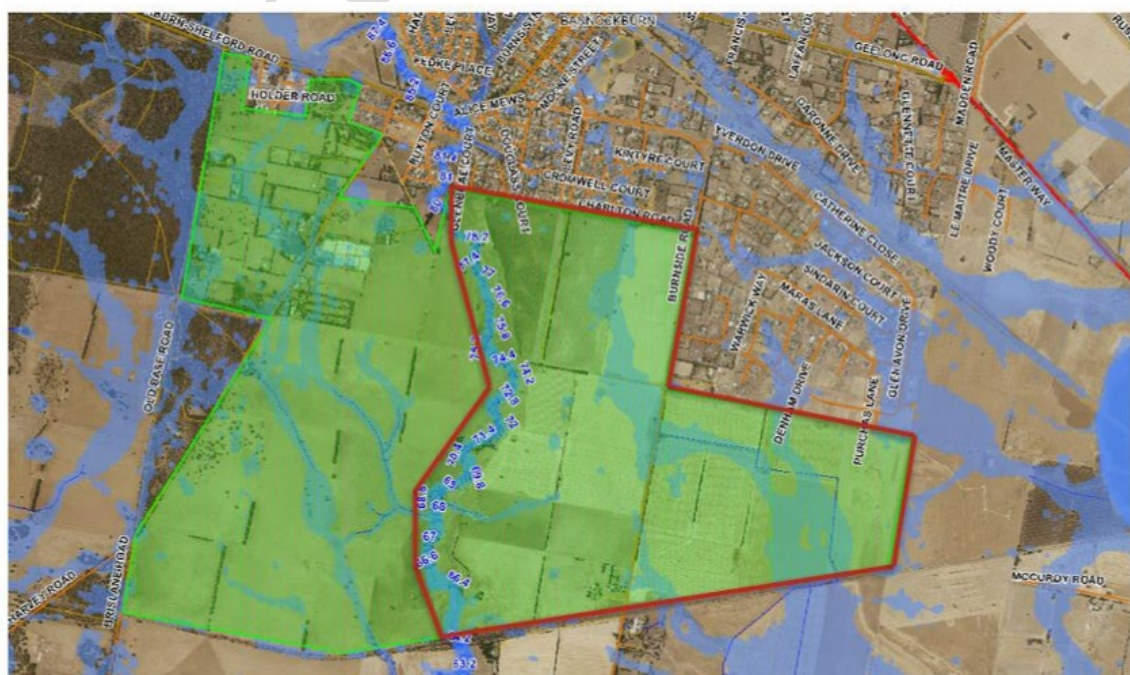
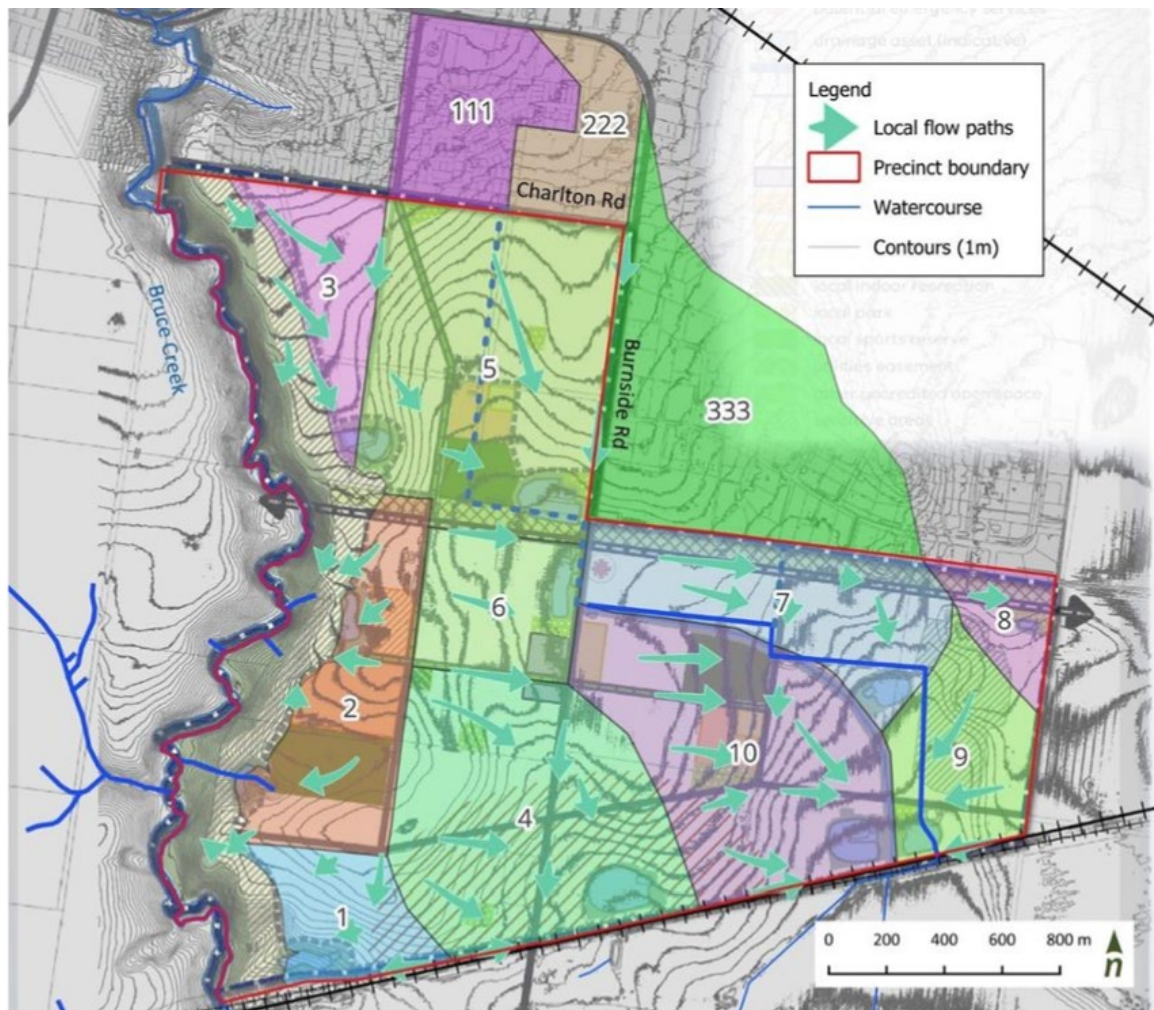


Figure 11 Sub-catchment layout showing flow direction. The urban layout is shown as an underlay. (Alluvium, 2023)



VPA Position

The VPA commissioned Alluvium to prepare two documents for drainage in Bannockburn South East:

- *Stormwater Drainage Concept Design Report* (March 2025); and
- *Memo on railway outfall optioneering* (February 2025).

The Stormwater Drainage Concept Design Report (March 2025) has informed the current draft Place Based Plan for exhibition. The drainage concept maintains no additional post-development flows into existing railway culverts, maintaining current railway culvert downstream capacity. It avoids significant works to the railway easement and southern properties outside the precinct.

The current concept retards additional peak flows within the precinct boundary with consideration for:

- Current best practice outcomes.
- Avoiding extensive filling adjacent to the railway reserve.
- Minimising the size of retarding basins adjacent to the railway reserve as much as practically possible.
- Continued runoff via the existing railway culverts into the downstream land to service the existing farm dam and standing water body.

Drainage and culturally and/or environmentally sensitive areas

The current drainage concept excludes culturally and environmentally sensitive areas (sensitive areas) from the developable land assumptions. VPAs initially requested Alluvium to include these sensitive areas as developable within the drainage model, while ensuring that no drainage infrastructure would be placed within them. This approach was recommended to avoid disturbing potentially significant cultural artefacts, which must remain undisturbed in their original locations. However, Alluvium has indicated that, due to site topography, it is not feasible to treat sensitive areas as developable while also avoiding the placement of drainage assets within them.

As a result, developers will need to revise their subdivision drainage strategy to account for any potential development in the Bruce Creek culturally and / or environmentally sensitive areas, if deemed appropriate. This would lead to increased stormwater treatment and storage requirements, as the catchment area would be larger if these culturally and / or environmentally sensitive areas were considered developable.

Drainage and railway culverts

There are existing railway culverts under the Gheringhap-Maroon railway line which is used for freight. The easement is owned by VicTrack and managed by Australian Rail Track Corporation (ARTC).

VPA are aware that VicTrack does not currently support the *Stormwater Drainage Concept Design Report* (completed in December 2024 with minor updates for legibility in March 2025). VicTrack has requested that VPA consider an alternative arrangement that does not direct any runoff to the existing railway culverts regardless of whether post-development flows remain unchanged.

As a result, the VPA commissioned the *Memo on railway outfall optioneering* (April 2025) or 'the Memo'. The Memo provides an overview of three drainage concepts designs:

- Concept #1 has been superseded;
- Concept #2 is reflected in the Stormwater Drainage Concept Design Report (completed in December 2024 with minor updates for legibility in March 2025). This concept is currently reflected in the draft Precinct Structure Plan for exhibition; and
- Concept #3 includes two drainage sub-options assessed at a high-level in the Memo.

The intent of the Memo is to provide the VPA, Council, VicTrack and ARTC with further information regarding options to address rail authorities' concerns regarding railway outfall. There is no agreed decision from stakeholders and the VPA are working with Council, VicTrack and ARTC to resolve this matter.

While the PSP is being exhibited with drainage Concept #2, the options for Concept #3 will continue to be explored.

If Concept #3 is confirmed as preferred, works outside the precinct will be required.

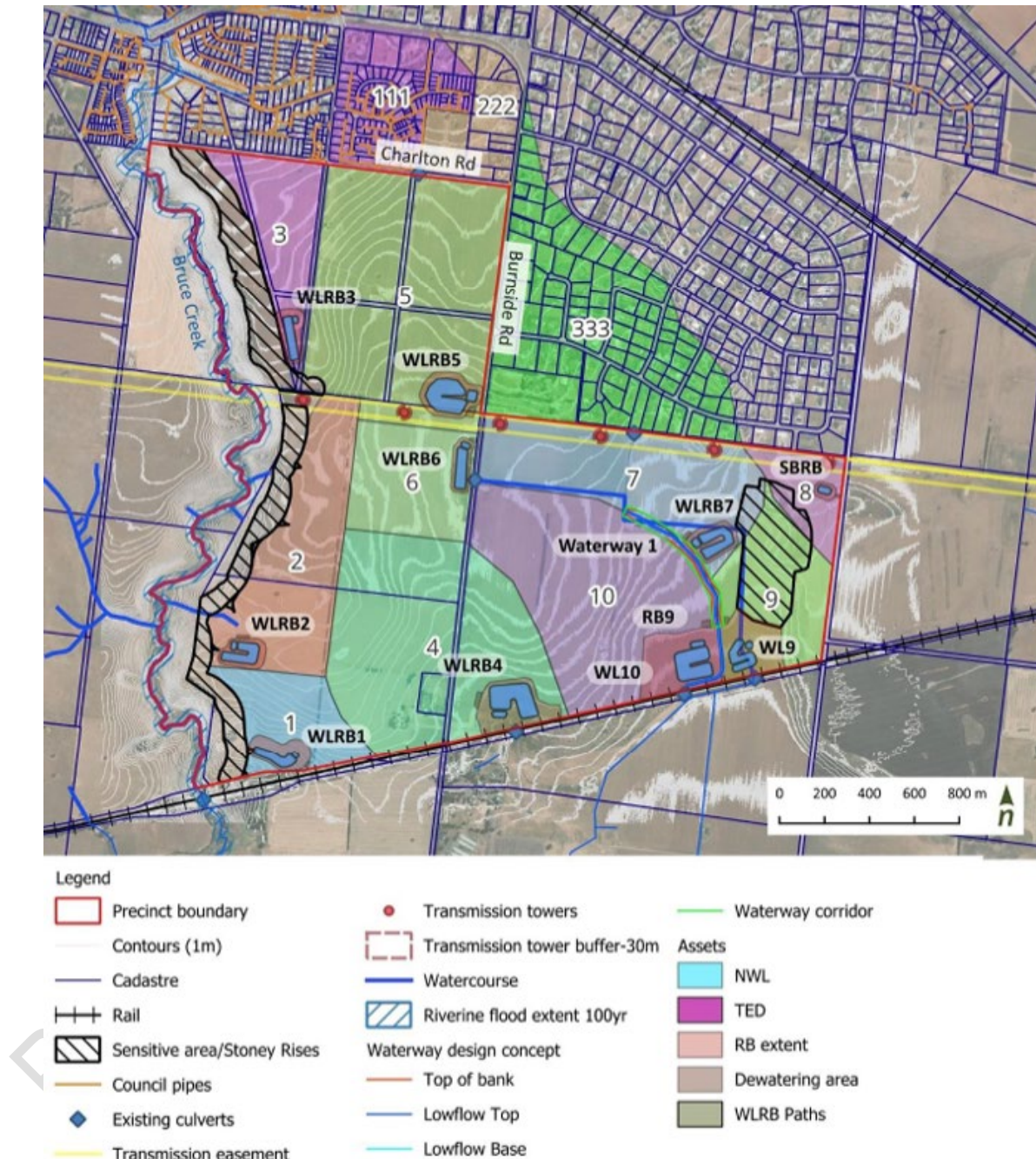
Drainage and Public Acquisition Overlay

The amendment applies the Public Acquisition Overlay (PAO) to reserve land for drainage assets to part of Harvey Road (Lot 2 TP96373 and Lot 17 LP6088) and part of 449 Burnside Road.

The application of the PAO (shown as PAO2 on the planning scheme maps) to part of Harvey Road adjacent to the Bruce Creek will facilitate the purchase of the land by Council for the construction of drainage infrastructure. The PAO on land at 449 Burnside Road (also shown as PAO2 on the planning scheme maps) will enable the purchase of the land by Council for the construction of drainage railway outfall outside of the precinct. The schedule to the PAO (Clause 45.01) nominates Council as the acquiring authority.

In lieu of a whole agency-preferred arrangement for the railway outfall, the VPA has identified the likely extent for where the PAO may be applied on land at 449 Burnside Road, south of the railway. The draft extent of the PAO reserves land for drainage channels and access to the channels for maintenance reasons. The extent of the PAO for 449 Burnside Road will be refined prior to approval of the Bannockburn South East amendment should Concept #3 be the preferred outcome.

Figure 12 Current drainage concept (Alluvium, 2024)



4.4.9 Chicken hatchery and breeder farm separation distance

Planning assessment

South of the precinct's southern boundary is the Turosi Foods chicken farm, which is located at 449 Burnside Road, Bannockburn. The farm contains a hatchery, approximately 50m from the precinct boundary and 7 breeder farms. The closest breeder farm building is approximately 420m from the precinct boundary.

The chicken hatchery and closest breeder farm present potential amenity impacts to future sensitive uses within the precinct. Therefore, a separation distance is required to avoid land use conflict. VPA consulted Agriculture Victoria (AgVic) and the Environmental Protection Agency (EPA) to determine the appropriate separation distance or buffer from the hatchery and breeder farm.

EPAs preference is for an odour assessment to be undertaken prior to gazettal of the PSP. However, VPA expects that an odour assessment will still be required post-gazettal at planning permit application even if one were prepared at the PSP stage. To avoid duplication of work, the VPA has not undertaken an odour assessment at the PSP stage and has included an application requirement in the UGZ Schedule to ensure it occurs.

On 19 September 2024, the VPA engaged AgVic to seek advice on appropriate separation distances for the Turosi Foods poultry farm at 449 Burnside Road, Bannockburn (to the south of the Bannockburn South East PSP area). This advice was sought to ensure alignment with the EPA's [Separation distance guideline](#) (Publication 1949, August 2024), which states in Table 2, page 24 - "the separation distance is as per current Agriculture Victoria advice and guidance."

VPA met with Turosi on 21 February 2025 to discuss the precinct and what it means for their operations. Turosi flagged the following key items:

- Turosi will remain on the site and seek to expand their poultry operations in the future.
- Increased biosecurity risk (i.e. increased likelihood of Avian Flu) from development is Turosi's main concern. Large drainage basins that attract wild birds, and backyard chicken coops both increase biosecurity risks.
- Safety concerns given increased traffic on Burnside Road.

Breeder farms

Within the breeder farms, there is approximately 32,000 breeder birds within each of the 7 breeder farms. The total number of breeder birds is approximately 224,000. This is below the triggers requiring odour modelling. The *Victorian Code for Broiler Farm 2009 (Plus 2018 Amendments)* requires odour modelling for farm capacities of greater than 400,000 birds and *AgriFutures Planning and environment guideline for establishing meat chicken farms (Guide 1 – Assessment guide)* (2021) has a 600,000 bird trigger for odour modelling.

According to Agriculture Victoria:

- Given the relatively low numbers of birds in the breeder farms an S Factor calculation of separation distances would appear appropriate.
- A 399m separation buffer from the closest breeder farm shed could be applied. This is informed by the [Egg Industry Environmental Guidelines, 2nd edition \(McGahan et. al. 2018\)](#), more specifically:

- A breeder farm with 32,000 birds in isolation would require a separation distance of 266m to a residential zone.
- If the individual breeder farms separation distances overlap and, in accordance with *Egg Industry Environmental Guidelines, 2nd edition (McGahan et. al. 2018)*, it is suggested that if the neighbouring facility's calculated 'odour plume' from the separation distance formula overlaps, then the calculated separation distances will need to be increased by 50% (i.e. multiply the distance by 1.5) requiring a separation distance of 399m to a residential zone.

Hatchery

Whilst there are several guidelines to determine an appropriate separation distance, Agriculture Victoria recommends using the *Egg Industry Environmental Guidelines, 2nd edition (McGahan et. al. 2018)*, which are the national guidelines. Based on these guidelines, a 500m buffer would be considered appropriate according to AgVic. The actual separation distance required may be lower but 500m would allow for adverse weather conditions and/or other environmental factors.

AgVic noted that it might be advisable to include vegetated screening as part of the design elements of the plan to protect visual amenity.

The *Egg Industry Environmental Guidelines, 2nd edition (McGahan et. al. 2018)* notes:

On page 2:

While the focus of the document is layer farms, the principles outlined in this document are equally applicable to pullet rearing and breeder farms. These guidelines are not designed to cover hatcheries and off-farm facilities that manufacture egg products

On page 10:

Where distances are not specified by state and local government departments and agencies, the following minimum fixed separation distances are suggested:

- 1. 500m between the impact source and any land use zone that is not compatible with the development (e.g. residential, rural residential).*
- 2. 250m separation distance between the impact source and any sensitive land use (e.g. neighbouring houses) that is located on land that is compatible with the development (e.g. on land designated rural, farming or similar).*

VPA Position

The VPA will apply a 500m separation distance from the hatchery and 399m separation distance from the closest breeder farm. The PSP includes objectives and requirements that facilitate the safe transition of land within proximity to the chicken hatcher and breeder farm.

There will also be requirements in the UGZ Schedule relevant to odour assessments for applications related to sensitive uses within the buffer, and keeping of poultry and domestic birds is prohibited across the entire precinct. Stormwater drainage basins are required to service the precinct, whilst there may be an opportunity to shift basins further away from 449 Burnside Road, they will still be required for development. There are ways to manage wild birds to detract them from drainage basins such as use of typical plant species and/or netting.

4.4.10 Heritage Victoria inventory site

Planning assessment

The VPA commissioned a post contact heritage assessment for Bannockburn South East to investigate any potential historic archaeological sites, buildings and trees within the precinct.

Three historic sites were identified (including:

- Archaeological site H7721-0541 - Bruce Creek Pastoral Outstation, Harvey Road, Bannockburn;
June 6, 2021, and the site is now listed on Victorian Heritage Inventory as: H7721-0541 – Bruce Creek Pastoral Outstation.
- Historic farmhouse with an associated dairy, barn, and dry stone wall (Grayson's Farm, 430 Burnside Road, Bannockburn).
It was recommended that a place specific heritage study be undertaken of this heritage place to clarify the significance of the place and determine if it meets the criteria for inclusion in the Heritage Overlay.
- The landowner has commissioned a heritage report advising that the dwelling did not warrant the application of a Heritage Overlay on the site.
- A dry stone wall, at Grayson Farm, as it holds individual significance as an example of an early-nineteenth century constructed dry stone wall in Bannockburn region. This wall is recommended for retention.

VPA Position

The VPA has identified the heritage inventory site on the Place Based Plan, as per the Heritage Victoria listing. Development would require a consent for archaeological investigations, it would likely be given to authorise works at the site with conditions requiring a program of site investigation, recording, reporting and artefact management. For further information see the Guidelines for investigating historical archaeological artefacts and sites by Heritage Victoria.

The VPA are not proposing to introduce a Heritage Overlay to the historic farmhouse at Grayson's Farm, 430 Burnside Road, Bannockburn.

To protect the Dry Stone wall the VPA are proposing to include a requirement to encourage their retention unless otherwise agreed by the responsible authority.

4.4.11 Native and non-native vegetation

Planning assessment

The VPA commissioned an arborist report to assess trees located within Bannockburn South East. In total 1,456 trees were assessed within the precinct. Trees classified with a 'Critical' or 'High' retention value within these reports are considered by council and the VPA as protected trees where all reasonable efforts should be made to retain them in the landscape/public realm. In total, 130 trees within the precinct fit this criteria and are recommended to be retained.

A further 173 trees were identified as being of 'Moderate' retention value. It was recommended that as many trees as possible meeting this criteria should be retained. A significant portion of these trees are non-native wind rows, which are seen as a key local characteristic of the precinct with a desire for either retention of these features or replanting of them with more suitable species.

All cypress trees, even those current in moderate/good health, are not recommended for protection as the area is infected with cypress canker which is untreatable and will inevitably lead to the death of all the trees.

The sugar gums (FC-6a) have been utilised for extensive firewood harvesting which has caused them to grow very unstable. It was therefore not recommended that these trees be retained in an urban environment. If they were to be retained, they would be best located in passive open space and would require significant tree protection zones that restrict any use of the land for recreation.

FE-2 are noted for retention and we have them as critical value trees. They are within the culturally and / or environmentally sensitive areas and landowners have also expressed interest in retaining them. Ultimately these should be retained.

VPA Position

Although the VPA understands current policy does not mandate the retention of non-native species, the PSP aims to retain a significant number of native and non-native trees within areas of significant amenity and character value to preserve and enhance the landscape and character of the precinct where suitable.

4.4.12 Bushfire interfaces

Planning assessment

The VPA prepared the *Bannockburn South East Precinct Structure Plan Bushfire Assessment* (May, 2024) in-house. The assessment has been peer reviewed by Terramatrix.

The whole precinct is identified as Bushfire Prone Area (BPA). Bushfire Management Overlay (BMO) does not apply within the precinct or within 2km of the precinct.

The bushfire risk for the precinct is relatively low. In particular, the bushfire risk at the site, neighbourhood and local scale are low, however surrounding vegetation will need to be managed to limit landscape scale bushfires. Terramatrix supports this view and notes that most high-risk bushfire hazards are located relatively distant from the precinct.

The dominant vegetation within and around the precinct is grassland, with isolated pockets of woodland located within the Bruce Creek corridor. Consequently, separation distances range from 19 meters to 50 meters, depending on the proposed use and location of the proposed development adjacent around Bruce Creek. The layout and subdivision of the precinct provides an opportunity to further strengthen the resilience of the existing township. Terramatrix underscores the potential risk of grassland fires impacting the precinct and stresses the importance of including ample buffers between development and surrounding grassland environments. This could be achieved via perimeter roads and setbacks within lots.

VPA Position

The VPA developed a Bushfire Interface Plan within the PSP which highlights the setbacks required for development to occur. The PSP includes a table that shows the bushfire hazard vegetation management & setback requirements. The VPA has developed a set of requirements and guidelines relating to development safely with bushfire assessment which have been informed by the CFA.

The PSP also includes cross sections that interface Bruce Creek and the existing railway that note considerations for buffers from bushfire hazards.

4.4.13 Contaminated land

Planning assessment

The VPA commissioned the *Bannockburn South East PSP - Soil Desktop Assessment - Sodic-Dispersive Soils and Contamination Risks* (WSP, August 2024). The assessment determined 6 sites as having "Medium" potential for contamination (see Figure 13) and will therefore require a Preliminary Risk Screen Assessment (PRSA) to be completed in accordance with the requirements of Planning Practice Note 30: Potentially contaminated land (PPN30). The PRSA will assess the need for an environmental audit.

One property was inaccessible (418 Burnside Road) but based on observations over the boundary fences and aerial imagery, the contamination risk did not appear to be elevated above surrounding properties. The property includes a rural residential property with no visible agricultural equipment. A Preliminary Site Investigation will be required for this site.

VPA Position

The amendment proposes to include an application requirement in UGZ1 to undertake a PRSA for the six sites with "Medium" potential for contamination. There are no areas identified as "High" potential for contamination. The amendment does not propose to apply the Environmental Audit Overlay (EAO) to any lots within the precinct.

Mandatory permit conditions have also been included in the UGZ1 requiring an environmental audit to be carried out if recommended in a PRSA provided as part of the application.

The VPA acknowledge that Ministerial Direction 1 states the planning authority must ensure an environmental auditor has issued a PRSA prior to giving notice of the amendment. Ministerial Direction 1 at section 6(3) states that 'where a planning authority determines that complying with subclause (1) or (2) is difficult or inappropriate it may defer the requirements of those subclauses provided the requirement are included in the amendment through the application of an EAO or other appropriate measure'.

Planning Practice Note 30 also states that meeting an environmental audit requirement prior to amendment is preferred, while acknowledging that in some instances this will be difficult or inappropriate, for example where 'the rezoning relates to a large strategic planning exercise or involves multiple sites in separate ownership'.

The VPA determined it would have been inappropriate to undertake an environmental audit upfront at the strategic planning stage given the size of the precinct and the fragmentation in ownership of the land. It is also expected that agricultural uses will continue whilst the precinct transitions, therefore the application of an EAO would be an unnecessary encumbrance on the land until the land transitions to residential use.

The VPA consider it is more appropriate to defer the audit system requirements and have these assessed at the planning permit stage. In doing so, the amendment provides an appropriate response to Ministerial Direction 1, with the amendment addressing Clause 6(3) of Ministerial Direction 1 and Planning Practice Note 30.

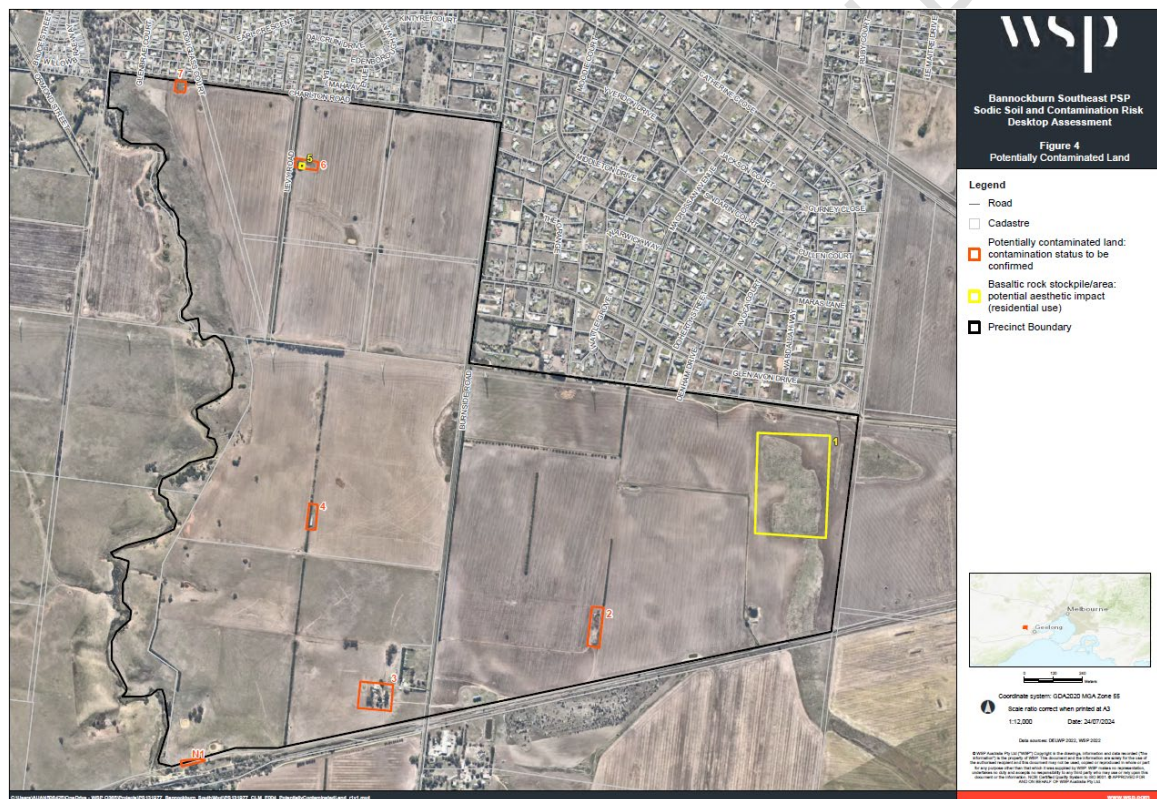
Triggering the audit system requirements at the strategic planning stage would not only be a time-consuming exercise for such a large and fragmented precinct but would not capture changes or new sources of potential contamination between the strategic planning stage and the ultimate development of the land.

The approach taken by the VPA ensures that potentially contaminated land is assessed at the appropriate time, being that when the land is intended to be subdivided and developed in accordance with the future land uses outlined in the PSP. Assessment at this stage in the planning process ensures that the responsible authority and any other decision maker or authority will be satisfied that the land can be made suitable for a sensitive use.

Assessment at this stage also ensures that any information gaps contained in the WSP assessment pertaining to potential contamination will be appropriately addressed at the planning permit stage and before a sensitive use can be established.

Furthermore, the application requirements in the UGZ1 integrate elements of the EAO, including the preparation of a PRSA confirming that an environmental audit is not required. The deliberate drafting of these application requirements ensures that the potential impact and risk of any contamination is not only identified but also ensures appropriate mitigation measures are enacted to address and remediate any such contamination prior to a sensitive use being established on a given site.

Figure 13 Potentially contaminated sites



4.4.14 Sodic and dispersive soils

Planning assessment

The *Bannockburn South East PSP - Soil Desktop Assessment - Sodic-Dispersive Soils and Contamination Risks* (WSP, August 2024) was commissioned by the VPA and assessed soil erosion based on a literature review and a site visit. No soil testing was undertaken. The desktop study found that east and west of Bruce Creek may encounter dispersive soils and this potential should be confirmed with an intrusive investigation including collection and analysis of soil samples.

VPA then commissioned the *Sodic/Dispersive Soils Testing and Assessment* (WSP, January 2025) which is a precinct-wide assessment to test the soil. The assessment found that the precinct is

primarily sodic with varying salinity and pH levels. The risk of erosion is especially high along Bruce Creek's steeper slopes.

The assessment recommended:

- At the precinct planning stage:
 - Implementation of erosion controls (potentially an environmental management overlay)
 - Water-sensitive urban design
 - Management of waterways including a green corridor/green buffer on the high-risk slopes along Bruce Creek
- At the development stage:
 - Requirement for erosion control management plans
 - Further soil investigations for high-risk sites
 - Retention of topsoil

VPA Position

The VPA will be implementing a green corridor along Bruce Creek, preventing development along the slopes of the creek. This will ensure development avoids these high-risk areas as they are prone to erosion.

The VPA will also require proponents to prepare erosion control management plans as a permit condition to be implemented during construction.

4.5 Services and destinations

PSP Performance Target

#Target	Target	Target Achieved?
T18	<p>The location of dwellings should achieve the following accessibility targets in relation to education and community facilities:</p> <ul style="list-style-type: none"> • 70% of dwellings located within 800m of a government primary school. • 100% of dwellings located within 3,200m of a government secondary school. • 80% of dwellings located within 800m of a community facility. 	Target achieved

4.5.1 Local schools

Planning assessment

The *Bannockburn South East PSP Community Infrastructure Assessment* (ASR, 2024) provided estimates of the community infrastructure demand generated by primary, secondary and tertiary study areas.

The assessment was initially completed in December 2022. An addendum was prepared in July 2024 following increased potential housing and population densities for Bannockburn South East Precinct.

The addendum investigated two study areas:

- Bannockburn South East Precinct
- Bannockburn Growth Plan Area – Includes Bannockburn South East Precinct, Bannockburn township, the proposed growth areas as per the Bannockburn Growth Plan (North West, South West, Future Growth Option South, and Future Growth Option East).

The original assessment from 2022 also explored what is referred to as “Bannockburn and District Area”, which includes townships/districts of Lethbridge, Teesdale, Meredith and Inverleigh (all located within a 20-minute drive of Bannockburn).

This section predominantly refers to the findings from the addendum.

Government primary schools

Overall, the full development of Bannockburn South East is likely to generate 1,190 government primary school enrolments, or the equivalent of 1.7 schools. The whole Bannockburn Growth Plan Area is estimated to generate 3,200 government primary school enrolments.

The assessment determined that Bannockburn South East would need to provide for an additional two government primary schools of 3.5ha each to cater to both the precinct’s residents, as well as future residents from the adjacent Future Growth Option - East.

Government secondary school

Bannockburn South East is expected to generate 540 students, or 0.5 government secondary schools. More broadly, the Bannockburn Growth Plan Area is estimated to generate a total of approximately 1,450 government secondary school enrolments at full development or 1.6 government secondary schools.

The report recommends an additional 8.4ha government secondary school within Bannockburn in the long term. A new secondary school location within Bannockburn South East is considered suitable given:

- The largest proportion of new secondary enrolments will be generated within the precinct.
- The location will provide optimal coverage of future growth areas and avoid significant overlap with the catchment of the existing Bannockburn P-12 college.

Non-government schools

Bannockburn is currently served by one Catholic primary school – St Mary McKillop. Melbourne Archdiocese Catholic Schools has advised that a second primary school will be needed in Bannockburn to cater for the growing population.

Bannockburn Growth Plan Area is estimated to generate 950 Catholic primary school enrolments. Of this, approximately 350 Catholic primary enrolments are expected from Bannockburn South East.

Melbourne Archdiocese Catholic Schools (MACS) requested that 3ha of land is set aside in Bannockburn South East for a potential Catholic primary school.

The Melbourne Archdiocese Catholic Schools advised the VPA that there is no requirement to set aside land for a Catholic Secondary School site within the Bannockburn South East Precinct. There is sufficient capacity within existing Catholic secondary schools in Geelong.

The VPA have not received formal interest at this stage from other independent primary or secondary schools.

VPA Position

The VPA has included the following in the Bannockburn South East Place Based Plan: two government primary schools, one non-government primary school and a government secondary school.

Bannockburn South East will achieve:

- 77% of dwellings located within 800m of a government primary school.
- 100% of dwellings located within 3,200m of a government secondary school.

The strategic assessment of the location of the government primary school is supported by the 'Victorian Government School Site Selection Criteria – Toolbox' and the Department of Education. The necessary requirements from the selection criteria have been included in the PSP.

4.5.2 Community infrastructure

Planning assessment

Community facilities

The *Bannockburn South East PSP Community Infrastructure Assessment* (ASR, 2024) recommends the provision of two Level 1 community centres (each 0.8ha in size) and one Level 2 multipurpose community centre (1ha).

The assessment noted a demand for 1.5 Level 1 centres and 0.8 level 2 centres being generated by the precinct.

Level 1 community centres should accommodate the following facilities: Kindergarten rooms (x3), flexible community meeting spaces able to be configured for varying sizes and varying activities (including classroom-based activities), and consulting suites for outreach visiting services.

The Level 2 community centres should provide all uses listed above provided in Level 1 Centres, in addition to maternal and child health consulting rooms (x3), and a Neighbourhood House service.

Indoor Recreation

The assessment indicates that Bannockburn South East will generate demand for 1.5 indoor courts, with 4.1 courts being required to service the wider Growth Plan area.

The assessment recommends the establishment of a new indoor recreation facility within the precinct.

Other facilities

Department of Health advised that there is no need for a hospital in Bannockburn South East noting that it is within a 20-minute drive from Geelong.

Furthermore, Department of Health requested for provision for land to be available for future aged care facility development. VPA notes that a PSP cannot allocate a specific area to a private sector residential aged care service. However, the PSP will guide them to appropriate locations as noted in G1 of Section 3 of the PSP, which states:

Higher density residential development, social and affordable housing typologies and specialised housing forms such as retirement living or aged care should:

- *be integrated with adjoining development*
- *be accessible by public transport*
- *not present a barrier to movement through the surrounding road network*
- *be located within Amenity Areas as shown on Plan 5 Housing Plan.*

Furthermore, when private sector residential aged care services wish to be in the precinct, they will have to submit a permit to the responsible authority (Golden Plains Shire Council).

ASR also assessed the need for a library and aquatic facility.

ASR recommended a construction of a new library or extension to the existing library in the Bannockburn town centre to accommodate the potential demand at full build out of the Bannockburn Growth Plan Area. The current preference from Council is an extension to the current library in the long term given it is most accessible.

According to ASR, at full build out of the Bannockburn Growth Plan Area, it would be justifiable to construct an aquatic facility (i.e. 25m indoor pool and gymnasium) in the long term. There is no existing public aquatic leisure centre in Golden Plains Shire. The nearest facilities are in the City of Greater Geelong at Waterworld and Kardinia Aquatic Centre.

VPA Position

The Place Based Plan currently shows the provision of:

- Two Level 1 community centres (each 0.8ha in size)
- One Level 2 multipurpose community facility (1ha).
- One 0.6ha indoor recreation centre

Bannockburn South East achieves the following in relation to and community facilities:

- 84% of dwellings located within 800m of a community hub/facility

The future urban structure situates community centres within easy access to residential development and connections to schools, sports reserves and the activity centre along the key central connector boulevard spine, providing active transport access to the local community and safeguarding public transport access for the wider community in the future. The Level 2 centre is directly located adjacent to the local activity centre to allow integration of complementary facilities and promote a vibrant neighbourhood core.

The Place Based Plan shows a 0.6ha indoor recreation centre located on the central connector spine, co-located with the secondary school and 10ha sports reserve.

4.5.3 Kindergarten provisions

Planning assessment

In June 2022 the state government announced its \$9 billion package over the next decade, for four-year-old kinder to be recast as 'pre-prep', with every Victorian four-year-old entitled to a free, 30-hour-a-week program, up from the current 15 hours.

The Community Infrastructure Assessment (ASR Research, 2024) recommends that 6 kindergarten rooms are required to service the precinct under the present kindergarten policy environment, and up to 9 kindergarten rooms to cater for both 3- and 4-year-old sessional could be required under the Victorian government's *Best Start, Best Life Policy (June 2022)*. Furthermore, the assessment recommends 3 kindergarten rooms in each of the three proposed community facilities. The preference is to integrate kindergarten facilities within either the proposed government primary school and / or potential non-government primary school. This recommendation requires further consultation and confirmation with the Department of Education and Melbourne Archdiocese Catholic Schools.

VPA Position

The community infrastructure assessment identifies the current and potential future policy setting for the '3 & 4 Year Old Sessional Kindergarten' provisions. Based on the assessment, the VPA plans to accommodate the demand that is expected in the Bannockburn South East PSP within the two Level 1 community centres and the Level 3 community centre.

4.6 Infrastructure coordination

PSP Performance Target

#Target	Target	Target Achieved?
T20	Identify all basic and essential infrastructure with spatial requirements on the Future Place-based Plan (e.g. open space, schools, community centres, integrated water management, etc.)	Target achieved

4.6.1 Staging and location of development

Planning assessment

The following influences the staging of development for Bannockburn South East:

- Existing and future servicing infrastructure as informed by the *Bannockburn South East PSP - Utility Servicing Assessment* (SMEC, August 2024), particularly sewer and water, which play a major role in development sequencing.
- Ability to connect to ultimate drainage outfall.
- Readiness of developers to develop.

SMEC also identified the following potential initial locations for development:

- Land abutting major roads such as Burnside Road and Charlton Road.
- Land which is owned by developers with an ability to fund trunk infrastructure, main drainage and roadworks, reimbursable Barwon Water assets and provide open space to the benefit of the precinct.
- Land serviced by the first proposed Sewer Pump Station earmarked by Barwon Water.

- Land serviced by Barwon Water nominated Stage 1 water supply works (northern area of the Bannockburn SE precinct).

VPA prepared an *Infrastructure Development Staging Plan Background Document* (April 2025) and produced an Infrastructure Development Staging Plan (IDSP) incorporating the above considerations. Please refer to the IDSP for details on how staging was determined and which factors impacted it.

VPA Position

The VPA has prepared an IDSP as part of the PSP to guide development based on key infrastructure items. There will be 2 stages for development:

- Stage 1 - land in the north of the precinct abutting Charlton Road and Burnside Road, areas close to the easement. This stage of development is close to the existing development front and Bannockburn township.
- Stage 2 - all other areas, mostly areas which are south of the transmission easement.

Please refer to the IDSP Background Document for details on exact extent of each stage and further information on how staging was determined.

4.6.2 Existing and future utilities infrastructure

Planning assessment

The VPA commissioned the *Bannockburn South East PSP - Utility Servicing Assessment (SMEC) August 2024*, which noted the following:

- Barwon Water is the responsible authority for potable water, recycled water and sewer.
- Powercor is the responsible authority for electricity.
- Ausnet is the responsible authority for the transmission easement and gas.
- There is an approximate area abutting Charlton Road that can be serviced by the existing Bannockburn gravity sewer network given it is closest to the Bannockburn town where an existing Bannockburn No. 1 sewer pumping station exists.
- Trunk sewer and water infrastructure are critical to servicing the precinct as shown in Figure 14 and Figure 15. These include infrastructure to be delivered by Barwon Water and developers such as:
 - Stage 1 major new trunk water main (Barwon Water works)
 - Stage 2 new major trunk water main connection to existing feeder main in Milton Street (Baron Water works)
 - New reticulation water mains
 - Two proposed Barwon Water sewer pump station and rising main (one east of Burnside Road and one north of the railway line)
 - Two future developer funded sewer pump station and rising main towards Bruce Creek
 - Gravity sewer main.
- NBN Co is open to working with the other Utility Service Providers (USPs), governments and other entities to cater for growth in the precinct.

VPA notes that Victoria Planning Scheme Amendment VC250 was gazetted on the 1st of January 2024 which prevents a permit being granted to connect to reticulated natural gas when constructing a new dwelling, apartment development or subdividing land for residential purposes in accordance with clause 53.03.

Figure 14 Trunk sewer infrastructure

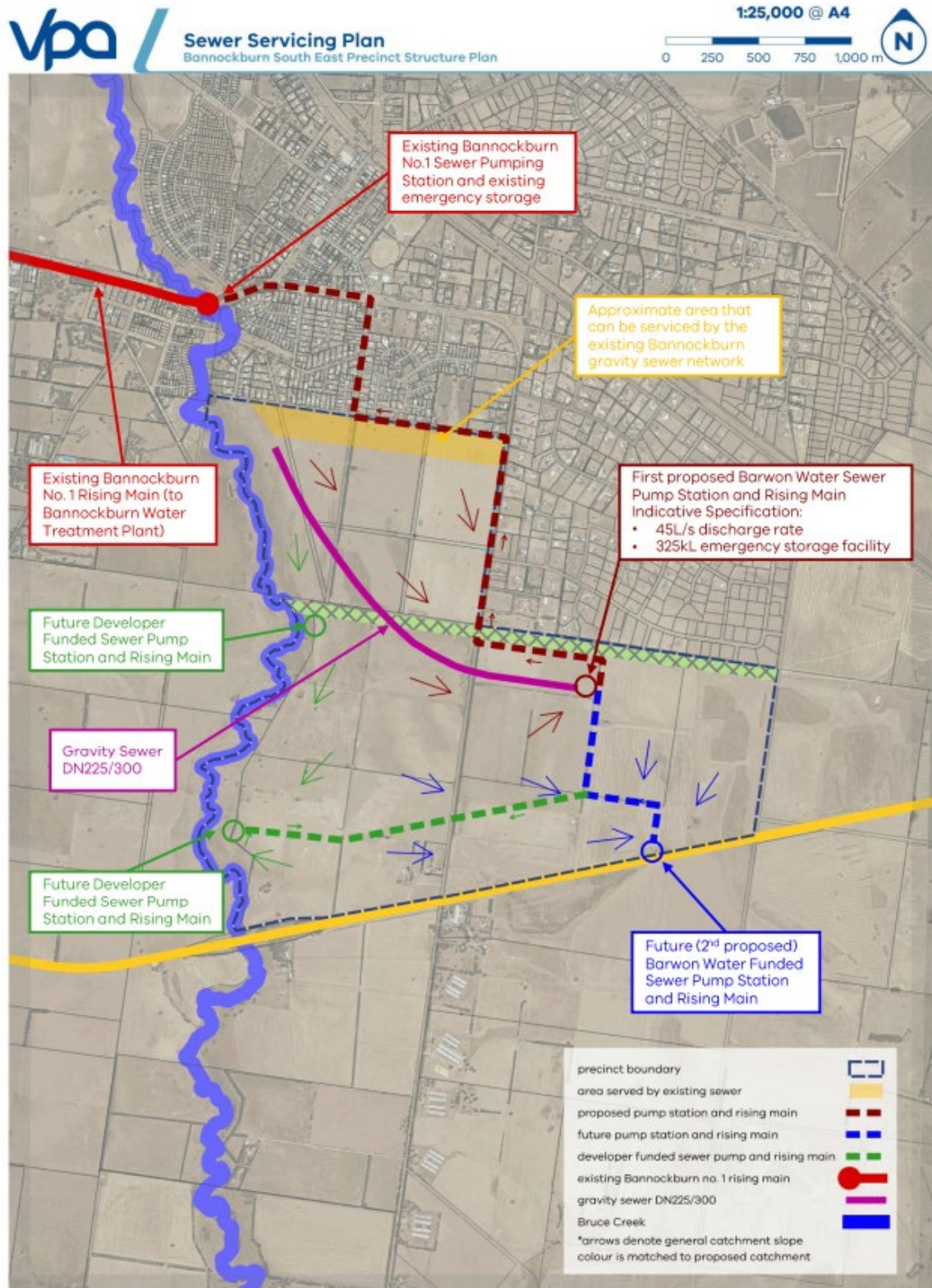
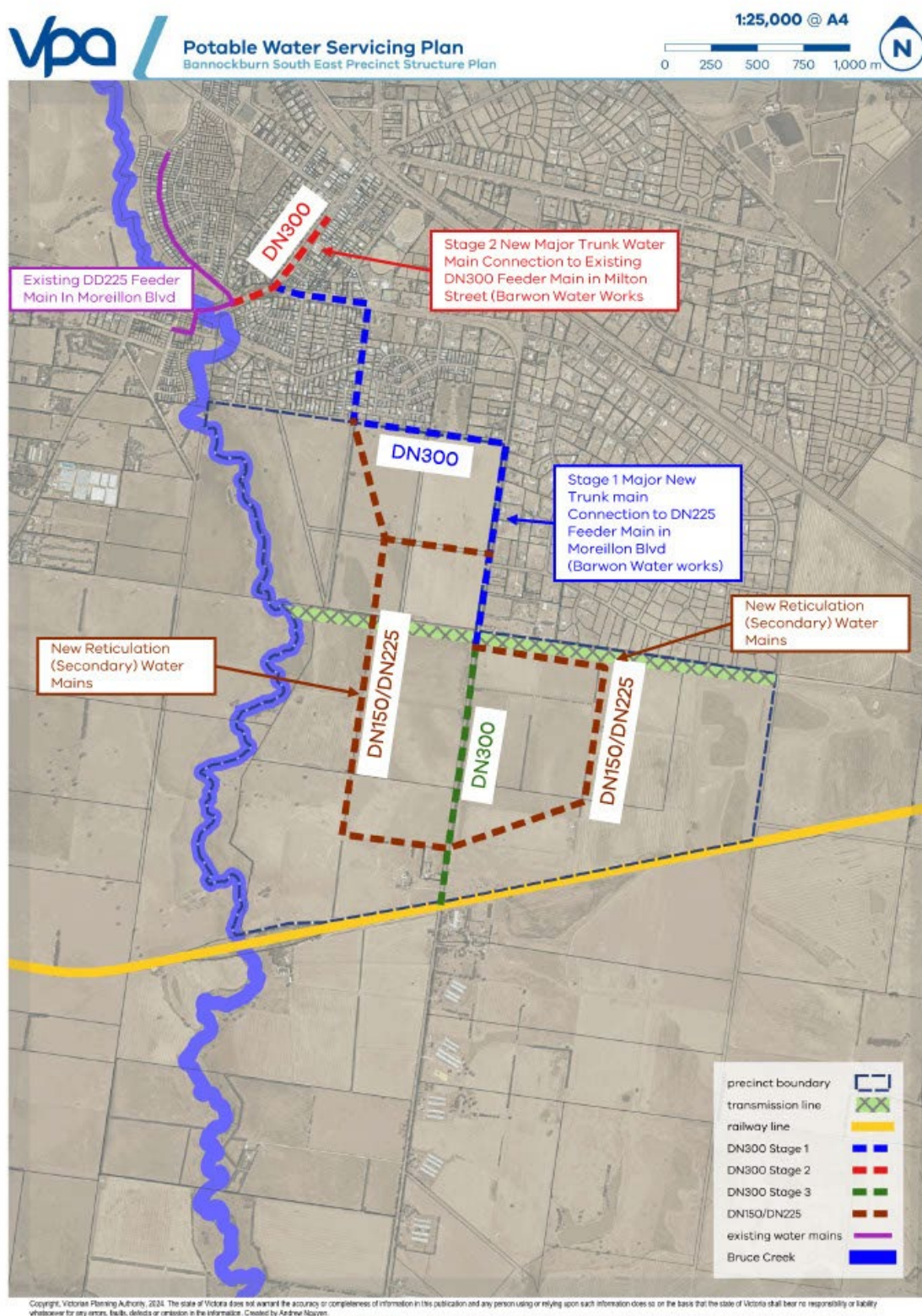


Figure 15 Trunk water infrastructure



VPA Position

The VPA has included all known existing and future utilities from the assessments within the utilities plan in the PSP. The PSP has included applicable requirements and guidelines relating to all types of utilities infrastructure.

4.6.3 Development contributions plan (DCP) – infrastructure items

Planning assessment

Developments increase the demand for infrastructure such as roads, open space, drainage basins and sport and community facilities. Development contributions are monetary payments, land or in-kind works provided by developers towards major new or upgraded infrastructure required to meet the future needs of the developed precinct, such as Bannockburn South East.

A Development Contributions Plan or DCP is a tool to identify the required major local infrastructure (new or upgraded), cost, expected timing and delivery method to accommodate growth.

DCPs ensure that the cost of providing new infrastructure and services is shared equitably between developers and the wider community. Fairness requires costs to be apportioned according to the projected share of use, and the required works, services and facilities items.

When land within a precinct is developed, the DCP nominates a per-hectare levy that is paid to council or offset against in-kind projects delivered by the developer. The collecting agency is typically a council.

VPA Position

VPA prepared the Bannockburn South East DCP in accordance with the [Ministerial Direction on the preparation and content of Development Contributions Plans](#). It outlines the projects that are funded wholly or partially by development contributions. The DCP would be incorporated into the Golden Plains Shire Planning Scheme via a planning scheme amendment.

VPA used the following reports and inputs to identify what infrastructure would be required for the precinct:

- *Integrated Transport Assessment* (Stantec, 2024)
- *Stormwater Drainage Design - Concept Design Report* (Alluvium, 2025)
- *Community Infrastructure Assessment* (ASR Research, 2024)
- *Draft Community Infrastructure Design and Costings* (Taylors, 2025)
- *Benchmark Infrastructure Costs Report* (Cardno, 2019)

One of the key transport infrastructure items in the DCP is the bridge (BR-01 as shown in Table 19 of the PSP). This includes the construction of interim (2-lane bridge). 50% of the total cost of the 2-lane bridge is apportioned to the Bannockburn South East precinct.

The remainder of the contributions to the bridge will be from future precincts such as Bannockburn South West and Bannockburn Future Growth Option South. The future precincts will not be planned or developed for some time. As a result, the South East precinct will be the key catalyst for this bridge in the interim, hence the 50% contribution to interim costs.

Other items in the DCP that are unique to Bannockburn South East include:

- Land acquisition costs for DR-01 (east of Bruce Creek) – This assists Council with facilitating drainage infrastructure and giving Council control of when passive recreation around Bruce Creek can be formalised without having to wait for planning to occur for Future Growth Option South (western portion), which may not be for a very long time.
- Land acquisition costs for DR-02 (within 449 Burnside Road) – This assists Council with implementing potential drainage outfall outside of the precinct.

- Cost for RD-02 (Burnside Road level crossing upgrade) – Upgrades to the existing Burnside Road railway crossing are likely required. The extent of the upgrade cannot be confirmed until a Railway Risk Assessment is undertaken. VPA proposes that this is undertaken during the permit application process before a permit is issued for subdivision. VPA has included \$2 million to enable upgrades, which are likely to include boom gates. This is based on high-level estimates from Victorian Infrastructure Delivery Authority based on similar projects with VLine.

4.6.4 State infrastructure items

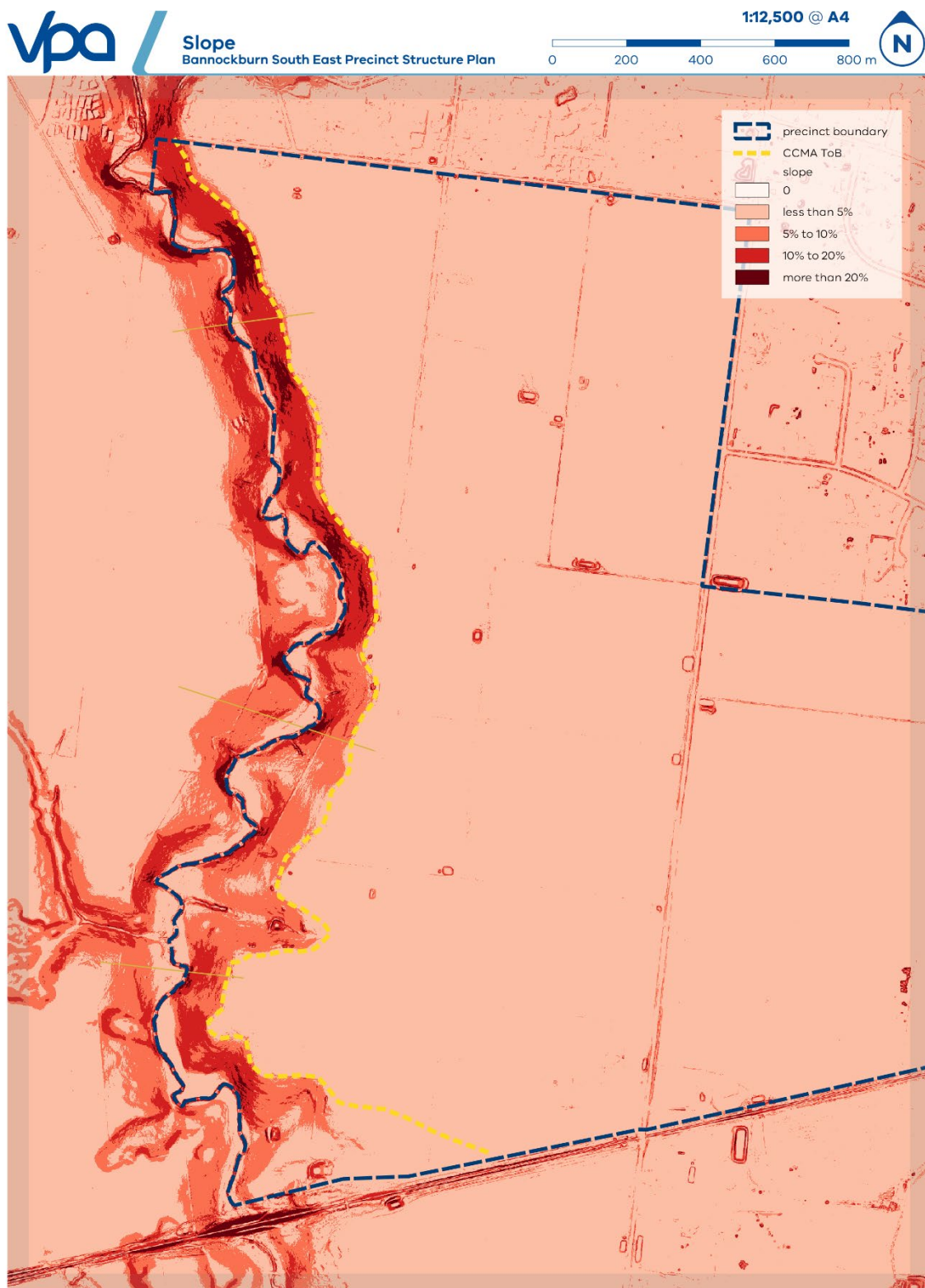
Planning assessment

There are currently no existing or future state committed infrastructure items within the precinct. However, there are potential impacts to existing state-owned roads outside of the precinct at full development of the whole Bannockburn Growth Plan areas.

VPA Position

The VPA has included all basic and essential items within the DCP to ensure a functional precinct.

5 APPENDIX 1: SLOPE MAP



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6 APPENDIX 2: BACKGROUND REPORT SUMMARIES

Arboriculture

Technical Report

Bannockburn South East PSP - Arboriculture Assessment, ENSPEC, March 2021

What was the purpose of the report?

- To identify trees worthy of retention within Bannockburn South East.
- To provide an assessment of the identified trees regarding their health, structure, and retention value in the landscape.
- To provide preliminary recommendations for tree protection that should be incorporated in the design and construction process.

Aboriginal Cultural Heritage Impact Assessment (DRAFT only)

Technical Report

(DRAFT) Bannockburn South East PSP - Aboriginal Cultural Heritage Impact, Unearthed Heritage, February 2023

What was the purpose of the report?

- To document the known and potential Aboriginal cultural heritage within the activity area.
- To provide preliminary recommendations and advice in terms of statutory obligations, development design response, further work, and conservation and management of cultural heritage within the activity area.
- **NOTE** – this document is not approved or endorsed by WTOAC and has been utilised as background material only.

Aboriginal Cultural Values Assessment

Technical Report

Bannockburn South East PSP - Aboriginal Cultural Values Assessment, Unearthed Heritage, 10 December 2021

What was the purpose of the report?

- To document the known and potential Wadawurrung living cultural heritage values in the precinct, to assist in planning and development designs.
- To determine environmental, historical and cultural context of the precinct and surrounding area.
- To provide recommendations for the precinct based on the core principles of the *Wadawurrung Health Country Plan* (WTOAC 2020).

Biodiversity

Technical Report

Bannockburn South East PSP - Existing Ecological Conditions Report, Ecology and Heritage Partners, September 2022.

What was the purpose of the report?

- Determine the presence or absence of any significant flora and fauna species.

- Confirm the condition and extent of native vegetation.
- Address any implications under Commonwealth and State environmental legislation.

Biodiversity - Bruce Creek West

Technical Report

Bannockburn South East PSP - Existing Ecological Conditions Report - Bruce Creek, Ecology and Heritage Partners, September 2022.

What was the purpose of the report?

- Collect and present information about environmental values to allow integration with the planning and potential future development of the area.
- Identify, assess, and map areas supporting native vegetation and fauna habitat, and determine the conservation significance of these areas.
- Determine the requirement for any targeted flora and/or fauna surveys.
- Provide management measures that should be implemented to reduce adverse impacts on biodiversity values known to, or likely to occur in the study area.

Bridge Feasibility

Technical Report

Bannockburn South East PSP - Bridge Feasibility Assessment, Jacobs, April 2025

What was the purpose of the report?

- Investigate proposed bridge crossings over Bruce Creek.
- Undertake a feasibility assessment of the crossing locations.
- Develop concept-level designs and cost estimates for each bridge crossing location.
- Determine potential road connections to each of the bridge crossings.

Bushfire

Technical Report

Bannockburn South East PSP - Bushfire Assessment, Victorian Planning Authority, January 2025

What was the purpose of the report?

- Identify bushfire legislation considerations and requirements.
- Determine areas of bushfire hazard at landscape, local and neighbourhood levels.
- Establishment of management requirements for bushfire risk within the precinct.

Community Infrastructure

Technical Report

Bannockburn South East PSP - Community Infrastructure Assessment, ASR Research, July 2024

What was the purpose of the report?

- To calculate community infrastructure demand generated by the Bannockburn South East precinct and the wider Bannockburn township and growth areas.
- To recommend community infrastructure items for inclusion in the Place Based Plan and form part of a Community Infrastructure Plan for the PSP and DCP.
- To provide high level indicative costings and catchment apportionment advice for community infrastructure items recommended for inclusion in the PSP and DCP.

Economic and Retail

Technical Report

Bannockburn South East PSP - Economic and Retail Assessment, Ethos Urban, July 2024

What was the purpose of the report?

- To calculate projected retail and commercial demand generated within the Bannockburn South East precinct and wider Bannockburn district.
- To make recommendations sensitive to preserving the existing activity centre hierarchy and protecting Bannockburn's High Street as the primary activity centre in the district.
- To make recommendations of project floorspace and necessary land take for a future activity centre/s within the Bannockburn South East precinct.
- To calculate project job numbers within the Bannockburn South East precinct for proposed retail and community uses.

Historic Heritage

Technical Report

Historical Heritage Assessment, Heritage Insight, February 2022

What was the purpose of the report?

- To identify historic (non-Aboriginal) cultural heritage located within the precinct.
- To inform the planned future land-use of the area.

Integrated Water Management Opportunities

Technical Report

Bannockburn South East PSP - Preliminary Integrated Water Management Issues and Opportunities Report, Spiire, December 2024

What was the purpose of the report?

- To review and summarise relevant integrated water management strategies and objectives from the region.
- To outline ambitions for water management as set by policy directions
- To bring together stakeholders to form a collective outlook on integrated water management issues and opportunities.
- To make recommendations for key opportunities for integrated water management within Bannockburn South East.

Social and Affordable Housing

Technical Report

Bannockburn South East PSP - Social and Affordable Housing Strategy, Urbanxchange, August 2023

What was the purpose of the report?

- To understand why social and affordable housing is required and who needs it.
- To propose options for social and affordable housing delivery and determine a minimum target for provision of social housing and affordable housing for the Bannockburn South East precinct and broader study area.
- To provide recommendations on the preferred housing typology, form, arrangement and location(s) to successfully deliver social and affordable housing in the Bannockburn South East precinct.
- To review Federal, State, and Local Government affordable housing policy and guidelines.
- To identify potential social and affordable housing delivery and management partners.
- To review the strengths and weaknesses for Precinct Structure Plans to deliver social and affordable housing in the greenfield and regional contexts.
- To understand the impact of different social and affordable housing delivery options on development feasibility, particularly alongside other requirements or contributions.

Land Capability

Technical Report

Bannockburn South East PSP - Soil Desktop Assessment - Sodic-Dispersive Soils and Contamination Risks, WSP, February 2025

What was the purpose of the report?

- To understand the likelihood of the presence of sodic/dispersive soils within the precinct and the associated risks to development.
- To understand the likelihood that a historical land use may trigger a requirement for a Preliminary Risk Screen Assessment (PRSA) to comply with EPA and/or planning regulations/guidelines.
- To inform the precinct structure planning being undertaken and provide management options in a property development context.
- Recommend whether on-site soil testing is required and (if so) an outline scope of works for such an assessment in the context of precinct planning.

Sodic Soil Assessment

Technical Report

Bannockburn South East PSP - Sodic-Dispersive Soils Testing and Assessment, WSP, January 2025

What was the purpose of the report?

- To build on the findings from the Sodic and Dispersive Soil and Contamination Assessment which recommended a targeted sodic soils assessment for the precinct.
- To determine the amount and location of sodic soils in the precinct and its impacts to:

- Soil stability
- Buildings and infrastructure
- Water quality
- To propose potential mitigation measures to limit erosion and soil dispersion due to sodic soils.

Transport Modelling

Technical Report

Bannockburn South East PSP - Integrated Transport Assessment, Stantec, December 2024

What was the purpose of the report?

- To undertake a high level traffic analysis of two scenarios for growth and development within Bannockburn South East and the wider Bannockburn Growth Plan area.
- To conduct strategic transport modelling focussed on the Bannockburn South East Precinct
- To prepare relevant recommendations for the road network and public and active transport networks within the precinct.

High Level Utility Servicing

Technical Report

Bannockburn South East PSP - Utility Servicing Assessment, SMEC, August 2024

What was the purpose of the report?

- To provide a high-level utility servicing review of the Bannockburn South East precinct to inform the preparation of Precinct Structure Plan and the requirements for the following services:
 - Sewer Reticulation, Potable Water and Recycled Water
 - Electricity
 - Gas
 - Telecommunications
- To review existing servicing strategies and assumptions.
- To identify opportunities and constraints regarding utility services and infrastructure related to the future development of the precinct.

Stormwater Drainage

Technical Report

Bannockburn South East PSP - Stormwater Drainage Design – Concept Design Report, Alluvium, March 2025

What was the purpose of the report?

- To test the drainage concept presented in the Bannockburn Growth Plan Catchment Assessment

- To undertake hydrologic modelling to estimate peak flows for a 1% AEP storm events
- To undertake hydraulic modelling and water quality treatment computations.
- To prepare functional designs for drainage assets that:
 - Ensure flows are maintained to pre-development rates for 1% AEP events
 - Ensure drainage conveyance through the precinct
 - Treat water to a quality in accordance with current best practice.
- Ensure flooding is no worse upstream or downstream to the precinct due to proposed drainage management

Land valuations

Technical Report

Bannockburn South East PSP – Valuation Report, Charter Keck Cramer

What was the purpose of the report?

- To assess the market value of the land within the precinct.
- To provide broad hectare and site specific valuations for the purpose of informing land acquisition costs for Development Contributions Plan projects.

Infrastructure Development Staging Plan Background Document

Technical Report

Bannockburn South East PSP - Infrastructure Development Staging Plan Background Document, Victorian Planning Authority, April 2025

What was the purpose of the report?

- Explains how the methodology outlined in *the Infrastructure and Development Staging Guidance Note* (the Guidance Note) was applied to prepare the Infrastructure and Development Staging Plan (IDSP) for the precinct.
 - Includes a contextual analysis.
 - Analyse and maps development drivers within the precinct.
 - Analyses financial revenue against infrastructure expenditure over time
 - Combines the outputs of Steps 1 to 3 into a single IDSP identifying sub-areas within the precinct suitable for development stages numbered in order.



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**Bannockburn South East
Precinct Structure Plan – April 2025
Background Report**

