

Bannockburn Growth Plan

May 2021



CONTENTS

Executive Summary	5
Golden Plains: Past, Present & Future	7
Southern Settlements	9
Strategic Context	13
Growth Plan Process	17
Vision & Principles	18
Growth Context	20
Growth Areas	23
Future Growth Options	32
Themes	35
Theme 1 – Housing & Community Infrastructure	37
Theme 2 – Economy & Employment	47
Theme 3 – Environment & Water	53
Theme 4 – Transport & Movement	69
Implementation & Delivery	78
References	81
Glossary	82

Plans

Plan 1	Framework plan	4
Plan 2	Regional context	6
Plan 3	Southern settlements	8
Plan 4	Local context	12
Plan 5	Proposed growth areas	22
Plan 6	Housing & community infrastructure	36

Plan 7	Economy & employment	46
Plan 8	Environment & water	52
Plan 9	Bushfire & buffers	62
Plan 10	Road network	68
Plan 11	Public transport & path network	72

Tables

Table 1	Estimated growth potential of proposed growth areas	23
Table 2	Potential community infrastructure	41
Table 3	Potential recreation facilities	41
Table 4	Existing health services	42
Table 5	Housing & community infrastructure actions – growth areas	43
Table 6	Housing & community infrastructure actions – advocacy	44
Table 7	Economy & employment actions – growth areas	50
Table 8	Economy & employment actions – advocacy	51
Table 9	Separation distances to be applied to urban and rural interfaces	63
Table 10	Environment & water actions – growth area	66
Table 11	Environment & water actions – advocacy	67
Table 12	Transport & movement actions – growth areas	76
Table 13	Transport & movement actions – advocacy	77

Figures

Figure 1	Stages in the preparation of the Growth Plan	16
Figure 2	Dwelling growth VIF base case and medium growth scenario	20
Figure 3	Growth Plan Investigation Area	24
Figure 4	Dwelling growth VIF base case, medium and high growth scenario	32
Figure 5	Sustainable Development Outcomes	60
Figure 6	Public transport opportunities	74

Acronyms

BAL	Bushfire Attack Level
BMO	Bushfire Management Overlay
Council	Golden Plains Shire Council
CCMA	Corangamite Catchment Management Authority
CFA	Country Fire Authority
DCP	Development Contributions Plan
DELWP	Department of Environment, Land, Water and Planning
DET	Department of Education
DoT	Department of Transport
DJPR	Department of Jobs, Precincts and Regions
EPA	Environmental Protection Authority
FFG Act	Flora and Fauna Guarantee Act 1988
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ICP	Infrastructure Contributions Plan
IWM	Integrated Water Management
PSP	Precinct Structure Plan
RDV	Regional Development Victoria
SES	State Emergency Service
UGZ	Urban Growth Zone
VIF	Victoria in Future
VPA	Victorian Planning Authority

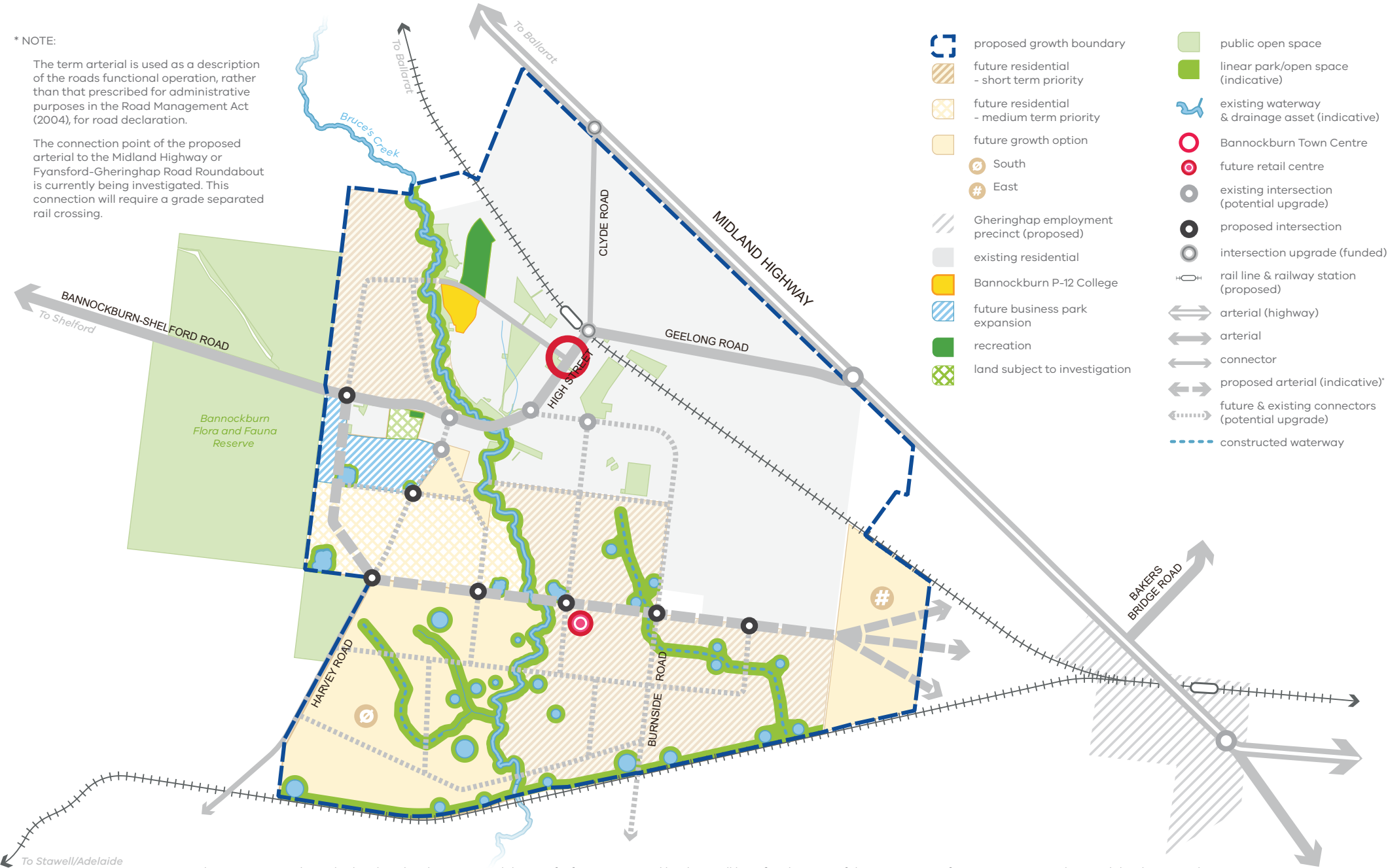
Acknowledgement of Traditional Owners

Golden Plains Shire is located on the Traditional lands of the Wadawurrung people.
We acknowledge the Traditional Wadawurrung custodians of the lands on which Golden Plains Shire is located.
We pay our respects to Wadawurrung ancestors and Elders, past, present and emerging.
We are committed to honouring Aboriginal and Torres Strait Islander peoples’ unique culture and their rich contribution to society.

* NOTE:

The term arterial is used as a description of the roads 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.



This is a concept plan only, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans

EXECUTIVE SUMMARY

The Victorian Planning Authority (VPA) in partnership with Golden Plains Shire Council (Council) has prepared the draft *Bannockburn Growth Plan* (Growth Plan) to guide the sustainable development of Bannockburn to the year 2050.

The Growth Plan is a high-level and broad strategy that:

- Sets out a vision for Bannockburn.
- Guides sustainable growth and development over the next 30 years.
- Identifies the steps needed to manage growth.
- Defines key projects and infrastructure required to support growth.
- Provides certainty for public and private investment decision making.

The Growth Plan addresses key challenges to guide housing, employment, infrastructure, services and other opportunities for residents and visitors while ensuring Bannockburn becomes more accessible, sustainable and liveable. The Growth Plan aims to maintain and enhance the unique attributes of Bannockburn and sets a vision for how the town will grow and change.

The Growth Plan sets out the location of broad urban development types and supporting infrastructure. The plans within the document are concept plans, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans.

The Framework Plan for Bannockburn is identified in **Plan 1 – Framework Plan**.

Bannockburn is the largest urban centre in Golden Plains. State and local policy support the town's growth and the provision of more housing, employment and community services.

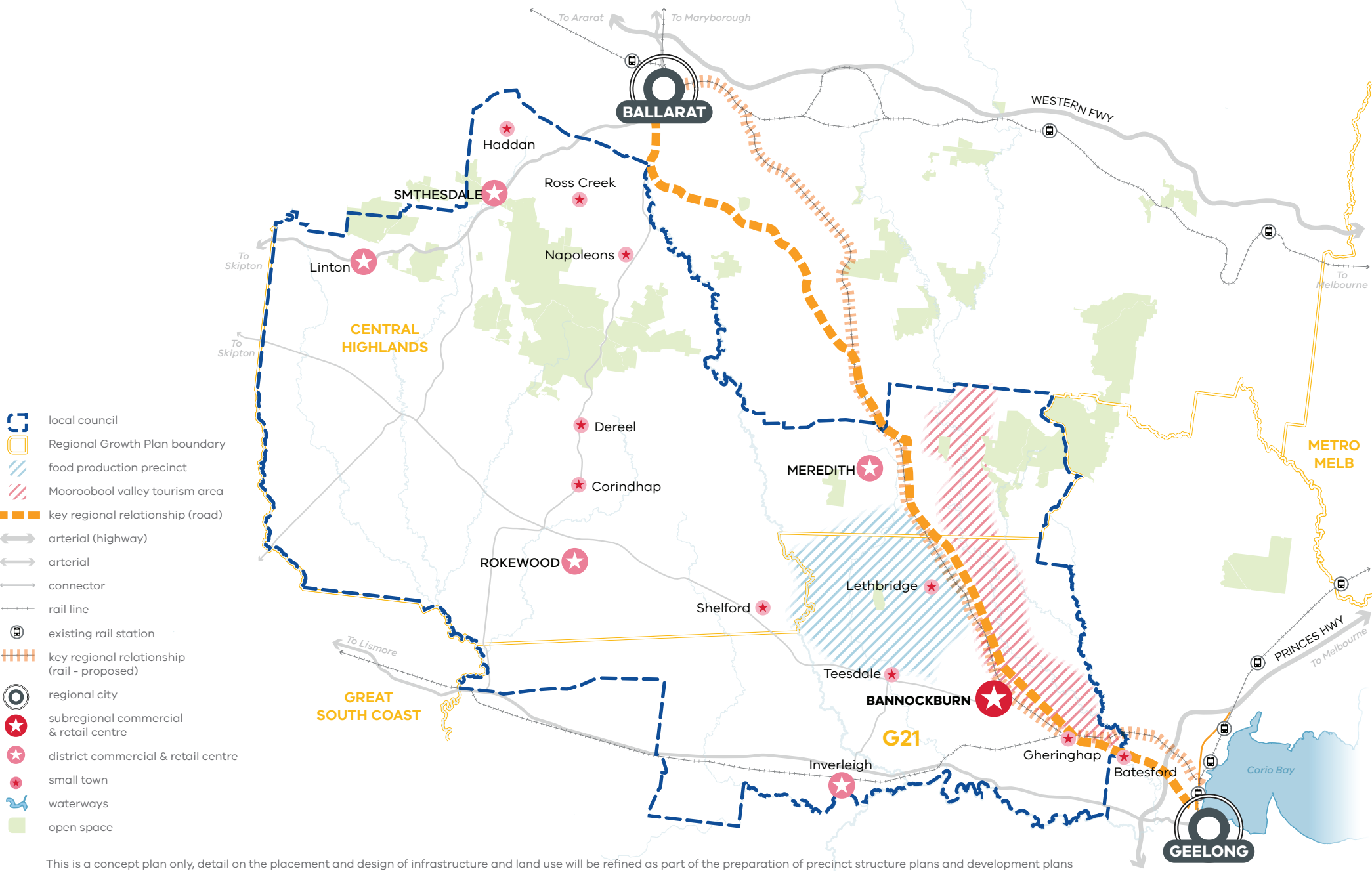
The population of Bannockburn is expected to reach approximately 13,090 by 2036 (*Victoria in Future*, 2019). The **Growth Areas** chapter identifies precincts for housing supply, to accommodate projected population growth to 2050.

The proposed growth areas will undergo detailed master planning processes before they are able to be developed. The Growth Plan includes four key themes that provide further guidance to inform this master planning process. The four themes are:

- Housing & Community Infrastructure
- Economy & Employment
- Environment & Water
- Transport & Movement

The Growth Plan makes recommendations on identified opportunities for urban growth and other initiatives to achieve the vision for Bannockburn. The proposed growth areas are conditional on relevant planning authority resolutions, Planning Minister support (where planning scheme amendments are required) and a range of further assessments that will occur at the appropriate time.

The delivery of actions in the Growth Plan will be led by Council and government partners. The Growth Plan will also be used by Council to advocate for funding for infrastructure and other initiatives.



GOLDEN PLAINS: PAST, PRESENT & FUTURE

The land that forms Bannockburn is Wadawurrung country. Bannockburn contains distinctive landscapes and water bodies, including Bruce's Creek, that are highly significant to Wadawurrung people. The Wadawurrung people make an integral cultural, social, environmental, economic and spiritual contribution to the story of Bannockburn. The Traditional Owners are represented by the Wadawurrung Traditional Owners Aboriginal Corporation. We will work in partnership with Wadawurrung people to interpret and manage areas of cultural significance. The stories and sites of the Wadawurrung peoples will play an integral role in planning for Bannockburn's future.

Golden Plains Shire is approximately 70 kilometres south-west of Melbourne between two of Victoria's largest regional cities, Ballarat and Geelong (see **Plan 2 – Regional Context**). The Shire is characterised by three waves of new arrivals. The first was the original settlers and landowners including those who arrived during the Gold Rush. The second wave was the soldier settlers and their families. The Shire is currently undergoing a third wave of population growth with many young families attracted to the area for its affordable housing, rural character and proximity to Ballarat and Geelong.

The Shire is home to diverse environmental features including granite rock formations, river valleys and volcanic plains. These landscapes include historic heritage sites such as goldfields and station homesteads. Nationally significant biodiversity is evident across the Shire including native grasslands, plains grassy woodlands and the endangered Striped Legless Lizard. Reserves and conservation areas, such as the Brisbane Ranges National Park and the Inverleigh Nature Conservation Reserve, contribute to the Shire's environmental features and tourism offer.

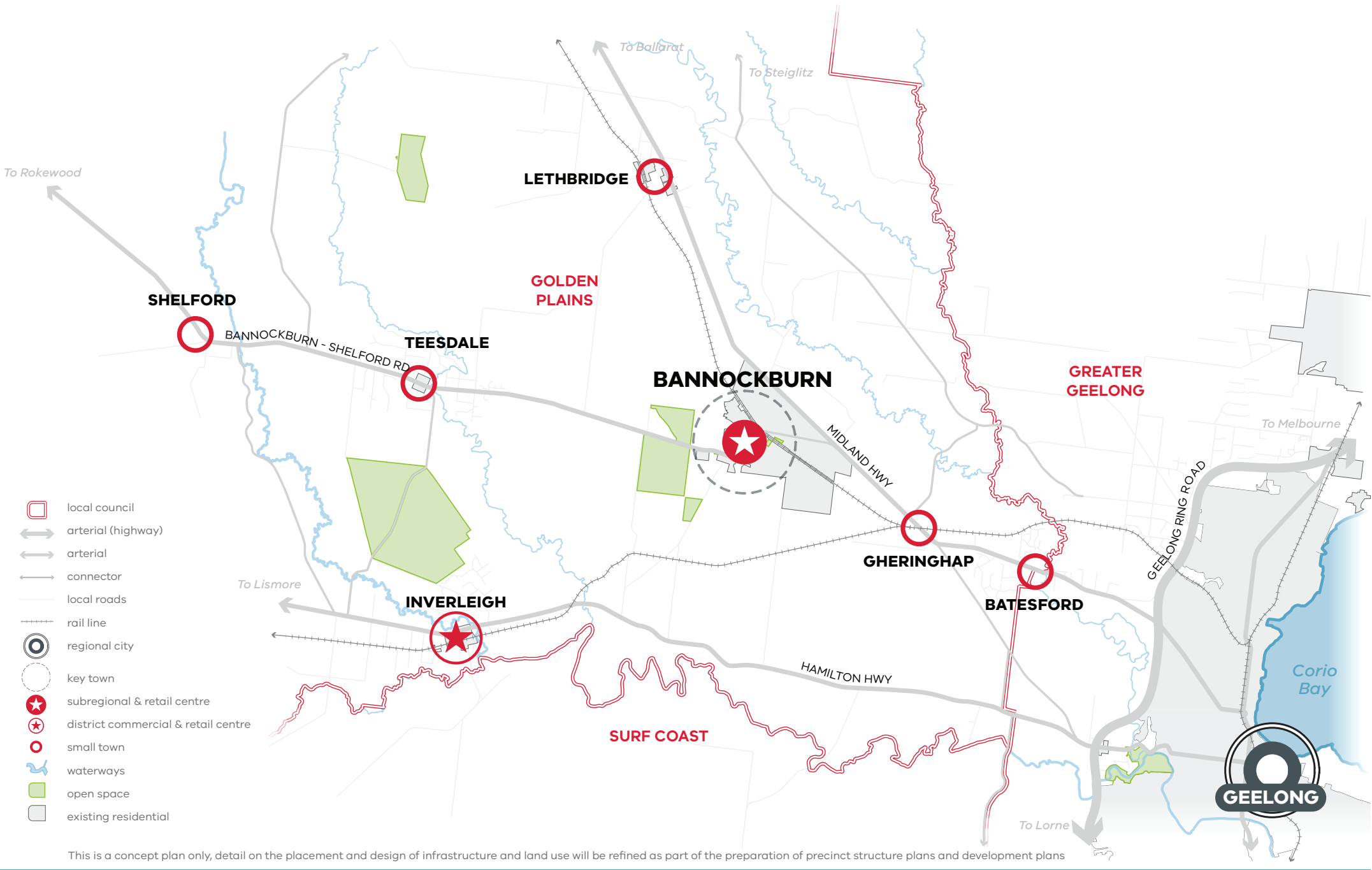
The largest employment category in Golden Plains is agriculture which represents 22% of the workforce, compared to the regional Victoria average of 8% (ABS Census, 2016). The main agricultural land uses

are grazing, cropping and intensive animal industries, including the production of 21% of Victoria's eggs. The Golden Plains Food Production Precinct is located near Lethbridge and is Victoria's first designated precinct for intensive food production. Wind farms are an emerging industry in the Shire with approval granted for the Golden Plains Wind Farm at Rokewood, to include up to 228 wind turbines over an area of 168 square kilometres.

The Shire has a population of over 23,000 people across 56 townships (.id Consulting, 2020). The Golden Plains *Northern Settlement Strategy* supports accommodating an additional 2,000 people in the north of the Shire by 2030. This will be achieved by supporting infill development in Smythesdale and investigating greenfield development within proximity to the City of Ballarat.

Bannockburn is the largest town in the Shire and supports the southern network of townships providing community services, commercial and administrative functions (see **Southern Settlements** chapter). While the Shire's largest employment category is agriculture, the working population of Bannockburn is generally employed in tertiary industries, mainly health care and social assistance (13%), construction (12%) and retail trade (11%) (ABS, 2016). To access employment in these industries, approximately 80% of Bannockburn's population travel to Geelong for work.

This proximity to Geelong in addition to the town's rural character and its access to servicing infrastructure have attributed to its strong growth, with the town consistently being one of the fastest growing areas in regional Victoria. Bannockburn is well-suited to accommodate a greater share of the region's growth, supported by state and local policy. The Growth Plan will set a vision for this growth to occur sustainably, in a way that responds and recognises the existing character of the town and ensures necessary infrastructure is provided.



SOUTHERN SETTLEMENTS

Bannockburn is the largest town in Golden Plains and supports a network of southern settlements (see **Plan 3 – Southern Settlements**). The communities within these smaller towns rely on the services and amenities provided in Bannockburn, particularly the secondary school, retail, commercial and other community infrastructure and facilities.

The southern settlements of Teesdale, Inverleigh, Lethbridge, Batesford and Gheringhap are all forecast for low levels of growth, mainly low-density residential lots and in the case of Gheringhap, employment land. Compared to Bannockburn, a much higher portion of residents in these towns are employed in the agricultural industry, highlighting the important role these towns and their communities play in supporting the local economy (ABS, 2016).

As Bannockburn grows it will continue to play a key role in providing services for these towns and alternative housing choices. The role of each of the southern settlement towns and their growth forecast is identified below.

Teesdale

Teesdale is located approximately 10km west of Bannockburn and is the second largest town in Golden Plains Shire. The *Teesdale Structure Plan (2020)* estimates the population of Teesdale is approximately 1,791 people. Teesdale’s residents are dependent on larger towns and regional cities, including Bannockburn for higher order retail, commercial and community services. The Structure Plan identifies capacity for additional 822 infill and 237 greenfield lots within the existing settlement boundary. Teesdale is not connected to reticulated sewer and will continue to provide low density housing lots, differentiating it from Bannockburn.





Inverleigh

Inverleigh is located approximately 15km south-west of Bannockburn. It has experienced an increase in popularity as a lifestyle alternative to Geelong and Bannockburn. Council is currently undertaking a structure planning process to accommodate projected population growth from 1,203 to 2,380 people (moderate growth scenario forecast for 2033) within the existing township boundary. Inverleigh is not connected to reticulated sewer and will maintain its identity as a lifestyle location with low density development.

Lethbridge

Lethbridge is located approximately 11km north of Bannockburn. Between 2016 to 2019, Lethbridge experienced an annual average growth rate of 7% as new lots were released to the market. The *Lethbridge Structure Plan* (2010) designates approximately 130 hectares of land for growth. Lethbridge's provision of low-density lifestyle development will be important as surrounding towns such as Bannockburn continue to grow.

Council has identified approximately 4,000 hectares of Farming Zone land to the north-west of Lethbridge as the Golden Plains Food Production Precinct, for intensive agriculture and associated agri-business activity. The Precinct has been supplied with town water supply following combined funding from the Federal Government, State Government, Barwon Water and Council.



Batesford

Batesford is located approximately 12km south-east of Bannockburn on the municipal boundary of Golden Plains Shire and the City of Greater Geelong. The portion of Batesford within Golden Plains Shire is not connected to reticulated sewer and includes low-density residential development.

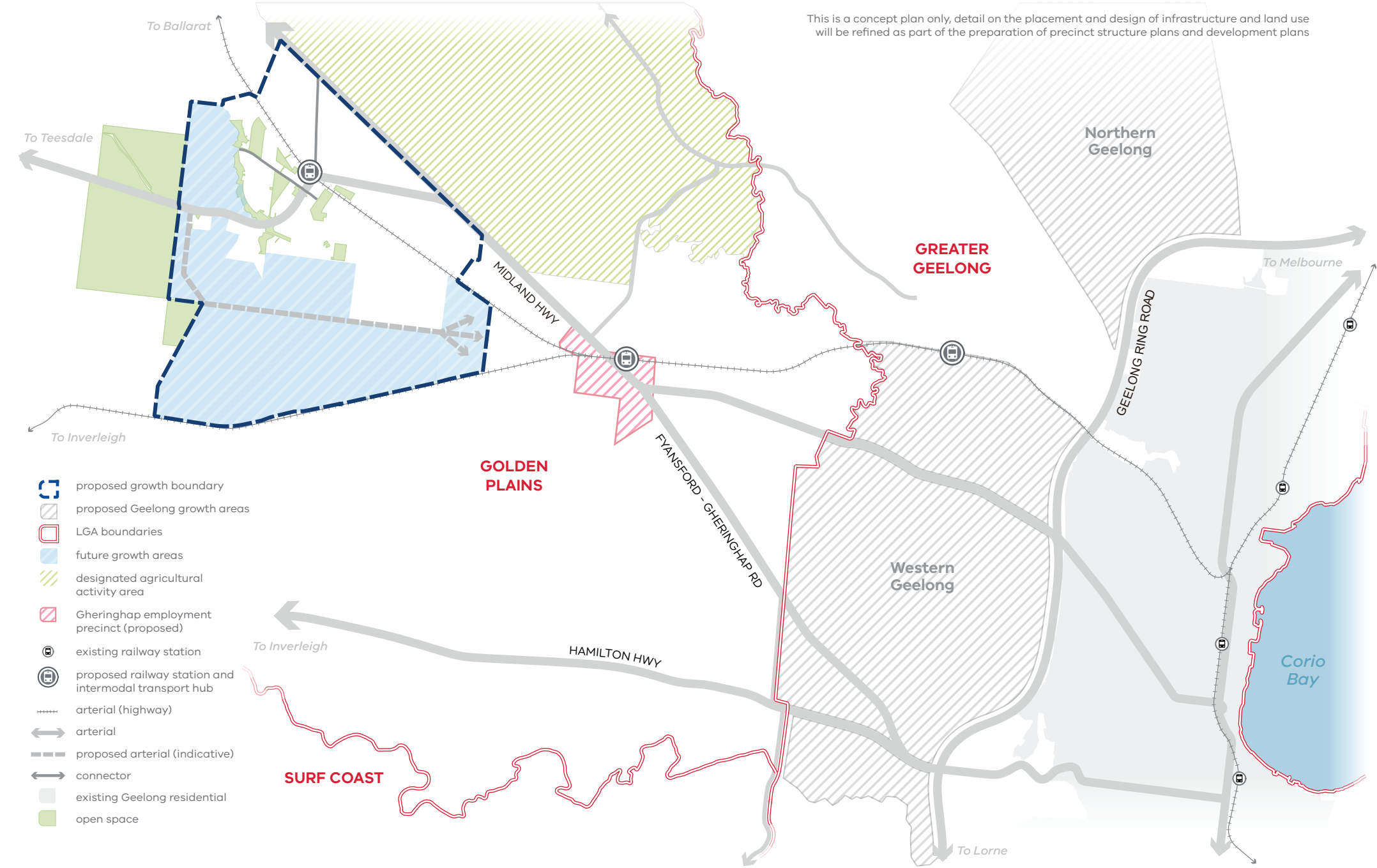
The *Northern and Western Geelong Growth Areas Framework Plan* (2020) identifies residential development to the east and south of the Batesford township. In response to this Plan, Council will be required to review the *Batesford Structure Plan* (2001) to define the future of the portion of Batesford that falls within the Golden Plains Shire boundary.



Gheringhap

Gheringhap is located approximately 6km south-east of Bannockburn. The *Gheringhap Structure Plan* (2012) identifies the town 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.





STRATEGIC CONTEXT

Local Context

Bannockburn is the largest urban centre in Golden Plains Shire. It includes a vibrant town centre including the Bannockburn heart civic play space with water play, a Catholic primary school, a government P – 12 college, Victoria Park recreation reserve, library and several retail, health and administrative services.

The Midland Highway bounds Bannockburn to the north-east, connecting Geelong to Ballarat via Meredith. The Moorabool Valley is also located to the north-east and supports a mix of agricultural land uses and eco-tourism including the Bannockburn wine district.

To the south of the town is the Gheringhap to Maroona freight railway line connecting to the state's central west. The Geelong-Ballarat railway line traverses through Bannockburn, it is not currently operational for passenger services but is used for freight.

To the west of the town is the Bannockburn Flora and Fauna Reserve supporting significant biodiversity and providing recreational opportunities for walking and cycling.

The proposed Gheringhap Employment Precinct is located approximately 5km south east from Bannockburn and has the potential to provide local employment and economic activity for the town. This precinct will provide an alternative opportunity for local jobs and investment to the existing Bannockburn Industrial estate in the west of the town. The Western Geelong Growth Area proposes development up to the eastern border of Golden Plains Shire. This proposed growth area will provide opportunities for improved access to services and facilities for Bannockburn's residents.

See **Plan 4 – Local Context**.

Policy Context

G21 Region Alliance

G21 is the formal alliance of government, business and community organisations working together to improve the lives of people within the broader Geelong region across its five member municipalities – Colac Otway, Golden Plains, Greater Geelong, Queenscliffe and Surf Coast.

The *G21 Regional Growth Plan* (2013) identifies Bannockburn as a regional town that will support significant residential growth. Bannockburn is also identified as a sub-regional employment centre for retail and commercial functions.

The Growth Plan supports all the key actions for Bannockburn identified in the *G21 Regional Growth Plan Implementation Plan* (2013):

- Town centre road upgrades.
- Milton Street bridge over Bruce's Creek.
- Alternative heavy vehicle route.
- Geelong-Ballarat passenger rail link.
- Railway station infrastructure.
- Emergency services precinct.

Bushfire

The **Environment & Water** chapter disusses the importance of bushfire risk mitigation measures to be delivered in future growth areas. The importance of mitigating bushfire risk is also included in state planning policy at Clause 71.02-3 which states "*in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations*"



Planning Policy Framework

The Planning Policy Framework (PPF) in the *Golden Plains Planning Scheme* provides key direction around settlement, housing, environment and infrastructure. Relevant components of the PPF include:

- Direct population growth to urban areas provided with water, sewerage and social infrastructure.
- Support a progressive series of land rezoning within Bannockburn, taking into account sustainable land supply, growth capacity and infrastructure provision.
- Develop Milton Street to provide a future road link across Bruce’s Creek to serve future residential areas to the west of Bannockburn.
- Support medium density housing within a general 500m radius of the Bannockburn Town Centre.
- Support a wide range of industry and business activities to meet the needs of a growing population and to provide increased employment opportunities.

- Providing walking and cycling linkages to open space areas, community facilities and the town centre in new development and subdivision.
- Provide open space areas in new developments that incorporate pedestrian, bicycle or riding trail paths to other open space areas such as the Bruce’s Creek Corridor.
- Create flora and fauna corridors within open space reserves that incorporate locally indigenous vegetation, where there are identified biodiversity values.
- Provide walking and cycling trails, preferably on the eastern side of the creek.
- Protect vistas, view lines and visual amenity along the creek environs.

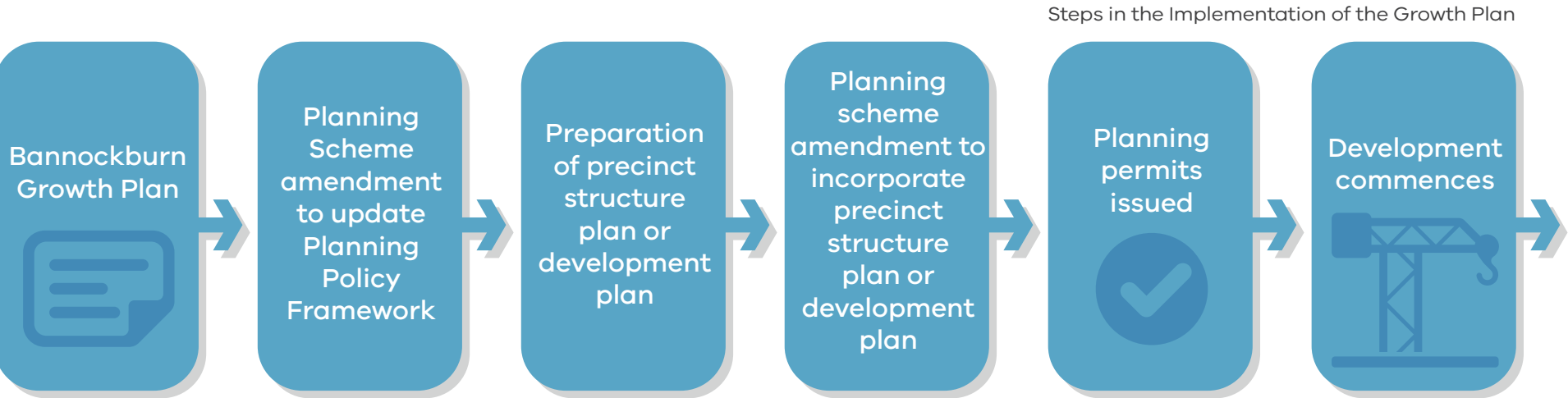
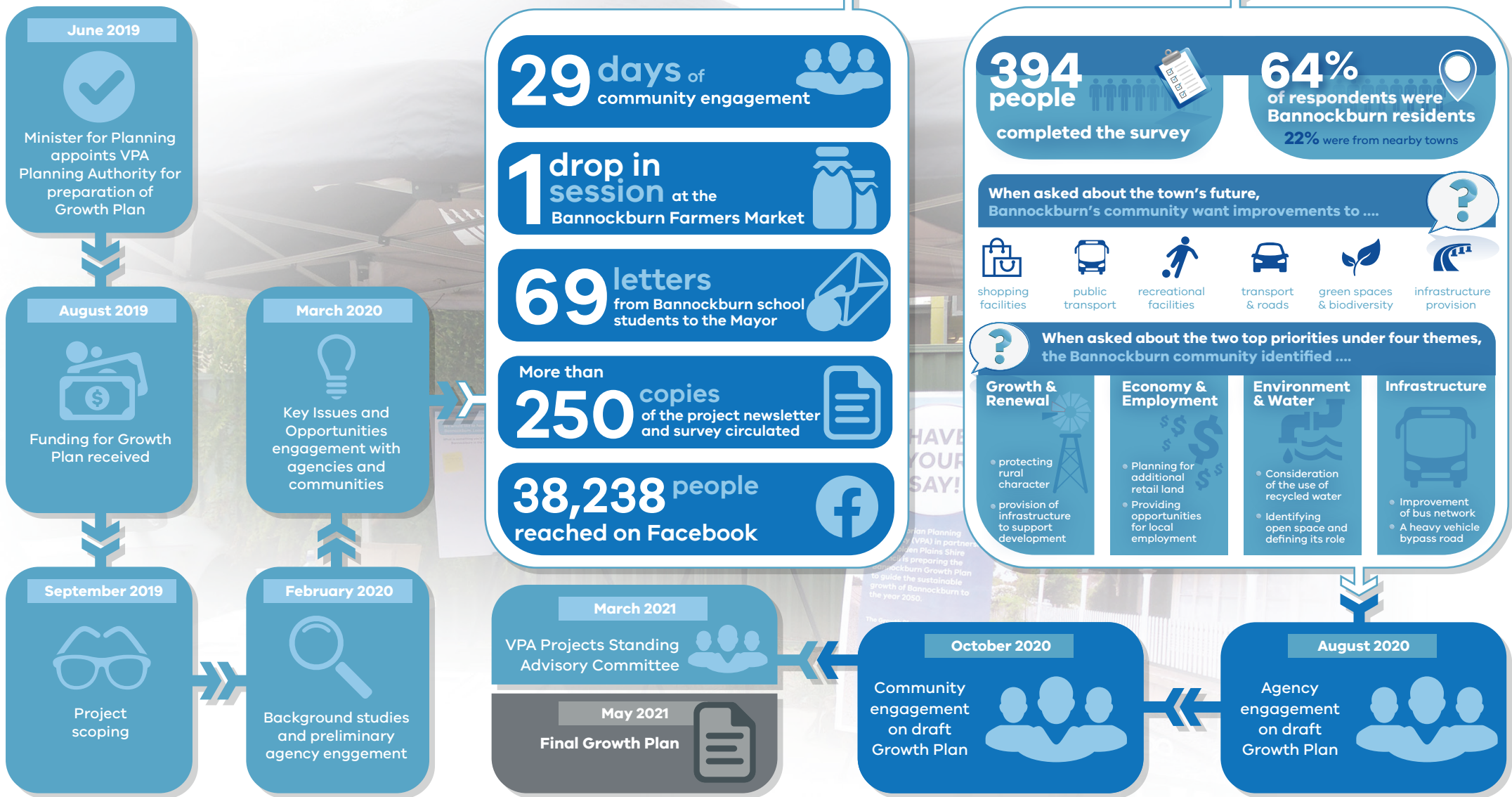


Figure 1 Stages in the preparation of the Growth Plan



GROWTH PLAN PROCESS

There have been a number of stages in the preparation of the Growth Plan as identified in **Figure 1**.

How will the Growth Plan be implemented?

The Growth Plan will support changes to local planning policy in the Planning Policy Framework (PPF) of the *Golden Plains Planning Scheme*. The changes to the PPF will set the direction for more detailed planning work to take place in the form of precinct structure plans or development plans for growth areas. The implementation of precinct structure plans and development plans will support the rezoning of these areas for urban development. Infrastructure contributions for proposed growth areas will be collected via development contributions plans or agreements under Section 173 of the Planning and Environment Act 1987.

The Growth Plan will also be listed as a Background Document in the schedule to Clause 72.08 of the *Golden Plains Planning Scheme*.

The delivery of other actions in the Growth Plan will be led by Council and government partners. The Growth Plan will also be used by Council to advocate for funding for infrastructure and other initiatives.

How to read the Growth Plan

The Growth Plan is a long-term plan to guide the future of Bannockburn, it includes the following key components:





VISION

In 2050...

New residents and visitors are attracted to Bannockburn as a regional hub due to its distinct identity, affordable lifestyle and local amenity.

The community conveniently accesses the services, employment and education opportunities offered by regional cities via the re-instated passenger services on the Geelong-Ballarat rail line and improved bus connections.

Investment in road and path connections allow people and goods to move around the town and access surrounding urban centres with ease.

Local employment opportunities respond to the town's rural character through an enhanced agricultural sector and diverse industrial precincts.

Bannockburn's unique environmental assets are protected and enhanced, and places of cultural heritage significance safeguarded. Sustainable water use and management is at the forefront of decision making, and water quality in local sources is protected.

Bannockburn's built form is respectful of the natural environment and heritage values. New development responds to climate change by adopting Environmentally Sustainable Design (ESD) principles.

Underpinning the town's growth is a healthy and well-connected community.

PRINCIPLES



PRINCIPLE 1

Encourage diverse and affordable housing in new precincts

- Housing typologies for a diverse population of varying ages and abilities.
- Competitive market that differentiates itself from Geelong and Ballarat.



PRINCIPLE 2

Enhance town character

- Sense of openness.
- Building typology that is responsive to the local context.



PRINCIPLE 3

Build an integrated and safe transport network

- Encourage modal shift by supporting opportunities for active and public transport.
- Maintain strong connections to the broader region.



PRINCIPLE 4

Support a resilient local economy

- Complement the strong agricultural role of Golden Plains.
- Provide local employment where suitable uses are identified.



PRINCIPLE 5

Protect and enhance the natural environment

- Capitalise on Bannockburn Flora and Fauna Reserve and Bruce's Creek.
- Identify new connections for environmental links.



PRINCIPLE 6

Ensure sustainable use and management of water

- Encourage Integrated Water Management (IWM) initiatives.
- Protect the quality of local water sources.



PRINCIPLE 7

Provide essential services and infrastructure

- Community infrastructure that services the local catchment and surrounding townships.
- Implement equitable development contributions mechanisms that enable essential infrastructure.



PRINCIPLE 8

Respect and integrate Wadawurrung heritage and values

- Protect and integrate sites of cultural heritage within the future urban structure.
- Work with Wadawurrung to ensure cultural values inform future built form outcomes.

GROWTH CONTEXT

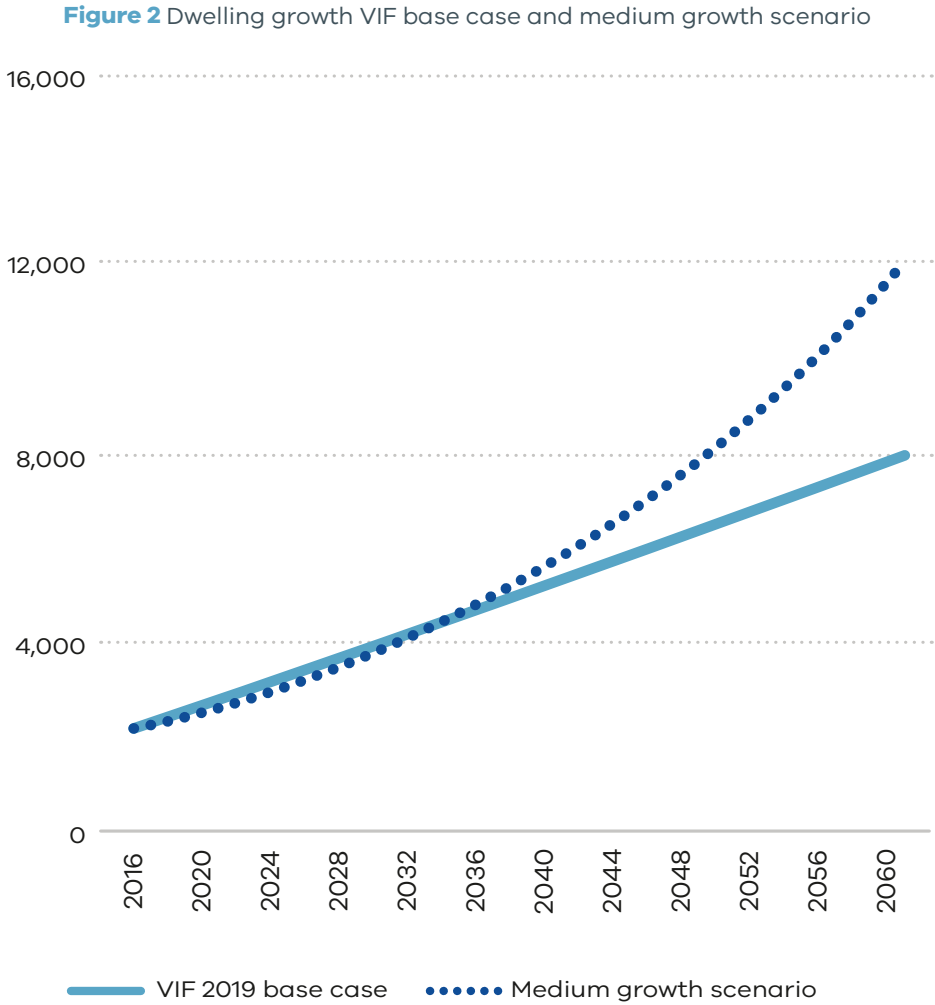
Bannockburn has consistently been one of the fastest growing areas in regional Victoria. Between 2006 and 2011, the annual average population growth rate was 5.8%, between 2011 and 2016 this increased to 6.6% (VIF, 2019). *Victoria in Future* (VIF, 2019) states the 2018 population of Bannockburn was 7,120, this is expected to reach approximately 13,090 by 2036.¹

Population growth rates provided by VIF (2019) are projected to remain positive and high relative to the state, averaging over 3% over the next 30 years. These projections are based on current trends and are considered conservative given the limited zoned supply of residential land available within Bannockburn. Therefore, there is potential for Bannockburn to observe growth rates higher than current trends, stimulated by the development of the Growth Plan.

Bannockburn currently captures a small percentage of the region’s growth and could easily observe higher demand than the prevailing levels.

Figure 2 identifies the total number of dwellings in Bannockburn assuming base case population projections (VIF, 2019) and a medium growth scenario. The medium growth scenario identifies the projected total dwelling requirements, assuming the current population growth rate of approximately 4% is maintained. There are currently approximately 2,500 total dwellings in Bannockburn, the medium growth scenario anticipates an additional 5,500 dwellings will be required to accommodate projected population growth to 2050. A high growth scenario has also been considered, this is discussed in the **Future Growth Options** chapter.

The medium growth scenario has been adopted to support the identification of future growth areas, as discussed in the subsequent chapter.



¹Figures pre-date any known potential impact of Covid-19 on population projections.

Current Drivers

A key component of Bannockburn’s growth is young families, attracted to the region due to the lifestyle and housing affordability. Other growth drivers include:

- Proximity to Geelong and Melbourne.
- Lifestyle destination associated with the town’s rural character.
- Access to education and other community services.
- Proximity to a thriving agricultural industry.

Future Trends

The future trends anticipated to drive growth in Bannockburn’s population are:

- Victoria’s regional areas are generally ageing, however the largest share of Bannockburn’s population growth is occurring in young families. The 0-14 years age group represents the greatest proportion of projected population growth to 2036 (VIF, 2019). The **Housing & Community Infrastructure** chapter discusses the importance of planning infrastructure to support this demographic.
- Approximately 80% of Bannockburn’s working age population travel to Geelong for employment (ABS, 2016). The Growth Plan supports local employment opportunities (see **Economy & Employment** chapter), however it’s expected this trend will continue due to the higher order service provision in Geelong.
- The **Transport & Movement** chapter advocates for the reinstatement of a passenger train service on the Geelong-Ballarat rail line, via Bannockburn. Enabling train services to and from Bannockburn would make the town more desirable to live in and would likely result in increased population growth rates.


additional **5,500 dwellings** required to accommodate projected **population growth to 2050**



Approx **80%** of Bannockburn’s **working age population** travel to Geelong for **employment**

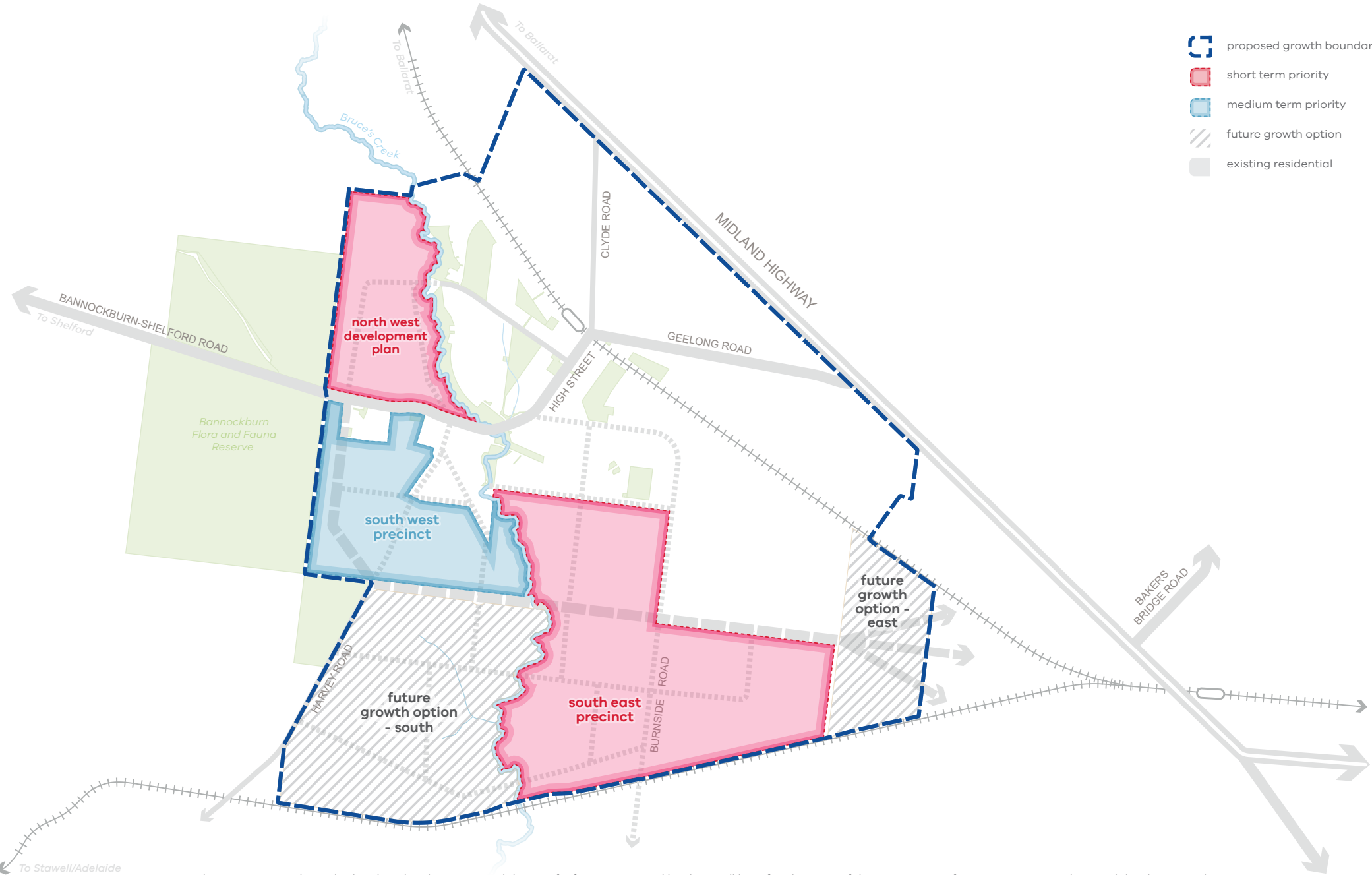


0–14 years age group represents the **greatest proportion** of projected population growth to **2036**



2018 population of Bannockburn was **7,120** ... expected to reach **approximately 13,090** by **2036**





This is a concept plan only, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans

GROWTH AREAS

Proposed Growth Areas

The identification of growth areas allows planning to be aligned with investment and the character of Bannockburn to be enhanced. Guiding development to areas capable of change and away from constraints provides certainty to the community and development industry.

Without designation of new growth areas, liveability and character could be compromised and opportunities for housing and job growth missed. Considered planning will enable sustainable and well-served residential growth.

The Growth Plan identifies three growth areas to accommodate projected population growth rates (see **Growth Context** chapter). The growth areas are identified in **Plan 5 – Proposed Growth Areas**, the estimated growth potential of the three areas is identified in **Table 1**.

The following tasks were undertaken to define and allocate growth areas:

- 1 Identification of Growth Plan Investigation Area.
- 2 Investigation of development constraints.
- 3 Identification of planning principles for the allocation of potential growth areas.
- 4 Nomination of growth areas.

Table 1 Estimated growth potential of proposed growth areas

	Total size (ha)	Developable Land (ha)	Dwellings	Population*
 South East	523	314	3,766	11,109
 North West	176	106	1,267	3,738
 South West	161	97	1,159	3,420
TOTAL	860	517	6,192	18,267

*Assumed 2.95 persons per household as per VIF (2019).

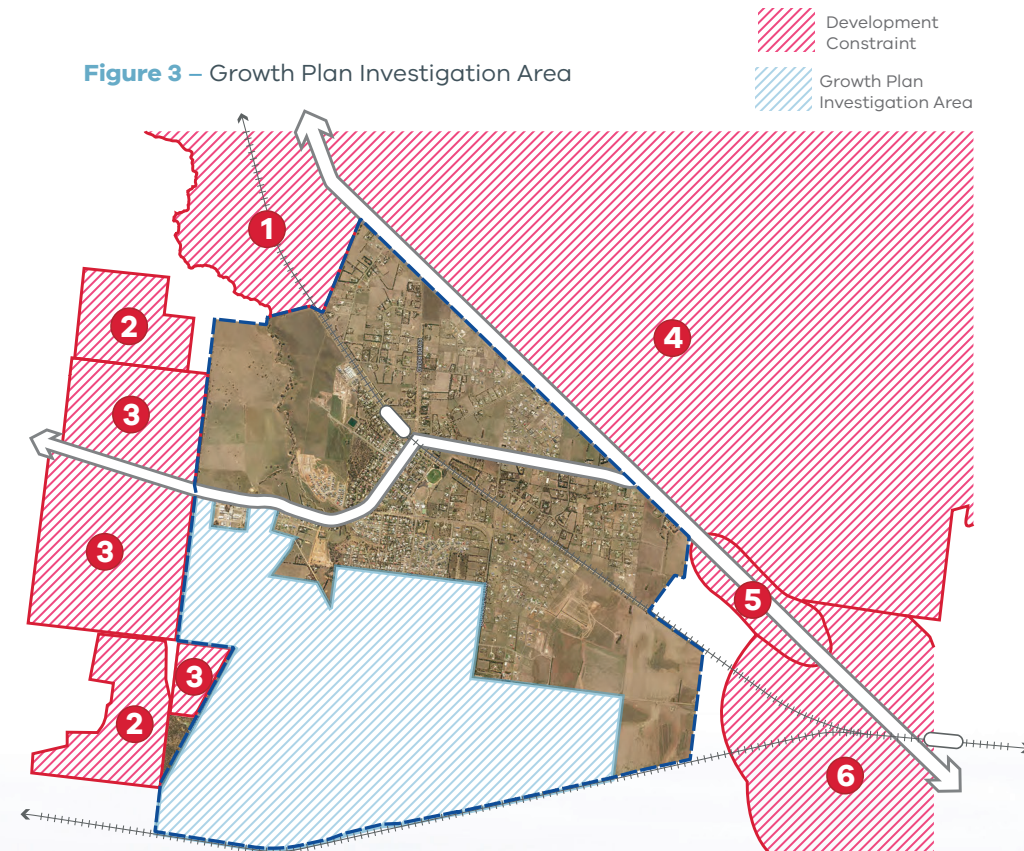
Growth Plan Investigation Area

The Growth Plan Investigation Area was derived from the identification of development constraints. These constraints are identified on **Figure 3** and described below:

- 1 Connectivity constraints imposed by Bruce's Creek, Midland Highway and the railway line.
- 2 Barwon Water infrastructure.
- 3 Bannockburn Flora and Fauna Reserve.
- 4 Rural Activity Zone identifying quality farmland.
- 5 Non-urban break between Gheringhap and Bannockburn.
- 6 Buffer from proposed employment uses at Gheringhap.

Each growth direction was also assessed in the *Strategic Desktop Bushfire Risk Assessment* (2020) to understand the bushfire risk associated with potential growth directions. The assessment concluded that development in the north and west would have a similar bushfire risk to the south. The east was identified as having a lower risk compared to the south.

Figure 3 – Growth Plan Investigation Area



Based on these constraints the most feasible growth direction for the town was identified to the south. Boundaries of the Growth Plan Investigation Area were informed by:

- North – existing urban development.
- East – policy on maintaining a buffer from Bannockburn and proposed business uses at Gheringhap.
- South – railway line.
- West – Bannockburn Flora and Fauna Reserve and Harvey Road.

The North West Development Plan Area was not included within the Growth Plan Investigation Area as it's within the existing Bannockburn settlement boundary. This boundary was established in 2011 by the *Bannockburn Urban Design Framework*. The Growth Plan reaffirms this location as appropriate for urban development.

The South West Precinct is also within the existing settlement boundary but was included as part of the Growth Plan Investigation Area. This is due to its location in the south of the town which presented an opportunity to consider it holistically with other land that was being investigated for urban development.

The Growth Plan Investigation Area provided a boundary for the completion of technical work and targeted engagement with key agencies to determine the allocation of growth areas.

Allocation of Growth Areas

The proposed growth areas have been identified based on clear strategic direction and principles as follows:

- Plan for housing growth over the short, medium and long term.
- Identify growth areas to provide residential land supply to the year 2050.
- Consider the ability for growth to assist in delivering the proposed second arterial road.
- Locate growth to maximise connectedness to the existing Bannockburn Town Centre and community infrastructure.
- Locate growth areas to maintain a cohesive town form.
- Locate growth to maximise the use of existing road infrastructure.
- Identify growth areas based on their ability to be serviced and managed for water supply.
- Consider the ability to deliver proposed drainage infrastructure, particularly constructed waterway corridors.

The three proposed growth areas, the South East Precinct, North West Development Plan Area and South West Precinct are discussed in further detail in the subsequent pages.

Bannockburn South East Precinct

The South East Precinct will deliver housing supply in the short to medium term. The precinct benefits from access to existing servicing infrastructure and proximity to the existing town. The provision of new open space, drainage assets and recreational links, as well as the enhancement of the Bruce’s Creek corridor, will provide a high amenity development with environmental values at the forefront. New retail opportunities and community infrastructure will create an attractive neighbourhood with the potential for diverse housing types.

Overview

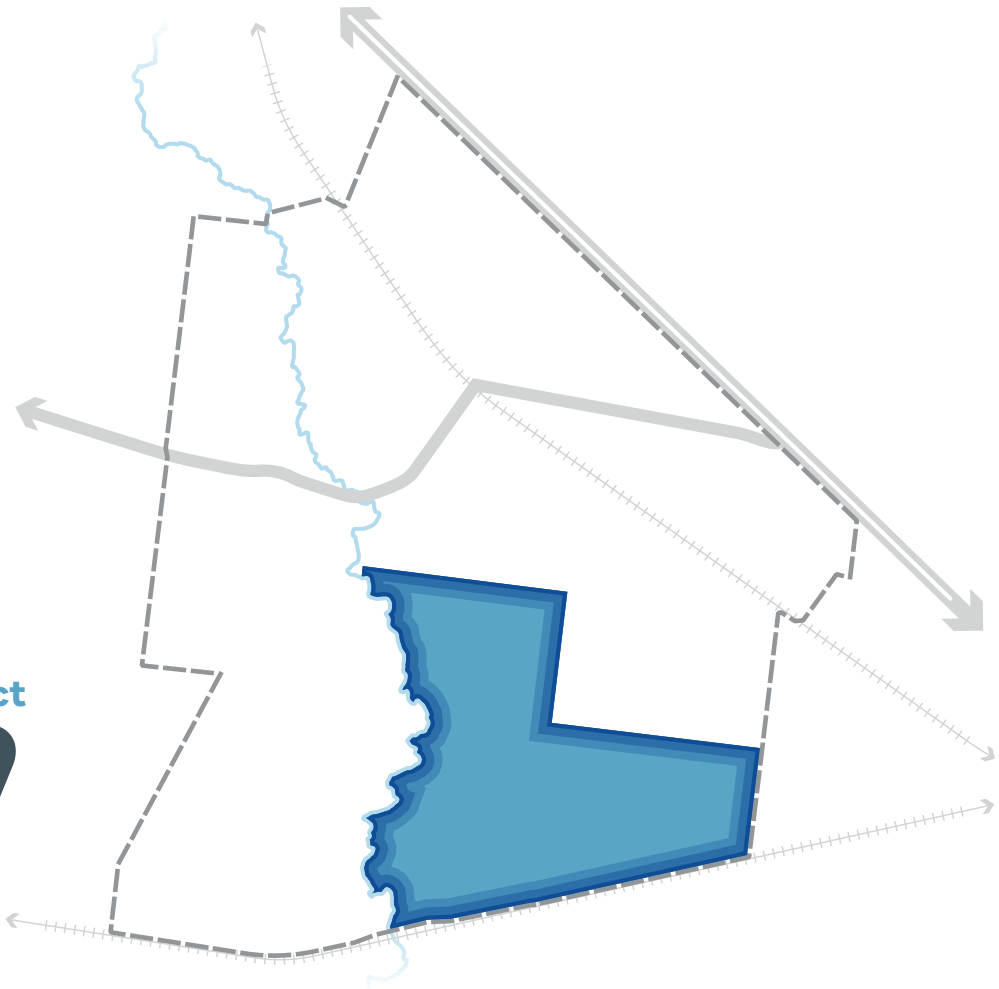
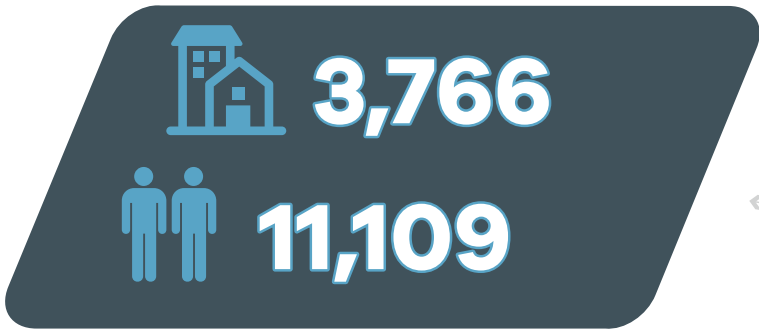
- The South East Precinct is bound by existing urban area to the north, future growth to the east, the railway line to the south, and Bruce’s Creek to the west (see **Plan 5 – Proposed Growth Areas**).
- The delivery of the precinct is a short term priority, contributing residential land supply in proximity to Bannockburn’s existing urban area.
- The precinct will benefit from two waterway corridors, Bruce’s Creek and a proposed constructed waterway. These corridors will create a high amenity environment while fulfilling a drainage function.
- The South East Precinct will be planned for in the short term by the VPA via a precinct structure plan and development contributions plan or infrastructure contributions plan.

Precinct Outcomes

- **Embed Aboriginal Cultural Heritage perspectives**
Protect and enhance Aboriginal Cultural Heritage significance and promote Aboriginal history and culture in the urban landscape.
- **Protect and enhance biodiversity values**
Protect and regenerate the biodiversity values of Bruce’s Creek. Establish a new environmental corridor along the proposed constructed waterway.
- **Plan for a well-serviced community**
Establish a community meeting place with a local activity centre and community infrastructure in a central location. Support medium density housing in proximity to the meeting place.
- **Create an integrated open space network**
Identify a linear open space network connecting Bruce’s Creek, the constructed waterway corridor and the railway corridor in the south.
- **Plan for active transport opportunities**
Enhance the use of Bruce’s Creek as an active transport corridor and provide new active transport links throughout the precinct.
- **Respect Bannockburn’s rural character**
Plan for neighbourhoods with high amenity that respect Bannockburn’s rural character.
- **Plan an appropriate transition to rural areas**
Ensure housing and land uses in rural interface areas are designed to respond to the neighbouring environment.
- **Implement appropriate bushfire risk mitigation measures**
Identify appropriate defendable space and bushfire risk mitigation measures where the precinct interfaces with natural edges.

- **Integrate transport and land use planning**
Provide a range of transport opportunities and minimise conflicts between growth and a potential second arterial road.
- **Protect amenity and minimise land use conflicts**
Ensure buffers and setbacks to agriculture uses and the rail corridor to the south are identified and plan for non-conflicting uses in these buffers.
- **Plan for appropriate uses within easements**
Develop land adjacent to the transmission easement as a key environmental, transport and recreational corridor, subject to approval from AusNet Services.
- **Protect sites of historic heritage**
Identify and project sites of historic heritage significance such as homesteads, farmhouses and drystone walls.
- **Provide community places and services that cater to all**
Deliver flexible spaces for community activities and provide a range of services, including government and Catholic schools.

Bannockburn South East Precinct



North West Development Plan Area

The North West Development Plan Area will provide housing supply in the short term and will benefit from its proximity to the town centre and existing community infrastructure, including the Bannockburn P-12 College and Recreation Precinct. The growth area will hold high amenity and recreation value from its interface with the Bannockburn Flora and Fauna Reserve and the Bruce’s Creek corridor. Milton Street and Bannockburn-Shelford Road will be strengthened as key active travel corridors to the Bannockburn Town Centre.

Overview

- The North West Development Plan Area is bound by Bruce’s Creek to the north and east, Bannockburn-Shelford Road to the south and Bannockburn Flora and Fauna Reserve to the west (see **Plan 5 – Proposed Growth Areas**).
- Increased connectivity over Bruce’s Creek, will ensure convenient access from the precinct to the Bannockburn Town Centre and existing community infrastructure.
- The north West Development Plan Area will be planned for in the short term via a development plan. Infrastructure contributions will be negotiated by an agreement under Section 173 of the Planning and Environment Act 1987. A development plan and Section 173 agreement are proposed due to the land ownership pattern and the role of Council as the Planning Authority.

Precinct Outcomes

- **Embed Aboriginal Cultural Heritage perspectives**
Protect and enhance Aboriginal Cultural Heritage significance and promote Aboriginal history and culture in the urban landscape.
- **Improve connectivity over Bruce’s Creek**
Provide a bridge on Milton Street and shared path crossing points over Bruce’s Creek to allow access to the Bannockburn P-12 College, the Recreation Precinct and the Bannockburn Town Centre.
- **Plan for active transport opportunities**
Enhance the use of Bruce’s Creek as an active transport corridor and provide new active transport links throughout the growth area.
- **Provide appropriate management of hazards**
Identify appropriate defensible space and bushfire risk mitigation measures where the precinct interfaces with natural edges.
- **Protect and enhance biodiversity values**
Protect and enhance the function of and connectivity between the key environmental assets of Bruce’s Creek and Bannockburn Flora and Fauna Reserve.
- **Create an integrated open space network**
Provide new open space and drainage assets that provide recreational and environmental value.

- **Plan an appropriate transition to rural areas**
Ensure housing in rural interface areas is designed to respond to the neighbouring environment.
- **Protect amenity and minimise land use conflicts**
Ensure buffers and setbacks to agricultural uses and Barwon Water infrastructure are identified and plan for non-conflicting uses in these buffers.
- **Maintain sightlines**
Provide an urban structure that protects key sightlines from the precinct to the Bannockburn Flora and Fauna Reserve.
- **Protect sites of historic heritage**
Identify and protect sites of historic heritage significance such as homesteads, farmhouses and drystone walls.

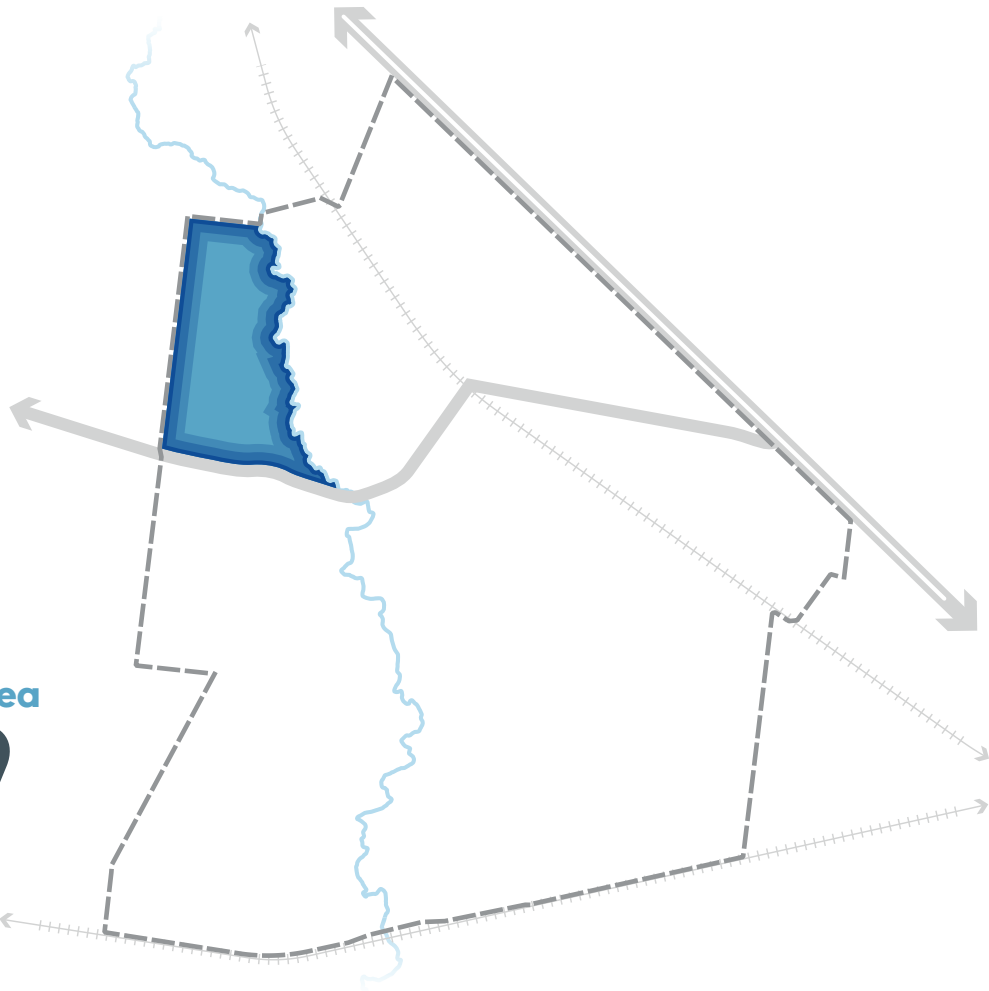
North West Development Plan Area



1,267



3,738



Bannockburn South West Precinct

The South West Precinct will deliver housing and employment land in the medium to long term and will benefit from connections to new infrastructure and facilities in the South East precinct. Improved connections between Bruce’s Creek and the Bannockburn Flora and Fauna Reserve will connect new residents with environmental values and recreational opportunities. The precinct will provide employment opportunities with the expansion of the existing Bannockburn Business Park.

Overview

- The South West Precinct is bound by Bannockburn–Shelford Road and the existing Bannockburn Business Park to the north, Bruce’s Creek to the east, the proposed arterial road to the south and the Bannockburn Flora and Fauna Reserve to the west (see **Plan 5 – Proposed Growth Areas**).
- The South West Precinct will provide employment land through the expansion of the existing Bannockburn Business Park, providing local employment opportunities.
- Environmental values and recreational opportunities will be central to the South West Precinct. Connections to the Bannockburn Flora and Fauna Reserve, Bannockburn Lagoon, and Bruce’s Creek will be complemented by the provision of new open space and environmental links.

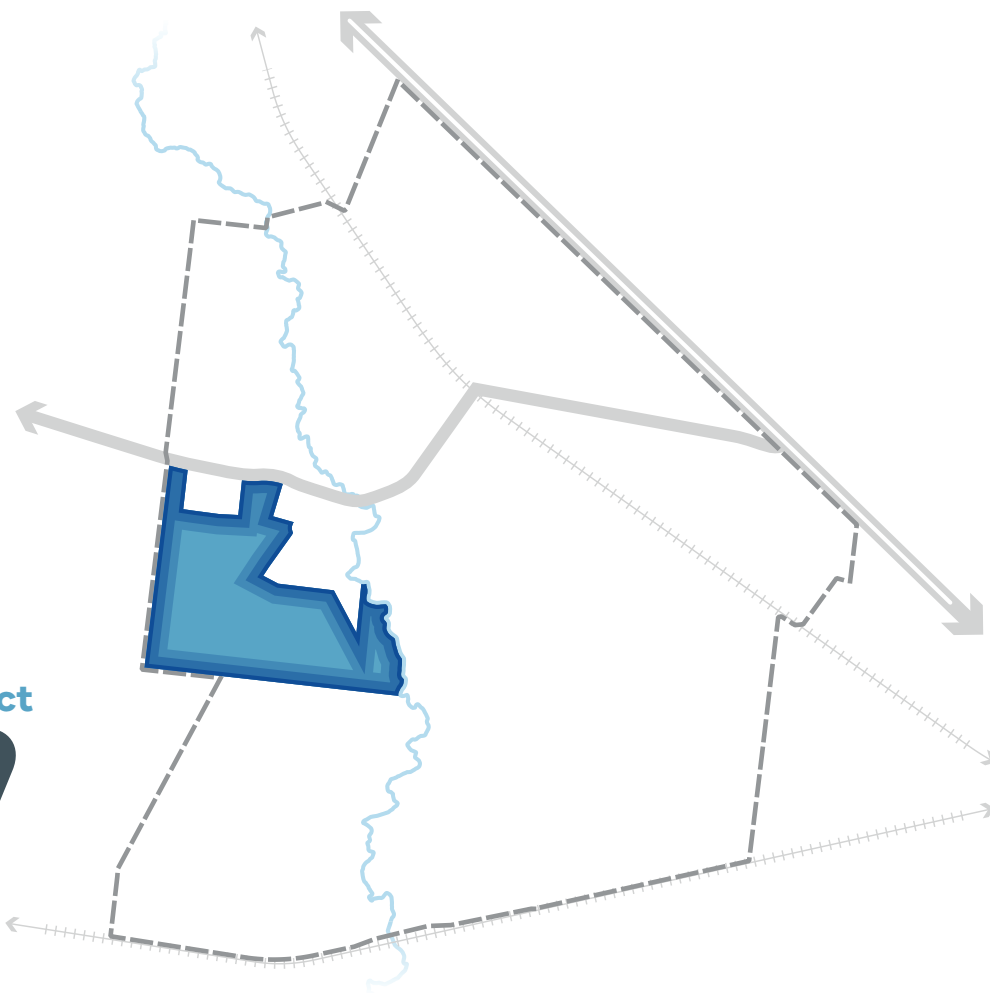
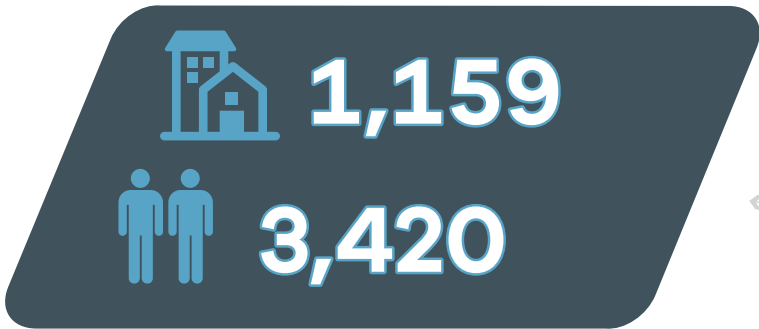
- The South West Precinct will be planned for in the medium term by the VPA via a precinct structure plan and development contributions plan or infrastructure contributions plan.

Precinct Outcomes

- **Protect sites of Aboriginal Cultural Heritage**
Protect and enhance Aboriginal Cultural Heritage significance and promote Aboriginal history and culture in the urban landscape
- **Protect and enhance biodiversity values**
Protect and enhance the function of and connectivity between the key environmental assets of Bruce’s Creek, Bannockburn Flora and Fauna Reserve and the Bannockburn Lagoon.
- **Provide appropriate management of hazards**
Identify appropriate defensible space and bushfire risk mitigation measures where the precinct interfaces with natural edges.
- **Plan for appropriate uses within easements**
Develop land adjacent to the transmission easement as a key environmental, transport and recreational corridor, subject to approval from AusNet Services.
- **Plan for active transport opportunities**
Enhance the use of Bruce’s Creek as an active transport corridor and provide new active transport links throughout the precinct.
- **Integrate transport and land use planning**
Provide a range of transport opportunities and minimise conflicts between growth and a potential second arterial road.

- **Improve connectivity over Bruce’s Creek**
Provide road and shared path crossing points over Bruce’s Creek to allow access to the existing town and the South East Precinct.
- **Plan for industrial expansion**
Expand the Bannockburn Business Park and plan for appropriate buffers between residential and industrial uses.
- **Maintain sightlines**
Provide an urban structure that protects key sightlines from the precinct to the Bannockburn Flora and Fauna Reserve.
- **Protect sites of historic heritage**
Identify and project sites of historic heritage significance such as homesteads, farmhouses and drystone walls.
- **Investigate suitable use for the land adjacent to the Bannockburn Lagoon**
Investigations to consider the extent and quality of biodiversity, industrial buffers and access. Uses could include residential, industrial and/or credited open space.

Bannockburn South West Precinct



FUTURE GROWTH OPTIONS

As identified in the **Growth Context** chapter, the medium growth scenario identifies projected dwelling requirements, assuming the current population growth rate of approximately 4% is maintained (VIF, 2019).

Given the time and effort required to undertake strategic planning for a regional town, allowing for a greater level of growth is supportable and recommended. This will ensure that Bannockburn is well placed in the likely event that a higher level of growth is realised following the delivery of the Growth Plan. The consequences of not planning adequately for growth include:

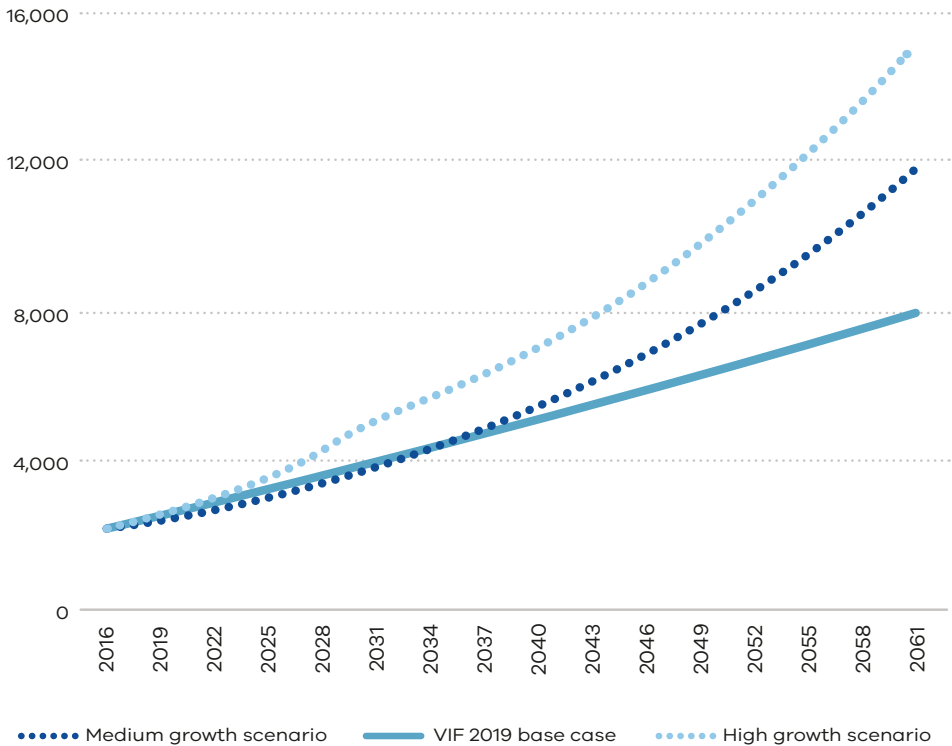
- Land and housing shortages, leading to pressure on housing affordability.
- Restricted housing choices for future residents.
- Potential impacts on the town’s competitiveness and economic growth.
- Requirement to undertake further strategic planning with cost and time consequences.

If the average population growth rate of 6.6% experienced between 2011 and 2016 was to return, the proposed supply identified in the Growth Areas chapter would be exhausted prior to 2050.

Figure 4 identifies a high growth scenario, which projects dwelling requirements if the population growth rate were to return to the rates experienced between 2011 and 2016. Under this high growth scenario, approximately 7,600 additional dwellings are required to accommodate Bannockburn’s population growth to the year 2050.

Two future growth options are identified to meet long term supply needs, future growth option south and east (see **Plan 5 – Proposed Growth Areas**). There are a number of pre-conditions that will need to be met prior to these areas undergoing a strategic planning process. The two future growth options are discussed in further detail in the subsequent pages.

Figure 4 Dwelling growth VIF base case, medium and high growth scenario



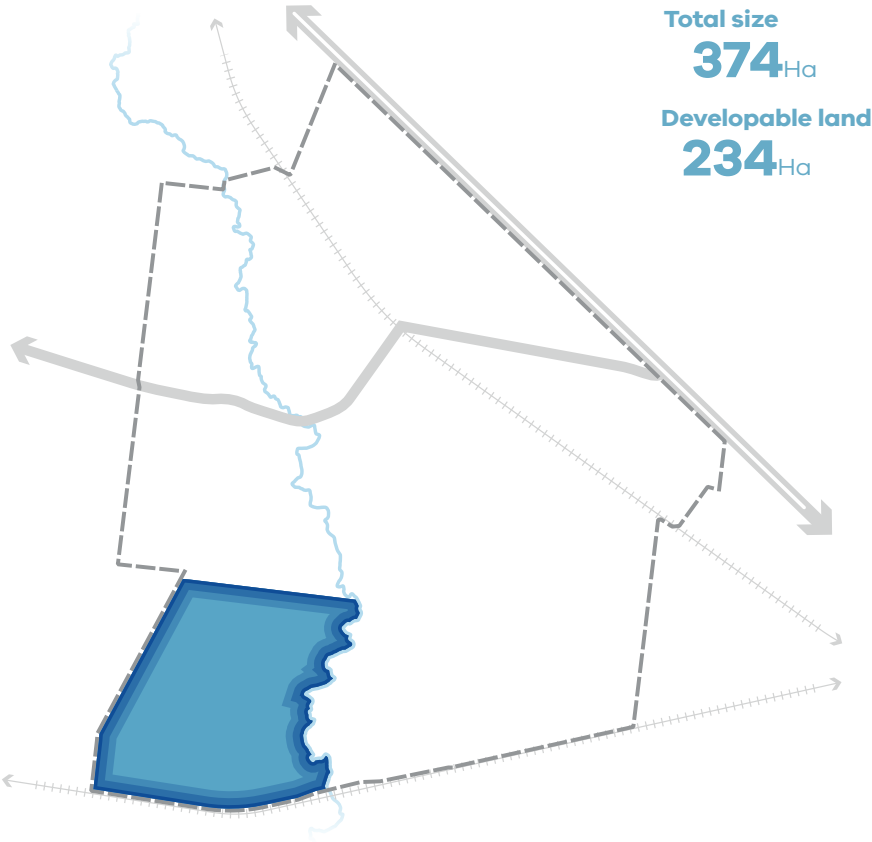
Future Growth Option – South

A future growth option in the south of the town is a suitable location for long term residential land supply (see **Plan 5 – Proposed Growth Areas**). This land was confirmed as suitable for urban development as part of the investigation completed for the Growth Plan Investigation Area (see **Growth Areas** chapter). It is best suited as a long-term supply option as it is not currently connected to existing urban development. The development area is considered appropriate for urban development as:

- It will be an extension of the existing urban area once the South West Precinct has developed.
- It benefits from existing road connections including Harvey Road and the proposed extension of Ormond Road.
- It will benefit from the delivery of the proposed second arterial road.
- It will have access to employment opportunities generated as a result of the Bannockburn Business Park expansion.
- It will benefit from access to active transport opportunities along Bruce’s Creek established by the development of the South West Precinct.

A strategic planning process will need to take place at the appropriate time to address constraints and opportunities. This land will not undergo a strategic planning process for urban development until a number of pre-conditions have been met:

- An investigation that confirms connection to servicing infrastructure can occur. This will likely be subject to South West Precinct bringing forward this necessary infrastructure.
- The land is needed to meet land supply needs, noting that state planning policy states that a minimum of 15 years of land supply should be planned for.



Future Growth Area – South

7,944

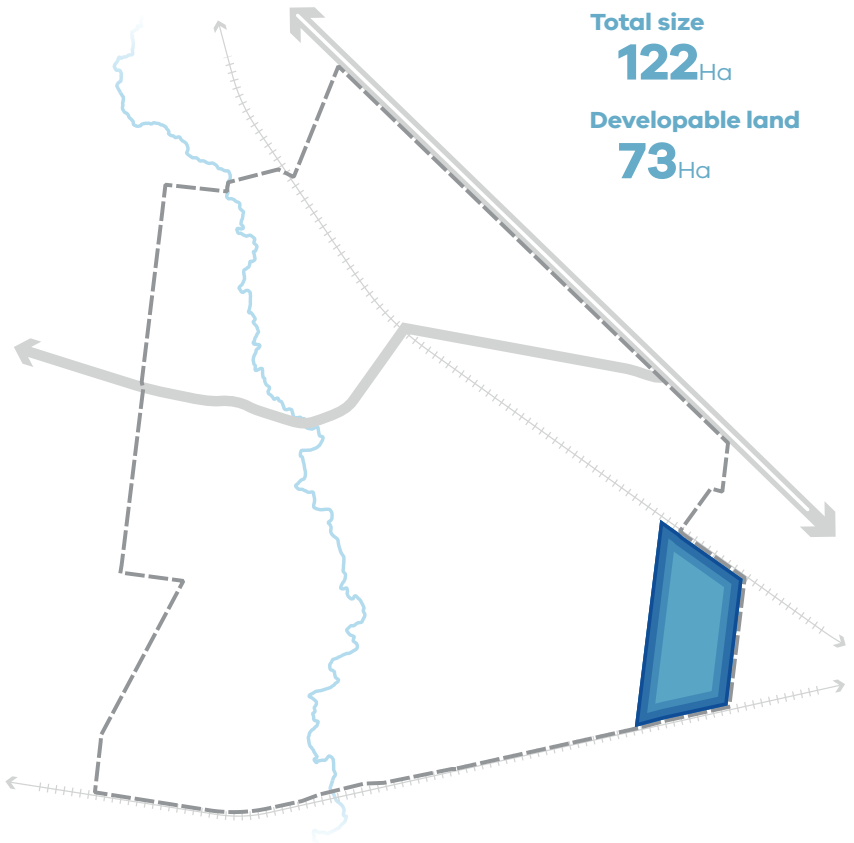
2,693

Future Growth Option – East

A future growth option in the east of the town is considered 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 (see **Plan 5 – Proposed Growth Areas**). This lands inclusion ensures a growth boundary for Bannockburn that is consistent with local policy, to maintain a separation distance of 1km between Bannockburn and Gheringhap (see discussion on Growth Plan Investigation Area in the **Growth Areas** chapter).

A strategic planning process will need to take place at the appropriate time for this area to address constraints and opportunities. In particular, a mapped wetland exists within this area which is potential Seasonal Herbaceous Wetland (Freshwater) of the Temperate Lowland Plains, these are nationally listed and have protection under the EPBC Act. This land will not undergo a strategic planning process for urban development until a number of pre-conditions have been met:

- An investigation that confirms servicing infrastructure can be connected. This will likely be subject to the South East Precinct developing and bringing forward this necessary infrastructure.
- Resolution of the proposed arterial road alignment and where this road will connect to the Midland Highway or at the Bannockburn-Fyansford Road roundabout.
- The land is needed to meet land supply needs, noting that state planning policy states that a minimum of 15 years of land supply should be planned for.



Future Growth Area – East

2,591

878

THEMES



The following section contains four key themes that provide further guidance for planning the proposed growth areas. The four themes are:

- **Housing & Community Infrastructure**
- **Economy & Employment**
- **Environment & Water**
- **Transport & Movement**

The themes have been developed based on input from community engagement and consultation with agencies and key stakeholders. Each theme represents a significant land use topic to support Bannockburn’s growth. Each theme contains Objectives stating the aspirations of Council and the community. Strategies are identified to support the achievement of each objective, and Actions underlie the strategies to provide key stakeholders with tangible steps for implementation. There are two types of action categories to support each theme - growth area and advocacy. The growth area actions outline projects that will be required to take place as part of the proposed precinct structure planning and development planning processes. The advocacy actions are projects that are generally beyond the immediate scope of the growth areas and may provide a broader benefit. Many of these actions are related to securing funding for infrastructure or service provision. Council is generally the responsible stakeholder for implementing the advocacy actions.

Each Theme includes icons to represent the principles that are being implemented by the strategies and actions within that chapter.

Each action is provided with a timing priority as follows:

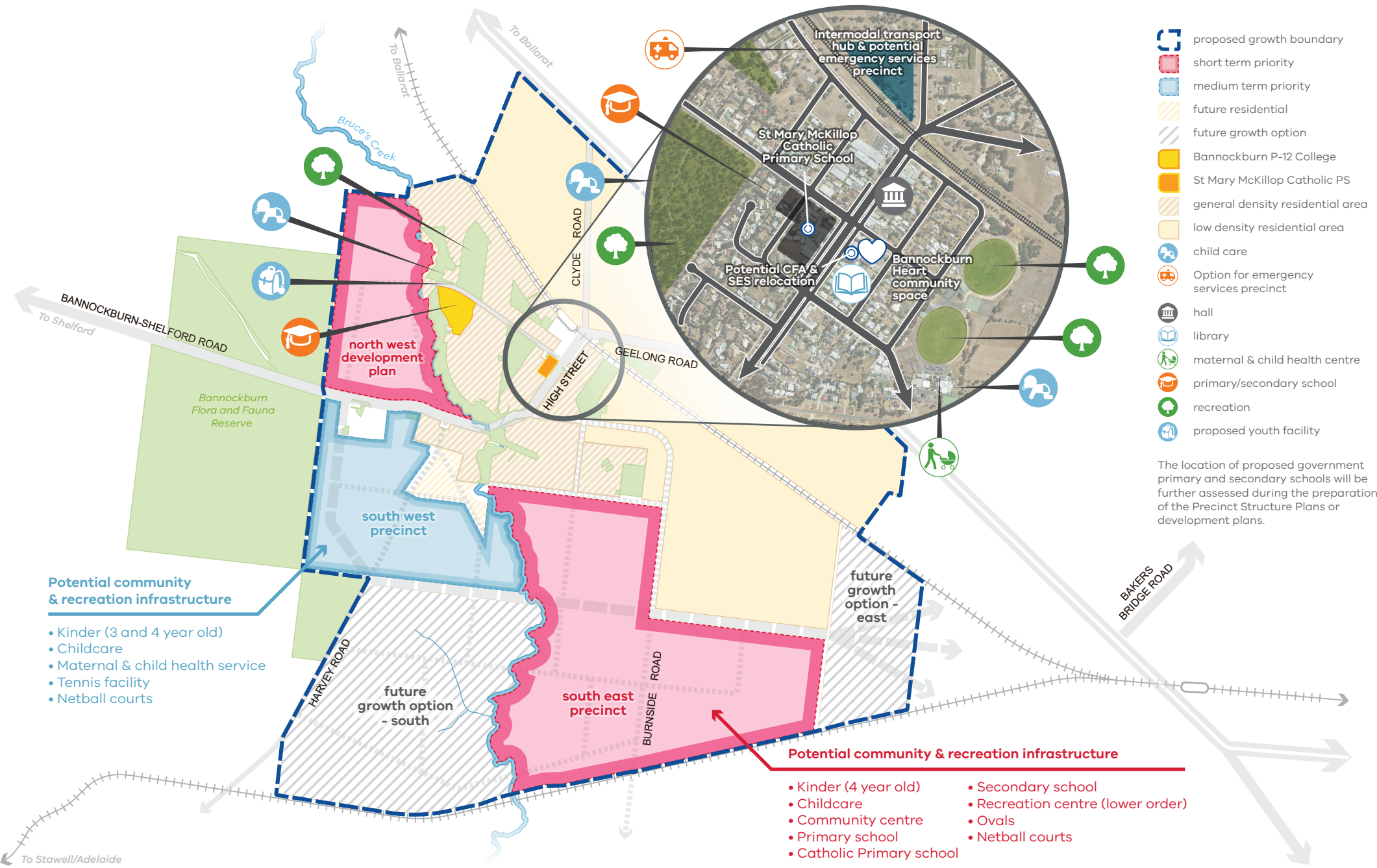
Timing Key

immediate/ongoing: next **12 months**

short term: **1–5 years**

medium term: **5–10 years**

long term: **10+ years**



This is a concept plan only, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans

THEME 1 HOUSING & COMMUNITY INFRASTRUCTURE

Bannockburn will accommodate a growing community by providing a timely supply of varied housing options to meet a range of needs. New homes will have access to shops and transport infrastructure, with concentrated development around activity centres and services. Bannockburn will be a resilient community that provides housing for vulnerable populations. Bannockburn's unique rural character will underpin future development, which will respect and contribute to the town's sense of openness and space. Community infrastructure and recreation facilities will enable a healthy, active and connected lifestyle for residents of all ages. Public spaces will continue to enable safe interaction that strengthen Bannockburn's vibrant sense of community.

Objectives

- Plan for vibrant new communities that enjoy a greater choice of housing options to accommodate projected population growth to 2050.
- Encourage increased dwelling density in locations close to infrastructure and services.
- Create growth areas with high amenity that consider the town's existing rural character.
- Provide community infrastructure and recreation facilities to support an inclusive, healthy and socially connected community.



Bannockburn
P-12 College



Housing Diversity and Typology

In 2016, 99.3% of all housing stock in Bannockburn comprised of detached houses (ABS, 2016). It is anticipated that young families will continue to be a key component of Bannockburn’s population growth, therefore sustaining the demand for detached housing supply. As the population grows and ages providing diverse housing will provide choice, allow the community to age in place, and provide affordable housing options.

There is considerable low-density housing supply in the north and east of the town, with lots generally ranging between 1 and 3ha (See **Plan 6 – Housing & Community Infrastructure**). These areas have a rural character with characteristics such as gravel footpaths, large front set-backs to dwellings and swale drainage.

The other main component of Bannockburn’s existing housing typology is new subdivisions, located to the north-west and south of the Bannockburn Town Centre (See **Plan 6**). On average, lot sizes in these areas are approximately 700 sqm.

It is anticipated new growth areas will continue to be predominately detached Housing, similar to the densities developed in newer greenfield growth areas. There is an opportunity to facilitate medium dwelling density, in locations close to services and transport nodes. At the interface of residential development and farming land larger lot sizes, or another appropriate measure, should be encouraged to allow an appropriate transition and to mitigate land use conflict.

Affordable and Social Housing

Housing in Golden Plains is generally considered affordable relative to nearby Geelong and metropolitan Melbourne, which has been a key reason for its high rates of population growth. However, pressure on house prices may increase if there is insufficient land released for development.

The *G21 Affordable Social Housing Paper* (2019) adopts the following definition of affordable housing:

Affordable housing is that which reduces or eliminates housing stress for low-income and disadvantaged families and individuals in order to assist them with meeting other essential basic needs on a sustainable basis, whilst balancing the need for housing to be of a minimum appropriate standard and accessible to employment and services.

It is important for housing in Bannockburn to remain affordable as it grows. This can largely be achieved by ensuring a diverse supply of housing to meet different needs, and through the release of residential land in growth areas.

Provision of social housing could ensure housing options remain diverse and ensure vulnerable members of the community are provided an opportunity to live in Bannockburn. The potential to explore the provision of social housing in Bannockburn is supported by the following demographic statistics (VIF, 2019):

- There is currently no social housing in Bannockburn.
- Approximately 16% of households are in the lowest income quartile.
- Approximately 44% of renters identified paying rent in the medium highest quartile.

Council should work with DHHS and the G21 Regional Alliance to understand the need and potential locations for this type of housing. Social housing will be more viable in Bannockburn as the population grows and more services and public transport options become available for the community.

Homes for Victorian’s is the policy that outlines the Victorian Government’s response to the housing affordability crisis in Victoria. It identifies the opportunity for inclusionary housing in major developments, particularly where value uplift will occur through rezoning. This opportunity should be explored as part of future rezoning processes.

Neighbourhood Character

Due to Bannockburn’s rural setting, it is important for residential development to be differentiated from other urban areas such as Geelong. There is currently a lack of design guidance, resulting in inconsistent housing typology and materiality across the town.

Growth in Bannockburn should be contained within the town boundary and not encroach on surrounding towns. This serves to protect the rural character of smaller towns in the vicinity. A rural-urban break should be retained to maintain visual continuity when moving in and out of the town. Gateways to the town can also serve to reinforce the rural nature of the town.

The community identified the protection of Bannockburn’s rural character as the most important issue when considering the town’s growth. Housing design guidelines can be developed and implemented in future precinct structure plans to ensure character is considered as part of future subdivisions. Some elements to consider in developing design guidelines include:



built form (e.g. architectural characteristics, height, setbacks, roof form, materiality)



lot sizes



open space



street tree planting and canopy cover



vegetation and landscaping



interface with street (e.g. fencing, driveways)



environmental sustainability (e.g. orientation, solar panels, rainwater tanks)



street and verge widths



footpaths (e.g. materiality, layout)

Community and Active Recreation Infrastructure

Community and active recreation facility provision must consider Bannockburn’s role in providing services and amenities for surrounding rural communities, as well as the existing and future Bannockburn community. Council is currently preparing a shire-wide *Community Service and Infrastructure Plan* (CSIP). This plan will provide direction on community and active recreation infrastructure required to support Bannockburn’s growth.

Prior to the completion of the CSIP, a high-level audit of community and active recreation infrastructure has been completed, which included engagement with Council and service providers. This assessment provides an indication of what infrastructure may be required to support Bannockburn’s growth in the short and medium term. The recommendations from this assessment are identified in **Tables 2** and **3** and **Plan 6 – Housing & Community Infrastructure**.

The high-level audit of community infrastructure was informed by benchmark provision ratios. The high level audit factored in timing of delivery based on short, medium and long term population growth. As outlined by Action 1.5 of the Growth Plan detailed assessments on community infrastructure provision and delivery will need to be completed at the PSP or development plan stage to define community infrastructure provision as well as determine funding arrangements.

Community infrastructure delivery should also consider the need for spaces for community events such as graduations, weddings, markets or performances.

There is land set aside for an aquatic facility in Councils existing recreation precinct in the north-west of the town. There is no Council budget currently allocated for the delivery of this facility, but as the population grows there will be additional demand. A feasibility study will need to take into consideration the provision of pools by private providers or by schools, such as the plan for St Mary MacKillop Primary School to develop a 25-metre pool and swim centre.

Further investigation into community and active recreation infrastructure provision will be undertaken as part of planning for the proposed growth areas and will be informed by the CSIP. For the purpose of school provision, this will require an understanding of demographic information relating to school-aged cohorts (ages 5 – 11 and 12 – 17).

Bannockburn relies on Geelong for some higher order community infrastructure such as hospitals and higher education. Improved public transport connections to Geelong are an important enabler of access to community infrastructure. Refer to the **Transport and Movement** chapter for further information on public transport.

There are a number of allied health services delivered by other providers in Bannockburn. For example, Barwon Health delivers services such as speech pathology, dietetics and podiatry services. As the population grows, increasing access to health and community services will be important. As identified in **Table 4**, the existing Bannockburn Surgery is investigating a potential expansion. The provision of new health and community services should be encouraged in the existing Bannockburn Town Centre or in future town centres as defined by the Growth Plan.

Table 2 Potential community infrastructure

Infrastructure	Potential provision	Principles for delivery
Kindergarten (4 year old program)	Short term	Community facilities (schools, community centres, active recreation) generally should be co-located with each other and close to a town centre. Community facilities should be linked to the walking and cycling network and the public transport network. Service provider siting standards / design guidelines should be considered. Community centres should include flexible spaces to meet changing demographic needs over time. Primary and secondary schools should be located on connector roads that are bus capable. Ensure that the proposed government primary schools are co-located with a community centre that incorporates a kindergarten
Kindergarten (3 and 4 year old program)	Medium term	
Day Care facility	Provision required in the short and medium term	
Maternal and Child Health facility	Expansion of existing facility or provision of additional facility in medium to long term	
Schools	Short to medium term – provision ratios indicate that up to three government primary schools, and potentially an additional government secondary school, in addition to any catholic and/or independent schools, subject to investigation with service providers. The Catholic Education Office has requested for a 3ha primary school site in the South East precinct.	
Level 1 or 2 Community Centre	Short term	

Table 3 Potential recreation facilities

Infrastructure	Potential provision	Principles for delivery
Indoor Recreation Centre (lower order)	Short term	Consider co-location with schools and other community facilities to support community functions. Consider Water Sensitive Urban Design principles and the use of recycled water for irrigation where possible. Consider the provision of other community uses such as community gardens. Council’s Sport and Active Recreation Strategy 2020-2030 (2020) identifies principles for sport and active recreation provision.
Aquatic facility	Medium to long term	
Netball courts	Short to medium term	
Tennis courts	Medium term	
Ovals	Short to medium term	

*Timing: Ongoing (immediate or on an ongoing basis), short-term (0 – 5 years), medium-term (5 – 10 years) and long-term (10+ years).

Community Services

The Bannockburn community accesses higher order health and community services in Geelong or other large centres. **Table 4** identifies the existing local community health services available in Bannockburn.

Table 4 Existing health services

Facility	Location	Notes
Bannockburn Dental Clinic	Unit 4, 13 High Street	Privately operated
Bannockburn Pharmacy	6 High Street	Privately operated
Bannockburn Physiotherapy Clinic	9 High Street	Operated by Corio Bay Health
Next Step Exercise Physiology	71 Holder Road	Privately operated
Bannockburn Surgery	16 High Street	Privately operated. There are plans for an expansion of this facility on an adjacent site.
Golden Plains Medical Centre	59 Geelong Road	Privately operated
Winks Eyecare	Unit 2 7 High Street	Privately operated

Emergency Services

The State Emergency Services (SES) Bannockburn Unit and Country Fire Authority (CFA) Fire Station are both located on 25 High Street. Council is proposing both the SES and CFA be relocated to a new emergency services precinct to enable Stage 2 of the Bannockburn Heart project to be completed. Bannockburn Heart is a community play space with water play in the centre of Bannockburn.

Council has identified land that could be used for a future emergency service precinct (See **Plan 6 – Housing and Community Infrastructure**) It is proposed this location will also include an intermodal transport hub to support the potential re-instatement of the Bannockburn train station (see **Transport & Movement** chapter).

Considering the proposed growth in the south of the town, the best location for an emergency services precinct should be re-considered in consultation with relevant agencies. With the current site (identified on **Plan 6**) considered as an option. The CFA requires a site of at least 4000m² with adequate access and egress and allows for CFA specific operational purposes. If the emergency services precinct does not meet these requirements, an alternative site should be investigated in consultation with the CFA. Ambulance and police services also operate out of Bannockburn. These services may need to be expanded as the population grows.

Strategies – Housing

- 1 Identify and stage the delivery of residential growth areas.
- 2 Provide for a range of densities that enable a mix of housing types and sizes.
- 3 Ensure new development considers and adds to Bannockburn’s rural character.
- 4 Investigate the need for affordable and social housing provision in existing and new residential areas.

Strategies – Community Infrastructure

- 5 Plan for community infrastructure that responds to community needs now and into the future.
- 6 Ensure new community infrastructure is co-located with other community uses in locations with access to walking, cycling and public transport infrastructure.
- 7 Facilitate improved access to local health and social services.

Housing & Community Infrastructure Actions

Table 5 Housing & community infrastructure actions – growth areas

Action number	Related strategies	Project	Timing*	Responsibility
1.1	1, 2, 3, 4	Housing supply Prepare a Precinct Structure Plan and Development Contributions Plan or Infrastructure Contributions Plan for the Bannockburn South East Precinct.	Short	VPA
1.2	1, 2, 3, 4	Housing supply Prepare and implement a Development Plan and agreement under Section 173 of the Planning and Environment Act 1987 for the Bannockburn North West Development Plan Area.	Short	Proponent & Council
1.3	1, 2, 3, 4	Housing supply Prepare a Precinct Structure Plan and Development Contributions Plan Infrastructure Contributions Plan for the South West Precinct.	Medium	VPA
1.4**	1, 3	Neighbourhood character Prepare housing design guidelines to define preferred built form and character outcomes.	Short/ Medium	VPA & Council
1.5**	5, 6, 7	Community infrastructure Prepare community infrastructure assessments that consider the recommendations of the Community Service and Infrastructure Plan (CSIP).	Short/ Medium	VPA, Council, DET & Catholic Education Office
1.6**	1, 4	Social and affordable housing Explore opportunities to require social and affordable housing provision as part of rezoning processes.	Short/ Medium	VPA & Council

Table 6 Housing & community infrastructure actions – advocacy

Action number	Related strategies	Project	Timing*	Responsibility
1.6	4	Social housing Work with the DHHS to investigate the need for social housing as the population grows.	Ongoing	Council, DHHS & G21 Regional Alliance
1.7	4	Affordable housing Work with registered housing organisations and providers to investigate the needs and opportunities to deliver affordable housing.	Ongoing	Council & DHHS
1.8	7	Health Advocate for the provision of additional healthcare facilities in the existing town centre and future activity centres	Ongoing	Council & DHHS
1.9	7	Emergency services Work with relevant agencies to determine an appropriate location for an emergency services precinct.	Ongoing	Council

*Timing: Ongoing (immediate or on an ongoing basis), short-term (0 – 5 years), medium-term (5 – 10 years) and long-term (10+ years).

** In relation to the North West Development Plan Growth Area, planning for this area in the short term is independent of these actions unless these actions have been completed or guidance is in place at the time of any rezoning



* NOTE:

The term arterial is used as a description of the roads 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.



This is a concept plan only, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans

THEME 2 ECONOMY & EMPLOYMENT

Bannockburn's economy supports local and regional employment opportunities that leverage the towns context.

Bannockburn will continue to benefit from increased local employment opportunities and will build upon its strategic role in supporting southern Golden Plains towns, and the G21 Region.

The local economy will be strengthened through the provision of additional industrial and retail opportunities. The Bannockburn Town Centre will continue to be the higher order town centre serving the region, with a new local town centre identified in the south of the town to support the growing population.

Bannockburn will benefit from its strategic location and will build upon opportunities provided by its agricultural context and proximity to Geelong by encouraging investment in the Gheringhap Employment Precinct and the Golden Plains Food Production Precinct.

Objectives

- Encourage investment in the Gheringhap Employment Precinct as a strategic location for regionally significant employment and economic growth.
- Encourage investment in the Golden Plains Food Production Precinct to enhance the local economy and provide local jobs.
- Plan for additional industrial land within Bannockburn that responds to local needs and considers potential amenity impacts.
- Continue to focus investment and improve the amenity of the existing Bannockburn Town Centre as the primary activity centre.
- Plan for an additional retail centre to encourage walkable neighbourhoods and local employment.
- Protect and build upon agricultural opportunities by preventing land-use conflicts between adjoining and nearby farming uses and proposed urban uses.



Industrial Land

Bannockburn currently has a relatively low level of industrial land provision compared to other comparable regional centres. Recent trends in the uptake of industrial land in Bannockburn show there is demand for additional supply, primarily supporting local demand needs. At a minimum, approximately 20ha of additional industrial land should be provided to bring Bannockburn in line with other towns of a similar size.

Local industrial land in Bannockburn is currently provided by the town’s business park adjacent to the South West Precinct. An expansion of this business park is proposed to address local industrial supply needs (See **Plan 7 – Economy & Employment**).

Council has expressed a desire to plan for additional industrial land in the short term. An expansion of the existing business park may be delivered independently of the precinct structure plan process for the South West Precinct, if conditions allow it. This potential early delivery will need to be carefully planned to ensure it does not compromise the broader outcomes of the South West precinct, particularly amenity of future residents and infrastructure provision.

In response to the location of the business park expansion and its proposed interface with residential development (existing and proposed), an appropriate land use zone should be considered at the detailed planning stage to minimise potential land use conflicts. The Industrial 3 Zone should form part of this consideration. The interface with the Bannockburn Flora and Fauna Reserve also needs to be considered at the detailed planning stage in relation to bushfire risk mitigation and protection of environmental values

Additional land serving regional industrial needs will also be gained from the development of the Gheringhap Employment Precinct (See **Plan 7**). This opportunity was established in the *Gheringhap Structure Plan* (2012) and will provide residents an employment and industrial hub close to Bannockburn. Gheringhap benefits from strategic transport connections and proximity to Bannockburn and Geelong.

Private investment is required for the development of this proposed precinct to be realised.

Future industrial land in Bannockburn should be carefully planned to protect amenity and should integrate with transport infrastructure to support mobility and optimise commutes.

Bannockburn Town Centre

The Bannockburn Town Centre (Town Centre) along High Street and adjacent streets serves the town’s local retail and commercial needs and provides some higher-level services (see **Plan 7 – Economy & Employment**).

The community highlighted limited retail options in the town as a significant concern when considering growth. The Town Centre will continue to serve as the primary activity centre for Bannockburn, even as the population grows and alternative retail locations are provided. The role of High Street will be strengthened by population growth and supported by design work, retail expansion, transport improvements and public works.

Plan 7 identifies opportunities for the Town Centre such as an expansion of the existing commercial area and the redevelopment of the existing Bannockburn Plaza site. The approved re-development of the Bannockburn Plaza will provide current and future residents a full-line supermarket and additional specialty stores. Investment in the Town Centre as the primary activity centre for Bannockburn should continue to be encouraged.

Transport improvements are critical to the Town Centres success and are identified in the **Transport & Movement** chapter. This chapter identifies a number of design and streetscape works to improve the safety and amenity of High Street for pedestrians. The proposed re-instatement of Bannockburn train station for passenger services and an associated intermodal transport hub would further enhance the economic potential and amenity of the Town Centre.

Future Retail

Bannockburn’s growth will allow for the provision of additional retail to support the Bannockburn Town Centre. The provision of a second retail centre in Bannockburn will strengthen the local economy and provide local employment, while contributing to livelier, and more walkable neighbourhoods.

A local town centre is supportable and proposed in the South East Precinct (see **Plan 7 – Economy & Employment**). The design and floor space of this centre will be determined at the detailed planning stage, however the *Bannockburn Retail Study* (2019) concludes that once the growth area reaches a population of 3,000 a retail centre of around 1,500sqm is supported including a 500sqm food store. Demand for such a centre will continue with population growth and it is estimated a further 1,000sqm could be sustained as the population reaches 5,000.

The second retail centre has been identified on the proposed arterial road to maximise exposure and provide an opportunity for retail to service through-traffic.

At the detailed planning stage, neighbourhood activity centres should also be investigated for the North West Development Plan Area and South West Precinct. These centres would provide local specialty stores and encourage walkable and vibrant neighbourhoods.

Agriculture

Agriculture is central to the economy of Golden Plains, local agricultural activity should be protected and supported in planning for the town’s growth.

Significant agricultural activity in the region includes the Golden Plains Food Production Precinct, which is the first designated precinct in Victoria for intensive food production (see **Plan 7 – Economy & Employment**). The full realisation of this Precinct is subject to private sector investment. Bannockburn’s proximity to this Precinct and the Rural Activity land to the north provides opportunities for local employment and economic growth.

Important agricultural assets around Bannockburn should be carefully managed to ensure they continue to make strong contributions to the local economy. Proposed growth should be planned to respond to uses with adverse amenity potential. Development staging should also consider impacts on agricultural activity, buffers should be considered to mitigate risks associated with development and ongoing farming activity.

Plan 7 identifies a rural-urban interface, this interface presents the most significant risk for land use conflicts between farming activity and urban development. Some potential risk mitigation measures include facilitating low-density housing along this interface and delivering the proposed linear park that is discussed in further detail in the **Environment & Water** chapter.

Further work to understand the agricultural activity within this interface will need to be undertaken to ensure buffers from specific uses that may have adverse amenity impacts are planned for.

Strategies – Economy & Employment

- 1

Improve the amenity of High Street as the primary activity centre.
- 2

Plan for the strategic expansion of retail and commercial uses in the town centre to provide a consolidated commercial precinct.
- 3

Plan for the provision of a secondary retail centre in the form of a local activity centre to service the town’s growth.
- 4

Encourage investment in the Golden Plains Food Production Precinct.
- 5

Ensure potential land use conflicts between adjoining and nearby farming uses and proposed urban development do not limit the operation of expansion of agricultural uses.
- 6

Plan for the provision of local employment opportunities
- 7

Ensure the provision of sufficient local industrial land through planning for the expansion of the Bannockburn Business Park.
- 8

Plan for and support the development of the Gheringhap Employment Precinct.

Table 7 Economy & employment actions – growth areas

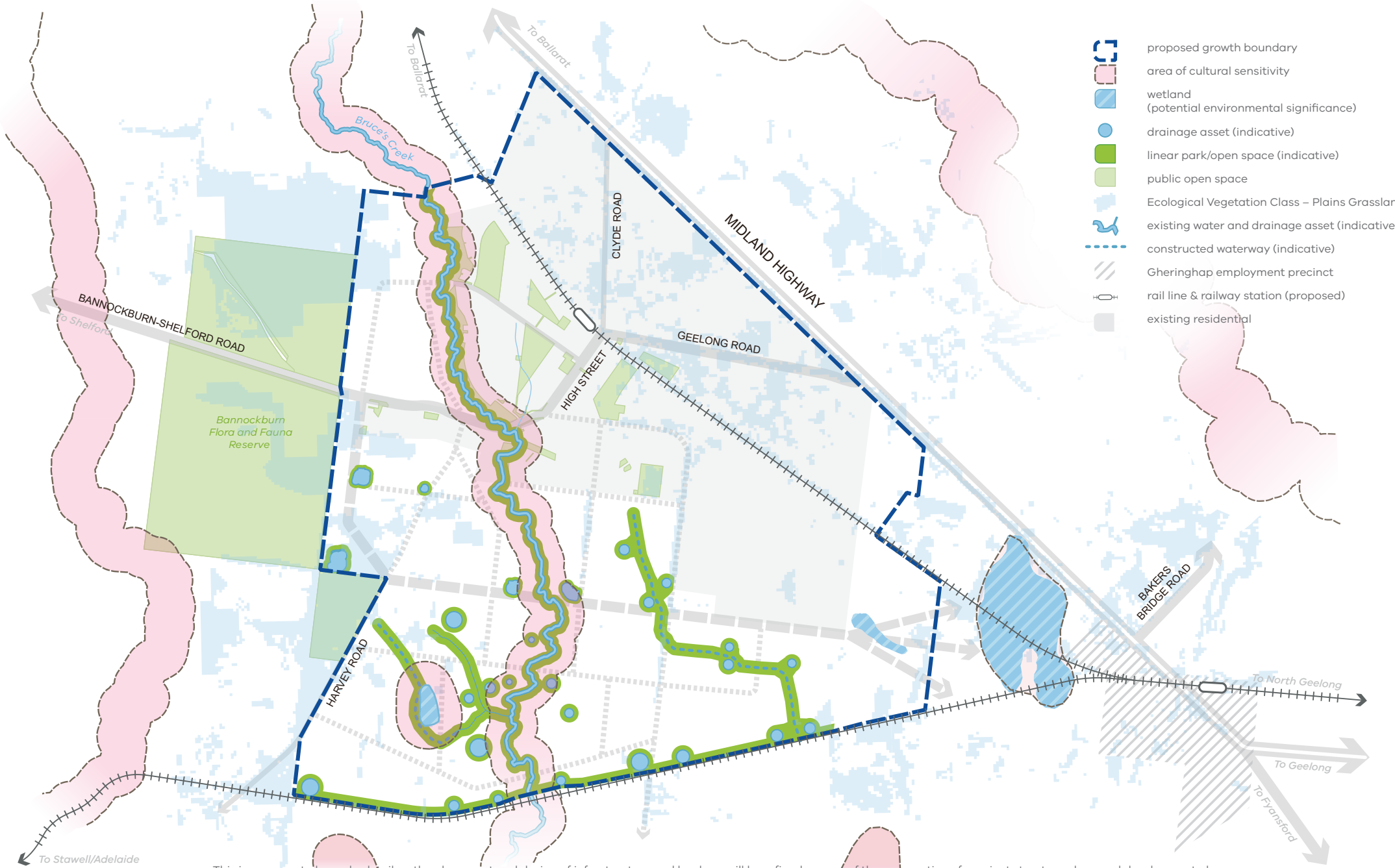
Action number	Related strategies	Project	Timing*	Responsibility
2.1	1, 2, 3, 6	Retail Plan for a local activity centre in the Bannockburn South East Precinct.	Short	VPA
2.2**	1, 2, 3, 6	Retail Investigate the provision of neighbourhood retail centres in the North West Development Plan Area and South West Precinct.	Short/ Medium	VPA & Council
2.3	6, 7	Industry Plan for an expansion of the existing Bannockburn Business Park in the South West Precinct, if its early delivery is not realised (see Action 2.8).	Medium	VPA & Council
2.4	5	Agriculture Investigate interface treatments such as low density housing and the provision of the proposed linear park to ensure potential for conflicts between existing farming uses and proposed urban development are avoided.	Ongoing	Council
2.5	7	Industry Identify an interface response from the proposed business park expansion to respond to bushfire risk, environmental values and potential land use conflicts	Medium	VPA, Council, DELWP & CFA

Table 8 Economy & employment actions – advocacy

Action number	Related strategies	Project	Timing*	Responsibility
2.6	1, 2, 3, 6	Retail Continue to advocate for private investment in the Bannockburn Town Centre as the primary activity centre.	Ongoing	Council & RDV
2.7	1, 2, 3, 6	Retail Complete strategic planning work to inform a potential expansion of the existing commercial zoned land in the Bannockburn Town Centre.	Short	Council & RDV
2.8	6, 8	Gheringhap Employment Precinct Define the role and function of the Precinct and advocate for private investment to deliver the Gheringhap Employment Precinct.	Ongoing	Council & RDV
2.9	6, 7	Industry Advocate for funding for infrastructure provision to facilitate an expansion of the existing Bannockburn Business Park.	Ongoing	Council
2.10	4, 6	Agriculture Advocate for private investment to realise the full potential of the Golden Plains Food Production Precinct.	Ongoing	Council & RDV

*Timing: Ongoing (immediate or on an ongoing basis), short-term (0 – 5 years), medium-term (5 – 10 years) and long-term (10+ years).

** In relation to the North West Development Plan Growth Area, the approach to addressing the intent of this action is subject to the discretion of Council



This is a concept plan only, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans

THEME 3 ENVIRONMENT & WATER



The stories and sites of the Wadawurrung people will be interpreted and reflected in the urban landscape. Bannockburn's unique environmental features will be protected, enhanced and integrated with new assets to provide a sustainable and high amenity urban environment.

Drainage infrastructure will achieve multiple objectives, serving a flood mitigation function while providing recreation connections for walking and cycling, open-space and greening.

Buffers to surrounding uses with potential adverse amenity impacts or natural hazards will be identified and compatible uses within these identified.

Sustainable water use and management and sustainable development outcomes will be at the forefront of decision making.

Bannockburn's environment, water and landscape will be protected and enhanced to deliver communities that respect Bannockburn's rural setting and provide amenity and interest to its residents

Objectives

- Interpret and manage areas of cultural significance and embed cultural values into the urban landscape.
- Identify and protect sites of historic heritage significance.
- Understand the extent and ensure the protection of state and federally significant biodiversity.
- Protect existing and identify new open space and waterway corridors to provide habitats for biodiversity.
- Support and provide opportunities for residents to connect with their environment for improved health and wellbeing.
- Ensure the function and quality of existing water assets are not negatively impacted by development.
- Facilitate a sustainable approach to water management by embedding Integrated Water Management (IWM) principles into future growth areas.
- Ensure risks associated with bushfire and flooding are appropriately mitigated.
- Identify buffers to areas of adverse amenity and plan for compatible uses within these.
- Ensure a built environment that is environmentally sustainable and strive for a zero net carbon emissions development.



Aboriginal Cultural Heritage

The Wadawurrung people are the custodians of the lands and waterways that make up Bannockburn. Wadawurrung people have lived on and managed this land for over 25,000 years. This means the presence of sites of significance and cultural value to the Wadawurrung people are likely within the proposed growth areas. **Plan 8 – Environment & Water** identifies areas of cultural heritage sensitivity.

Features within the landscape such as Bruce’s Creek are considered highly significant to the Wadawurrung people. Culturally significant sites within growth areas will be protected and managed through consultation with the Wadawurrung Traditional Owners Aboriginal Corporation. Cultural values will also be understood and embedded into urban development outcomes.

Historic Heritage

Council prepared Stage 1 and 2 of the *Golden Plains Heritage Study* in 2004 and 2009 respectively which informed the application of a number of heritage overlays across the Shire. A heritage overlay has been applied to a site within the North West Development Plan Area . This should be identified and incorporated into future development.

Further work is required for all growth areas to ensure any other sites of historic heritage are identified and protected. Sites of significance may include historic homesteads, farmhouses and drystone walls.



Biodiversity

Bannockburn’s unique environment is within an ecological corridor that extends through the Victorian Volcanic Plains bioregion from north of Geelong to Colac and Beeac. High-level analysis of biodiversity in Bannockburn has found potential for several state and nationally significant species.

State and Commonwealth listed grassland communities such as Western (Basalt) Plains Grassland and Natural Temperate Grasslands of the Victorian Volcanic Plain may be present within the growth area.

Other State significant Ecological Vegetation Classes that may occur include Western Basalt Plains (River Red Gum) Grassy Woodland. Nationally significant fauna species with the potential to occur within the growth areas include the Golden Sun Moth, Striped Legless Lizard and Growling Grass Frog. State significant fauna that may be present include the brown tree creeper and hooded robin. Nationally significant flora species with the potential to occur within the growth area include Dwarf Spider-Orchid, Spiny Rice-Flower and Adamson’s Blown Grass. State significant species may include Cut-Leaf Burr Daisy and Small Scurf-Pea.

Biodiversity is supported by substantial local environmental assets such as Bruce’s Creek and the Bannockburn Flora and Fauna Reserve and by smaller assets such as Bannockburn Lagoon and the local network of road-side vegetation and remnant bushland.

Biodiversity will be protected through the preservation and enhancement of these key environmental assets and the provision of new open spaces, drainage infrastructure and habitat links, which have the opportunity to provide an integrated environmental and recreational network. Native Vegetation Precinct Plans will be prepared for future precinct structure plans to guide the strategic management and protection of native vegetation.





Bannockburn Flora and Fauna Reserve

The Bannockburn Flora & Fauna Reserve is a locally and regionally significant environmental asset, and holds substantial biodiversity, cultural heritage, recreation and community values.

Wadawurrung peoples have managed and utilised the land that makes up the Reserve for thousands of years, with the proximity of Bruce's Creek and surrounding grassing plains offering a diverse range of resources in the area. A number of significant artefacts have been found in and surrounding the Reserve.

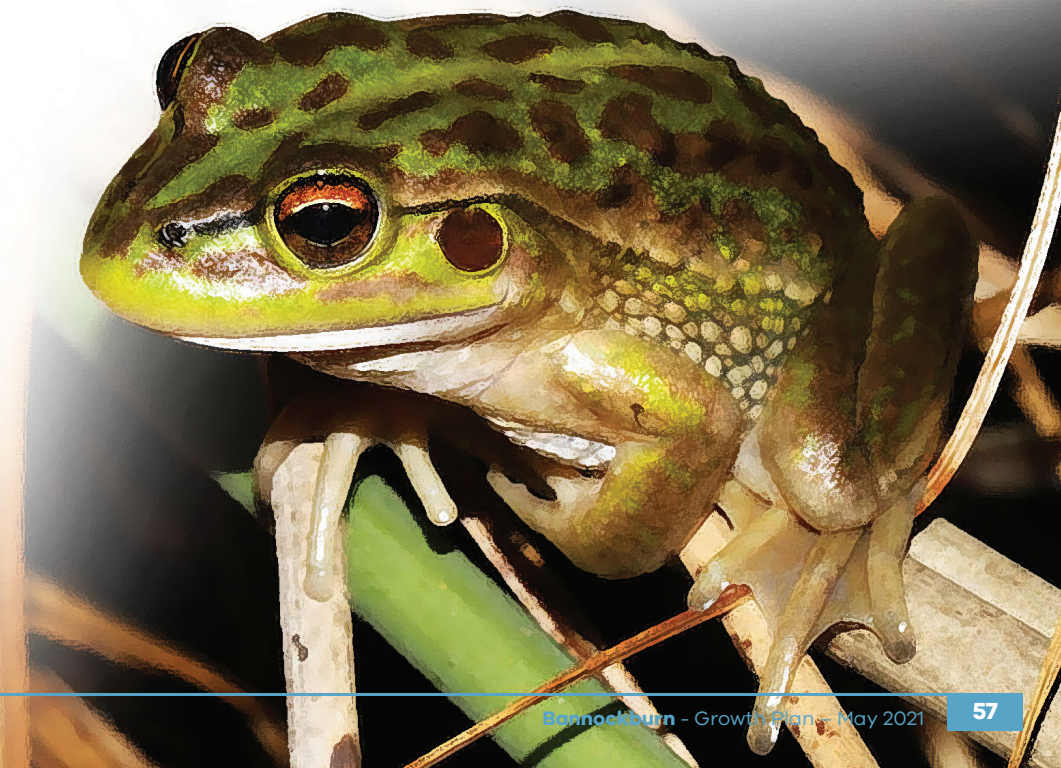
The Reserve is predominantly Plains Grassy Woodland which is identified as endangered within the Victorian Volcanic Plains bioregion and is home to a number of state and regionally significant species of flora, including the Snowy Mint-bush, Melbourne Yellow Gum and Sun orchid. The Reserve also holds amenity and recreational value to the community as the only major reserve in the area, however increasing usage and urban development could pose threats to its habitat values and native flora and fauna.

Threats to the Reserve posed by urban development may include:

- **Invasive flora & fauna**
Urban development may lead to the introduction of species not native or harmful to local flora and fauna, including invasive weeds and feral pests, especially cats.
- **Household toxins**
Many household products such as rat or mice bait are toxic to and have the potential to effect native fauna, particularly birdlife.
- **Rubbish**
Development may lead to increases in littering and dumping of waste within the reserve. Rubbish can be dangerous to fauna when ingested.
- **Light pollution**
Increases in light pollution can affect light sensitive fauna such as local amphibians and insects and can cause harm to these species as well as affect predator species.
- **Human behaviour**
Human mindsets and values towards the environment can also be harmful or dismissive of the value of places such as the reserve.

It is therefore important that for the Reserve's significance to be protected and enhanced, opportunities are taken at the Precinct Structure Plan or development plan stage to minimise the potential effects of urban development. Such future opportunities could include:

- Improving habitat linkages between the Reserve and the Bruce's Creek corridor
- Leveraging the educational value of the Reserve to build community values and create community driven sustainable outcomes
- Informing prospective landholders and residents of the risks of potential invasive species and toxic household chemicals
- Employing measures to reduce the effect of light pollution and rubbish on the Reserve.
- Ensuring an effective and sufficient interface between the Reserve and business and residential uses that considers bushfire risk, biodiversity and amenity.



Open Space

Bannockburn is currently served by a range of open space assets such as Wabdallah Reserve, the Arboretum, local parks and the Bruce’s Creek Corridor. The growth plan will ensure new residents have access to open space through the provision of new infrastructure, such as local parks and play spaces, and improved connections to existing assets. A network of open spaces across growth areas will provide opportunities for active transport, recreation, urban greening and cooling and new environmental assets. Larger open spaces should be considered as these have the added benefit of serving as community gathering spaces, contributing to a more resilient and connected community. The location of open space will utilise buffers, such as the provision of a linear park adjacent to the railway line in the south. This proposed linear park also has the benefit of achieving a rural-urban transition between proposed urban development and existing farming uses.

There are opportunities to integrate open space with proposed drainage infrastructure through the provision of linear parks along existing and constructed waterway corridors. These linear parks will include paths for passive recreation and uses such as community gardens. Small playgrounds and paths could also be provided in the space adjacent to drainage basins, that are not required for an engineering function.

The design and extent of open spaces will be determined at the detailed planning stage but will need to be cognisant of bushfire risk and access and maintenance requirements of the CCMA and Council. The location of open space will be dispersed through growth areas to maximise walkable access for future residents.

Greening

The community indicated the neighbourhood character of Bannockburn in its rural setting should be an important consideration when planning for growth. The consistent use of tree species throughout a town can contribute to enhancing the character of a rural town. Street trees are also critical to avoid the urban heat island affect, reduce greenhouse gas emissions and enhance amenity.

Street trees will be required along all new local streets, connector roads and arterial roads. Consideration of street tree species to be identified in future growth areas should be made in conjunction with Council’s *Street Tree Guide* (2020) and DELWP. This will ensure species are selected that are most suited to the climate and character of the town and provide the desired canopy shading. There are also opportunities to increase urban greening through understorey plantings, such as along retarding basins, recreation reserves and nature strips.



Drainage

Development will need to respond to the unique topography and drainage patterns of the growth area to manage flood risks, protect waterway environs, and to minimise runoff and pollution.

Bannockburn and the growth area generally reside on flat plains, with much of the area draining into Bruce’s Creek and a portion of the town to the east draining out of the south easternmost corner of the south east growth area.

The *Bannockburn Catchment Assessment* (2020) proposes a high-level stormwater drainage management strategy for the growth areas comprising a series of drainage basins and constructed waterway corridors. This infrastructure is identified on **Plan 8 – Environment & Water** and is indicative at this stage. The exact location, size and function of this infrastructure will be subject to further detailed drainage work. This strategy will involve working closely with stakeholders such as the CCMA and considering policy guidance such as Clause 14.02-1S (Catchment Planning and Management) of the *Golden Plains Planning Scheme*.

Infrastructure such as wetlands and constructed waterways provide opportunities for urban cooling, recreation, habitat and amenity. There are also opportunities to integrate tree placement with water sensitive urban design for passive irrigation.

Plan 8 identifies a wetland in the southern long-term growth option. Further work is required to understand both the environmental significance of this site as well as the cultural heritage significance of this waterbody.

Integrated Water Management (IWM)

IWM initiatives are highlighted in Council’s *Environment Strategy 2019-2027* (2019) as important to mitigate and manage flooding and stormwater and protect waterways and wetlands.

The potential for the use of recycled water for urban, environmental and agricultural uses has been identified as a key opportunity for Bannockburn. Barwon Water’s reclamation plant to the northwest of the town could provide recycled water for such opportunities. The reuse of existing Class C should be investigated as part of the growth areas for purposes such as irrigation of active recreation facilities and tree lots.

To explore these opportunities, Council and Barwon Water are advocating for funding to prepare a Bannockburn IWM Strategy. **Figure 5** outlines examples of IWM initiatives to be explored in further detail as part of a future IWM strategy for Bannockburn. In the absence of a strategy, these initiatives should be investigated as part of the detailed planning for the growth areas.



Sustainable Development

Council has adopted the *Golden Plains Shire Environment Strategy 2019-2027* (2019) which sets the strategic direction for environmental sustainability in the Golden Plains Shire to 2027. The Environment Strategy outlines Council's strategic direction regarding environmental sustainability and sets targets and key mechanisms to support the implementation of these strategic directions.

Figure 5 reflects opportunities for sustainable development outcomes to be explored in more detail as part of planning for the proposed growth areas. These opportunities include Environmentally Sustainable Design (ESD), active travel, community gardens, Integrated Water Management (IWM), Water Sensitive Urban Design (WSUD) and urban greening.

These are some initiatives that could contribute to a zero net carbon emissions development, something that should be sought to be achieved in the new growth areas through engagement with Council landowners and government agencies.



Figure 5 Sustainable Development Outcomes

Deliver efficient and resilient water systems

- Explore use of Class C recycled water for irrigation of recreation infrastructure **1**
- Investigate trial of greywater recycling system **2**

Ensure healthy waterways, landscapes and neighbourhoods

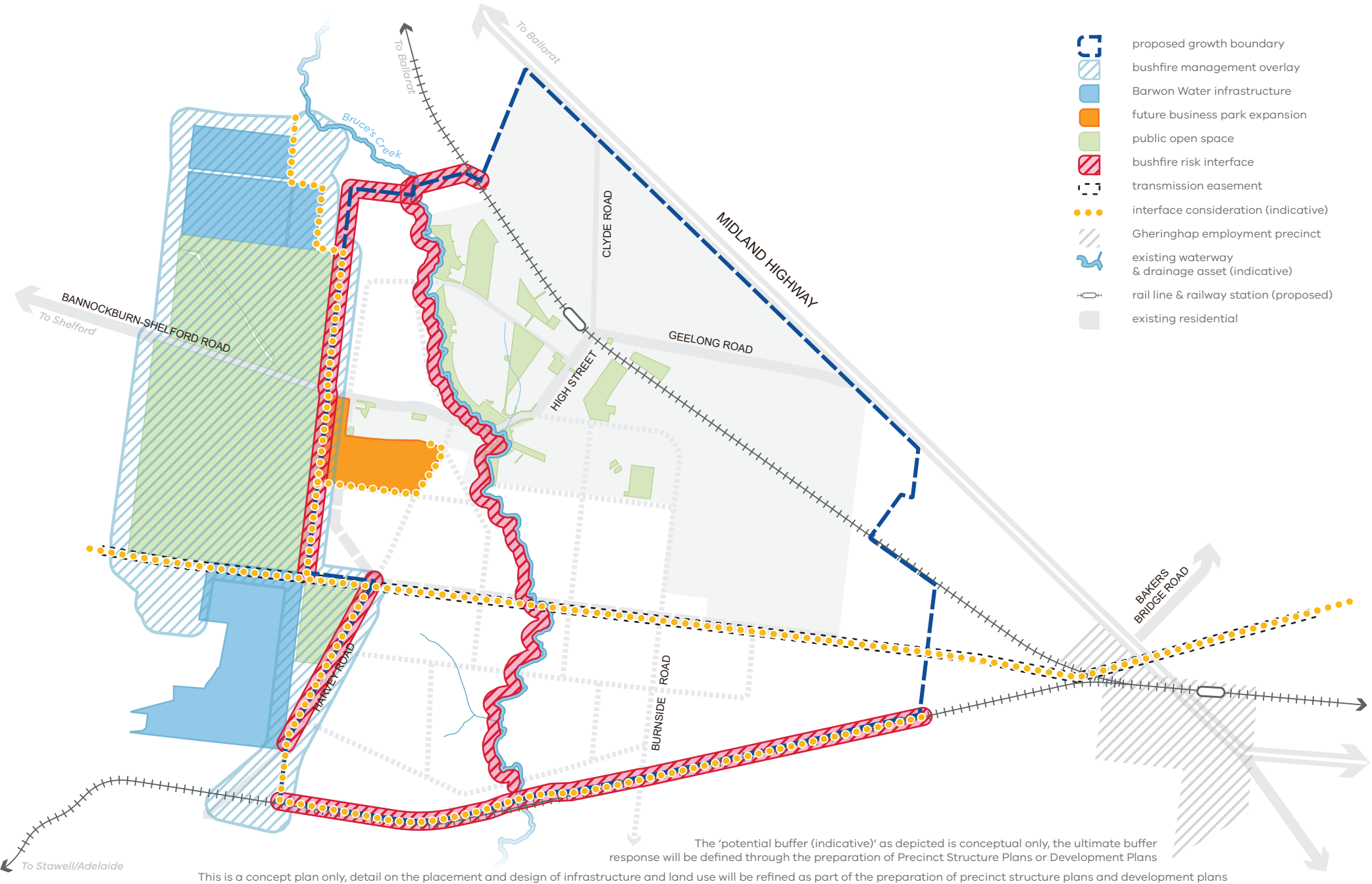
- Reflect the stories and values of Wadawurrung people in waterway and landscape outcomes **3**
- Explore WSUD outcomes such as tree pits, rain gardens and swales **3**
- Identify permeable surfaces where appropriate (i.e. car parks, walking paths) **4**

Provide liveable, health landscapes and neighbourhoods

- Achieve a 30% tree canopy cover **3**
- Encourage community gardens **5**
- Deliver a network of recreation trails connecting existing and proposed waterways and open space **6**

Encourage ESD principles and strive for neighbourhoods with net zero emissions

- Solar panels **7**
- Roof water harvesting **7**



This is a concept plan only, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans

Bushfire

The *Bannockburn Strategic Bushfire Risk Assessment* (2020) identifies the most likely directions of bushfire attack on severe fire weather days are from the north-west and south-west in Victoria. The most apparent bushfire risk is in the North West Development Plan Area and the South West Precinct, which both interface with the Bannockburn Flora and Fauna Reserve (see **Plan 9 – Bushfire & Buffers**). Engagement with Wadawurrung Traditional Owners Corporation should explore opportunities for Traditional burning practices, particularly in the Bannockburn Flora and Fauna Reserve.

Further detailed work will be required to confirm bushfire risk mitigation measures to be implemented at the detailed planning stage. This detailed work will consider risk mitigation opportunities such as:

- interface roads
- hydrant networks
- access for emergency vehicles
- multiple access and egress points
- directing community infrastructure away from high risk locations
- guidance on lot layout criteria and Bushfire Attack Level (BAL) construction standards.

The separation distances outlined in **Table 9** will be applied at the detailed planning stage to achieve benchmarks for radiant heat exposure. Maintenance of vegetation within separation distances will be essential to ensure incremental changes to vegetation does not occur over time. The separation distances outlined in **Table 9** will be provided entirely within growth area boundaries.

At the detailed planning stage detail will be provided as to how the separation distances will be managed in perpetuity to ensure development won't be exposed to radiant heat greater than 12.5Kw/km².

Table 9 Separation distances to be applied to urban and rural interfaces

Vegetation and Landscape type	Separation distance	Relevant locations in the growth area
Flat land or upslope grassland	19m	Eastern and southern boundary of the South East Precinct.
Downslope grassland	22m	Part of the southern boundary of the South East Precinct.
Flat land or upslope woodland	33m	Western boundary of the South West Precinct.

The Assessment did not provide guidance specific to the North West Development Plan Area. This will take place as part of the preparation of the rezoning considerations and preparation of the development plan.

The Bushfire Management Overlay (BMO) applies to the Bannockburn Flora and Fauna Reserve and extends into the North West and South West Precincts (see **Plan 9**). Under the BMO a Bushfire Management Strategy will need to be prepared at the precinct planning stage to effectively respond to Clause 53.03 of the Golden Plains Planning Scheme.

Future detailed planning for the Growth Areas must incorporate bushfire protection measures, developed in consultation with the CFA, that address the following:

- Provision of appropriate setbacks from opens spaces, creek reserves and linear open space network corridors to ensure appropriate defendable space distances can be achieved and maintained on an ongoing basis. This is of particular concern for the Bannockburn Flora and Fauna Reserve and Bruce's Creek. Failure to provide adequate setbacks will increase bushfire risk and impact the ability of development to meet radiant heat exposure policy.



- The road layout to include a perimeter road between bushfire hazards and proposed settlement. This will provide ongoing certainty for vegetation management, reduce bushfire risk and private landowner obligations for defendable space. Further benefits include improved access and egress for the local community and better fire fighting capability and fire fighter safety in a bushfire or other emergency event.
- Vulnerable and sensitive land uses including aged care, child care and education centres to be located away from areas at higher risk to bushfire, such as Bannockburn Flora and Fauna Reserve.
 - How the bushfire risk will be mitigated in areas that look to protect and enhance biodiversity values, create an integrated open space network and protect sites of Aboriginal cultural heritage with the increase in vegetation.

Buffers and Easements

A number of existing and proposed land uses require the provision of buffers to minimise land use conflicts and reduce potential amenity impacts. The provision of buffers can serve to improve amenity while presenting opportunities to enhance recreation, environment and transport outcomes in the growth areas.

These buffers may need to be planned for associated with the industrial land expansion, the electricity transmission line easement, rail infrastructure, agricultural uses, and Barwon Water infrastructure (See **Plan 9 – Bushfire & Buffers**).

New and expanded business park uses will require specific built form outcomes to minimize land use conflicts. The interface between the proposed business park expansion and surrounding proposed residential uses will be subject to careful consideration to provide an appropriate transition between uses that protects amenity for residents and effectively utilizes the space. Open space and the proposed connector and arterial road network may help in providing such appropriate buffers between the proposed business park expansion area and existing and future residential areas.

The interface between the Bannockburn Flora and Fauna Reserve and adjacent uses such as the business park may need to consider buffers to manage bushfire risk mitigation and protection of environmental values. This buffer has the potential to also form a habitat connection.

The proposed linear park and drainage infrastructure along the southern boundary of the South East Precinct presents an opportunity to provide a buffer from the railway line and farming uses.

The extent of adverse amenity of these uses will need to be fully understood at the detailed planning stage and appropriate buffers and uses within these buffers identified.

An easement associated with the electricity transmission line runs adjacent to the southern boundary of the South West Precinct and along the northern boundary of the South East Precinct (see **Plan 9**). The second arterial road is proposed to be located adjacent to this easement. The cross section for the second arterial road will need to ensure an appropriate buffer distance to this easement, subject to approval of AusNet Services. Appropriate uses within this easement will also need to be identified, and AusNet Services will need to provide guidance on permitted uses. Some appropriate uses to plan for may include:

- Trees and shrubs with a mature growth height not exceeding 3m.
- Landscaping and paving, subject to sufficient clearances to the conductors and towers.
- Playground equipment, subject to a 1m maximum high limit.
- Market and community gardens, excluding buildings.
- Ground level sporting activities.

Consultation with AusNet Services at the precinct structure planning stage will be critical to resolving this component of the future development.

Strategies – Heritage

- 1 Protect and embed Aboriginal Cultural Heritage significance and values.
- 2 Identify and protect sites of historical heritage and integrate these sites into future development.

Strategies – Environment & Buffers

- 3 Support biodiversity through the enhancement and provision of habitat links between key environmental assets.
- 4 Ensure drainage infrastructure is considered as an open space asset in addition to its engineering functions.
- 5 Promote urban greening and cooling through the provision of new open spaces, street trees, and drainage infrastructure.
- 6 Identify street trees appropriate to the local climate and character.
- 7 Respond to and appropriately manage bushfire risks by the inclusion of risk mitigation measures.
- 8 Identify buffers and appropriate uses within them.

Strategies – Water

- 9 Plan for drainage infrastructure that contributes to IWM outcomes.
- 10 Utilise new drainage assets such as waterways and reserves as recreational, environmental and active transport opportunities where appropriate.
- 11 Explore the use of recycled water for urban, environmental and agricultural uses.

Strategies – Sustainable Development

- 12 Embed Environmental Sustainable Design (ESD) principles into new development.

Environment & Water Actions

Table 10 Environment & water actions – growth area

Action number	Related strategies	Project	Timing*	Responsibility
3.1**	1	Cultural heritage Partner with the Wadawurrung Traditional Owners Aboriginal Corporation to prepare Cultural Heritage Impact Assessments and Cultural Values Assessments	Short	VPA, Council & WTOAC
3.2**	3	Historic heritage Prepare a historic heritage assessment for the growth areas to ensure places of heritage significance are identified and protected.	Short	VPA & Council
3.3**	4	Biodiversity Understand the prevalence of significant biodiversity and protect and enhance this.	Short/ Medium	VPA, Council & DELWP
3.4**	4	Biodiversity Prepare a Native Vegetation Precinct Plan for the South East and South West Growth Areas.	Short/ Medium	VPA, Council & DELWP
3.5**	4	Biodiversity Prepare biodiversity assessments to identify flora and fauna species identified in the EPBC and FFG Acts.	Short/ Medium	VPA, Council & DELWP
3.6**	5, 6, 10, 11, 12	Drainage Complete a drainage strategy to refine the drainage network identified in Plan 8 .	Short/ Medium	VPA, Council, DELWP, Barwon Water & CCMA

*Timing: Ongoing (immediate or on an ongoing basis), short-term (0 – 5 years), medium-term (5 – 10 years) and long-term (10+ years).

**In relation to the North West Development Plan Growth Area, the approach to addressing the intent of this action is subject to the discretion of Council” to items 3.1-3.11

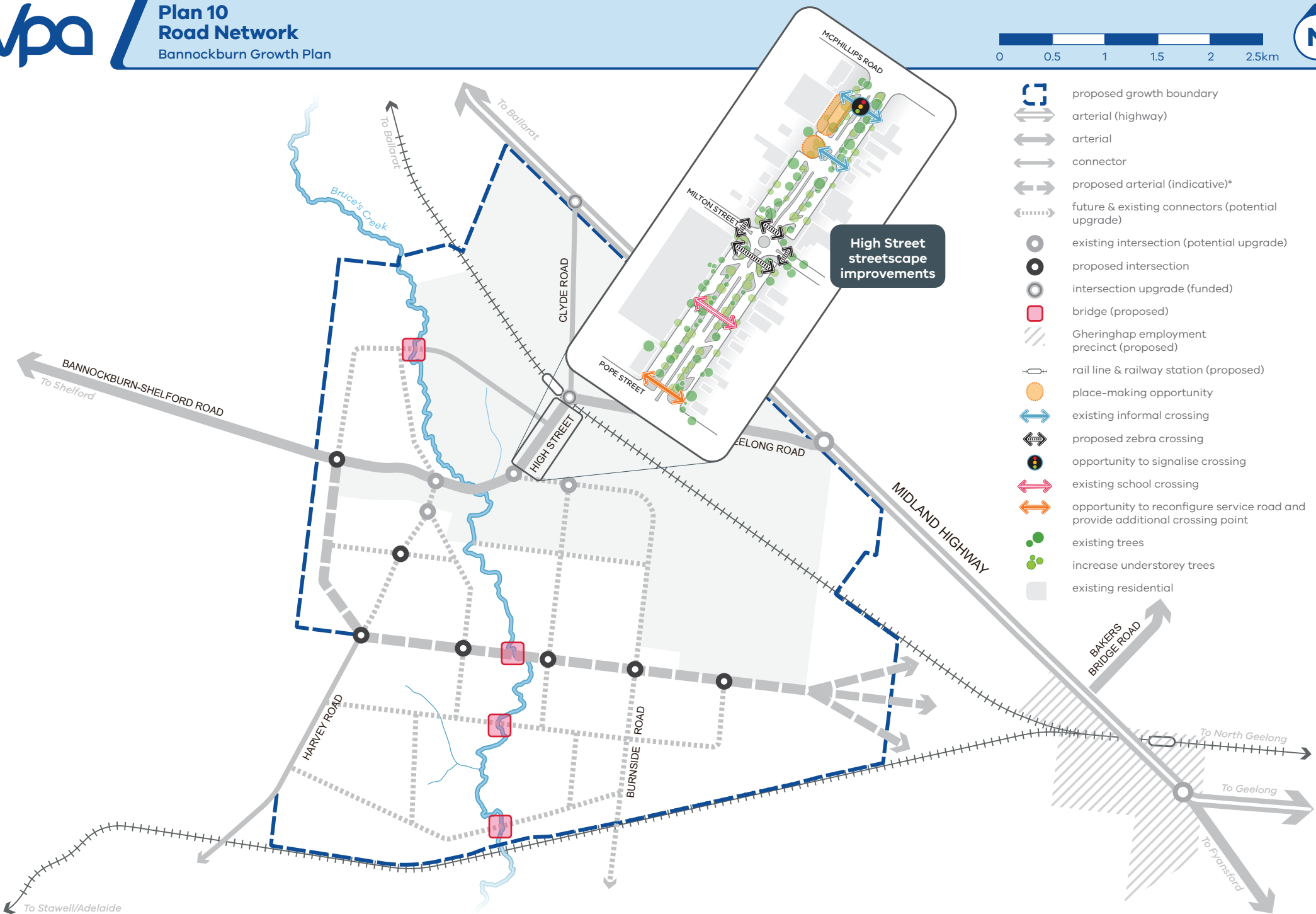
Action number	Related strategies	Project	Timing*	Responsibility
3.7	5, 6, 10, 11, 12	IWM Prepare IWM Strategies to ensure sustainable water management is central to the precincts development, if Action 3.12 is not realised.	Short/ Medium	VPA, Council, DELWP, Barwon Water & CCMA
3.8	8, 9	Bushfire Manage non-urban interfaces (See Plan 10 and Table 7) to new neighbourhoods as part of urban development.	Short/ Medium	VPA, Council & CFA
3.9	8, 9	Bushfire Develop detailed bushfire assessments to respond to bushfire and develop risk mitigation strategies, consistent with state policy.	Short/ Medium	VPA, Council & CFA
3.10	9	Buffers Identify buffers and plan for compatible uses within them.	Short/ Medium	VPA, Council & EPA
3.11	4, 9	Transmission Easement Engage with AusNet Services to confirm an appropriate interface and uses within the electricity transmission line easement.	Short	VPA/Council

*Timing: Ongoing (immediate or on an ongoing basis), short-term (0 – 5 years), medium-term (5 – 10 years) and long-term (10+ years).

Table 11 Environment & water actions – advocacy

Action number	Related strategies	Project	Timing*	Responsibility
3.12	5, 6, 10, 11, 12	IWM Strategy Advocate for funding to deliver a town wide IWM Strategy, which investigates the urban and agricultural opportunities associated with recycled water from the Bannockburn reclamation plant.	Ongoing	Council, Barwon Water & DELWP
3.13	3	Biodiversity Advocate for the preparation of a Management Plan for the Bannockburn Flora and Fauna Reserve by DELWP and BEN to ensure its ongoing sustainable use and management	Short/ Medium	Council, WTOAC, & FBB

WTOAC - Waduurrung Traditional Owners Aboriginal Corporation BEN - Ballarat Environment Network FBB - Friends of Bannockburn Bush



This is a concept plan only, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans

THEME 4 TRANSPORT & MOVEMENT

The development of the Growth Plan provides the opportunity for the delivery of a complete multimodal transport network.

A complete network will create safe and accessible transport options for people walking and cycling, and provision for bus services along key connector and arterial routes. Road connections will facilitate efficient vehicle movement throughout the town and to the broader region.

The walking and cycling network will appeal to a range of ages and abilities, such as shared paths, footpaths and on-road bicycle lanes.

A safe and direct network will provide convenient access to key destinations, while minimising exposure to vehicle traffic, with a focus on connecting existing and future residents to schools, community facilities, retail and employment.

Bannockburn's transport network will support growth and provide a more sustainable and diverse range of movement choices. Transport infrastructure will improve connectivity within Bannockburn while responding to the movement of people and goods in the wider region.

Objectives

- Establish an integrated and permeable transport network to prioritise walking, cycling, and public transport, reduce car dependency and maximise safety and connectivity for all road users.
- Investigate additional and improvements to key external connections to the surrounding arterial road network to improve network resilience and accessibility throughout the growth areas and the wider region.
- Reduce through-traffic in the Bannockburn Town Centre to improve amenity and support safe pedestrian and cyclist movements.
- Provide a second rail crossing that is grade separated, consistent with state policy, to facilitate an efficient and safe network for all transport modes.
- Provide safe and welcoming pedestrian connections, particularly in proximity to activity centres and community infrastructure.
- Expand bus network coverage and service frequencies to destinations within Bannockburn, surrounding towns and to Geelong and Ballarat.
- Advocate for the investigation of the reinstatement of the Geelong-Ballarat passenger train service.
- Create an integrated transport system where users can move between transport modes, creating an efficient and sustainable movement system.
- Encourage a mode shift from vehicle use to public transport, walking and cycling.
- Ensure the future road network is adequate for access and egress in the event of an emergency

Arterial Roads

Bannockburn is serviced by a sole arterial road, Bannockburn–Shelford Road, which becomes High Street in the Bannockburn Town Centre (Town Centre). This arterial serves as the only crossing of both Bruce’s Creek and the railway corridor. It is the main connection from Bannockburn to the Midland Highway towards Geelong and Melbourne, and from Bannockburn to Western Victoria including Skipton and beyond.

The *Bannockburn Growth Plan Network Assessment* (2020) concludes that a second arterial road is required to support the transport and movement objectives for the growing town. The additional arterial road:

- Is required to meet the forecast traffic demand generated by the growth areas.
- Could provide an alternative heavy vehicle route for through-freight movements..
- Presents an opportunity to improve safety and amenity in the Bannockburn Town Centre.
- Supports the needs of future public transport services.
- Provides a grade separated crossing of the railway line.

The assessment concludes that an additional arterial connection linking Bannockburn–Shelford Road to Midland Highway is the most viable option to fill this role.

The proposed alignment of the second arterial road extends south from Bannockburn–Shelford Road on a new road through the proposed business park expansion area, crossing Harvey Road and following the southern boundary of the South West Precinct before continuing east adjacent to the transmission line easement (see **Plan 10 – Road Network**). See ‘buffers and easements’ section of the **Environment & Water** chapter for additional information on the transmission line easement.

Investigations are currently underway to understand where the arterial road may connect onto the Midland Highway or at the Fyansford–Gheringhap Road roundabout. Wherever this connection

point takes place, a grade separated railway crossing will be required. Investigations into this connection point will need to consider a mapped wetland that exists within this area which is potential Seasonal Herbaceous Wetland (Freshwater) of the Temperate Lowland Plains, these are nationally listed and have protection under the EPBC Act.

The detailed design of the arterial road including confirmation of the alignment, the cross section, delivery mechanism and responsible entity for the ongoing co-ordination and management of the road will be determined through further work. It is proposed that the road be 60km/h through the existing and future residential areas before increasing speed once past the Bannockburn town boundary. The road will be designed to minimise impact on the amenity of existing and future communities.

Freight Vehicle Movements

Bannockburn is located on a major freight path between productive landscapes in the Central Highlands and further west in the state, and the destinations of Geelong and Melbourne. As such, major through-freight movements are recorded in the town centre, especially along the existing arterial route.

The prevalence of freight vehicles in the town centre along High Street presents safety and amenity concerns for the existing community, which are expected to increase as the population grows.

Additionally, there are significant volumes of through-freight vehicle traffic along Bannockburn–Shelford Road that will be impacted by the increased local traffic generated by the Growth Plan.

The second arterial connection provides an alternative heavy vehicle route for through-freight. This presents an opportunity to improve safety and amenity outcomes for the local community, and travel time and reliability for these movements. The location of the arterial road is to be determined on completion of further analysis and assessment at the Precinct Structure Plan preparation stage.

Bannockburn Town Centre

The amenity and function of High Street as Bannockburn’s primary town centre and retail core is currently limited by design and through-freight vehicles.

The amenity and safety impacts of through-freight in the town centre was highlighted as a concern by residents and has been a focus of Council in advocating for an alternative heavy vehicle route.

The second arterial road provides the potential to improve the streetscape along High Street to facilitate pedestrian and cyclist movement, improve amenity and calm traffic to improve safety. Improvements along High Street can contribute to placemaking and help affirm it as the town’s principal town centre. The following actions can be considered:

- New signalised and non-signalised crossing points to improve pedestrian safety.
- Gateway treatments to calm traffic and create a sense of place.
- Increased canopy and understory vegetation cover to provide amenity and aesthetic improvements.
- Reconfiguration of service road entry points to improve pedestrian and vehicle safety.

Opportunities for streetscape improvements on High Street are identified on **Plan 10 – Road Network**.



Connector and Local Roads

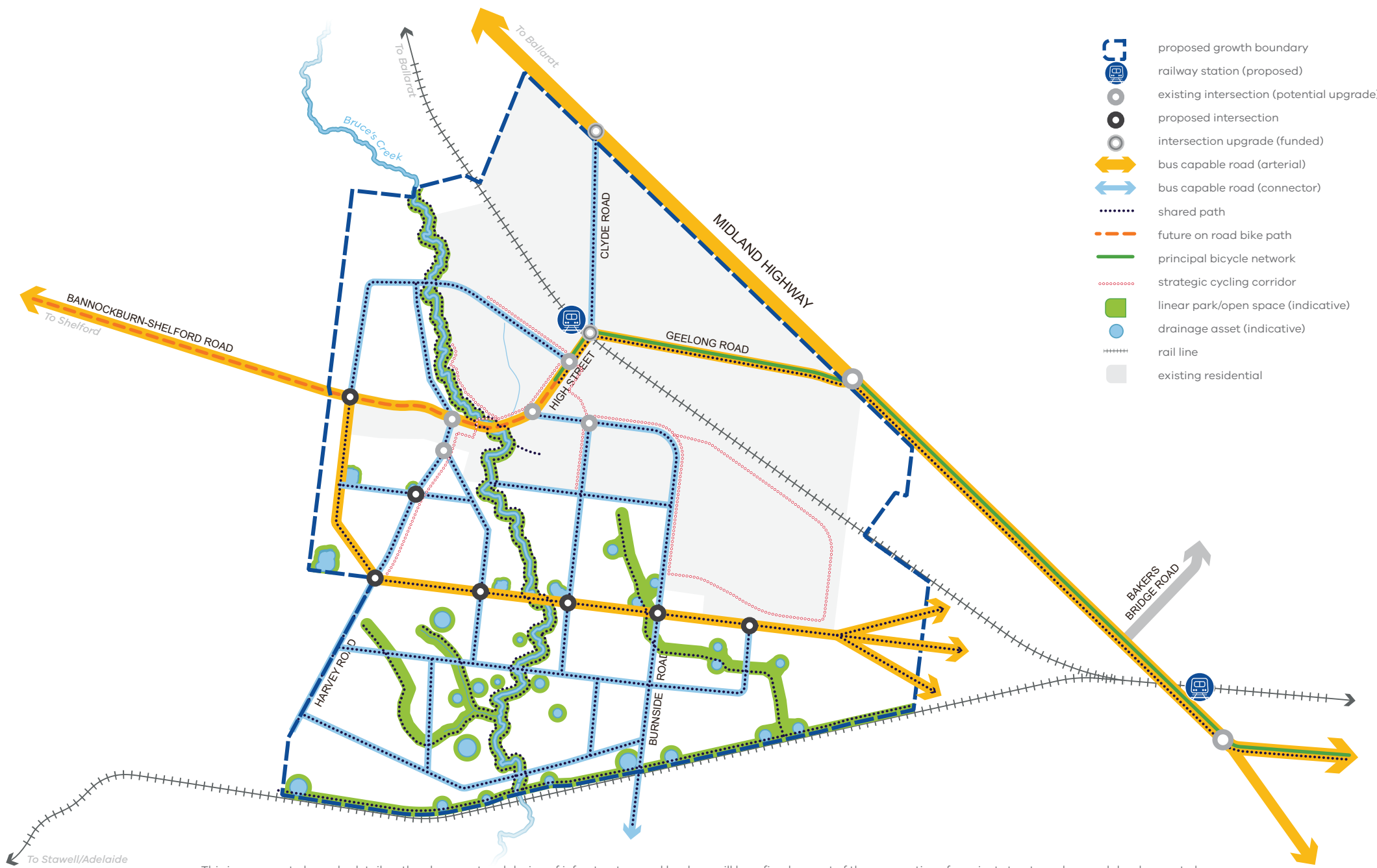
Bannockburn’s existing network of connector roads will support the growth areas through the extensions of Levy Road, Ormond Street and Milton Street (See **Plan 10 – Road Network**).

Connectivity can be improved across Bannockburn through the provision of additional crossing points over Bruce’s Creek both north and south of Bannockburn–Shelford Road. The location and number of bridge crossings shown on **Plan 10** is indicative and subject to change at the detailed planning stage. The connector road network will be bus-capable and will deliver off-road shared paths, meaning it is a critical component of the overall multi-modal network.

The network outlined on **Plan 10** is indicative and subject to change at the detailed planning stage. The connector roads have been generally placed at 800m intervals in both a north-south and east-west direction.

Planning for the proposed Growth Areas will consider the necessary local road connections to support the indicative higher order road network identified in **Plan 10**. This process will enable tailored local road cross sections to interface schools, open space and as perimeter roads as separation from bushfire hazards. Consideration for Electric Vehicle charging stations should be factored into decision making. These charging points should be prioritised near the rail line or fuel station, as well as in other townships in Golden Plains. Locating these charging stations close to existing small businesses could have economic benefits through increased patronage.





This is a concept plan only, detail on the placement and design of infrastructure and land use will be refined as part of the preparation of precinct structure plans and development plans

Active Travel

Active transport opportunities in Bannockburn are restricted by missing links in infrastructure, a lack of connectivity across the town, and roads with limited safe crossing points.

Plan 11 – Public Transport & Path Network identifies opportunities for improvements to existing walking and cycling infrastructure, integrated with the proposed network in the growth areas. There are opportunities to invest in this infrastructure now to ensure a connected network of walking and cycling paths for current residents.

Existing and proposed waterway corridors present a strategic opportunity for shared paths that are both functional as connections to key destinations but also provide opportunities for recreation. Encouraging walking and cycling has several potential benefits such as positive health outcomes, reduced road congestion and improved environmental outcomes.

The Growth Plan builds on existing active transport corridors, such as the Principal Bicycle Network on Geelong Road and the shared path network along Bruce's Creek, by identifying an integrated network of strategic active travel connections. **Plan 11** identifies key active travel connections which include:

- Extension of the shared path network along Bruce's Creek corridor.
- Shared path connections adjacent to constructed waterway corridors.
- Opportunities to upgrade existing intersections to ensure pedestrian and cyclist movements are considered.
- Inclusion of shared paths on all future connector and arterial roads.

There are also opportunities to investigate the ability to cater for shared path connections to nearby townships such as Lethbridge to the north, Inverleigh to the south west and Teesdale to the west.

The Department of Transport is currently investigating upgrades to the Midland Highway between Bannockburn and Geelong, which presents an opportunity to investigate a future shared path connection from Bannockburn to Gheringhap and Geelong.



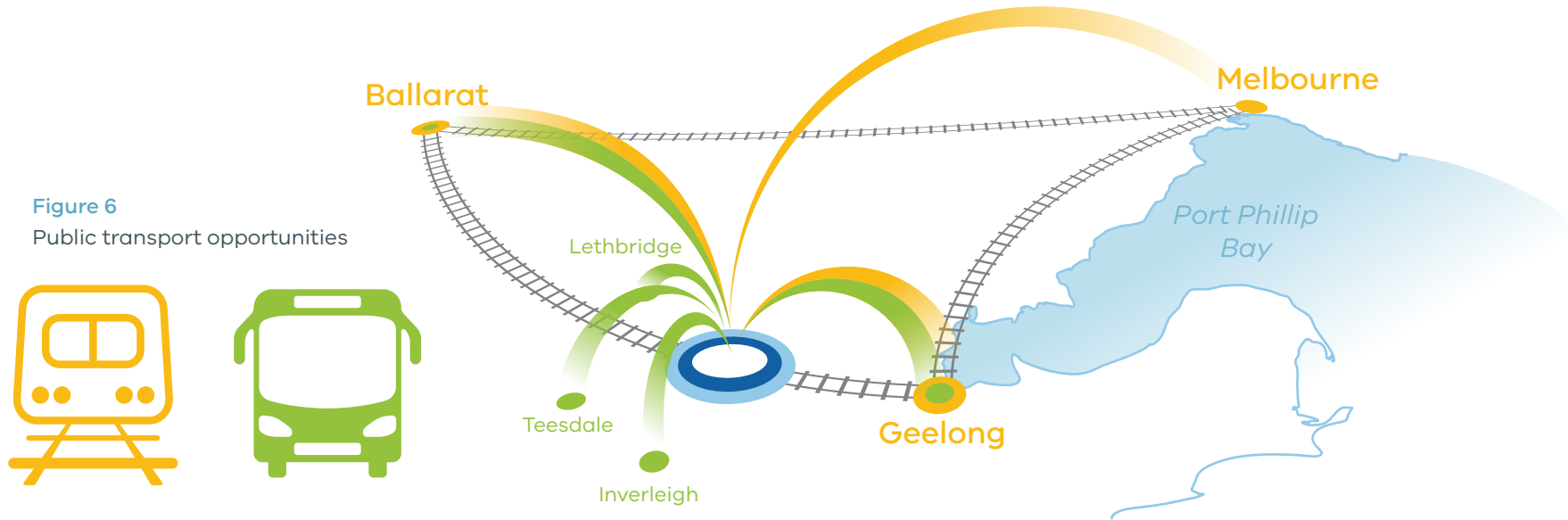
Public Transport and Intermodal-Transport Hub

Bannockburn is currently underserved by public transport, with no local bus services and limited, infrequent bus services to Geelong. There is currently only one bus stop in the town, located in the Bannockburn Town Centre, therefore the majority of existing residents are not in walking distance of a bus stop. Bannockburn station is not currently in operation, as there are no passenger services on the Geelong-Ballarat railway line.

The provision of buses and advocating for the reinstatement of passenger services on the Geelong-Ballarat railway line could improve commuting for a large portion of residents, with approximately 80% of the working population of Bannockburn commuting to Geelong for employment (ABS, 2016). Travel to Geelong is also required to access some higher-level services. The investigation of the provision of public transport opportunities is necessary to ensure growth is sustainable, growth areas are accessible, and that servicing and employment patterns are supported. Residents in surrounding towns would also benefit from improved bus connections to Bannockburn.

Plan 11 – Public Transport & Path Network identifies the potential network of bus capable roads. **Figure 6** identifies opportunities for broader improvements to the regional network.

The proposed intermodal transport hub has the opportunity to support the re-activation of the Bannockburn train station for passenger services. This hub could provide car parking, bike cages and end of trip facilities for train passengers. There is also an opportunity to integrate a bus interchange at this location to facilitate ease of transition from train to bus services. The site is also proposed to be utilised for emergency services. This is discussed in more detail in the **Housing & Community Infrastructure** chapter. Refer to **Plan 6 – Housing & Community Infrastructure** for the location of the hub and emergency services precinct.



Strategies – Road Network

- 1 Plan for a network of connector roads that connects neighbourhoods and provides links to the arterial road network.
- 2 Undertake road and intersection upgrades to service growth, improve safety and support road network extensions.
- 3 Provide a second east-west arterial road with the dual purpose of servicing the growth area and re-routing through-freight out of the town centre.
- 4 Provide additional crossing points over Bruce’s Creek to facilitate east-west movement across the town.
- 5 Modify High Street through the town centre to create a streetscape that is responsive to pedestrian and cycling needs and which discourages through-freight movements.

Strategies – Public Transport

- 6 Explore a feasibility investigation into the re-instatement of passenger rail services between Bannockburn, Ballarat and Geelong.
- 7 Provide commuter bus services to facilitate and support employment in key centres such as Geelong and Gheringhap, particularly in the absence of a rail service.
- 8 Provide for a comprehensive bus service within Bannockburn.
- 9 Explore transport options that support Bannockburn’s role as a provider of higher order services for Golden Plains’ southern settlements.
- 10 Continue to safeguard land for the inter-modal transport hub and advocate for a bus interchange at this location.

Strategies – Active Travel

- 11 Encourage a safe walking and cycling network as an integral component of Bannockburn’s transport network.
- 12 Enhance the role of Bruce’s Creek as a key north-south walking and cycling corridor.
- 13 Provide shared path crossings over Bruce’s Creek to facilitate east-west walking and cycling connections.
- 14 Provide connector and arterial road cross sections that are responsive to the needs of pedestrians and cyclists.
- 15 Integrate new cycling infrastructure with the existing Principal Bicycle Network and Strategic Cycling Corridors.
- 16 Expand the regional shared path network to allow recreational and tourist cycling and pedestrian links to neighbouring townships.
- 17 Improve cycling infrastructure between Bannockburn and Geelong that link with Gheringhap and future growth in Western Geelong.





Table 12 Transport & movement actions – growth areas

Action number	Related strategies	Project	Timing*	Responsibility
4.1	2, 3, 4, 5, 11, 13, 14, 17	Second arterial road Determine the design, timing, funding arrangements and resolution of access to the Midland Highway for the proposed second arterial road. Identify and safeguard land for the roads delivery	Short	Council, VPA, DoT, VicTrack & V/Line
4.2	1, 2, 3, 4, 5, 6, 11, 12, 13, 14, 15, 16, 17	Road network Understand where road and infrastructure upgrades are required and the identification of new infrastructure through the preparation of traffic impact assessments.	Short/ Medium	Council, VPA & DoT
4.3	1, 2, 3, 4, 5, 7, 8, 9, 10	Public transport Partner with DoT to determine a network of bus routes to service new growth areas.	Short/ Medium	Council, VPA & DoT

Table 13 Transport & movement actions – advocacy

Action number	Related strategies	Project	Timing*	Responsibility
4.4	6, 9, 10	Public transport Further assess the timing and feasibility of a passenger train service between Bannockburn, Geelong and Ballarat.	Ongoing	Council, DoT, VicTrack & V/Line
4.5	1, 2, 3, 4, 5, 7, 8, 9, 10	Public transport Advocate for a comprehensive bus service within Bannockburn and to surrounding towns and Geelong.	Ongoing	Council, DoT, & V/Line
4.6	6, 7, 8, 9, 10	Public transport Continue to safeguard land for the inter-modal transport hub and advocate for the delivery of a bus interchange at this location.	Ongoing	Council & DoT
4.7	2, 3, 4, 5, 11, 13, 14, 17	Second arterial road Advocate for funding for the second arterial road and grade separated railway crossing.	Ongoing	Council, DoT, VicTrack & V/Line
4.8	5, 11, 15	Streetscape improvements Prepare a detailed proposal to investigate the proposed streetscape improvements identified on Plan 10 and advocate for funding for their delivery.	Ongoing	Council, DoT, VicTrack & V/Line
4.9	1, 3, 4, 8, 11, 14	Road network Advocate for the funding of crossing points of Bruce’s Creek at Milton Street in the North West and the proposed arterial road in the south.	Short/ Medium	Council & DoT

*Timing: Ongoing (immediate or on an ongoing basis), short-term (0 – 5 years), medium-term (5 – 10 years) and long-term (10+ years).

IMPLEMENTATION & DELIVERY

Implementation and Review

Sequencing of growth fronts should be continuously reviewed based equally on supply and demand analysis and the ability to deliver needed infrastructure. As making precise growth projections is difficult, the Growth Plan identifies future growth options that are available to be delivered if a higher growth scenario is experienced in Bannockburn.

Subject to approval by Council, the delivery of proposed growth areas and future growth options can be brought forward if deemed necessary and if supported by appropriate assessments.

The Growth Plan identifies a number of actions to support the towns long term growth. The Growth Plan will be implemented over a 30-year time frame, therefore should be subject to review. The Growth Plan should be reviewed every five years to track progress of implementation and ensure delivery and investment decisions are accurately reflected. This review should also incorporate a review of land supply and demand, as well as the development sequencing of growth areas and future growth options.

Delivery

Infrastructure

The infrastructure required to support the proposed growth areas is extensive and diverse. This infrastructure will be delivered by various stakeholders such as:

- Capital works by Golden Plains Shire Council.
- State Government.
- Subdivision works by land developers.
- Utility service providers.

Infrastructure will be funded in the growth areas via a number of means such as:

- Development contribution plans or infrastructure contributions plans.
- Agreements under Section 173 of the Planning and Environment Act 1987.
- Works in kind projects completed by land developers.
- Works by utility service providers.
- State and potentially federally funded projects.

The delivery of actions in the Growth Plan will be led by Council and government partners. In addition to the potential funding mechanisms identified, the Growth Plan will also be used by Council to advocate for funding for infrastructure and other initiatives.

Servicing and Utilities

Upgrades to existing servicing infrastructure will be required to service the new growth areas. Detailed servicing plans will need to be prepared as part of future development plans and precinct structure plans.

Engagement with servicing providers as part of the Growth Plan process did not identify any significant concerns related to the ability to service the proposed growth areas.

Some of the high-level considerations provided by servicing providers to be considered as part of the planning for the growth areas are:

Barwon Water

- Sewerage
 - The southern areas all fall to the south away from existing sewerage infrastructure in Bannockburn. As gravity sewerage infrastructure and pump stations are generally located at the lowest point, this puts them at the furthest point away from the existing system. This can make initial servicing quite difficult. If development occurs remote from the low point, alternative or temporary servicing arrangements may be required. Therefore, the exact number of pump stations will need to be investigated. These typically occupy between 500 – 2,500 sqm of land.
 - The capacity of the existing Water Reclamation Plant will need to be assessed to determine if it can accommodate the scale of growth proposed. The Bannockburn Water Reclamation Plant currently allows for a connected population of approximately 5,000 before further upgrades are required. Barwon Water records show approximately 3,700 connected currently, therefore it is still a number of years before further upgrades will be considered. Barwon Water will continue to closely monitor growth in Bannockburn and plan for future upgrades accordingly.

- Water
 - The capacity of the water network to the south of Bannockburn is currently limited. Progressive updates to the network will need to accompany future growth.
 - The capacity of the water basin and pump station to accommodate a peak days demand will need to be assessed to determine if it can accommodate the scale of growth proposed.
- Recycled Water
 - Opportunities to reuse existing Class C water within the growth areas should be investigated.
 - Consideration could be given to improvements to the quality of recycled water (higher class).
 - Opportunities for reuse should be explored through Integrated Water Management initiatives.

Gas – AusNet

- An assumption has been made for a 3–5% growth in residential connection per year, with a small amount of commercial and industrial connection
- Further capacity can be accommodated with network upgrades.
- In order to reticulate gas to the growth areas, the network augmentations and upgrades would include extensions or large diameter supply mains, network reinforcements and a potential upgrade to current the Bannockburn City Gate

Electricity – Powercor and Australian Energy Market Operator (AEMO)

- Powercor has assumed 2-3% population growth per annum in determining its current provision. Bannockburn is currently supplied electricity from the Geelong zone substation (GL). Proposed development would require significant 22kV feeder works and potentially a new zone substation. This may involve land being allocated for the zone substation and REFCL isolation transformers.
- AEMO has identified a future requirement for an additional double circuit 500kV Moorabool-Heywood line, in response to increased wind generation in south-west Victoria. The additional line will likely be located immediately adjacent and parallel to the south of the existing infrastructure.

Telecommunications

- At the detailed planning stage, further engagement with NBN Co Limited will be required.
- At least one mobile base station will be required to support growth.

Development Sequencing

- A staged release of land for urban development is supported by the *Golden Plains Planning Scheme*, which states:
- *Support a progressive series of land rezoning within Bannockburn, in line with the staged development of the town taking into account sustainable land supply, growth capacity and infrastructure provision.*

Sequencing of urban development is critical to the success of the new communities and must be undertaken in a manner that benefits the city’s broader community and economy.

Commencing new urban development in proximity to existing neighbourhoods is generally preferred as it will allow nearby access to services for new residents prior to the delivery of local infrastructure.

The staging of future growth areas will be essential to ensure necessary infrastructure can be provided to support development as it occurs. Detail on staging and sequencing will be determined as part of the detailed planning for the growth areas. The following principles will be applied to future development staging:

- Ensure development staging considers activity centres and community infrastructure during early stages.
- Staging of subdivisions will respond to fragmented land ownership as to best conduct development and deliver infrastructure.
- Development staging will be informed by the ability to provide servicing infrastructure. Growth should be structured and staged and remain closely aligned with trunk infrastructure.
- Prioritise development staging in locations with proximity to existing infrastructure such as roads, retail and community facilities.
- Consideration of zoned land supply and any unforeseen issues related to the progression of short or medium growth options should allow future long term growth areas to be considered if required, subject to the approval of Council.

Sequencing of proposed growth areas may be bought forward, subject to the approval of Council.

REFERENCES

Australian Bureau of Statistics (ABS), Census (2016)
www.abs.gov.au/websitedbs/censushome.nsf/home/2016

Alluvium Consulting Australia Pty Ltd, Bannockburn Catchment Assessment (2020)

Department of Environment, Land, Water and Planning (DELWP), Victoria in Future (VIF) (2019) www.planning.vic.gov.au/victoria-in-future

Ecology and Heritage Partners, Bannockburn Strategic Bushfire Risk Assessment (2020)

G21 Geelong Region Alliance, Affordable Social Housing Paper (2019)

G21 Geelong Region Alliance, G21 Regional Growth Plan (2013)

G21 Geelong Region Alliance, G21 Regional Growth Plan Implementation Plan (2013)

Golden Plains Shire Council, Batesford Structure Plan (2001)

Golden Plains Shire Council, Environment Strategy 2019-2027 (2019)

Golden Plains Shire Council, Lethbridge Structure Plan (2010)

Golden Plains Shire Council, Sport and Active Recreation Strategy 2020-2030 (2020)

Golden Plains Shire Council, Street Tree Guide (2020)

Golden Plains Shire Council, Teesdale Structure Plan (2020)

Greater Geelong City Council, Northern and Western Geelong Growth Areas Framework Plan (2020)

.id Consulting, Bannockburn population (2020)
forecast.id.com.au/golden-plains/about-forecast-areas

Parsons Brinckerhoff, Urban Design Framework (2011)

Parsons Brinckerhoff, Gheringhap Structure Plan (2012)

Victorian Planning Authority (VPA), Bannockburn Growth Plan Network Assessment (2020)

GLOSSARY

Active Transport	Transport requiring physical activity, typically walking and cycling.	Built Form	The combination of features of a building, including its style, façade treatments, height and site coverage.	Constructed Waterway	A fully or partially constructed waterway to provide an appropriate drainage level of service for new developments.	Framework Plan	High level coordinating plan which sets policy direction and spatial structure for a growth area, urban renewal precinct, cluster, or regional city. A Framework Plan: <ul style="list-style-type: none">• Sets out the future vision for a defined area.• Guides sustainable growth development over the longer term.• Identifies the steps needed to manage growth.• Defines key projects and infrastructure required to support growth.• Provides a more certain environment for making both public and private investment decisions.
Activity Centres	Areas that provide a focus for services, employment, housing, transport and social interaction. They range in size and intensity of use from smaller neighbourhood centres to major suburban centres and larger metropolitan centres.	Bushfire Attack Level (BAL)	A rating system used to define the level of exposure a bushfire will have on a building. It is measured in terms of the radiant heat exposure or the direct flame contact from a bushfire as well as considering the impact from burning embers.	Development Contributions	Development contributions are payments or in-kind works, facilities or services provided by developers towards the supply of infrastructure required to meet the future needs of the community.	Historic Heritage	Includes post-colonial built and environmental sites or other types of places that embody aesthetic, historic, scientific or social values.
Affordable Housing	Housing that is appropriate for the needs of a range of very low to moderate income households, and priced (whether mortgage repayments or rent) so these households are able to meet their other essential basic living costs.	Climate Change	A long-term change of the earth’s temperature and weather patterns, generally attributed directly or indirectly to human activities such as fossil fuel combustion and vegetation clearing and burning.	Development Plan	Ensures the future development of strategic sites is undertaken in a coordinated way. The plan addresses land use, built form, landscaping, transport and access, drainage and other infrastructure requirements to support the delivery of staged development. A development plan is incorporated in the Planning Scheme through the application of a Development Plan Overlay.	Housing Density	The number of dwellings in an urban area divided by the area of the residential land they occupy.
Amenity	The pleasant or satisfactory aspects of a location which contribute to its overall character and the enjoyment of residents or visitors. May include access to services and well-designed public spaces.	Climate Change Adaption	Actions that prevent or minimise the adverse impacts of climate change.	Easement	An easement is an interest attached to a parcel of land that gives another landowner or a statutory authority a right to use a part of that land for a specified purpose, for example for roads or transmission lines.	Integrated Transport	The linking of multiple modes of transport and land use planning to provide efficiency of travel and accessibility.
Arterial Road	A higher order road designed to perform a through-movement function with restricted direct access to abutting land uses.	Climate Change Mitigation	Actions that prevent or reduce emissions of greenhouse gases that contribute to climate change.	Environmentally Sustainable Design (ESD)	Design following a set of guidelines or standards that aim to reduce the impacts in the construction and use of the built environment on the natural environment.	Integrated Water Management	An approach to planning that brings together all facets of the water cycle including sewage management, water supply, stormwater management and water treatment, ensuring environmental, economic and social benefits.
Biodiversity	The variety of all life forms, the different plants, animals and microorganisms, the genes they contain and the ecosystems of which they form a part.	Community Facilities	Infrastructure provided by government or non-government organisations for accommodating a range of community support services, programs and activities. This includes facilities for education and learning, early years health and community services, community arts and culture, sport, recreation and leisure, justice, voluntary and faith and emergency services.				
Buffer	An area within a standard distance from uses which pose specific hazard or amenity risks, in which additional controls or provisions on land use may apply.	Connector Road	A lower order road linking local streets to the arterial network.				

Linear Park	Corridor of open space, generally along river and creek lines, railway lines or similar, which link together to form a network and provide active transport connections in the community to key destinations and facilities.	Planning and Environment Act 1987	The purpose of this Act is to establish a framework for planning the use, development and protection of land in Victoria. The main functions of the Act are to: Set the broad objectives for planning in Victoria. Set the main rules and principles for how the Victorian planning system works. Set up the key planning procedures and legal instruments in the Victorian planning system. Define the roles and responsibilities of the Minister, councils, government departments, the community and other stakeholders in the planning system.
Local Town Centre	Town centres that are an important community focal point and have a mix of uses to meet local needs. Accessible to a viable user population by walking, cycling and by local bus services and public transport links to one or more principal or major town centres. This should be of sufficient size to accommodate a supermarket.		
Neighbourhood Activity Centres	Local centres that provide access to local goods, services and employment opportunities and serve the needs of the surrounding community.		
Open Space	Land that provides outdoor recreation, leisure and/or environmental benefits and/or visual amenity.		
Overlay	A state-standard provision, forming part of a suite of provisions in the Victoria Planning Provisions. Each overlay addresses a single issue or related set of issues (such as heritage, bushfire or flooding). Not all land is affected by an overlay, but where more than one issue applies to a parcel of land, multiple overlays can be used.	Planning Authority	Any person or body given the power to prepare a planning scheme or an amendment to a planning scheme.
		Planning Scheme	A document approved by the Victorian Government, that outlines objectives, policies and controls for the use, development and protection of land for each municipality across Victoria. It contains state and local planning policies, zones and overlays and other provisions that affect how land can be used and developed.
		Planning Scheme Amendment	The process to change a planning scheme as set out in the Planning and Environment Act 1987. An amendment may involve a change to a planning scheme map (e.g. a rezoning), a change to the written part of the scheme, or both.

Precinct Structure Plan (PSP)	Detailed master plans for future growth corridor developments. The plans identify alignments of transport routes, town centres, open space networks, densities of residential areas, and areas for industry and employment.	Urban Heat Island Effect	A localised heating effect in urban areas caused by a concentration of hard surfaces such as pavements, walls and roofs that retain heat and radiate it back into the environment.
Regional Growth Plan	Plans providing a broad regional planning direction for land use and development across eight regions in Victoria, developed through partnerships between local governments and state agencies and authorities.	Walkability	The degree to which an environment supports walking as a transport mode, for instance by providing safe and attractive paths that connect common trip origins and destinations.
Social Housing	Non-profit housing owned and managed for the primary purpose of meeting social objectives such as affordable rents, responsible management, security of tenure and good location in relation to employment services. The term encompasses public housing and includes housing owned or managed by housing associations and community housing organisations.	Water Sensitive Urban Design (WSUD)	Integrating the urban water cycle into urban design to minimise environmental damage and improve recreational and aesthetic outcomes.
Sustainable Development	An approach to development that seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs. It has economic, social and environmental dimensions.	Zone	A planning scheme uses zones to designate land for particular uses, such as residential, industrial or business. There is no ability to vary the zones or to introduce local zones. However, some zones have schedules to provide for local circumstances, such as the Mixed Use Zone and the Rural Living Zone.
Town Centre	The primary community focal point and commercial centre of a town, often holding historical, social or administrative significance.		
Urban Greening	Growing plants wherever possible in urban areas to contribute to vegetation coverage, and provide a connection to nature.		



May 2021