



BANNOCKBURN TOWN CENTRE INVESTMENT STRATEGY

FINAL REPORT

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Connell Wagner

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Executive Summary

The Bannockburn Town Centre Investment Strategy has been prepared to provide a comprehensive and coordinated framework for new retail and commercial developments that will be required to support an expanding population base. The population of Bannockburn and surrounding districts increased by 39.3% between 2001 and 2006 to 8,140 and is forecast to continue to grow at a similar rate to 2021, when the catchment population of the town centre will be 12,260.

Bannockburn has a unique urban character defined by its wide open streetscapes and mix of older heritage buildings. The Investment Strategy recommends that new development respect this character and retain the generally low rise profile and open presentation to street frontages of buildings in the town centre.

The Investment Strategy provides for expansion of the retail and service/commercial areas within the town centre and redefines the character and density of development within inner residential precincts as summarised below:

- Provision has been made for consolidation of retail activities between Burns Street and High Street and extending across the northern half of Burns Street to Victor Street. These areas will be rezoned Business 1 and Burns Street will be retained as a primary access to parking associated with the expanded Plaza Centre.
- Service/commercial precincts are proposed on the eastern side of High Street between the service station and Milton Street, on the site of the primary school if and when it is relocated and on a second level associated with a redevelopment of the Plaza Centre. These areas will be rezoned Business 1.
- Medium density residential precincts are proposed between McPhillips Road and Milton Street and Burns Street and Victor Street adjacent to the proposed Business 1 zones.
- Inclusion of a Civic Precinct on the south east corner of High Street and Milton Street.

Traffic management and service provision in the town will need to be upgraded to accommodate new growth and the location of new residential areas west of the town centre will alter the character of some local streets and change the traffic management requirements of intersections in the town centre. Significant improvements to traffic management of local streets will also be required to accommodate additional traffic generated by new development and growth in the catchment. Traffic signals are proposed at the intersection of Milton Street and High Street and roundabouts are proposed at the following intersections:

- Burns Street and Milton Street
- Milton street and Byron street
- Milton Street and Moore Street.

Implementation of the Investment Strategy will require amendments to the planning scheme and appropriate management of development applications and works affecting the town centre in the future.

1. Introduction and Background

Bannockburn Township is experiencing very high rates of growth reflecting its proximity to Geelong and Melbourne and the fact that it serves as the community hub for the Golden Plains Shire. Completion of the Geelong By-Pass will make Bannockburn an even more attractive dormitory area offering direct access to Avalon and Melbourne airports, the city and south west.

Golden Plains Shire has identified a critical need to plan for the growth of the Bannockburn Town Centre, and in particular, provide the framework for new retail and commercial developments including a significant expansion of the Plaza. The Investment Strategy provides a comprehensive and coordinated framework to facilitate expansion of the town centre as it continues to play a key role in servicing the residents and workers of Bannockburn and the wider regional community. The Study Area for the Bannockburn Investment Strategy is shown in Figure 1.

Bannockburn retains its rural township setting and lifestyle. The challenge for the Investment Strategy is to manage the forecast change and provision of new services and infrastructure without detracting from the amenity and liveability of the township.

The purpose of the Investment Strategy is to deliver:

- *"A land use plan to guide commercial growth and manage change as the town and commercial precinct expand"*
- *A plan to facilitate commercial growth, investment and change to capture economic benefits for Bannockburn and district and encourage job creation*
- *Plans to improve the infrastructure and traffic movement in and around the Town Centre, such as providing for an integrated pedestrian network, to facilitate more sustainable access to commercial and community facilities*
- *A plan for the development of car parking infrastructure over time to service businesses, attract shoppers and encourage more activity*
- *A marketing tool to attract business, provide greater certainty and attract improved facilities associated with the multi-million dollar development in the centre"*



Figure 1 Bannockburn Town Centre Investment Strategy Study Area

1.1 Approach and Consultation

The Investment Strategy has involved a mixture of desktop and site analysis, community and stakeholder consultation and a detailed assessment of key issues identified in the course of the investigations.

The key issues and background data that informed the strategy include:

- The Bannockburn Urban Design Framework
- The Golden Plains Planning Scheme
- Relevant Planning Practice Notes
- Future population growth
- Proposed expansion of retail and commercial activities
- Traffic, car parking and access issues
- Pedestrian movement around the town centre
- Provision of major infrastructure including water supply, sewerage and electricity
- Possible land use changes, such as the relocation of the primary school

The diagram below outlines the stages associated with the preparation of the strategy and opportunities for community input that contributed to the development of the plan.

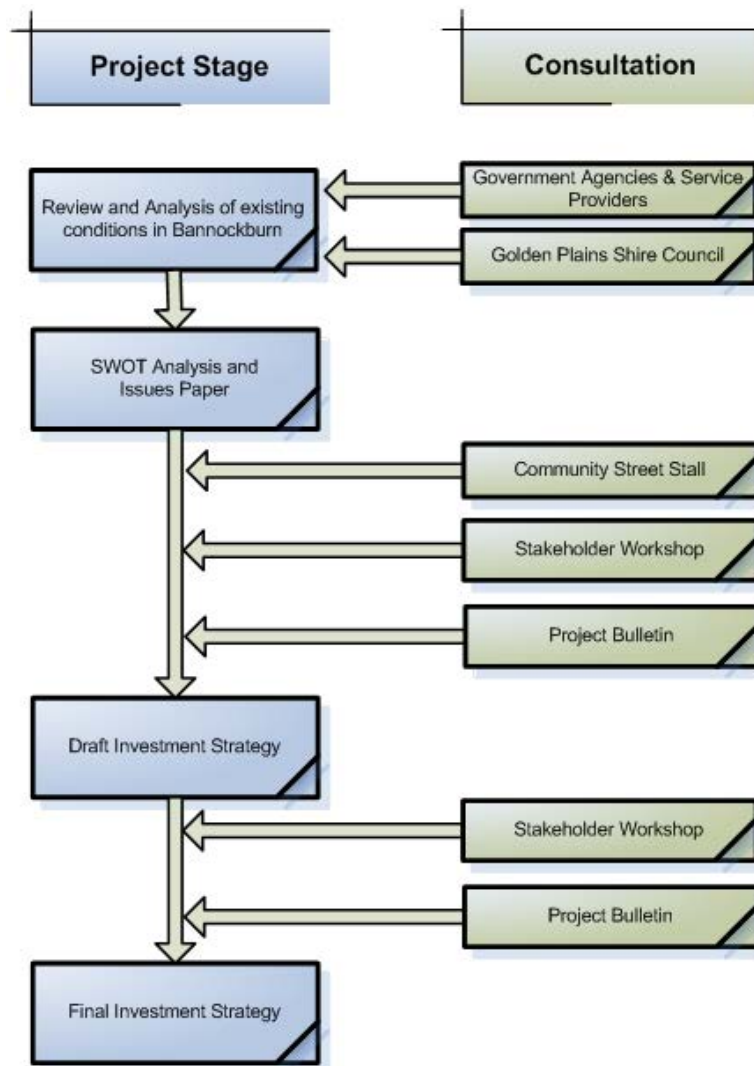


Figure 2 Investment Strategy process

2. Context and Issues

This section provides an overview of the context and issues that will impact on the Investment Strategy for Bannockburn.

2.1 Location

Bannockburn is situated in western Victoria, approximately two kilometres from the Midland Highway which links Geelong and Ballarat. The town is approximately 80 kilometres from Melbourne, and 20 kilometres from Geelong.

Figure 3 below shows the location of Bannockburn and its context in the surrounding region.



Figure 3 Location of Bannockburn

2.2 Physical Form

Bannockburn is the principal urban centre in Golden Plains Shire located approximately 20 kilometres north west of Geelong. It lies on gently undulating land, to the west of the Midland Highway, on the railway line connecting Geelong and Ballarat. The close highway proximity allows easy access to Melbourne, Geelong and also Ballarat.

The town has developed principally along the major axis of High Street (Shelford-Bannockburn Road).

Commercial and retail activity (the "Town Centre") is focused at the north-eastern end of High Street between the railway and Milton Street. Generally retail activities are contained on the western side of High Street, with several continuing through to Burns Street further west. There is an array of commercial services on the eastern side of High Street, with several similar uses scattered along the eastern side of Burns Street.

High Street is a broad boulevard style road, with uncontrolled pedestrian crossings providing access from one side of High Street to the other. Buildings in the Town Centre are a mixture of ages and

predominantly single storey. The subdivision pattern in the core business area of Bannockburn is generally uniform, with most lots being of regular, rectangular shape and originally laid out as residential lots. Recent subdivisions have increased the density of housing in the town centre precinct with the development of units and dual occupancies.

The Town Centre is bordered to the north by the Railway line, and to the east, west and south by predominantly residential development. Other notable uses in the area include the Bannockburn Primary School on the south west corner of High Street and Milton Street, Bannockburn Sports Stadium immediately to its south, and the Bannockburn Community Centre on the eastern side of High Street south of Milton Street, opposite the school. The Bannockburn Recreation Reserve is located two blocks to the east of High Street in Moore Street.

Residential development has radiated outwards from the central axis of High Street and the commercial precinct. Low to conventional density housing is focused around the main township area, along Byron, Moore, Burns and Victor Streets. The residential areas of the town are predominantly single storey. Rural residential development is located predominantly to the north and east of the township. Further residential development is planned for areas south of Burnside Road, which is suitably zoned to accommodate such development. Land north of Milton Street, west of the township and running through to McPhillips Road, has also been rezoned for residential purposes (Residential 1 Zone).

2.3 Demographics

The 2006 Australian Census provides the most recent demographic information on Golden Plains Shire.

Following is a summary of the key aspects of Bannockburn (included in the South East Golden Plains Shire region), based upon Community Profile information prepared by ID Consultants (2007). A link to this information is www.id.com.au/goldenplains/commprofile.

Data for Golden Plains Shire has been compiled into four regions. Bannockburn falls into the South East region.

Table 1 below gives a breakdown of the population of the South East region over the period between 2001 and 2006.

Key statistics (summary statistics)	South East						
	2006			2001			
			Golden Plains Shire %			Golden Plains Shire %	Change 2001 to 2006
	Enumerated data	number	%	number	%		
Enumerated population, excluding overseas visitors							
Total population (b)	3,546	100.0	100.0	2,546	100.0	100.0	1,000
Males (b)	1,815	51.2	50.6	1,284	50.4	51.0	530
Females (b)	1,731	48.8	49.4	1,262	49.6	49.0	469

(b) Excludes overseas visitors

Table 1 Population of the South East region of Golden Plains Shire, 2001-2006
[Source: ID Consulting, 2007]

Growth has been strong in this region, with a 39.3% increase in total population for the five years from 2001-2006.

Table 2 below shows population projections for the South East Region of Golden Plains Shire.

Summary data	Forecast year		
	2006	2011	2021
Total population	3,676	4,857 ↗	6,928 ↗
Resident population in non-private dwellings	16	89 ↗	127 ↗
Resident population in private dwellings	3,659	4,767 ↗	6,801 ↗
Households	1,245	1,661 ↗	2,481 ↗
Dwellings	1,274	1,700 ↗	2,540 ↗
Average household size	2.94	2.87 ↘	2.74 ↘

↗ stable* from previous year ↗ increase from previous year ↘ decrease from previous year
 * stable refers to between +/- 0.5% change

Table 2 Population change in South East region of Golden Plains Shire
 [Source: ID Consulting, 2007]

The total population for the South East Region of Golden Plains Shire is expected to rise steadily for the next 15 years, reaching just fewer than 7,000 inhabitants by 2021. While the increase up until 2011 shows a 32.1% increase on 2006 figures, the increase will equate to a staggering 42.6% between 2011 and 2021 (ID Consulting, 2007).

Table 3 below presents age structure estimated over the years of 2006 – 2021.

Age structure		Forecast year				
5 year age groups (persons)		2006		2011		2021
	number	%	number	%	number	%
0 to 4	1,103	6.7	1,171	6.4	1,370	6.2
5 to 9	1,182	7.2	1,292	7.1	1,511	6.9
10 to 14	1,275	7.7	1,269	7.0	1,509	6.9
15 to 19	1,141	6.9	1,148	6.3	1,295	5.9
20 to 24	768	4.7	798	4.4	885	4.0
25 to 29	732	4.4	811	4.5	935	4.3
30 to 34	962	5.8	1,030	5.7	1,235	5.6
35 to 39	1,260	7.6	1,225	6.7	1,467	6.7
40 to 44	1,306	7.9	1,369	7.5	1,516	6.9
45 to 49	1,360	8.2	1,366	7.5	1,500	6.8
50 to 54	1,308	7.9	1,394	7.7	1,523	6.9
55 to 59	1,265	7.7	1,366	7.5	1,519	6.9
60 to 64	956	5.8	1,261	6.9	1,470	6.7
65 to 69	690	4.2	945	5.2	1,324	6.0
70 to 74	476	2.9	667	3.7	1,114	5.1
75 to 79	322	2.0	471	2.6	823	3.7
80 to 84	209	1.3	312	1.7	546	2.5
85 and over	170	1.0	278	1.5	424	1.9

Table 3 Age Population Structure of the South East region of Golden Plains Shire, 2006-2021
 [Source: ID Consulting, 2007]

The information presented above suggests that the strong growth expectations already evident in the region will continue. Growth will occur in all age groups. Despite a growing population in the region, an ageing population is also evident. All age categories between 0 and 59 years show a projected decrease between 2006, through to 2021 as a percentage of the total population. Ages above 60 years all show an increase as a percentage of the total population.

2.4 Urban Design, Town Character & Heritage

Bannockburn Town Centre has undergone dramatic changes to land use and built form over a relatively short period, reflecting the strong growth rates and decision to make Bannockburn the administrative capital of the Shire. Given this circumstance, the buildings with Bannockburn are, for the most part, of a high standard that positively contribute to the streetscape and feel of the Town Centre.

There are a number of older buildings in Bannockburn such as the Shire Hall that reflect the rich history of the town and contribute to the character of the town centre. In order to identify and protect these buildings, a heritage study has been commissioned by Golden Plains Shire which is currently being undertaken by Heritage Matters Pty. Ltd. The study is due for completion in August, 2008.

2.5 Formal Open Space & Recreation

There are two major open space areas and a sports stadium located near the town centre as shown in Figure 4.

Wabdallah Reserve is located to the west of Bannockburn town centre and is managed by Parks Victoria.

Sports Complex is located adjacent to Moore Street, east of the Bannockburn Town Centre and a bowls green, tennis courts and football ovals.

Bannockburn Sports Stadium is located on the western side of High Street, within the Town Centre area study area.

Bannockburn Arboretum is located on the western side of Victor Street, just outside the Town Centre study area. The Arboretum is managed by Council as a Public Open Space reserve and includes the historic Bannockburn Lock-up.



Figure 4 Formal open space in Bannockburn

2.6 Infrastructure

2.6.1 Sewer

South of the railway line, the Town Centre and surrounding residential areas are connected to a reticulated sewer system. Although additional works will be required to connect the future residential areas west of Wabdallah Reserve, this system is capable of supporting the projected residential expansion of the town. Sewer precinct plans are shown in Figure 5. Most of the low density residential areas to the north and east of Bannockburn are without sewer.

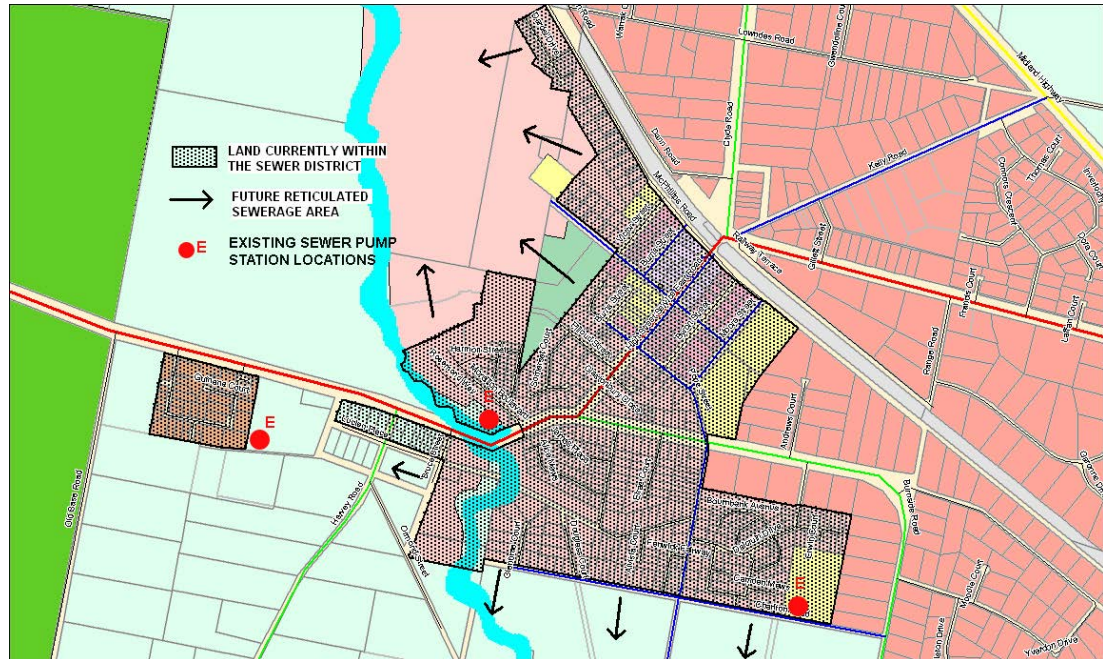


Figure 5 Existing sewerage system

There are three sewer pump stations in Bannockburn. One is located on the Shelford-Bannockburn Road, near the creek crossing. The second is on Charlton Road, adjacent to the cemetery. The third is in the new industrial estate on Holder Road, just off Shelford-Bannockburn Road (refer Figure 5).

2.6.2 Water

Treated water for Bannockburn and district is supplied from the Moorabool Water Treatment Plant, via the She Oaks Pipeline to the Bannockburn Basin. Water can also be transferred from the Montpellier Basins if required. All water for Bannockburn and district customers is pumped from the Bannockburn Basin in Milton Street.

2.6.3 Drainage

Discussions with Council have indicated that the township area to the west of High Street has existing underground drainage that mostly discharges toward Bruce's Creek. There is concern over the need to protect this catchment prior to discharging into the creek.

The township area to the east of High Street has no existing underground drainage or easement drains. Stormwater run off is collected in table drains that run alongside the road pavement.

2.7 Access

2.7.1 Roads

Bannockburn is easily accessible by road, allowing direct routes towards the east into Geelong, west towards Teesdale and Shelford and northwest to Ballarat. Figure 6 below shows the location of Bannockburn in relation to Geelong and the surrounding road network.



Figure 6 Bannockburn and the surrounding road network

Bannockburn has direct access to both Melbourne and Geelong. Completion of the Geelong By-Pass in 2010 will reduce travel times from Bannockburn to Melbourne and major airports.

2.7.2 Public Transport

The provision of public transport in Bannockburn is generally limited. Bannockburn is located on Route V104 (V/Line Coach), which links the township to Geelong (see Figure 7 below) and Ballarat (see Figure 8 below).

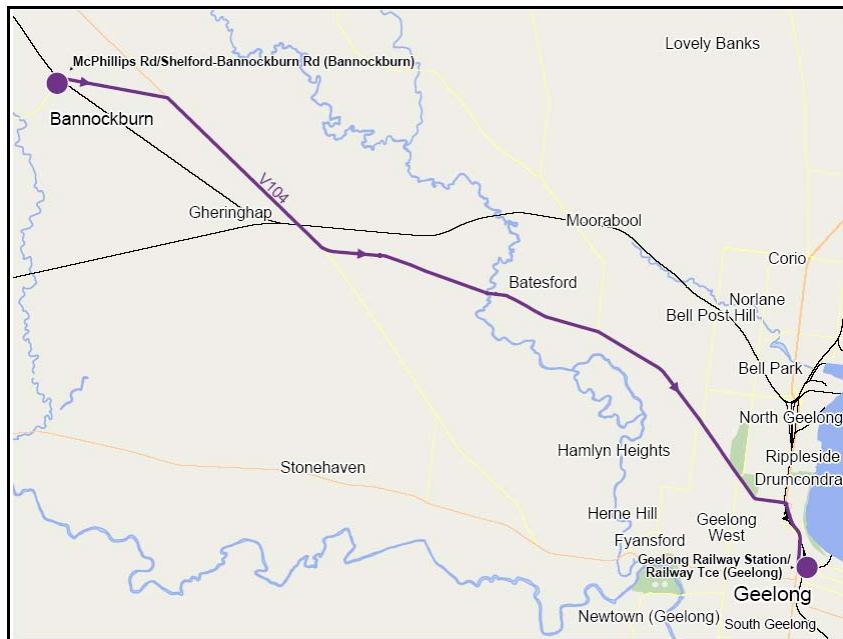


Figure 7 Bannockburn to Geelong bus route
Source: www.viclink.com.au

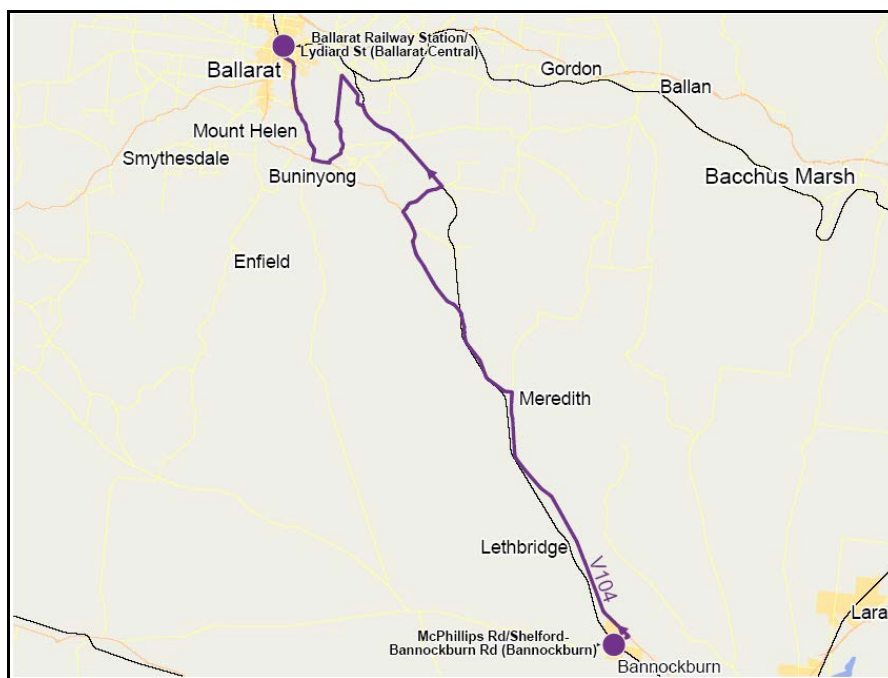


Figure 8 Bannockburn to Ballarat bus route
Source: www.viclink.com.au

In addition to the V/Line services there is a local taxi service and a community transport service that is available to residents of Golden Plains Shire.

2.7.3 Pedestrian and Cycle

Council commissioned the *Paths and Trails Strategy* in 2005 to investigate existing paths and trails and the actions required to further develop the network within the municipality. The strategy identified over 11km of trails and paths within Bannockburn and the surrounding area.

A new trail has been constructed along Pope Street, Levy Road and the urban section of Burnside Road. Other trails are located along Shelford-Bannockburn Road, Clyde Road, Milton Street and High Street. The report also highlights the importance of Shelford-Bannockburn Road, which provides walking access for many surrounding towns and areas. A map of the Bannockburn Trails is contained in Appendix A.

2.8 Current Development Proposals

A proposal has been presented to Council for the development of a large scale retail precinct at the corner of McPhillips and Burns Road. The multi-million dollar investment seeks to provide a large scale supermarket (two and a half times the size of the existing supermarket), with 20 speciality stores and associated car parking. To accommodate this scale of development, it has also been proposed that both McPhillips be realigned and Burns Street be closed. When reviewing plans for this proposal it will be important to ensure that access and parking areas to the rear of the old Shire Hall are retained.

A preliminary concept plan of the retail precinct can be seen in Appendix B.

2.9 Key Findings of Existing Conditions Analysis

The key findings from the existing conditions analysis are:

- Bannockburn is a thriving town that has experienced considerable growth in the last 10 years, which shows no signs of slowing.
- Retail and commercial services are present in Bannockburn Town Centre but given the population increases and projections, the current level of service will ultimately be inadequate.
- The open spaces and atmosphere in the Town Centre is an appealing factor of Bannockburn that needs to be retained through continued development.
- Services in the Town Centre are generally adequate, with the exception of drainage to the east of High Street.
- The lack of traffic management in the Town Centre is becoming an issue given the continual population growth in Bannockburn.
- The road network that exists around Bannockburn is adequate and allows easy access to and from the town.
- The frequency of bus services to Bannockburn is poor, leaving public transport nearly non-existent.
- Walking paths that exist in and around Bannockburn do not necessarily link to places of interest or gathering.
- Parking within the Town Centre is becoming inadequate to meet demand during daily peak periods.
- The current car parking layout in Bannockburn is not user friendly, however, the ability to access High Street from Burns Street is important for local traders and traffic circulation in the area.

2.10 SWOT Analysis

An analysis of the strengths, weaknesses, opportunities and threats (SWOT) in relation to Bannockburn Town Centre was undertaken to provide a further framework for the Investment Strategy. The findings of the SWOT analysis are presented in Table 4 overleaf.

Table 4 SWOT Analysis

Strengths	Weaknesses
<i>Social</i> <ul style="list-style-type: none">Consistent, strong population growth across all age groupsGood access to services and facilitiesAffordabilityRural character	<i>Social</i> <ul style="list-style-type: none">An increase in the aged population as a percentage of the total population will require services planningLack of housing diversityLimited public transport access
<i>Economic</i> <ul style="list-style-type: none">Existing developer interest in BannockburnGood access to commercial servicesLocal shopping facilities	<i>Economic</i> <ul style="list-style-type: none">No supply of natural gasLack of substantial local employment opportunities
<i>Environmental</i> <ul style="list-style-type: none">Rural character and quiet atmosphereProximity to coastal regions along the Great Ocean RoadExisting open spaces are extensive, in close proximity to each other, and easily connected through walking linksThe Shire currently has over 11 kilometres of walking trails and pathsNatural waterway (Bruce's Creek) in close proximity to the township	<i>Environmental</i> <ul style="list-style-type: none">Managing impacts of growth on environmental features
<i>Physical</i> <ul style="list-style-type: none">Proximity to Melbourne, Geelong and BallaratHighway accessHigh Street and many local roads have very wide road reservations and therefore able to accommodate additional traffic / footpaths without the need to purchase additional landExisting traffic volumes are relatively low suggesting spare capacity within the existing infrastructureEasy parkingAreas are currently adequately serviced by waterEmergency services	<i>Physical</i> <ul style="list-style-type: none">Poor drainage infrastructureMajority of public parking is located in a single quadrant of the townTown is split by High Street (arterial road) running through the middleHeavy Vehicles use High StreetOnly two formal (although unsignalised) pedestrian crossing points on High StreetLimited footpaths along local streets such as McPhillips RoadInternal retail takes activity and focus away from High StreetSome outer zones are not serviced by sewerage systemsEast side of Bannockburn is not serviced by a piped drainage system and no easement drains exist.

Opportunities	Threats
<i>Social</i> <ul style="list-style-type: none">Continued growth forecasts basis for increased service provisionProviding greater diversity of housing and servicesPromote healthy communities/lifestylesImprove accessibility	<i>Social</i> <ul style="list-style-type: none">Matching provision and timing of services to growthAbility to provide services to an aging populationLosing the rural character of the townshipIncreasing isolation through poor access to services
<i>Economic</i> <ul style="list-style-type: none">Sufficient and suitable land to increase commercial activityIncrease activity to street frontagesConsolidate town centrePromote sustainable growthProposal for a large scale retail development has been submitted to CouncilTourism opportunities	<i>Economic</i> <ul style="list-style-type: none">Matching provision and timing of services to growthAd hoc development
<i>Environmental</i> <ul style="list-style-type: none">Adequate open space needs to be provided to cater for the growing population of BannockburnExisting open spaces are suitable for linkagesLinks should be separate from vehicular trafficRecognise and integrate local heritageFor drainage upgrade for east side of Bannockburn, stormwater storage and re-use are opportunities may be implemented during strategy stageQuality urban design	<i>Environmental</i> <ul style="list-style-type: none">Encroaching salinity issues for Bannockburn townshipImpacts of growth on natural environment
<i>Physical</i> <ul style="list-style-type: none">Benefits of Geelong Bypass to reduce travel times to Melbourne and GeelongPotential to provide additional commercial area without necessarily providing full complement of parkingMost likely be a sewer pumping station located at corner of Burnside RoadCritical need to plan for the growth of the Bannockburn Town CentreProvide heavy vehicle by-pass of Town CentreManaging the future of the school	<i>Physical</i> <ul style="list-style-type: none">Funding improvements and the provision of servicesEffect of increased traffic volumes on pedestrian movement and safetyMany of the off street parking areas are not directly connected. Should parking get to be at a premium then this would make search patterns for parking spaces potentially quite difficult

3. Consultation

Consultation for the draft structure plan has been undertaken in accordance with the consultation program contained in Appendix C.

Consultation activities that have been completed include:

- Consultation with Council and service providers to understand existing conditions (ie. traffic, water supply, sewerage, power) within Bannockburn
- A community street stall
- A stakeholder and community workshop
- Targeted stakeholder consultation
- Issue 1 of Project Information Bulletin.

3.1 Community Street Stall

	
Discussing the new Plaza concept plan	Reviewing existing conditions in Bannockburn over township aerial photo

Connell Wagner project team members and Council staff attended a community street stall on 8th November, 2007. The aim of the stall was to enable shoppers at the Plaza to view and discuss aspects of the strategy and the proposed redevelopment of the Plaza. Members of the public who attended the stall were also invited to register their interest in the project for future information.

3.2 Issues and Visioning Consultation

Key stakeholders, retailers and community interest groups who were contacted during the initial stages of the project were invited to an issues and visioning workshop. Participants addressed four main questions regarding the development of Bannockburn (see Appendix D). A summary of the results of these meetings is located in Appendix E.

3.3 Presentation of Draft Investment Strategy

On 13th December, 2007 a second community session was held to present the draft Investment Strategy. This session included presenting the guiding principles of the strategy, and allowing the community a chance to view the various plans that have been developed to implement the Investment Strategy.

Following this, the Draft Investment Strategy was placed on exhibition to allow community comment. The exhibition period extended from the 13th December to 18th January. All submissions received up to and including this date were considered.

3.4 Community Comment

Three written submissions were received by Council. These submissions highlighted the following issues with the draft strategy:

-
- The need to retain a vehicle connection between Burns Street and High Street and associated parking.
 - Possible closure of the central car park and consequent congestion will impact on businesses in the town centre.
 - Protection of the historic precinct around the old Council offices adjacent to the Plaza.
 - Continued use of Burns Street as a major access point for the Plaza shopping centre car park with through connection from Burns Street to Victor Street.
 - Acknowledgement of local taxi services as a public transport option available to the community.

4. Vision and Objectives

4.1 Vision

The vision for Bannockburn Town Centre is:

To maintain the rural atmosphere of Bannockburn by managing future development in a way that enhances the regional role of the township, maintaining high service provision and providing opportunities for local employment, while improving traffic circulation and public access.

4.2 Objectives

The following objectives have been developed to provide guidance in relation to the future planning and development of the Bannockburn Town Centre and have been grouped around the key themes of population and retail growth, traffic and parking, pedestrian access and open space, town character and infrastructure.

Population and Retail Growth

- Establish a logical framework for the future development of Bannockburn Town Centre
- Facilitate opportunities to expand retail and services activities to meet the growth projections of Bannockburn to 2021.

Traffic and Parking

- Promote traffic management outcomes that cater for increased traffic and parking demands associated with the growth of Bannockburn.
- Provide specific control measures at key intersections in Bannockburn.
- Define a road hierarchy to facilitate traffic movement through and within the town.
- Provide adequate and suitably located car parking to cater to retail and commercial land uses.

Pedestrian Access and Open Space

- Enhance pedestrian and cycle connectivity within the town
- Provide attractive and usable public spaces adjacent to or within close proximity to the retail centre.

Town Character

- Maintain the village character of Bannockburn through the protection of historic buildings and wide streetscapes.

Infrastructure

- Upgrade the provision of infrastructure in the town centre to ensure all areas are connected to basic services of sewer, water, power and telecommunications.
- Provide a drainage system that services all areas within the town centre.

5. Role and Function of Bannockburn Town Centre

5.1 Population Growth and Regional Catchment

Bannockburn is the main convenience shopping and local service centre for a broader catchment within the south east region of Golden Plains Shire (refer Figure 9 below). The population and growth of this region will influence the current and future retail and commercial land use demands in Bannockburn.

Population projections for the wider catchment are based on the ID Consulting forecasts. The most accurate representation of the broader catchment area is found by including both the South East and Central East regions defined by ID Consulting (refer to Figure 10 overleaf).

Population projections for the Central East and South East regions of Golden Plains Shire are summarised in Table 4 and show a forecast population of 12,256 by 2021.

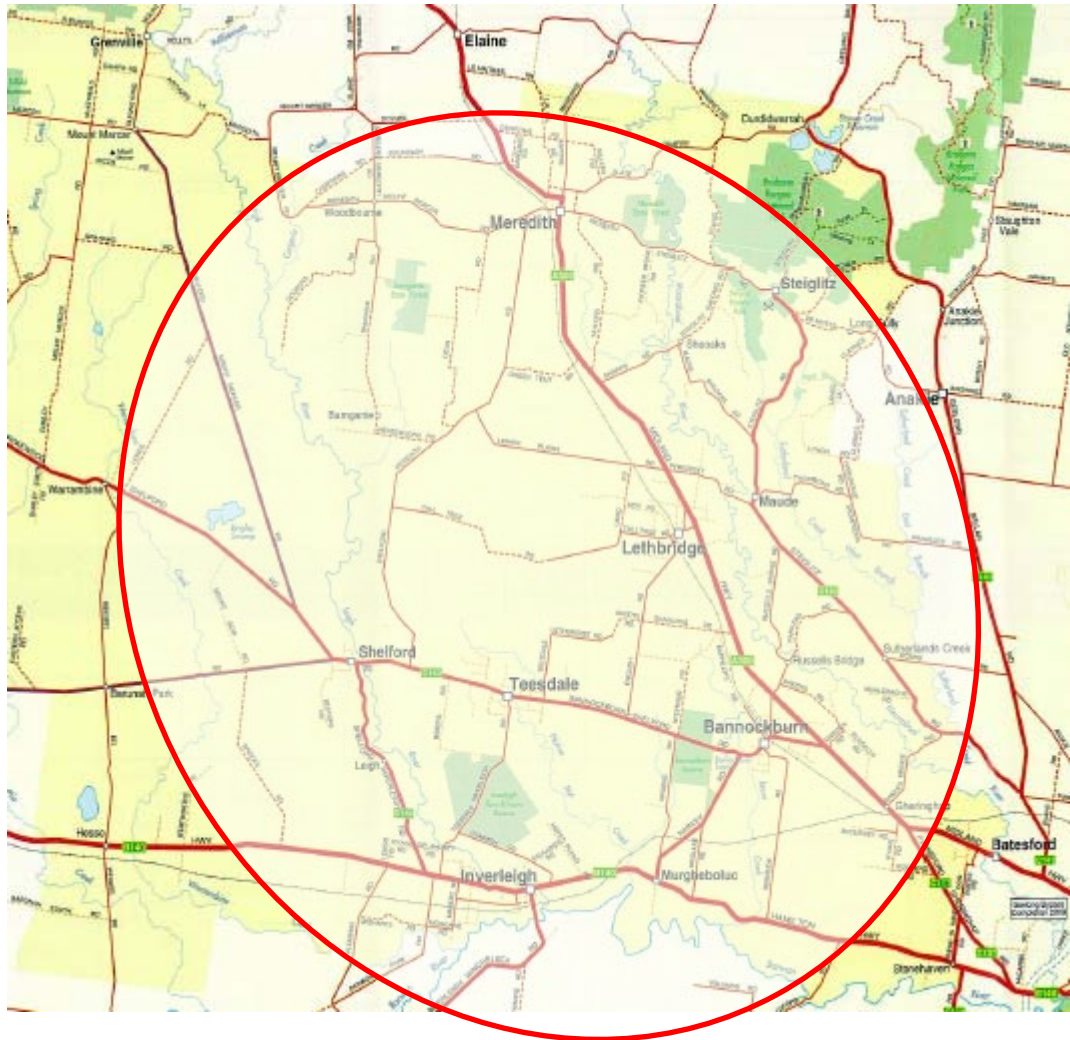


Figure 9 Regional Catchment of Bannockburn Town Centre

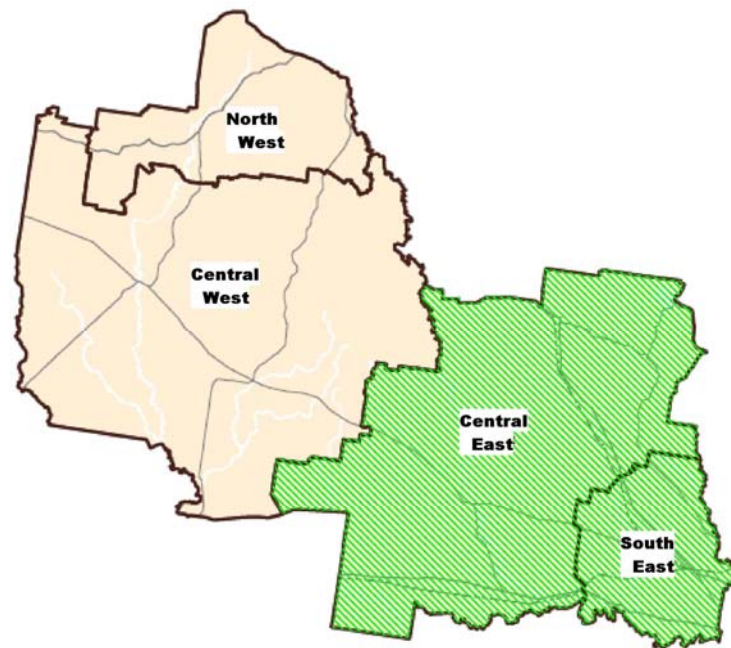


Figure 10 Regions of the Golden Plains Shire
[Source: ID Consulting, 2007]

	2006	2011	2021
Total Population	8,141	9,499	12,256
Households	2,907	3,467	4,655

Table 5 Population Projections for the Eastern Region of Golden Plains Shire
[Source: ID Consulting, 2007]

5.2 Retail Centre Hierarchy

The City of Greater Geelong Retail Strategy includes a retail centre hierarchy for the Greater Geelong region, which includes the south east region of Golden Plains (refer Table 5 below). This hierarchy acknowledges the primary retail function of Geelong in the region and provides the basis for developing local policy for Bannockburn.

Under the Geelong Strategy, Bannockburn would be classified as a Neighbourhood Centre, which has the following characteristics:

- Population of 8,000 - 25,000
- Retail floorspace of 2,500 – 10,000sq m
- Supermarket as main “anchor”

Whilst the Neighbourhood Centre designation for Bannockburn is appropriate in terms of catchment, floorspace provisions and key tenants, it doesn't adequately reflect the district and administrative functions of the town. Bannockburn is not only the main retail commercial and service centre for Golden Plains but is also the declared administrative centre for the Shire.

With a projected population by 2021 of 12,250 people, Bannockburn will support a range of convenience retail functions and commercial and professional services with a major supermarket as the “anchor”. Higher order retail and service functions will remain in Geelong and are unlikely to be attracted to Bannockburn. These functions rely on a critical mass of activity that enables comparison of

products and prices over a range of outlets that would not be supported by the population of Bannockburn and would not compete with the range and ease of access to this type of facility already established in Geelong.

The prospect of a bulky goods retail precinct has been suggested within the Bannockburn area with a preference for frontage to the Midland Highway. Although outside the study area, such a development has the potential to detract from the objective to consolidate retailing in the Bannockburn Town Centre by increasing the propensity for convenience expenditure to “escape” from the trade area of the centre. Research undertaken as part of this study indicates that there is insufficient population in the local catchment to support this type of retailing and that adequate facilities are available at Corio and Wairn Ponds in Geelong with good access from the study area.

Allowance should be made for 5,000 - 10,000 sq m of retail floorspace (gross leasable area) across the centre to cater for the growth to 2021. This assumes that there will be an anchor, full-scale supermarket of up to 4,000 sq m and a range of small specialty shops. The current proposal for an expansion of the Plaza includes a supermarket of 3,500 sq m and a range of specialty shops. Additional allowance should be made for commercial and professional services, which are already well represented in town.

The decision to develop a new facility is ultimately a commercial decision by the developer concerned. The main issue for Council is to ensure that adequate land is available for future growth and that the growth can occur in a coordinated and logical manner without impacting on the function of the town centre.

Level in Hierarchy	No. of Centres in CoGG	Typical Catchment Population	Indicative Retail Floorspace Range	Examples of Key Tenants
Regional Centre	1	Up to 300,000 people	More than 100,000m ²	Department store, discount department store(s), mini major(s), supermarket(s) and extensive range of specialties
Sub-Regional Centre	3	40,000 to 80,000 people	15,000m ² to 35,000m ²	Discount department store(s), mini major(s), supermarket(s) and specialties
Community Centre	1	Around 40,000 people	10,000m ² to 25,000m ²	Supermarket(s), mini major(s) and specialties
Neighbourhood Centre	10	8,000 to 25,000 people	2,500m ² to 10,000m ²	Supermarket (small or full line), primarily convenience oriented specialties
Town Centre	6	5,000 to 25,000 people	1,500m ² to 15,000m ²	Supermarket, mini major(s), specialties
Local Shops	numerous	Up to 5,000 people	Up to 1,000m ²	Convenience and service retail
Homemaker Retail		At least 100,000 people	5,000m ² to 50,000m ²	Large restricted retail type tenants

Table 6 Retail Centre Hierarchy
[Source: Essential Economics, 2006]

6. Investment and Land Use Strategy

The Investment and Land Use Strategy for Bannockburn town centre is shown on Plan A1 overleaf.

The principles underlying this strategy are:

- Provision of adequate land to meet future requirements for expansion to the town centre.
- Protection of heritage buildings that contribute to the urban character of Bannockburn.
- Retention of broad streetscapes to preserve the township atmosphere and character.
- Maintenance of a low rise profile to any new development proposed.
- Integrated traffic management and car parking arrangements to service the centre.
- Provision of an integrated pedestrian and cycle network to link commercial, retail and recreational land uses with residential areas.
- Provision of open spaces within the Town Centre that positively contribute to the character and streetscape of Bannockburn.
- Acknowledging the important role played by existing businesses in the town centre.
- Functional land use precincts that are both convenient to and complement each other.
- Regard for new development precincts while managing their future impact on the township.
- Facilitate consolidation of the Town Centre retail and commercial precincts to maintain the village character and pedestrian scale of Bannockburn.

6.1 Retail Expansion

Expansion of the retail precinct at Bannockburn is required to accommodate future growth. Consolidation of retail uses within the precinct is also a primary aim of the Investment Strategy, which will achieve efficiencies with access and parking for shoppers in the centre. The Investment Strategy proposes to extend the current retail precinct, incorporating the existing shopping centre, across Burns Street as shown on Plan A1 to Victor Street. Part of this land will be required for increased parking and to provide direct access from Burns Street to the new shopping centre parking areas to the west. The amount of parking required is discussed in Section 7. The consequence of this expansion will be closure of Burns Street and rezoning land from Burns Street to Victor Street Business 1 Zone. The larger retail footprint will allow for the inclusion of open space areas within the shopping centre, creating passive outdoor spaces for outdoor dining associated with cafés and restaurants and formal and informal seating arrangements.

The retail precinct will also continue down to Milton Street, incorporating the existing strip shops located at the rear of the shopping centre. The Shire Hall and open space fronting High Street should be retained within an open space area to protect the heritage appeal and significance of the building.

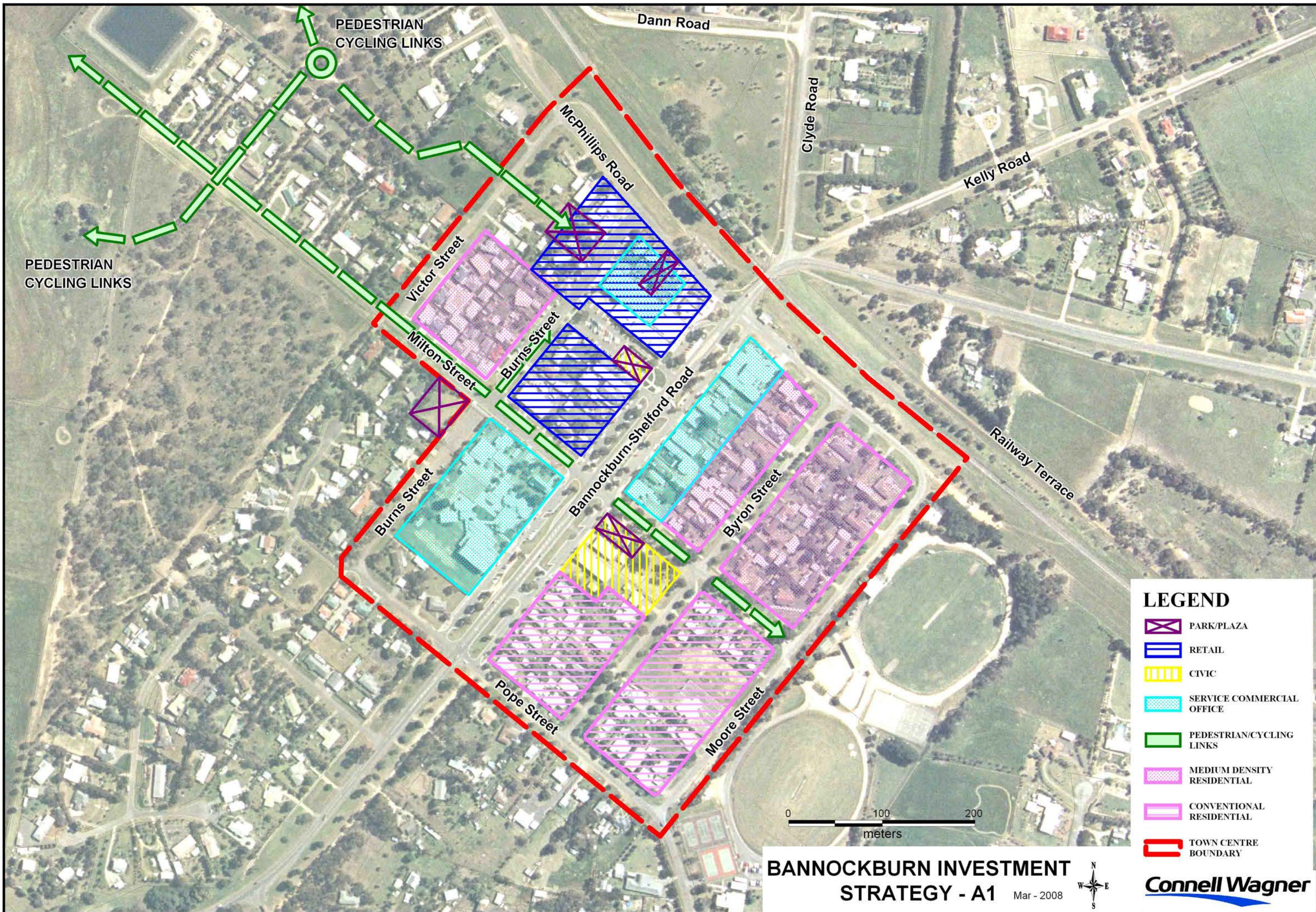
A total land area of approximately 27,000m² is available in these areas. This should comfortably accommodate the projected floorspace required for the expansion of Bannockburn and its catchment and also allow provision for some on site parking, landscaping and a mix of land uses.

6.2 Commercial Services and Office Space

The Investment Strategy provides three precincts for commercial services and professional rooms within the town centre. These are located:

- on the eastern side of High Street between the service station and Milton Street
- on the site of the primary school if and when it is relocated
- on a second level associated with a redevelopment of the Plaza Centre.

Provision for parking is included in these precincts and discussed in Section 7. The two ground-level precincts will provide land area of approximately 20,000m² for future commercial/service uses. A smaller specialised area for offices and/or medical rooms (eg) is also shown above the expanded Plaza Centre. This will enable complimentary services to be accessed from within the centre and share



PEDESTRIAN
CYCLING LINKS

PEDESTRIAN
CYCLING LINKS

Dann Road

Clyde Road

Kelly Road

Railway Terrace

Victor Street

Milton Street

Burns Street

Bannockburn Shelford Road

Byron Street

Pope Street

Moore Street

LEGEND

- PARK/PLAZA
- RETAIL
- CIVIC
- SERVICE COMMERCIAL OFFICE
- PEDESTRIAN/CYCLING LINKS
- MEDIUM DENSITY RESIDENTIAL
- CONVENTIONAL RESIDENTIAL
- TOWN CENTRE BOUNDARY

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parking with the centre. The second storey addition to the centre will also provide architectural opportunities to articulate the shape and form of the proposed centre.

6.3 Residential Land Uses

Medium and low density residential uses are proposed on land outside the retail and commercial precincts within the study area. The higher density development proposed in the Investment Strategy will consolidate the existing pattern of unit development near the town centre and promote a more efficient use of land that is readily accessible by foot to the centre.

6.3.1 Medium Density Housing

Medium density development of land between McPhillips Road and Milton Street that is not within the retail and commercial precincts is encouraged by the strategy. This style of development should be undertaken with improved drainage and infrastructure recommended in Section 8.

6.3.2 Conventional Residential Housing

The remaining residential areas within the study area will be retained at conventional housing densities typical of the inner core of Bannockburn.

6.4 Open Spaces and Civic Land Uses

Several areas of communal open spaces are recognised by the Investment Strategy. These are located to complement retail and commercial uses, providing open spaces in high use areas of the township. The open areas are also connected by pedestrian links where possible, creating an integrated path network within the township.

A civic precinct is located on the south-eastern corner of High and Milton Streets, which incorporates the existing town hall. Council proposes to develop the land for a neighbourhood house and public library. The civic precinct will also contain a communal open space area to complement the primary use.

6.5 Connecting the Town

Pedestrian and cycling links are provided throughout Bannockburn (refer Plan A1) using Milton Street as the primary axis connecting the future residential development with the sports grounds located on Moore Street. The path network makes use of the existing pathways accessed via Victor Street, connecting through onto Milton Street and the Wabdallah Reserve. The strategy proposes that Victor Street will become both a primary entry point to the Plaza for pedestrians and cars.

The pathway network is located within the broad road reserves and should be appropriately constructed and landscaped to enhance the village character.

6.6 Urban Design for Precinct Areas

6.6.1 Retail Development

Growth within the retail precinct will be strongly influenced by the expansion planned for the Plaza. New retail developments should be undertaken in a way that responds to the following principles:

- Is respectful in scale of the surrounding area and character
- Retains an active frontage to major roads
- Retains Burns Street as a principal access way to proposed car parks servicing the Plaza
- Incorporates design techniques to articulate all visually exposed facades
- Ensure a high standard of design that positively contributes to the character of Bannockburn

- Incorporates setbacks from important heritage and public areas that contribute to the character of Bannockburn
- Retains car parking areas adjacent to the Shire Hall.

6.6.2 Medium Density Development

The medium density residential precincts east of High Street and west of Burns Street will undergo further redevelopment over the planning period. Higher density development will be encouraged and in order to ensure that future development is of a high standard, the following urban design guidelines should be applied:

- Housing density of at least 18 dwellings per hectare should be encouraged
- Maximum building height of 2 storeys
- Setbacks and landscaping should be consistent with other medium density developments within the precinct
- The style of development should reflect the general character of the area.

The re-zoning of land to a Residential 1 Zone will also allow Council to assess any multi unit development applications under the provisions of ResCode enabling a high standard of development to be achieved.

6.6.3 Commercial / Service Precincts

The commercial / service precincts located on High Street opposite the existing plaza and at the school site are important elements in defining the urban character of Bannockburn. The strong articulation of the streetscape and mix of building styles and age is important to this character. The following guidelines are proposed to protect the street appeal of this area and promote its use for a range of commercial and service functions:

- *Existing commercial precinct (east of High Street)*
 - Preserve the heritage nature of any significant buildings
 - Ensure the provision of adequate off-street parking on site for employees
 - Ensure any future development in this precinct is respectful of the existing streetscape and surrounding buildings
 - Maximum building height of 1 storey.
- *Redevelopment of school site*
 - Preserve the heritage nature of any significant buildings
 - Reuse of existing buildings where suitable and when appropriate for future uses
 - Ensure a high standard of articulation and design, whilst positively contributing to the existing streetscape and character of Bannockburn
 - Maximum building height of 2 storeys.
- *Commercial Services precinct above the Plaza centre*
 - Recessed built form, to present an articulated façade to the surrounding street frontages
 - Built form that is respectful to the town character and existing streetscape
 - Maximum single storey development over the retail floorspace
 - Second level to be directly accessible from within the retail complex.

6.6.4 Open Space Areas

The parks and open areas prescribed in Plan A1 of the Investment Strategy will contribute to the liveability of the town centre and define its attractiveness for customers. The following design guidelines are recommended:

- *Open, passive spaces for recreational purposes*
 - Provision of landscaping to create visually appealing spaces

- Suitable park furniture in each open space area
 - Open air spaces that are visible from streets and surrounding areas, allowing for informal surveillance
 - Integration of kerb and street spaces with key features, such as the Shire Hall.
- *Formal open areas, particularly in and around the retail precinct that are likely to contain open-air cafés and restaurants*
 - Formal open spaces, that include the provision of seating and a central focal point in the form of either a landscaping feature or water feature
 - Allowance for cafés and restaurants to include an outdoor seating area to promote usage of the open plaza areas
 - Integration between the open spaces and the retail precinct in the form of inviting accessways and entrance points
 - Maintenance of view corridors to retain visibility of public spaces from other activity areas.

6.6.5 Civic Precinct

The civic precinct shown in the Investment Strategy (Plan A1) recognises the existing proposal for a neighbourhood house and public library. This proposal can be complemented with the integration of an open space area to facilitate multi uses on the single site. It is recognised that the main building existing on site has heritage value and should be retained and incorporated into the open space area to preserve its significance and enhance the passive space.

6.6.6 Conventional Residential Housing

For these areas it is preferable to retain the current housing density and form. These areas would not be considered appropriate to support medium density housing.

7. Traffic Management and Car Parking in Bannockburn

7.1 Traffic Generation and Distribution

7.1.1 Existing Traffic Conditions

A full review of the existing traffic conditions in Bannockburn Town Centre is contained in the Existing Conditions Report dated 16 October 2007. The key features of the existing traffic use within Bannockburn are:

- Bannockburn – Shelford Road (High Street) currently caters for between 4500 and 5500 trips per day (estimated 2007 volumes).
- The Service Roads along High Street currently cater for between 150 and 500 trips per day.
- McPhillips Road caters for approximately 500 trips per day, north west of High Street, increasing to 1150 trips per day south east of High Street.
- Milton Street and Pope Street cater for approximately 1000 vehicles per day to the south east of High Street.
- Growth along High Street has been noted at 3.1% per annum compound.

7.2 Future Land Use Traffic Generation and Distribution

7.2.1 Traffic Generation

Residential Traffic Generation

ResCode and its predecessor the Victorian Code for Residential Developments – Volume 1¹ suggest that traditional dwellings generate in the order of 10 vehicle movements per dwelling per day with 10% of movements occurring in the morning peak hour.

Guidance on ‘integrated’ or medium density housing including RTANSW, Guide to Traffic Generating Developments and AMCORD:URBAN – Guidelines for Urban Housing indicate that integrated and medium density housing typically generate fewer trips than traditional housing with daily rates ranging from 4 to 6 movements per dwelling.

Adopting a rate of 10 trips per conventional dwelling and a conservative rate of 6 trips per additional medium density dwelling the anticipated additional residential traffic within Bannockburn has been calculated within Table 7.1.

¹ Department of Planning and Housing: Victorian Code for Residential Development – Subdivision and Single Dwellings, April 1992

Table 7.1: Residential Traffic Generation

<i>Residential Area</i>	<i>New Dwellings (Type of Dwelling)</i>	<i>Adopted Daily Traffic Generation Rates</i>	<i>Anticipated New Daily Traffic</i>
North West Growth Area	1480 (conventional)	10 trips per dwelling per day	14,800
Burns St Growth Area	20 (medium density)	6 trips per dwelling per day	120
Byron St Growth Area	60 (medium density)		360
Totals	1180 dwellings		15,280

Commercial and Retail Traffic Generation

Guidance on typical commercial and retail daily traffic generation has been sourced from RTANSW Guide to Traffic Generating Developments. This document represents the most comprehensive database of traffic generating information to date.

The RTANSW Guide recommends the following daily traffic generation rates for retail and commercial (office) developments:

- Retail (10,000 to 20,000sq.m) 78 trips per 100sq.m GFA per day
- Commercial (office) 10 trips per 100sq.m GFA per day

Based on these rates, the total future commercial and retail traffic generation within Bannockburn has been calculated within Table 7.2.

Table 7.2: Commercial and Retail Traffic Generation

<i>Use</i>	<i>Total Gross Buildable Floor Area</i>	<i>Adopted Daily Traffic Generation Rates</i>	<i>Anticipated New Daily Traffic [1]</i>
Retail (Block 1)	8750sq.m	78 trips per 100sq.m per day	
Retail (Block 2)	5450sq.m		
Total Retail	14,200sq.m		11,080 trips
Commercial (Block 3)	4500sq.m	10 trips per 100sq.m per day	
Commercial (Block 4)	8175sq.m		
Commercial (Block 5)	5300sq.m		
Total Commercial	17,975sq.m		1800 trips
Total Commercial and Retail	32,175sq.m		12,880 trips

[1] Trips rounded to the nearest 10 trips

It is noted that the total commercial and retail traffic above includes the following:

- Traffic from existing residential dwellings within Bannockburn;
- Traffic from new residential dwellings within Bannockburn; and
- New regional traffic attracted to the improved services and facilities within Bannockburn.

In order to avoid double counting traffic attracted to the expanded retail and commercial precincts in Bannockburn, existing traffic to and from the town centre and new traffic from future residential areas which would visit the centre for commercial and retail purposes needs to be excluded from the retail / commercial generation.

Assessment of Regional Trips to the Town Centre

Surveys undertaken by the former Ministry of Housing indicated that trips from residential dwellings could be broadly split into four categories; 'work', 'shopping', 'education' and 'other', with work and shopping trips accounting for 36% and 34% of daily trips respectively.

It is anticipated that some of these 'work' and 'shopping' trips would be to the new commercial and retail precinct in Bannockburn whilst others would be to and from destinations such as Geelong and Ballarat. For the purpose of this assessment it has been assumed that approximately 30% of 'work' trips and 90% of 'shopping' trips would be to and from Bannockburn Town Centre. These residential commercial and retail trips would equate to approximately 1650 'work' trips and 4680 'shopping' trips.

Table 3.2 indicates that the commercial and retail precinct would generate approximately 12,880 trips per day of which it is anticipated that approximately 6330 trips per day (1650 work & 4680 shopping trips) would be from new residential areas of Bannockburn. Based on this it is anticipated that 6550 trips comprising existing and new regional trips would be attracted to the upgraded town centre.

Conservatively assuming that the 'new' regional trips to the upgraded town centre would equate to approximately 75% of the total trips excluding new residential trips then these regional trips have therefore been calculated as follows:

• Regional Retail Traffic	11080 - 4680 x 75%	4800 trips per day
• Regional Commercial Traffic	1800 - 1650 x 75%	110 trips per day
Total		4910 trips per day

Civic Development

It is anticipated that the civic development within Bannockburn would primarily serve existing and new local residents and therefore would not generate any additional traffic to the township.

Summary of New Development Traffic

Table 7.3 sets out the new 'development-based' traffic anticipated to occur within Bannockburn.

Table 7.3: Total New Traffic Generated by Future Development in Bannockburn

<i>Use / Development</i>	<i>Anticipated New Daily Traffic (to nearest 10 movements)</i>
Residential	15,280
Retail	4800
Commercial	110
Totals	20,190

7.2.2 Traffic Distribution

The distribution and assignment of traffic on the road network depends on a number of factors including the surrounding road network and the location of household, employment, activity centres and other destinations.

Residential Traffic Distribution

The residential traffic distribution has been assessed by breaking down daily trips into work, shopping, education and other trips². These trips have then been assigned to the local network to produce an overall distribution that indicates that 61% of new residential trips would be local to the town and 39% would be to and from other destinations, such as Geelong and Ballarat on the Midland Highway. Table 7.4 sets out the anticipated residential traffic distribution.

Table 7.4: Residential Traffic Distribution

<i>Destination</i>		<i>Percentage of Trips</i>		<i>Daily Trips</i>
Local Trips	Retail Precinct	61%	39%	5940
	Remainder of High St		11%	1640
	SE of Town Centre		8%	1260
	NW of Town Centre		3%	500
Non Local Trips	To/ From Midland Hwy	39%	35%	5290
	To / From Shelford		2%	350
	To / From Hamilton Hwy		2%	300
Totals		100%	100% [1]	15,280 [1]

[1] Figures rounded to the nearest percentage or 10 trips.

Commercial Traffic Distribution

Commercial traffic distribution is primarily dependent on the locality of various populations within the catchment of the population. In this case the commercial traffic is considered to be regional rather than local traffic originating from populations outside Bannockburn. Table 7.5 sets out the adopted regional commercial distribution and hence traffic movements.

Table 7.5: Commercial Traffic Distribution

<i>Destination</i>	<i>Percentage of Trips</i>	<i>Daily Trips</i>
North (McPhillips Road)	5%	250
East (Midland Hwy)	50%	2450
South (Burnside Rd to Hamilton Hwy)	15%	740
West (Bannockburn – Shelford Rd)	30%	1470
Totals	100%	4910

Based on the above discussions, Figure 7.6 on the next page sets out the anticipated daily development volumes through the town centre.

² Former Ministry of Housing Interview Surveys.

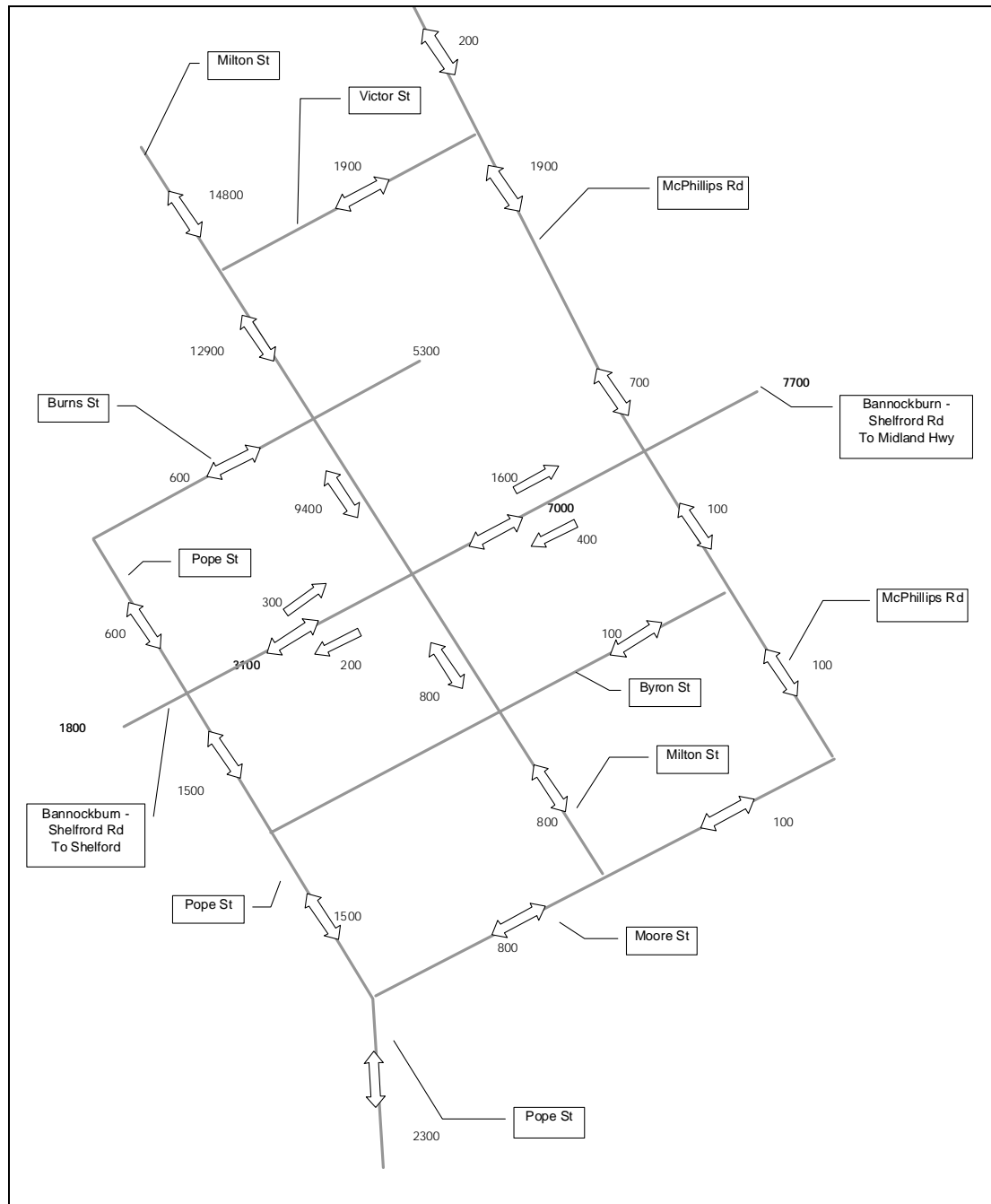


Figure 7.6: Additional Traffic Due to Development In Bannockburn

7.3 Natural Growth on the Network

Whilst growth on the local road network is primarily influenced by new development within Bannockburn and has therefore been assessed within Section 7.2, growth on the arterial network, namely Bannockburn – Shelford Road (High Street), is influenced by many factors outside the town. Historic data from Bannockburn-Shelford Road indicates that this road has, in recent years, experienced growth at a compounded rate of 3.1% per annum.

For the purpose of this assessment it has been assumed that growth on Bannockburn – Shelford Road would continue to increase by 3.1% per annum, which would suggest on average an increase of 1700 vehicles per day using High Street over the next 10 years.

7.4 Future Road Network

On the basis of development and natural growth through Bannockburn Town Centre, 10 year traffic volumes on major roads through the study area have been calculated in Table 7.7 where existing volumes are available.

Table 3.7: Estimated 2007 Daily Traffic Volumes

<i>Street</i>	<i>Location</i>	<i>Estimated 2007 Daily Traffic Volumes [1]</i>	<i>Development Traffic</i>	<i>Additional Through Traffic 2017</i>	<i>2017 Traffic Volumes</i>
High Street	South of McPhillips Rd	4550	7000	1700	13,250
	South of Milton St	5450	3100	1700	10,250
	South of Pope St	4700	1800	1700	8200
High St Service Rd – nth-bound	Btw Milton & McPhillips Rd	150	1600	-	1750
	Btw Pope & Milton St	250	300	-	550
High St Service Rd – sth-bound	Btw Milton & McPhillips Rd	500	400	-	900
McPhillips Road	South east of High St	1150	100	-	1250
	North west of High St	550	700 - 1900	-	1250 - 2450
Milton Street	South east of High St	1000	800	-	1800
Pope Street	South east of High St	900	1500	-	2400

[1] Estimated daily volumes from Existing Conditions Report

7.5 Road Infrastructure Requirements

7.5.1 Future Road Hierarchy

Based on the likely development traffic and future traffic volumes through Bannockburn a road hierarchy has been identified and is illustrated within Figure 8.1(see over).

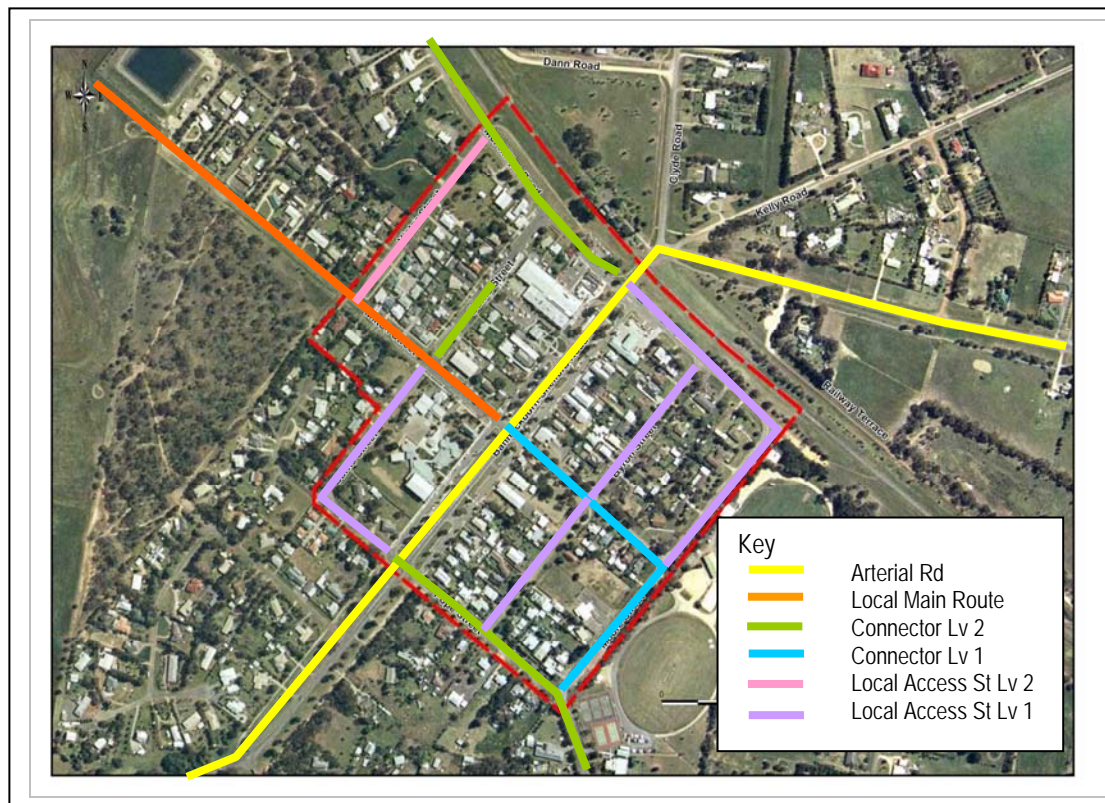


Figure 8.1: Future Road Hierarchy

Bannockburn – Shelford Road

Bannockburn – Shelford Road is an arterial road that is controlled by VicRoads. It has a strategic role for the region carrying traffic west from Geelong.

At present this road caters for approximately 5000 vehicles per day through Bannockburn Town Centre, however as a result of natural growth and development in and around Bannockburn, this is anticipated to increase to approximately 10,300 vehicles per day at its south western end and 13,300 vehicles per day at the north eastern end. This is a considerable increase in traffic volumes.

Volumes at this level require a road geometry consisting of single through lanes plus turning lanes, as in the existing scenario. With the installation of signalised intersections through lanes are likely to require duplication to ensure sufficient capacity through the intersections.

High Street Service Roads

As a result of the growth in commercial and retail development along High Street the service roads are anticipated to cater for approximately 500 and 1800 vehicles per day, with the busiest service road abutting the retail precinct. Access would be retained between Burns Street and High Street to service local shopping precincts adjacent to the Plaza development.

Pope Street

Pope Street is anticipated to play two roles within the road hierarchy of Bannockburn. To the north of High Street, Pope Street would function as an access street (level 1) catering primarily for local trips accessing local destinations. Traffic Volumes are anticipated to be approximately 1000 vehicles per day.

To the south of High Street Pope Street would have both a local access role and a more strategic role forming the primary link from Bannockburn to Burnside Drive and linking down to Hamilton Highway. Traffic volumes are anticipated to be between 2000 and 3000 vehicles per day. It is therefore considered that this road would operate as a connector street (level 1).

Milton Street

Like Pope Street, Milton Street is anticipated to have very different characteristics to the north and south of High Street. To the north of High Street, Milton Street will provide the primary access to future major residential growth to the north west of the town, and as such is anticipated to cater for approximately 13,000 vehicles per day.

This level of traffic falls well above typical residential street levels and is similar to that experienced on arterial roads. In order to accommodate this level of traffic, the road would need to incorporate turning lanes or roundabouts at major intersections. In this instance, roundabouts have been selected as the most appropriate treatment at Victor and Burns Streets (refer to Plan A2) and traffic signals, with appropriate turning lanes, are recommended for the intersection with High Street.

South of the town, traffic volumes are anticipated to be approximately 2000 vehicles per day with some local and non local trips. As such, this road would operate as a connector street (level 1).

McPhillips Road

McPhillips Road would provide some access to the new development in the town centre and is anticipated to cater for between approximately 1200 and 2500 vehicles per day within the town centre.

Victor Street

Victor Street would provide a secondary route for traffic from the new residential areas travelling to the retail precinct, as such it is anticipated that traffic on this road is likely to be approximately 2000 vehicles per day.

Burns Street

Burns Street, to the north east of Milton Street, would form one of the major access points to the retail precinct of the town and as a result is anticipated to cater for relatively high traffic volumes, approximately 5300 vehicles per day, which is consistent with connector street (level 2) requirements.

To the south west of Milton Street, Burns Street is anticipated to have a more local access role catering for approximately 1000 vehicles per day.

Byron Street

The role of Byron Street is unlikely to change as a result of development to the area as it would continue to provide access to residential properties abutting the street.

Moore Street

Moore Street would have both a local and more regional role in traffic movements around Bannockburn. To the south west of Milton Street, Moore Street would provide local access and through access between Milton Street and Pope Street and is anticipated to cater for approximately 1000 vehicles per day.

To the north east of Milton Street, Moore Street is anticipated to be primarily an access street catering for fewer than 1000 vehicles per day.

7.6 Intersection Treatments

Guidelines for appropriate intersection treatments are set out within Austroads Guide to Traffic Engineering Practice Part 9: Arterial Road Traffic Management. Section 2.6.2 of this document sets out recommended intersection treatments for arterial roads.

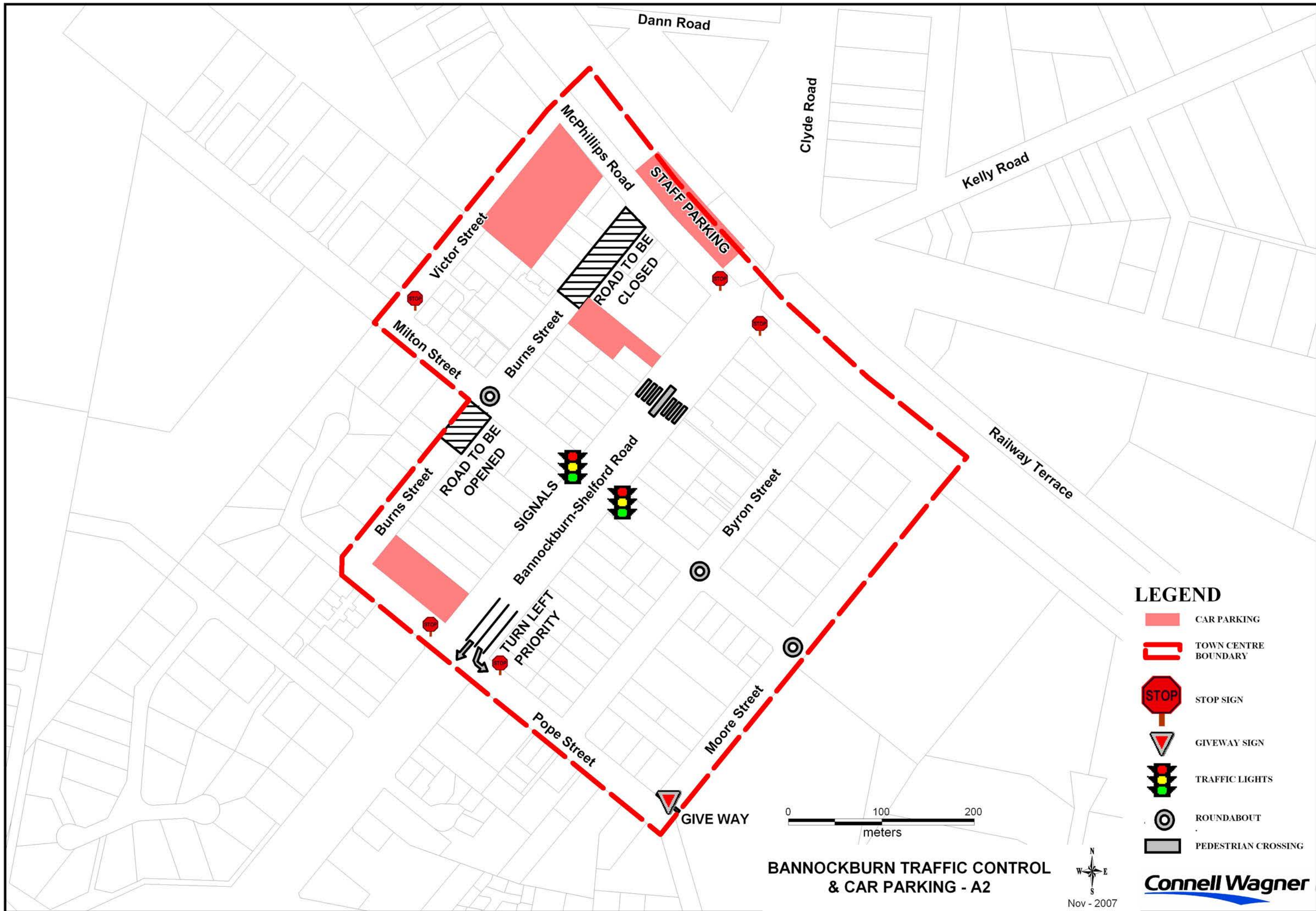
Bannockburn Town Centre contains a single arterial road, Bannockburn-Shelford Road, however Milton Street, whilst functionally a local road is anticipated to cater for traffic volumes that are closer to the levels expected on arterial roads than local roads. Therefore the arterial road treatments have been considered against both Bannockburn-Shelford Road and Milton Street.

On the basis of the above Table 9.1 sets out the recommended intersection treatments along Bannockburn – Shelford Road and Milton Street.

Table 9.1: Recommended Intersection Treatments

<i>Intersection</i>	<i>Classification of Roads</i>	<i>Recommended Intersection Treatment</i>
Bannockburn – Shelford / Pope Street	Arterial / Connector	Stop / Give Way Signs Control
Bannockburn – Shelford / Milton Street	Arterial / Arterial	Traffic Signals
Bannockburn- Shelford / McPhillips Street	Arterial / Local	Stop / Give Way Control
Milton Street / Victor Street	Arterial / Local	Stop / Give Way Control
Milton Street / Burns Street	Arterial / Local	Roundabout
Milton Street / Moore Street	Connector / Local	Roundabout

The intersection treatments are visually represented on Plan A2.



7.7 Car Parking Considerations

7.7.1 Preamble

The car parking considerations is based purely on the recommended requirements for both the commercial and retail expansion of the town centre.

7.7.2 Existing Parking Conditions

Existing parking conditions are discussed in detail within the Existing Conditions Report which identified in summary the following points:

- Bannockburn Town Centre contains approximately 200 off-street parking spaces (including some private spaces for specific users) and 370 on-street parking spaces;
- Approximately 50% of on-street parking is located along the service roads abutting High Street;
- None of the off-street car parks are subject to time restrictions;
- On-street car parks are a mixture of half hour, 2 hour and unrestricted spaces; and
- Most time restricted on-street parking is located to the north west of High Street around the existing shopping and retail area.

7.7.3 Future Parking Demands

■ Statutory Parking Requirements

The statutory parking requirements for many types of development are set out within Clause 52.06 of the Golden Plains Shire Planning Scheme. Under this Clause retail and commercial uses should provide parking at a rate of 8 and 3.5 spaces per 100sq.m respectively. Table 10.1 sets out the statutory parking requirement for the future town centre based on these rates

Table 10.1: Planning Scheme Nominated Commercial Parking Requirements

<i>Use</i>	<i>Gross Floor Area</i>	<i>Planning Scheme Nominated Statutory Parking Rate</i>	<i>Total Parking Spaces</i>
Retail	14,200sq.m	8 spaces per 100sq.m	1136 spaces
Commercial	17,975sq.m	3.5 spaces per 100sq.m	629 spaces
			1765 spaces

Experience at other commercial and retail developments in and around Melbourne suggests that typically the nominated planning scheme rate of 8 spaces per 100sq.m for retail produces an oversupply of parking. The commercial rate is generally appropriate for office type developments, however other types of commercial facilities may generate a different level of parking.

Case study data for retail uses in and around Melbourne indicate that typically shopping centres (including supermarkets) generate parking at around 4 spaces per 100sq.m.

In addition the RTANSW Guide to Traffic Generating Developments suggests that shopping centres of between 20,000 and 30,000sq.m generate a peak parking demand equivalent to 5.6 spaces per 100sq.m.

Adopting the more conservative RTA rate of 5.6 spaces per 100sq.m for retail and a general commercial rate of 3.5 spaces per 100sq.m for other development in the town centre, the total future parking requirements have been calculated in Table 10.2.

Table 10.2: Recommended Commercial Parking Requirements

<i>Use</i>	<i>Gross Floor Area</i>	<i>Recommended Parking Rate</i>	<i>Total Parking Spaces</i>
Retail	14,200sq.m	5.6 spaces per 100sq.m	795 spaces
Commercial	17,975sq.m	3.5 spaces per 100sq.m	629 spaces
			1424 spaces

It is noted that some commercial uses may be able to justify a lower rate than above and this should be taken into account as part of specific planning applications.

The total parking spaces needed to accommodate demands within the Town Centre can be provided by either on and off street parking solutions.

7.7.4 Parking Solutions

As stated in Section 7.7.2 Bannockburn Town Centre currently has approximately 370 on street parking spaces of which approximately half are located along the existing service roads.

Assuming that the service roads will continue to cater for on-street parking associated with the commercial and retail elements of the town centre Table 10.3 sets out the minimum off street parking requirements considered necessary to accommodate anticipated growth in the area.

It is noted that the recommended number of spaces is based on the total floor areas set out within this report less the available on-street parking abutting the various development blocks. If development reduces or increases the minimum off street parking requirements would also need to reduce or increase accordingly to maintain the overall recommended rates.

Table 10.3: On and Off Street Retail and Commercial Parking Requirements

<i>Use</i>		<i>Gross Floor Area</i>	<i>Total Parking Requirement [1]</i>	<i>On Street abutting Site [2]</i>	<i>Off Street Requirement</i>
Retail	Block 1	8750sq.m	490 spaces	14 spaces	476 spaces
	Block 2	5450sq.m	305 spaces	22 spaces	283 spaces
Total Retail		14,200sq.m	795 spaces	36 spaces	759 spaces
Commercial	Block 3	4500sq.m	158 spaces	-	158 spaces
	Block 4	8175sq.m	286 spaces	57 spaces	229 spaces
	Block 5	5300sq.m	186 spaces	56 spaces	130 spaces
Total Commercial		17,975sq.m	630 spaces		517 spaces

[1] Based on 4.3 spaces per 100sq.m for retail and 3.5 spaces per 100sq.m for commercial

[2] Table 3.1 of the Existing Conditions Report

At present the off street car parking comprises approximately 200 parking spaces, the majority of which are located around the retail precinct, clearly a significant increase in parking provision within the town centre would be required.

Parking should be split into short and long term spaces and located within a reasonable distance of the specific uses. Figure 10.4 identifies areas considered suitable for parking associated with the individual commercial and retail development blocks.

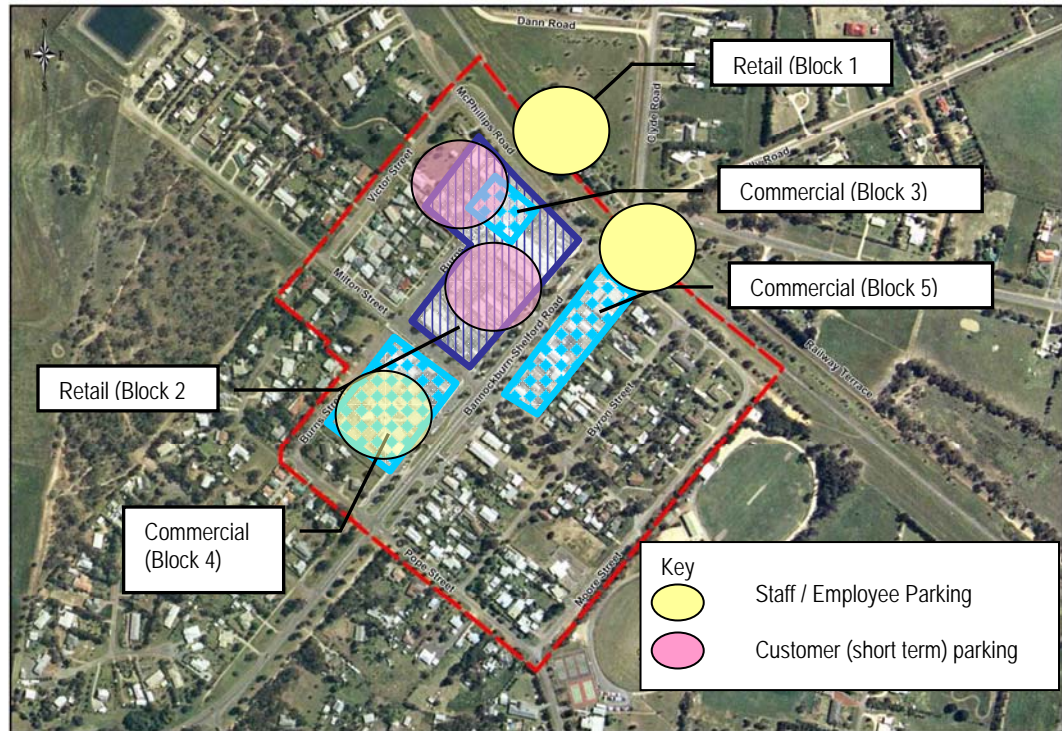


Figure 10.4: Recommended Off Street Car Parking Locations

7.8 Further Issues facing Bannockburn

7.8.1 Pedestrian Movements

Pedestrian links need to be established within Bannockburn Town Centre these links should include the following:

- Links between new residential areas and the retail precinct;
- Links between new and existing residential areas and other destinations, such as schools and civic facilities; and
- Links across Bannockburn-Shelford Road.

In relation to the last point it is noted that at present there are no controlled crossing points along Bannockburn-Shelford Road, however, as it is anticipated that traffic would increase along this road by a factor of between 2 and 3, the severance of this road between the northern and southern areas of the town would increase significantly.

The provision of traffic signals at the intersection of Milton Street and Bannockburn-Shelford Street will provide some assistance for pedestrians crossing at this point, however it is noted that a second pedestrian crossing at the northern end of the town would increase the connectivity between the retail and commercial precincts.

7.8.2 Bicycle Access

Bicycle links need to be established through the town centre in a similar manner as the pedestrian links.

To facilitate the use of bicycles "end of trip" facilities such as bicycle parking, showers and lockers should be provided in line with the recommendations set out within the Golden Plains Shire Planning Scheme, reproduced Table 11.1.

Table 11.1: Bicycle Parking Requirements

Use	Bicycle Parking Provision Rate		Minimum Bicycle Parking Requirements	
	Employee	Visitor / Shopper	Employee	Visitor / Shopper
Retail (14,200sq.m)	1 to each 300sq.m leasable area	1 to each 500sq.m of leasable area	47	28
Commercial (17,975sq.m)	1 to each 300sq.m of net floor area	1 to each 1000sq.m of net floor area	60	18
			107	46

Based on the above assessment the town centre should include approximately 110 bicycle parking spaces for workers and approximately 50 bicycle parking places for visitors to the centre.

7.8.3 Public / Community Transport

Given current measures to encourage sustainable travel and the amount of growth proposed within Bannockburn it is recommended that provision for taxi, community and/or public transport should be accommodated within new road and development infrastructure associated with the Town Centre. In particular this includes:

- New transport services connecting the retail precinct with new residential subdivisions to the north west of the town,
- Expanded services connecting Town Centre retail and commercial precinct with outlying communities and,
- A dedicated taxi rank within the town centre that provides convenient drop-off and waiting areas for taxis servicing the expanded retail and commercial precinct.

7.8.4 Intersection of Bannockburn-Geelong Road / Kelly Road / Clyde Road



Figure 12.1: Intersection of Clyde Road / Kelly Road with Bannockburn –Geelong Road

Figure 12.1 shows the intersection of Kelly Road, Clyde Road and the Bannockburn-Geelong Road. The alignment of this intersection causes drivers trying to enter the intersection from Kelly Road and Clyde Road to look back over their shoulders to ensure that there is no on-coming traffic. In addition it is clear that the spacing between Clyde Road and Kelly Road falls well below typical recommended levels for both residential streets and traffic routes³.

To improve the operation and safety of this intersection it is suggested that the alignment of Kelly Road could be relocated to the east which would have the following impacts:

- Increase the separation of the Clyde Road and Kelly Road; and
- Improve visibility for vehicles exiting Kelly Road.

It is noted that this issue has previously been explored by Council and presented to VicRoads. The realignment recommended above is one of two options – the second being the further development and use of Gillett Street as a thoroughfare between Kelly Road and Bannockburn-Shelford Road. This issue will require further resolution between Council and VicRoads.

7.8.5 Operation of Rail Crossing

Whilst no trains stop in Bannockburn, trains still run along the rail tracks to the north of the town centre. These include V-Line services to Ballarat and freight services, the latter of which can comprise many carriageways and cause traffic on Bannockburn-Geelong Road to be delayed for several minutes.

Given the increase in traffic volumes crossing the rail lines as a result of development some form of upgrade to the rail crossing is required.

Whilst grade separation of the crossing is the ideal solution this is often not economically viable or practical and therefore as a minimum it is recommended that Bannockburn Road on both approaches to the rail crossing should be widened. Widening the road would increase queuing space and help to dissipate queues when the crossing barriers are raised.

7.8.6 Heavy Vehicle Bypass

It is noted that there is a need to reduce the incidence of heavy vehicles travelling through the town centre to improve the amenity of the centre and better integrate the east and western sides of High Street. Although this issue is beyond the scope of the current study, Council is exploring the development of a truck bypass route. Council has however provided a conceptual plan showing the proposed route alignment for the bypass. This is contained in Appendix F.

³ Based on information within the old ResCode which states that the average junction spacing on traffic routes is 100m whilst along residential streets it varies between 40 and 80 metres.

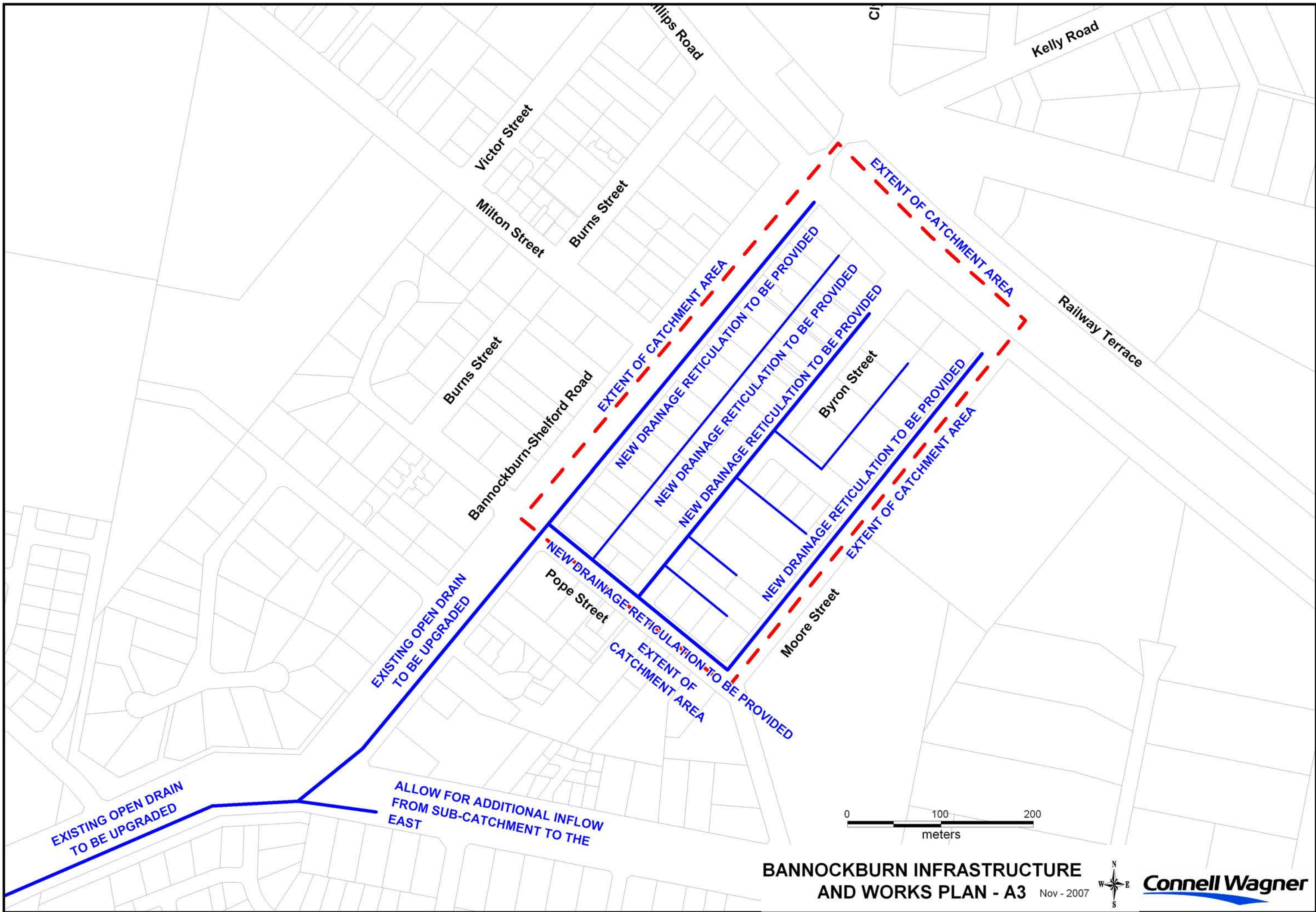
8. Infrastructure and Works Plan for Bannockburn Town Centre

The Infrastructure and Works Plan for Bannockburn is shown on Plan A3.

8.1 Infrastructure & Works Plan

The sewer and water infrastructure requirements being managed by Barwon Water appear to be catered for in relation to management of both existing and future requirements for the township. The electrical and telecommunications also are managed to cater for existing and future requirements. The existing drainage to the township only appears to adequately cater for the area contained to the west side of High Street and flows to the south west outlet point at Bruce Creek.

The east side of the central township area has very little (if any) drainage infrastructure. On the attached diagram in this section, the existing pipe drained area has been shaded, and the proposed drainage has been shown on the east side of High Street. It would be desirable to allow the ultimate outlet of drain to the same direction as the existing drainage, with provision for appropriate storm water quality treatments implemented as part of this development. Details for these need to be finalized at future design stages, but have to date included treatments such as swales, retention basins, pollutant traps, wetlands and treatment ponds.



**BANNOCKBURN INFRASTRUCTURE
AND WORKS PLAN - A3**

Nov - 2007



Connell Wagner

9. Investment Strategy Response to *Bannockburn Urban Design Framework* and Planning Policy

9.1 Bannockburn UDF

The *Bannockburn Urban Design Framework* (UDF) undertaken by the Research Planning Design Group and Chris Dance Land Design (2003; revised 2005), is underpinned by principles directing a sustainable growth form. These are as follows:

- *Responsiveness to the land and environmental qualities of the Township*
- *Limiting growth to minimise infrastructure and servicing requirements, and reduce 'land grab' impacts*
- *Integrating principles of water sensitive development, and environmentally sustainable design*
- *Protection of natural systems and significant vegetation*
- *Creating opportunities for walking and cycling in preference to increased car usage.*

The Bannockburn Town Centre Investment Strategy addresses these principles by responding to the land qualities and providing appropriate development for the township, including the reuse of existing sites, for example, the current school site. This also contributes to the minimisation of growth, consolidating development in and around the Town Centre area.

The overall principles for the *Bannockburn UDF* are presented visually within the report, a copy of which can be found in Appendix G. The UDF notes the Town Centre, representative of the Study Area for the current strategy, as a *Consolidated Commercial Precinct*. The rationalisation of this precinct considers Bannockburn's need to grow into a larger service centre, while recognising stronger regional influences such as Geelong and Ballarat.

The development of the Town Centre is hinged on consolidation, ensuring that definite boundaries are set to contain retail and commercial development within the Town Centre boundary and stop ad hoc out-of-town development. The UDF also recommended the inclusion of higher density residential development within mixed use areas, and defined commercial development only within the commercial precinct.

These major principles have been applied and reinforced within the *Bannockburn Town Centre Investment Strategy*, ensuring that the documents can be used in conjunction with each other without conflict in prescribed planning principles.

9.2 Golden Plains Planning Scheme – Clause 21.05 *Bannockburn*

The following table presents the objectives of Clause 21.05 *Bannockburn*. The information below also tabulates the response of the Investment Strategy to these planning policy objectives.

Planning Scheme Objective	<i>Bannockburn Town Centre Investment Strategy</i> Response
Objective 1 To promote growth in Bannockburn that is sustainable and that fosters positive urban design and sustainability outcomes.	<p>The consolidation of growth in and around the Town centre of Bannockburn, as prescribed by the <i>Bannockburn Town Centre Investment Strategy</i>, creates a sustainable growth pattern that will allow for retention of existing urban design and town character.</p> <p>The reuse of existing precincts, such as the commercial land on the east of High Street and the current school site, allow for consolidation of development and hence create sustainable development outcomes. This is also reinforced by increasing residential densities in close</p>

	proximity to the Town Centre.
Objective 2 To ensure the efficient provision of infrastructure which supports new growth and improves the land, the character and environmental qualities of Bannockburn.	<p>Infrastructure development forms a component of the Bannockburn Investment Strategy. The further provision of services, particularly drainage infrastructure, supports the future development of land in Bannockburn.</p> <p>Upgrades to the existing roads in the form of traffic attenuation systems will also aid in managing the growth of Bannockburn, ensuring an effective and safe road network. This will ultimately preserve the town character by creating a safe, friendly, walkable environment.</p>
Objective 3 To create a prosperous and sustainable Bannockburn town centre.	<p>The Bannockburn Town Centre Investment Strategy presents a holistic approach to the development of the Town Centre. It incorporates land use development, pedestrian links, open spaces and traffic attenuation systems that will ultimately create a sustainable Town Centre, that will continue to attract residents from within the township, as well as greater surrounds.</p>
Objective 4 To provide an open space network that is integrated with Bannockburn township, is responsive to the needs of residents and that protects biodiversity values.	<p>A component of the Bannockburn Town Centre Investment Strategy is to provide an open space network that is linked by pedestrian and cycle routes. This has been achieved through the provision of passive spaces within the township, integrating each open space with a nearby land use.</p> <p>The proposed open spaces are also for the most part linked by a pedestrian network which strongly integrates the notion of walkability into the Bannockburn Town Centre. The network also aims to connect residential development with recreational, commercial and retail uses wherever possible.</p>
Objective 5 To provide distinctive entrances into Bannockburn.	<p>While this was not included as a component of the Bannockburn Town Centre Investment Strategy, a particular focus has been placed on the arrangement of the traffic intersection at Kelly Road, Clyde Road and Shelford-Bannockburn Road. This is a key entrance into the Town Centre – the upgrade of this intersection will ensure ease of access to the town, via safe, efficient means.</p>

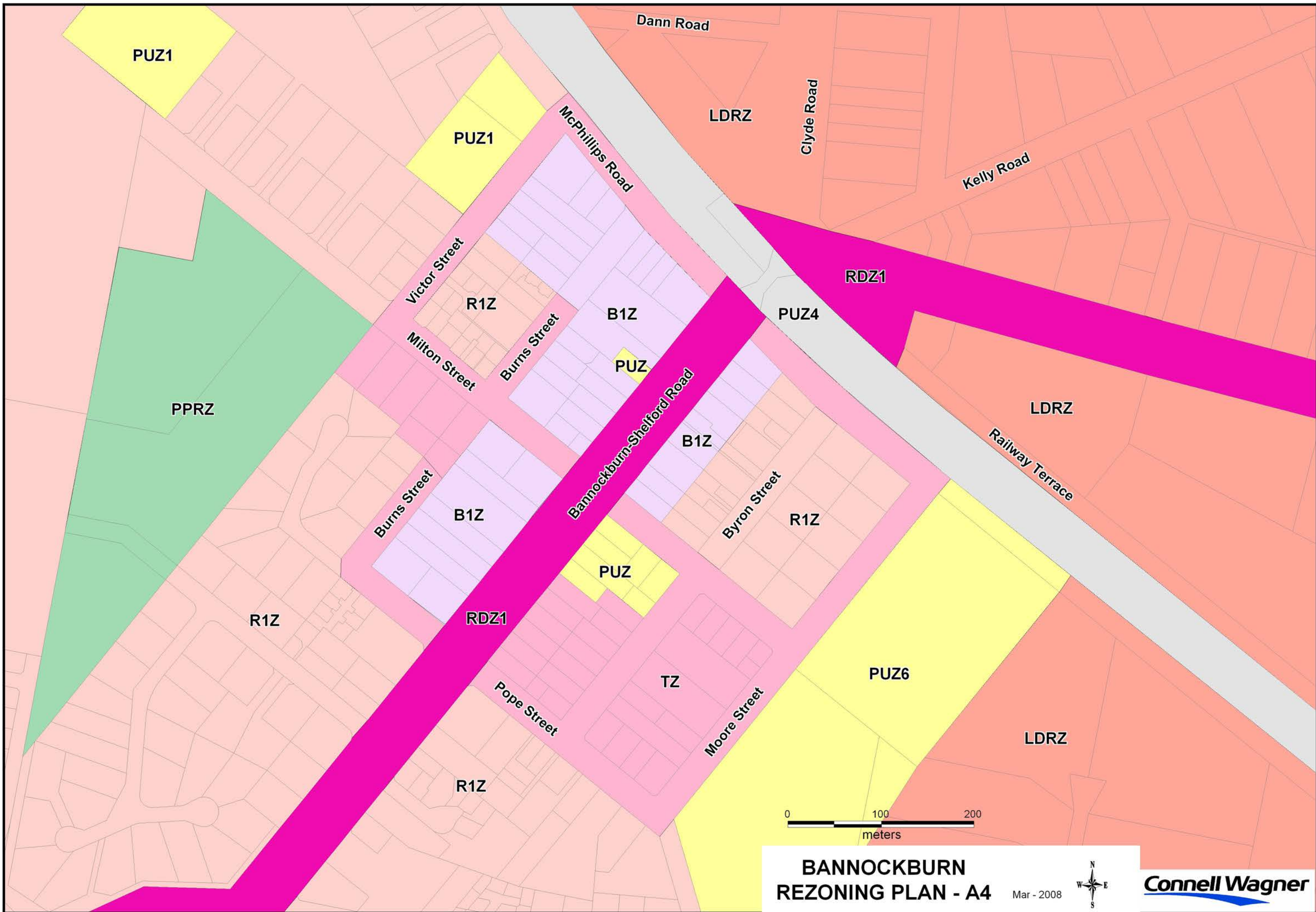
10. Implementation Plan

Table 13 below presents an implementation plan for the Bannockburn Town Centre Investment Strategy. The table presents the various actions, including responsibilities for implementation and the priority of each action. The action priority is classified as follows:

Classification	Year timeframe
A	0-2 years
B	2-5 years
C	5-10 years

Action	Responsibility	Priority
Re-zone land as shown in Plan A4 overleaf	Council	A
Traffic improvements in accordance with Plan A2 contained in Section 7	Council in conjunction with VicRoads	B
Drainage and infrastructure upgrades in accordance with Plan A3 contained in Section 8	Council	C
Closure of northern end of Burns Street, at McPhillips Road	Council	B
Realignment of Kelly Road	Council/VicRoads	B
Negotiate lease for staff parking on VicTrack land	Council, in conjunction with VicTrack	C
Review potential for traffic improvements to be funded by a Developer Contribution Overlay over the new residential land	Council	B
Negotiate outcome for the plaza redevelopment, consistent with the Investment Strategy	Council, in conjunction with the developer	A

Table 13 Implementation Plan



11. References

Department of Sustainability and Environment (2006) *Golden Plains Planning Scheme*

Essential Economics (2006) *City of Greater Geelong – Retail Strategy 2006*

Golden Plains Shire & Parklinks (2005) *Paths and Trails Strategy*,

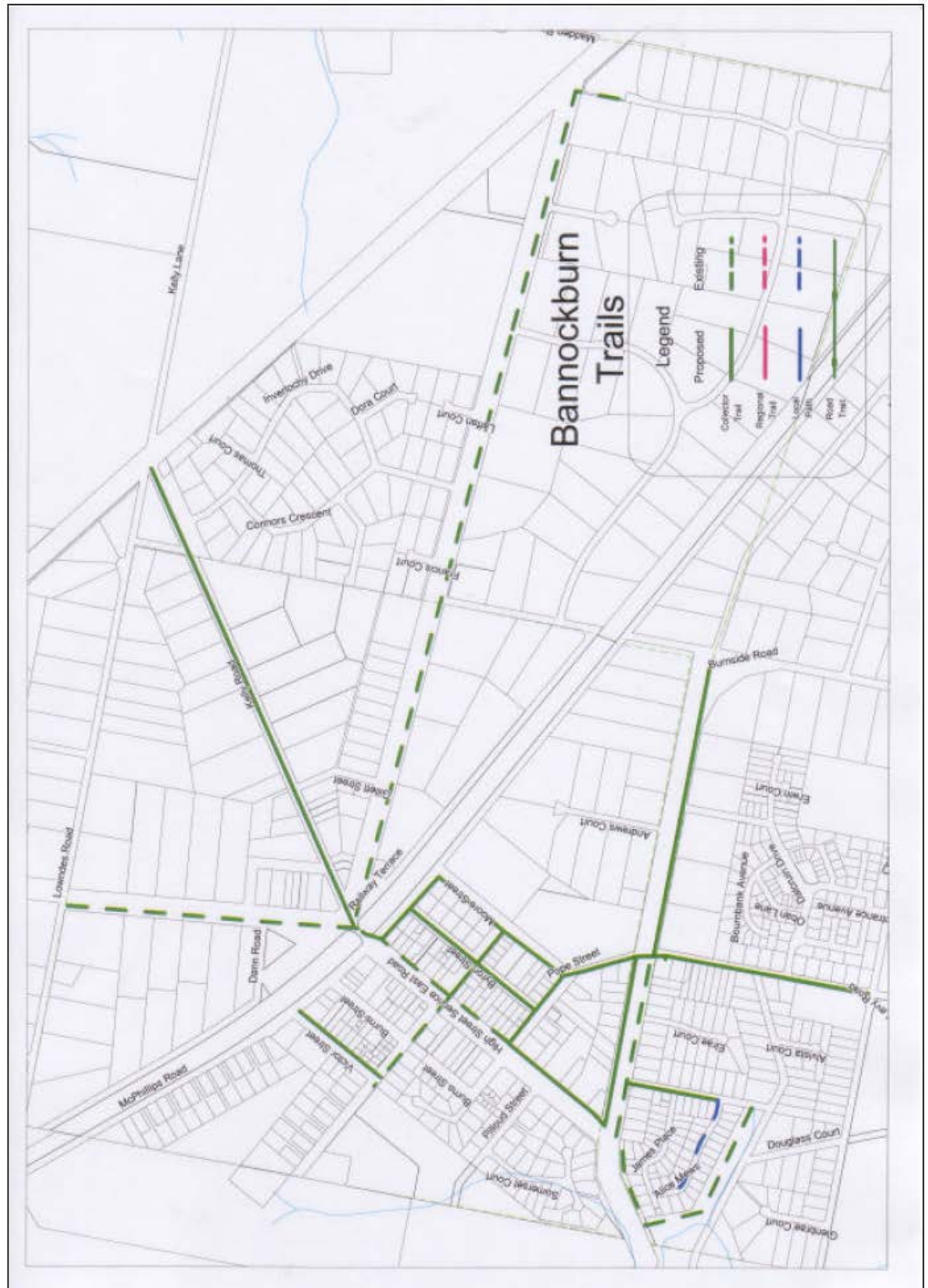
ID Consulting & Golden Plains Shire (2007) *Golden Plains Shire Community Profile*

Research Planning Design Group & Chris Dance Land Design (2005) *Bannockburn Urban Design Framework*

Appendix A

Bannockburn Trails

[Source: Golden Plains Shire & Parklinks, 2005)



Appendix B

Bannockburn Plaza Precinct Plan

COMMUTER AND EMPLOYEE PARKING

MCPHILLIPS ROAD

V I C T O R S T R E E T

SHOPIING CENTRE DEVELOPMENT

B U R N S S T R E E T

Existing Units

Old Shire Hall

**Existing
Hotel Distr**

HIGH STREET

CONCEPT PLAN

Concept Plan
Proposed Shopping Centre
Bannockburn

SITE PLAN

Scale 1:500

[illegible]

Appendix C

Consultation Program

Appendix C

<i>Stage/Step</i>	<i>Consultation Required</i>	<i>Who to Undertake Consultation</i>
Stage 1 Initiation	<ul style="list-style-type: none"> Identification of key stakeholders and invitation of stakeholders to focus group meeting/workshop. Establish a register of interested parties – place advertisements in local newspapers and media release include reference to hotline. 	CW/Council Council
Stage 2 Review & Analysis	<ul style="list-style-type: none"> Consultation with Council and service providers to understand existing conditions (ie. traffic, water supply, sewerage, power) within Bannockburn. 	CW
Stage 3 Consultation on Issues Paper	<ul style="list-style-type: none"> Consultation will be in the form of up to two key stakeholder workshops (on the same day) and a street stall at an agreed time and place. Project bulletin number 1. Comments received will be collated. 	Note CW (distribution by Council) CW
Stage 4 Prepare Draft Strategy	<ul style="list-style-type: none"> The draft strategy will be discussed with the Project Reference Group before being finalised. 	CW
Stage 5 Consultation on Draft Strategy	<ul style="list-style-type: none"> Key stakeholders will be consulted on the draft strategy. Consultation will be in the form of up to two key stakeholder workshops (on the same day). Project bulletin number 2. Comments received will be collated and where appropriate, fed into the revised strategy. 	CW/Council Note CW (distribution by Council) CW
Stage 6 Finalise Report	<ul style="list-style-type: none"> The final strategy will be discussed with the Project Reference Group before being presented to Council. 	CW

Appendix D

Community Consultation Questions

Appendix D

Bannockburn Town Centre Investment Strategy

Thursday, 8th November, 2007

Formulate responses to the following questions as a group. Place your notes and ideas here, and translate the points across to the butcher's paper provided. Mark areas on maps provided.

- What is there about Bannockburn Town Centre that you don't want to lose?

.....
.....

- What other facilities and services should be provided to meet the needs of the growing population?

.....
.....

- Where should the new growth in Bannockburn Town Centre occur? (Consider re-use of the school site, High Street and impact on land use, and the proposed expansion of arcade)

.....
.....

- How would you improve traffic and parking in Bannockburn?

.....
.....

Appendix E

Community Consultation Responses

Appendix E

What is there about Bannockburn Town Centre that you don't want to lose?

Open spaces and recreation

- ▶ Existing landscaping through the town and streetscape vegetation and large, mature trees
- ▶ Open spaces and feel for people/passive recreational use
- ▶ The Shire Hall and recreational area around it
- ▶ Good footpaths for connectivity of the town

Retail and services

- ▶ Good diversity of uses/mixed uses that complement each other
- ▶ Good car parking close to facilities
- ▶ The Railway Hotel

Built form

- ▶ Big wide road avenues
- ▶ Low level built form
- ▶ Heritage buildings in the town centre
- ▶ Managed expansion and structure contained

Ambience and connectivity

- ▶ Compactness – close together, ie: commercial and civic uses in close proximity
- ▶ Walkability of the town
- ▶ Connection to key hubs within the town centre
- ▶ Village streetscape and feel
- ▶ Relaxed feel – wider street/road reserves

What other facilities and services should be provided to meet the needs of the growing population?

Open spaces and recreation

- ▶ Sitting / passive open spaces
- ▶ Path network to be improved

Retail and services

- ▶ More variety of shops – clothing, etc.
- ▶ Increased supply of office spaces
- ▶ Adequate parking spaces in the town centre
- ▶ A community health centre
- ▶ TAFE centre
- ▶ Further development of service industries
- ▶ Function centre – cultural/community hub
- ▶ Secondary school
- ▶ Branch library
- ▶ Accommodation options
- ▶ Community/tourism information
- ▶ Professional services/office space
- ▶ Emergency services/ambulance
- ▶ Medicare
- ▶ Country target, soft furnishings
- ▶ Another bank, café, restaurant
- ▶ Small discount department store
- ▶ Theatre/cinema

- ▶ Pool
- ▶ Travel agent, clothing, jewellers, paint, big hardware store, shoes, whitegoods
- ▶ Bigger supermarket
- ▶ Variety of shops
- ▶ Appliance servicing/skilled tradespeople
- ▶ Electrical goods
- ▶ Build on existing health services – community health centre
- ▶ Support community/cultural hub
- ▶ Incentives streamline for business development
- ▶ Decent off street parking, separated from traffic
- ▶ Disabled parking, loading bays/zones

Ambience and connectivity

- ▶ Increased public transport provisions
- ▶ Design of Town Centre to include young people
- ▶ A young persons gathering centre
- ▶ Transport hub/taxi rank

Where should the new growth in Bannockburn Town Centre occur? (Consider re-use of the school site, High Street and impact on land use, and the proposed expansion of arcade)

- ▶ Restructure eastern side of High Street
- ▶ Retailing on west side
- ▶ Services/offices on east side – also café, restaurants and destination uses
- ▶ Commercial uses near recreation reserve has inherent problems with congestion/use conflict
- ▶ Integration of school site with Wabdallah Reserve
- ▶ Retain native grasses in McPhillips Road
- ▶ Consider increasing some buildings in Town Centre to 2 storeys
- ▶ Businesses – some not suitable for an enclosed centre
- ▶ Recreation on east side - including pedestrian links
- ▶ Service businesses on east side Strengthen retail hub – west side
- ▶ School site – relocation of school will allow for expansion of commercial

How would you improve traffic and parking in Bannockburn?

Traffic

- ▶ Upgrade/resolve rail crossing and northern 3-way intersection
- ▶ Pedestrian access to Byron Street & Pillard Bridge/Bruces Creek
- ▶ Retain wide road avenues – pedestrian access and meeting places
- ▶ Public transport hub/interchange – buses, taxis
 - School & public buses should be off main street hub @ McPhillips
 - More services/more regular timetable
- ▶ Traffic lights where appropriate
- ▶ Use McPhillips Road/Moore Street as main access to new land release areas south
- ▶ Heavy vehicle bypass out of the town centre
- ▶ Improvement of intersections with High Street
- ▶ Connection between both sides of High Street
- ▶ Width of High Street can be a constraint – heavy traffic/Arterial Road
- ▶ Resolve legal issues with connecting Body Corporate car parking areas
- ▶ Traffic calming and management – esp. in side streets

Car Parking

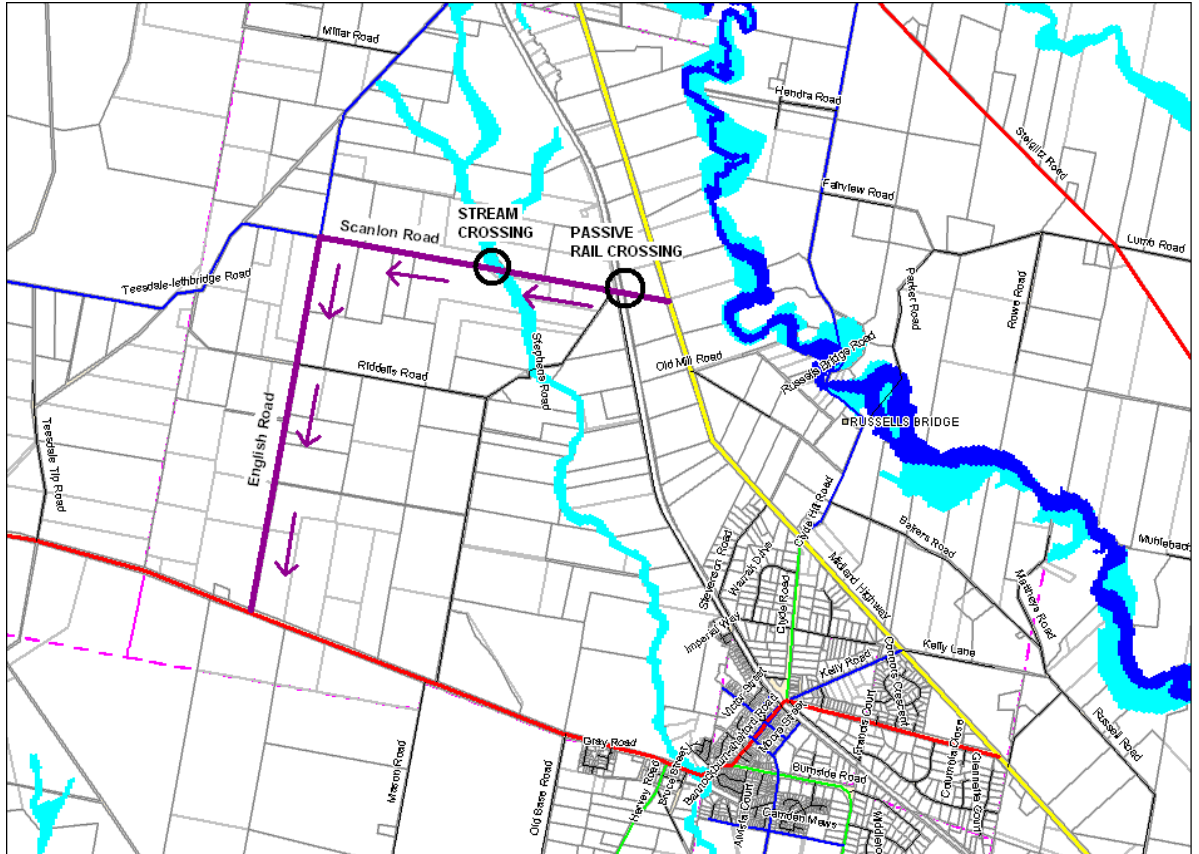
- ▶ Keep sufficient car parking close to facilities
- ▶ Car parking needs to support active High Street interface
- ▶ Multi storey car parking facilities
- ▶ Move car parks to more appropriate locations

Appendix F

Proposed Heavy Vehicle Bypass

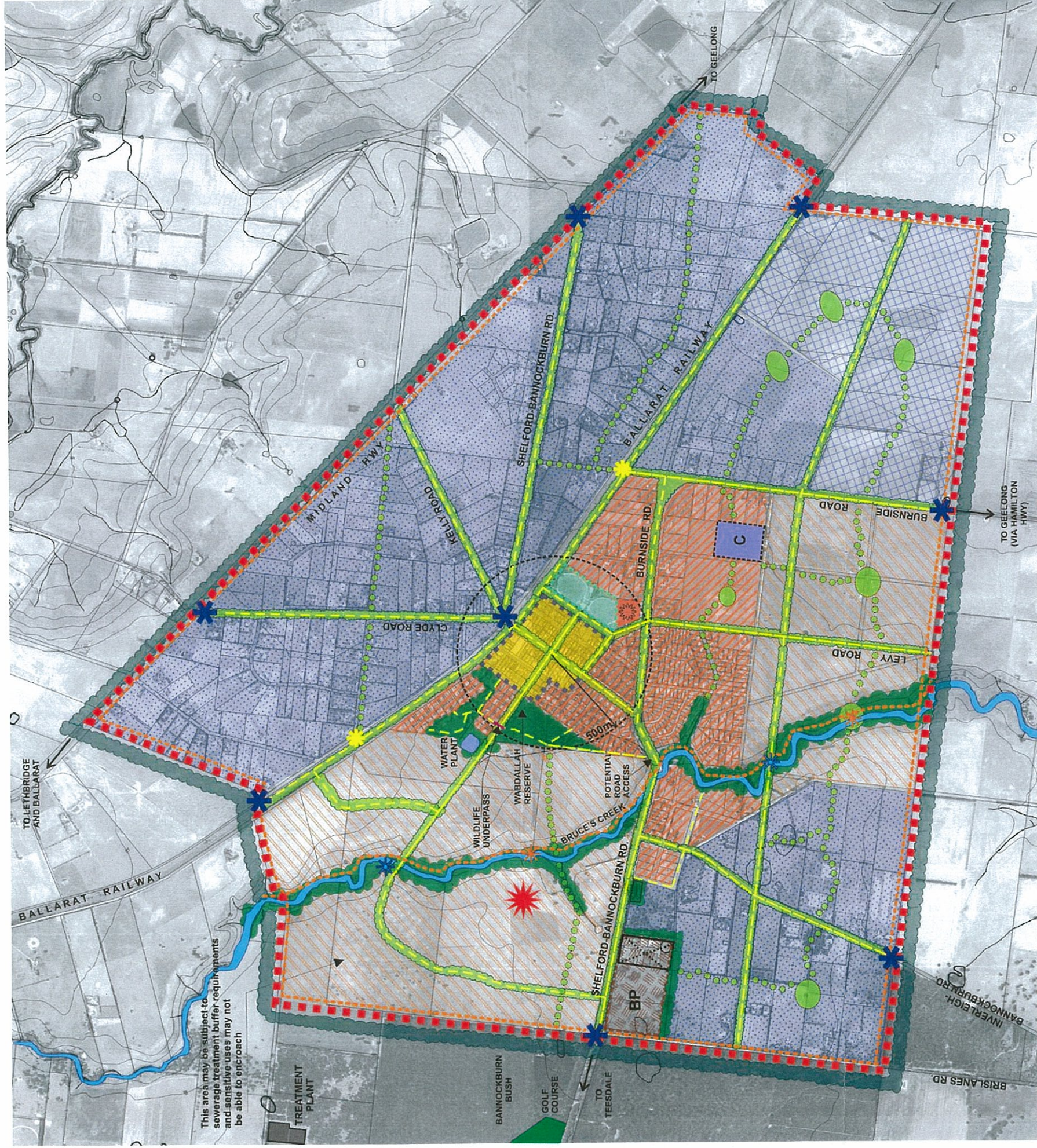
Appendix F

Proposed Heavy Vehicle Bypass



Appendix G

Bannockburn UDF – Overall Principles



LEGEND

KEY ENTRY POINTS

- Signify arrival into the town through:
 - signage (directional, information, tourist)
 - traffic calming measures to slow traffic entering the town.
 - landscape treatments.

GREEN WEDGES / OPEN SPACE CORRIDORS

- A 'network' of linked open space.
- Continues the amenity and bushland character of the town.
- Locations for playgrounds and small recreation spaces.

KEY ROAD AVENUES

- Established along key access routes:
 - provides wide road reserves for pedestrian, cycling and riding trails, and avenue tree planting
 - ESD drainage initiatives

POTENTIAL CREEK CROSSING (VEHICULAR)

POTENTIAL CREEK CROSSING (PEDESTRIAN)

POTENTIAL PEDESTRIAN RAIL CROSSING POINTS

- WILDLIFE UNDERPASS**
Installed below Milton Street, connecting Waddallah Reserve to Arboretum

GROWTH BOUNDARY

- A boundary defining sustainable growth limits.
- Also incorporating a vegetation belt and a shared pedestrian/cycle/riding path.

CONSOLIDATED COMMERCIAL PRECINCT

- Defined central core to maintain the intimate, compact and accessible nature of the town.
- Defined shared carparking, located at the rear.
- Defined pedestrian links.

FUTURE RECREATION AND EDUCATION PRECINCT

- Further planning required to define exact size and location of the Recreation and Education Precinct

EXISTING RECREATION PRECINCT

- RURAL LIVING**
Low density residential zone.

LOW DENSITY RESIDENTIAL

- Current development and/or application for development

BRUCE'S CREEK

- Defined easement incorporating an open space corridor and pedestrian/cycle/riding path along the town (eastern) side.
- Design and development overlays to apply to development adjacent to the creek.

DISTANCE FROM TOWN CENTRE

- Walkable distance approx. 500 metres

CONSOLIDATED RESIDENTIAL

PRIORITY RESIDENTIAL DEVELOPMENT ZONE

BUSINESS PARK

- Incorporating design and development overlay to protect the amenity of adjacent uses.
- (Existing extent shown dotted)

CIVIC PRECINCT

- Expansion of Civic Offices and community facilities.

PEDESTRIAN PATH

PEDESTRIAN/CYCLE PATH

- Along the town (eastern side) of Bruce's Creek and around the edge of the town following the growth boundary.

EXISTING CEMETERY