



Prepared by

centrum

Town Planning

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Contents

1	INTRODUCTION	1			
1.1	Objectives of the Township Plan	1			
1.2	Use of the Township Plan.....	2			
1.3	Land affected by the Township Plan	3			
1.4	Policy Context	5			
1.5	Strategic Context.....	6			
1.6	Population Projections	8			
1.7	Existing Conditions	9			
1.8	Process	15			
1.9	The Community Plan	17			
2	THE TOWNSHIP PLAN	18			
2.1	Vision.....	18			
2.2	Key Illustrations.....	19			
2.3	Limitations	19			
2.4	Explanatory Notes.....	19			
3	THEMES.....	23			
3.1	Residential Land Use	24			
3.2	Urban Structure.....	26			
3.3	Residential Character	28			
3.4	Transport & Access.....	31			
3.5	Waterways, Drainage & Land Capability	38			
3.6	Public Open Space	41			
3.7	Biodiversity & Bushland Interfaces	45			
3.8	Social & Community Infrastructure	47			
3.9	Physical Infrastructure	50			
3.10	Non Residential Land Uses.....	52			
3.11	Development Staging & Funding	54			
4	EXISTING URBAN AREA.....	58			
4.1	The Town Centre.....	58			
4.2	Residential Areas.....	67			
5	LAND BUDGET	70			
6	IMPLEMENTATION.....	73			
	REFERENCES.....	76			
	APPENDICES.....	77			
	Appendix A. Map of existing zones	78			
	Appendix B. Hydrology & water, flood & drainage characteristics	81			
	Appendix C. Proposed road hierarchy.....	83			
	Appendix D. Recommendations for precincts in existing urban area	87			
	Appendix E. Summary of changes recommended by Panel	92			

Plans

Plan 1 Strathfieldsaye Township Structure Plan - New Development Areas	20
Plan 2 Strathfieldsaye Township Structure Plan - Environment	21
Plan 3 Strathfieldsaye Township Structure Plan - Transport & Movement	22
Plan 4 Strathfieldsaye Town Centre Structure Plan	60

Figures

Figure 1 Study area and new development areas.....	4
Figure 2 Residential strategic framework plan.....	7
Figure 3 Key demographic projections for Strathfieldsaye to 2006-2031.....	8
Figure 4 Existing conditions.....	10
Figure 5 The consultation process	16
Figure 6 Relationship between the Community Plan and Township Plan.....	17
Figure 7 Example of development fronting side streets.....	30
Figure 8 Indicative road cross section – connector road	35
Figure 9 Indicative road cross sections – creekline interface street	36
Figure 10 Indicative road cross section – bushland interface street.....	37
Figure 11 Recommended development plan precincts – new development areas ..	57
Figure 12 Potential long term concept for Wellesley Street (opposite)	64
Figure 13 Precinct plan for land budget	72
Figure 14 Precincts –existing urban area.....	91

Tables

Table 1 Framework for residential development	25
Table 2 Town Centre development framework	62
Table 3 Land budget	71
Table 4 Implementation plan.....	73

1 Introduction

The Strathfieldsaye Township Plan provides an integrated planning vision for how Strathfieldsaye should develop over the next 20 years.

The main element of the Township Plan is a structure plan to guide the development of two new residential growth areas in Strathfieldsaye. A structure plan is a key planning document that guides major change to land use, built form and public spaces that together can achieve economic, social and environmental objectives.

The Township Plan contains the strategies to guide the future development of Strathfieldsaye and the actions needed to realise the strategies. The Plan is intended to be implemented progressively as landowners choose to develop their land.

The City of Greater Bendigo has engaged Centrum Town Planning to prepare the Plan in conjunction with a team of specialist consultants. The Plan has been prepared in close consultation with the Strathfieldsaye community and key agencies and government departments.

This plan replaces the existing Strathfieldsaye Township Structure Plan (2001) that was developed in the early 1990s and which was last amended in 2006.

1.1 Objectives of the Township Plan

The particular objectives of the Strathfieldsaye Township Plan as outlined in the project brief are to:

- ensure that future development integrates with surrounding land
- assess and plan for appropriate social and community infrastructure
- identify a planning framework for the staging of future development
- manage development at the residential and forest interface and residential and rural interface
- ensure that long-term growth opportunities are not prejudiced by inappropriate or incompatible development
- ensure that land use and development is sustainable, relative to the physical capability of the land and environmental factors
- ensure that the natural features and characteristics of the area are enhanced and properly managed
- identify urban design treatments for the Strathfieldsaye Town Centre
- incorporate elements of the existing Strathfieldsaye Township Structure Plan (2001), where relevant

1.2 Use of the Township Plan

The State Planning Policy Framework states planning authorities should facilitate the orderly development of urban areas through the preparation of structure plans (SPPF, Clause 14.01-2).

The plan is intended to be used by the following stakeholders in the following ways:

- The City of Greater Bendigo:
 - as the strategic basis for introducing new policies, rezonings and overlays into the Greater Bendigo Planning Scheme
 - to guide the assessment of permit applications, particularly applications for residential subdivisions and commercial development
 - preparing capital works budgets and delivering services
 - preparing other strategic documents such as open space strategies
 - preparing development contributions plans
 - to support funding applications
- **The community** in understanding how Strathfieldsaye is likely to change in the future
- **Developers** in understanding opportunities for new development and the expectations of City of Greater Bendigo when applications are made for new development

- **Government agencies and authorities** in co-ordinating infrastructure requirements relating to roads, water and other services

It is intended that the Strathfieldsaye Township Plan will become a Reference Document in the Greater Bendigo Planning Scheme. This will ensure that town planning applications must have regard to the strategies and actions of the plan.

Document approval

The Strathfieldsaye Township Plan was adopted by the City of Greater Bendigo on 1 July, 2009.

Monitoring & review

The City of Greater Bendigo will monitor the implementation of the Township Plan. It is anticipated that the key assumptions of the plan and its effectiveness will be evaluated on a regular basis, at least every five years. Depending on the outcomes of the review, it is anticipated that the plan will be updated as required.

1.3 Land affected by the Township Plan

Strathfieldsaye is a residential and semi-rural area located approximately 8 kilometres to the south east of the Bendigo CBD. The study area encompasses most of the area known as Strathfieldsaye, as show in Figure 1.

The study area is bounded by:

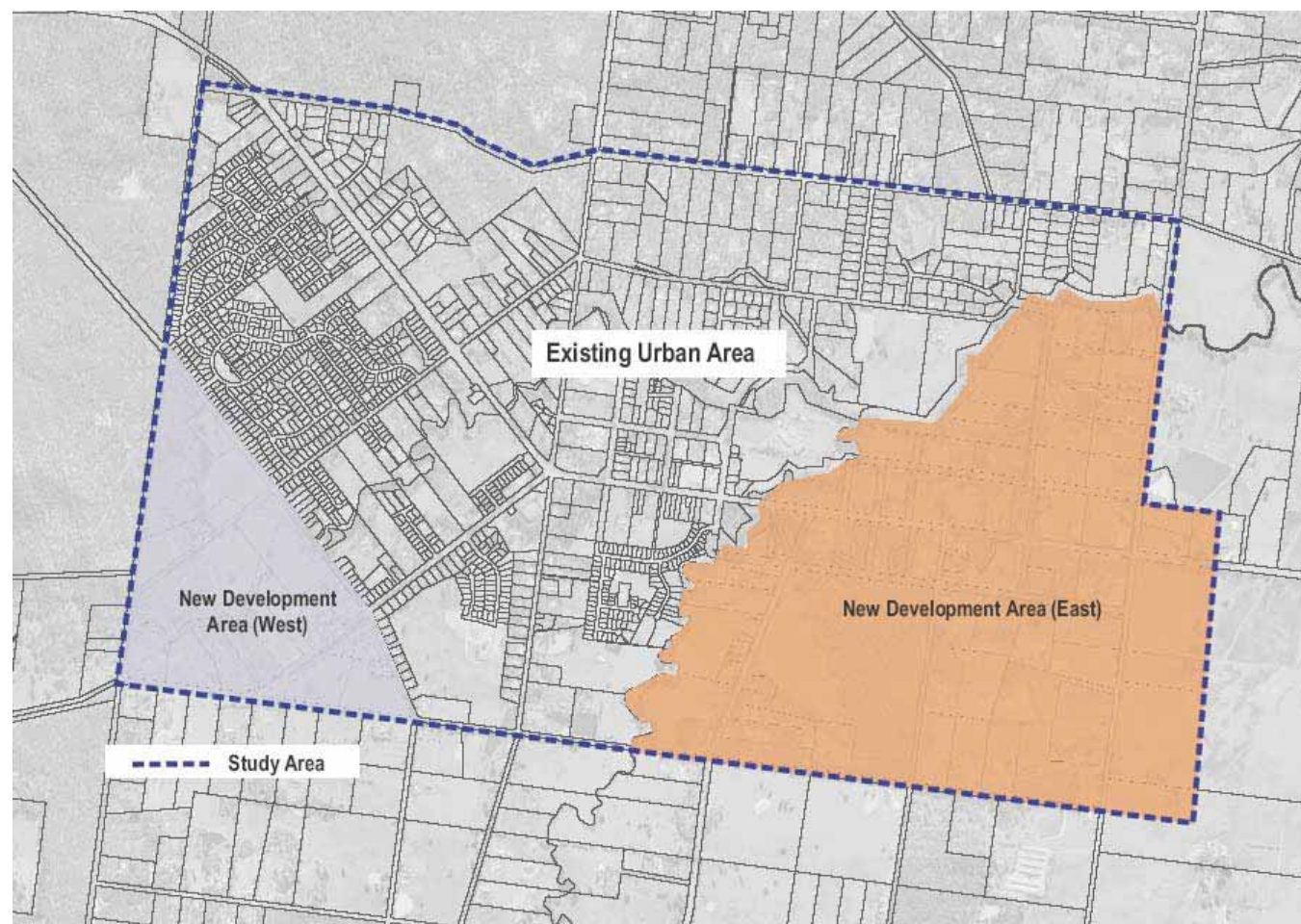
- Sinclairs Road / Watson Drive in the north
- Osborne Lane in the west
- Bakers Lane in the south
- Somerset Park Road / Mannes Lane in the east

The focus of the Township Plan is on two 'new development areas' that have been identified by the City of Greater Bendigo:

- **New development area (east)**, which comprises approximately 300 hectares of semi-rural land to the east of the Town Centre. The area is bounded by Emu Creek and Sheepwash Creek to the north-west, Bakers Lane to the south and Somerset Park Road/Mannes Lane to the east.
- **New development area (west)**, which comprises approximately 85 hectares of semi-rural land to the south west of the Town Centre. The area is bounded by Osborne Lane and the Greater Bendigo National Park to the west, Bakers Lane to the south and Guys Hill Road to the north east.

- The remainder of the study area consists of the existing urban area and the Town Centre. The Township Plan also provides guidance about how these areas should develop in the future

Figure 1 Study area and new development areas



1.4 Policy Context

The Township Plan has been prepared within the context of the following overarching planning policies:

- **State Planning Policy Framework**, which comprises general principles for land use and development in Victoria and specific policies dealing with settlement, the environment, housing, economic development, infrastructure and particular uses and development.
- **Ministerial Direction No.6 Rural Residential Development** sets out the matters which must be considered before planning authorities give consideration to rural residential development.
- **Melbourne 2030**, which contains a series of 'Neighbourhood Principles' to ensure liveable neighbourhoods. These relate to urban structure, urban density, sense of place, transport and movement and the protection of the environment.
- **ResCode (Clauses 54,55&56)**, which contains the planning requirements for the design and location of residential multi-unit development and residential subdivisions.

The Township Plan has also given regard to the following local planning policies of the Greater Bendigo Planning Scheme:

- **Development at the Urban-Forest Interface Policy (Clause 22.01)**, which aims to ensure residential development protects and maintains the environmental values of adjoining forested areas surrounding Bendigo.

- **Salinity and Erosion Risk Policy (Clause 22.04)**, which aims to minimise the risk of salinity on development and rehabilitate areas that are affected by or contribute to salinity.
- **Strathfieldsaye Township Residential Character Policy (Clause 22.22)**, which aims to ensure that development is responsive to the desired future character of the area and to retain and enhance the identified elements that contribute to the character of the area.

1.5 Strategic Context

The Township Plan has been developed within the context of considerable strategic planning work that has been undertaken by the City of Greater Bendigo. The key strategies are:

- **Greater Bendigo Municipal Strategic Statement (MSS)** contains the key objectives for land use and development and the strategies and actions for achieving the objectives. Relevant strategies for Strathfieldsaye relate to:
 - protecting environmental values including development at the urban forest interfaces
 - providing more affordable and higher density types of accommodation close to access routes and services
 - the provision of street and pathway networks
 - creating buffers from native vegetation and restoring biolinks along drainage lines
 - integrating residential land uses with other land uses and maintaining the Town Centre as a Village Centre.
- **City of Greater Bendigo Open Space Strategy (2004)** provides a strategic assessment of open space assets and recommendations for the future enhancement of existing and potential open space

- **City of Greater Bendigo Commercial Land Strategy (2004)** provides a planning framework and policy objectives for retail and commercial development in Greater Bendigo. The strategy aims to maintain the competitiveness, performance and viability of the retail and commercial hierarchy in Bendigo and centres within the hierarchy.

The strategy recognises that the existing shopping centre in Strathfieldsaye is a Village Centre in the hierarchy of commercial development identified in the strategy (Ratio Consultants, 2004,28). The strategy predicts that there will be a strong demand for growth in the village centre and provides general principles for how development should occur (Ratio Consultants, 2004, 59).

- City of Greater Bendigo Residential Development Strategy (2004)** identifies Bendigo's future housing needs and provides a framework to accommodate an additional 38,390 residents to 2030 through urban consolidation and the staged release of new residential land

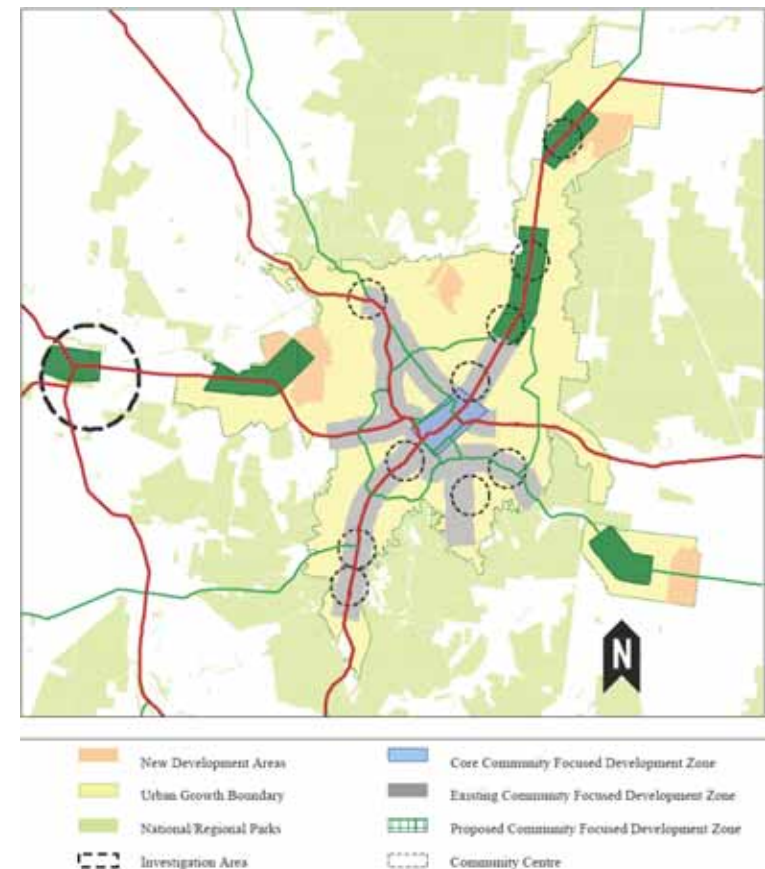
The strategy identifies Strathfieldsaye as one of four new development areas that will accommodate new residential growth (refer to Figure 2).. It anticipates that almost 1,400 new dwellings will be constructed in Strathfieldsaye by 2030. Of these, 45% of dwellings will be detached, 35% semi detached and 20% multi unit dwellings

The strategy introduced an 'Urban Growth Boundary' to manage this growth. It also identifies a proposed 'Community Focused Development Zone' that extends approximately 400 metres around Strathfieldsaye Road/Wellington Street. The strategy anticipates a wide variety of housing types at higher densities in the Community Focused Development Zone.

Other strategic documents

Various other strategic documents form part of the strategic context for the project. These were reviewed during the preparation of the background reports that have informed this plan. The background reports are listed in the references section of this report.

Figure 2 Residential strategic framework plan



Source: Greater Bendigo Municipal Strategic Statement (Clause 21.05)

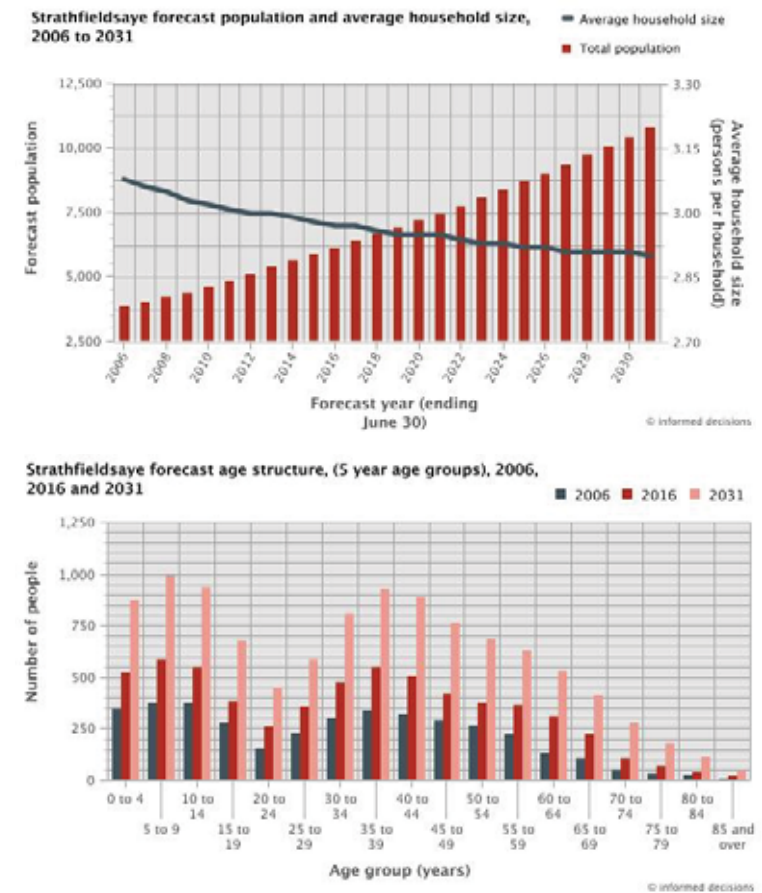
1.6 Population Projections

In 2006, Strathfieldsaye had a usual resident population of 2,992 (ABS, 2006 Census of Population and Housing). Population projections prepared for the City of Greater Bendigo and shown in Figure 3 estimate that Strathfieldsaye area will have a population of approximately 10,000 people by 2031 (ID Consulting & www.bendigo.vic.gov.au).

According to forecast.id, the age structure in 2031 is likely to be similar to the structure in 2008 (refer to Figure 3). The highest age groupings are expected to be 5 to 9 year olds, followed by 10 to 14 years olds and 35 to 39 year olds. This is quite a different pattern to many other rural and regional areas where the number of older adults is likely to be significantly higher than younger people (Communityvibe, 2008).

The graphs in Figure 3 demonstrate the anticipated change in age structure of the Strathfieldsaye community to 2031.

Figure 3 Key demographic projections for Strathfieldsaye to 2006-2031



Source: (ID Consulting & www.bendigo.vic.gov.au).

1.7 Existing Conditions

This section provides a brief description of the existing conditions within Strathfieldsaye with an emphasis on the two new development areas. More detailed descriptions of each element can be found in the seven background reports listed in the references section of this report. Reference should also be made to Figure 4 (Existing Conditions).

Role of Strathfieldsaye

Strathfieldsaye was formerly a rural based hamlet that supplied agricultural products to the local Bendigo economy.

In the past 30 years, Strathfieldsaye has been developed as a residential satellite of Bendigo surrounded by large areas of rural residential development. Whilst basic shops and services currently exist in Strathfieldsaye, most residents travel to other parts of Bendigo on a regular basis for employment and to utilise the broader range of shops, services and facilities that exist in the wider Bendigo urban area.

Landscape

Strathfieldsaye is located in the valley of the Axe, Emu and Sheepwash Creeks. The landscape consists of gently undulating hills and flats around the creeks. The elevated land to the north and west of the study area contains vegetated land that forms part of the Greater Bendigo National Park.

Flora

The study area is located within the Goldfields Bioregion. Significant areas within the study area have been cleared for previous grazing uses or for urban development, although some significant areas of remnant native vegetation remain primarily along the creeks and roadsides.

Vegetation within the new development areas ranges from significant remnant patches, scattered or isolated trees to non-indigenous vegetation. All vegetation in the study area is modified and often missing major structural components (Cheers, 2008). Ecological Vegetation Classes (EVCs) within the study area are Box-Ironbark Forest, Low Rises Grassy Woodland, Heathy Woodland, Heathy Dry Forest, Creekline Grassy Woodland, Floodplain Woodland, Grassy Dry Forest and Alluvial Terraces Herb-Rich Woodland.

Three threatened flora species were found in the new development areas. Ausfelds Wattle (*Acacia ausfeldii*), listed as vulnerable, was found in both new development areas, Late Flax-lily (*Dianella tarda*), listed as vulnerable, was found at one location in New Development Area (East) and *Cassinia diminuta*, listed as rare, was also found at one site in the New Development Area (East) (Cheers, 2008).

Figure 4 Existing conditions



Fauna

Cleared farmland and scattered trees support mainly open country birds such as magpies and noisy minors. Other areas such as vegetation abutting the Greater Bendigo National Park in New Development Area (West) support a more varied species composition including woodland and forest species. Creek lines in the new development areas have the potential to be corridors for some fauna species

The Victorian Fauna Database lists eight threatened species recorded within New Development Area (East) and seven within New Development Area (West). The Victorian Fauna Database lists 35 threatened or vulnerable species within a five kilometre radius of the centre of the new development areas, although the lack of a wetland or suitable dams in the study area would restrict 9 of the 35 species that require water from using the area on a regular basis (Cheers, 2008).

One threatened fauna species, the Swift Parrot, was recorded in New Development Area (West). Forty-nine native and five introduced bird species were also recorded over both sites. In addition five native mammals, three introduced mammals, five reptiles and one amphibian were also seen in the new development areas (Cheers, 2008).

Waterways

The Strathfieldsaye Study Area falls within the Axe Creek catchment. The Axe Creek Catchment lies within the larger Campaspe River Basin of north Central Victoria. Sheepwash Creek and Emu Creek are the main waterways that flow through the Strathfieldsaye area. Both creeks are part of the greater Axe Creek catchment. There are a number of minor waterways and drainage lines in the study area that flow into Sheepwash Creek and Emu Creek. A map showing these features is provided in Appendix B.

Groundwater

Groundwater in the Strathfieldsaye area is not considered useful for any kind of domestic or agricultural irrigation due to concentrations of salt. However there are likely to be some pockets of good quality groundwater in the Strathfieldsaye area, but these areas are yet to be identified (Heckmeijer, Dawes in GHD, 2008).

A number of areas within the study area are likely to be affected by soil salinity due to the location of groundwater tables close to the surface. These areas are located along Bakers Lane and Ryalls Lane and in the vicinity of Bakers Lane.

Lot size and ownership pattern

The existing urban area in Strathfieldsaye is made up of a dispersed collection of residential subdivisions that vary in scale and lot density. The largest subdivisions, including 'Battunga Park' and 'Saxby Park' are located on the south west side of Strathfieldsaye Road and contain allotments that are generally between 500 and 800 square metres.

The subdivisions on the north side of Strathfieldsaye Road are characterised by larger allotments that range in size from 4,000 square metres to 2 hectares. Most of these allotments are not connected to reticulated sewerage. Large parcels of vacant land or land under development exist throughout the existing urban area, particularly in the vicinity of Tannery Lane, Taylors Lane and Bassett Drive.

In New Development Area (West), most of the land is privately owned and comprises 24 lots that range from 5,000 square metres to approximately 12 hectares. In New Development Area (East), much of the land is privately owned in 77 lots, most of which are 3 to 4 hectares in size. Many of the lots have been developed with dwellings.

Land use

Land use within the existing urban area is predominantly residential. Other uses including retail, education and community uses are generally located in the Town Centre. Recreation facilities are located in Club Court and at a recently constructed recreation reserve on the south west side of Strathfieldsaye Road adjoining Sheepwash Creek.

In the new development areas, most of the land is used for rural living purposes and has developed with single dwellings. A small number of landholders have developed small scale agricultural or horticultural pursuits associated such as vineyards.

Other land uses in the new development areas include a garden supply business and nursery located on Tannery Lane and an earthmoving depot and City of Bendigo waste transfer station on the south side of Strathfieldsaye Road.

Several parcels of crown land exist on the north and south sides of Strathfieldsaye Road in New Development Area (East). Crown land also exists along Sheepwash Creek and Emu Creek between Club Court and Somerset Park Road.

Road network

Strathfieldsaye Road runs east-west in the centre of New Development Area (West). It provides one lane in each direction and provides a direct road link to the Town Centre and Bendigo. Several local roads intersect Strathfieldsaye Road, including Emu Creek Road and Dukes Lane and there are several unmade road reservations on the north and south sides of Strathfieldsaye Road.

The key local roads that provide access to New Development Area (West) are Guys Hill Road, which provides a link to Bendigo via Strathfieldsaye Road, and Tannery Lane, which provides a direct connection to the Town Centre and an alternative route to Bendigo.

Public transport

The bus service in Strathfieldsaye forms part of the Bendigo bus network. It links the terminus in Blucher Street with the Bendigo CBD and Railway Station via LaTrobe University and Strath Hill shopping centre. The route encompasses the larger residential subdivisions via Tannery Lane, Saxby Drive, Brentwood Boulevard and Guys Hill Road.

Activity centres

There is one activity centre in Strathfieldsaye, which is located on the north side of Wellington Street in the geographical heart of Strathfieldsaye (the 'Town Centre').

Within the Town Centre, there is a core area where retail and service uses are concentrated (the 'Core Area'). This area is bounded by Apsley Street to the north, Wellington Street to the south, Uxbridge Street to the west and Emu Creek to the east. Services that exist in the Core Area include a supermarket, service station, hardware store, several retail and service outlets as well as medical rooms, a pharmacy and a small bank.

The Core Area is surrounded by a larger mixed use area that contains a range of recreation, education, commercial and residential uses.

Built form

The built form in Strathfieldsaye is characterised by dwellings that have a typical suburban character. They are generally single storey and have consistent setbacks from the street. Garages are typically built to the building line or protrude forward of dwellings. On larger allotments, many dwellings incorporate elements that evoke an Australian 'country style' such as ranch style dwellings with verandahs, traditional design details and garden settings.

Buildings in the Town Centre exhibit a mix of building styles, but are generally small scale single storey buildings. Larger buildings include the supermarket and hardware store. Car parking is generally located within the front setbacks of buildings.

Social and community infrastructure

Strathfieldsaye township features a number of children's and early learning services including two primary schools, a kindergarten, a child care centre, and a maternal and child health centre.

Existing sport and recreation facilities include netball, tennis, soccer, touch football, baseball, lawn bowls, Australian Rules Football and cricket. The indoor Sports Club provides opportunities for a range of indoor physical activities, hobbies and social activities, as does the pavilion at the new Recreation Reserve.

Open space, walking and cycling networks

The main recreation reserves in the Township are the Brian Keogh Sports Reserve, the new Strathfieldsaye Recreation Reserve and the Sheepwash Creek Reserve. The recently extended Sheepwash Creek Walking and cycling path connects the two sports reserves.

Actively managed local neighbourhood parks exist within the Battunga Park, Regent Park and Basset Drive subdivisions. There are six playgrounds clustered around Club Court and in recent residential subdivisions.

Physical and service infrastructure

The existing urban area in Strathfieldsaye is served by a reticulated sewerage system managed by Coliban Water. Strathfieldsaye is also connected to a reticulated town water supply managed by Coliban Water. The existing urban area is serviced by electricity, natural gas and telecommunications services.

The new development areas are not currently serviced with town water or reticulated sewerage. Electricity and telecommunications infrastructure have been extended in the new development areas as required to service new dwellings.

1.8 Process

The Township Plan has been prepared using a three-step approach as outlined in Figure 5.

Consultation with the community and relevant government agencies and authorities has occurred at appropriate points throughout the process. The consultation has involved workshops, face to face interviews and review of written information. Key events in the consultation process are listed below:

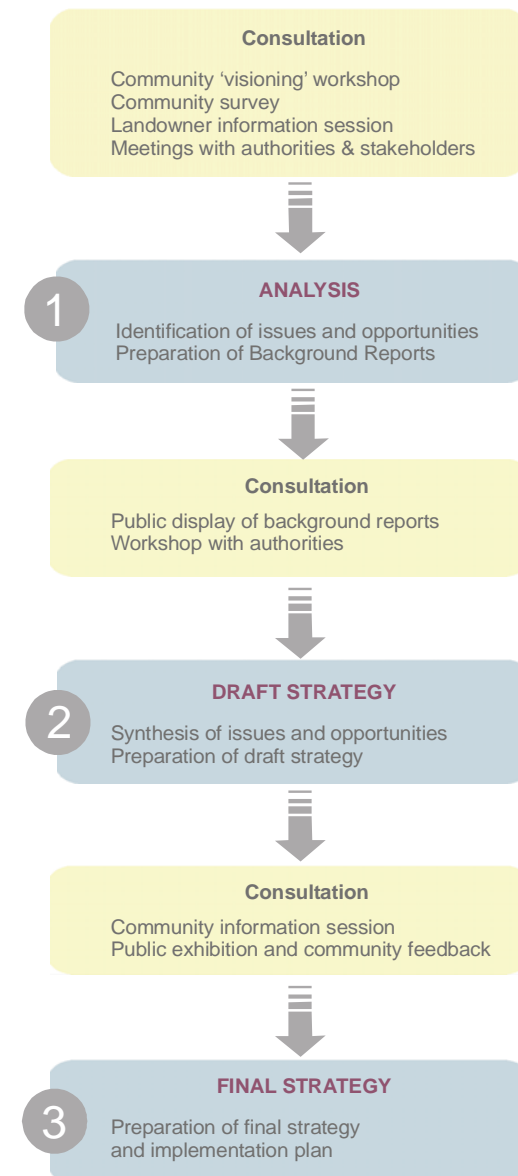
- **Community visioning workshop** in April, 2008, which was attended by approximately 55 members of the community. Small group discussions were held to obtain feedback on a broad range of community issues relating to environment, sustainability, infrastructure and other factors relevant to the future development of the Township.



- **Community survey**, which was sent to all residents of Strathfieldsaye to obtain feedback about strengths, weaknesses and opportunities in Strathfieldsaye. In total, 106 survey forms were completed.
- **Landowner information session** in April, 2008, which was attended by approximately 25 landowners in the two new development areas. The purpose of the workshop was to inform landowners of the project and discuss issues of particular relevance to landowners.
- **Community event** held in August, 2008, which allowed the community to view the Background Reports and provide feedback on the issues and opportunities identified in the reports.
- **Workshop with Authorities** in November, 2008, which was attended by representatives from relevant government departments, agencies and service authorities. Draft strategies and actions were presented to the workshop and small group discussions were held to refine the strategies and actions.

In addition, the City of Greater Bendigo distributed Project Bulletins at key stages of the project to keep the community informed about the project.

Figure 5 The consultation process



1.9 The Community Plan

As part of the process of preparing the Township Plan, the City of Greater Bendigo has worked with the community in developing a 'Community Plan' for Strathfieldsaye.

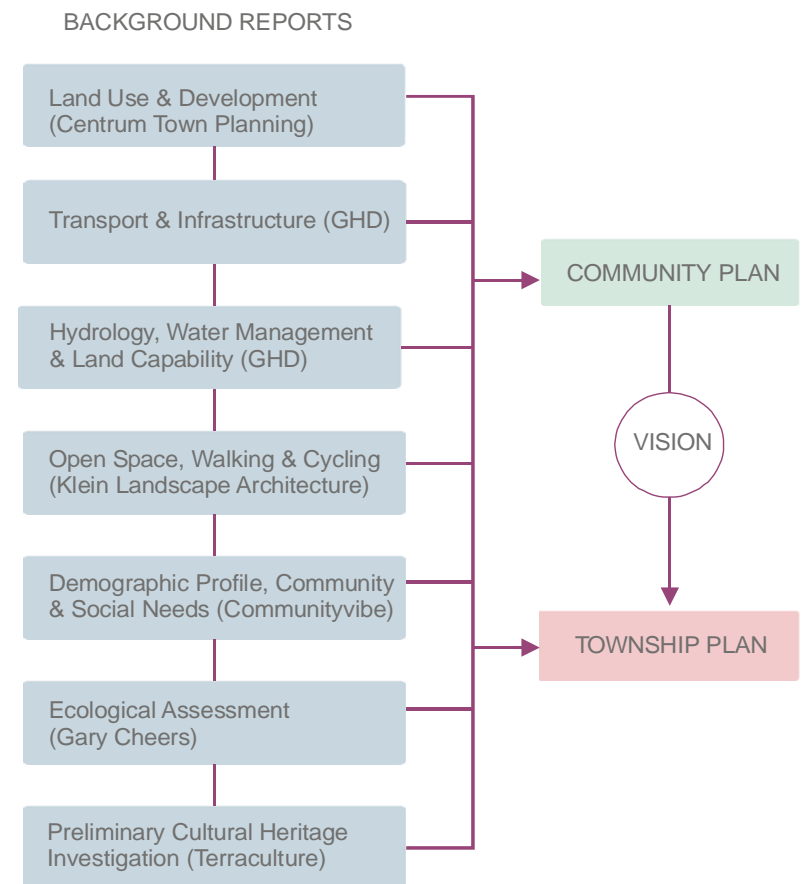
The Community Plan is a concise statement of the community's vision for Strathfieldsaye, together with objectives, actions and timelines for achieving the vision. Community planning is a concept committed to by local governments across Victoria.

The scope of the Strathfieldsaye Community Plan is broad ranging. In addition to themes that relate to land use planning, it encompasses topics such as health and wellbeing, education, training, entertainment, arts and culture.

The community plan focuses upon the community infrastructure development and social needs, whilst the Township Plan focuses on future land use and development within the Township.

The plans have informed each other and together provide a comprehensive overall plan for the future development of Strathfieldsaye. The relationship between the plans is shown visually in Figure 6.

Figure 6 Relationship between the Community Plan and Township Plan



2 The Township Plan

2.1 Vision

The vision for Strathfieldsaye, developed in consultation with the Strathfieldsaye community is to create a Township that:

- **respects and protects existing environmental features**, in particular the creeks, native vegetation and Greater Bendigo National Park
- **creates a strong sense of place** derived from its distinctive bushland and semi-rural setting
- **creates a healthy place to live**, where all residents are well connected with each other and the Town Centre
- **strengthens the concept of Strathfieldsaye as a 'village'** with the Town Centre as the focus of community life
- **increases urban densities** in locations close to the Town Centre and in other places that are well served by the public transport network, walking and cycling paths and open space
- **reduces greenhouse gas emissions** by providing safe, attractive and convenient walking and cycling paths that make walking a viable method of moving between neighbourhoods and to the Town Centre
- **attracts a broad mix of people** from different age groups and socio-economic backgrounds through the provision of a wide range of housing, community services and recreational opportunities
- offers a wider range of services and employment opportunities, concentrated within the Town Centre
- **enhances community safety** through the design of buildings, public spaces and the structure of new residential areas
- **creates a resilient community** that is able to adapt to changes in climate and changes in the cost and availability of energy and water resources

2.2 Key Illustrations

The key illustrations that describe the Township Plan are:

- Plan 1: Strathfieldsaye Township Structure Plan – New Development Areas
- Plan 2: Strathfieldsaye Township Structure Plan – Environment
- Plan 3: Strathfieldsaye Township Structure Plan – Transport & Movement
- Plan 4: Strathfieldsaye Town Centre Structure Plan (refer to Section 4)

2.3 Limitations

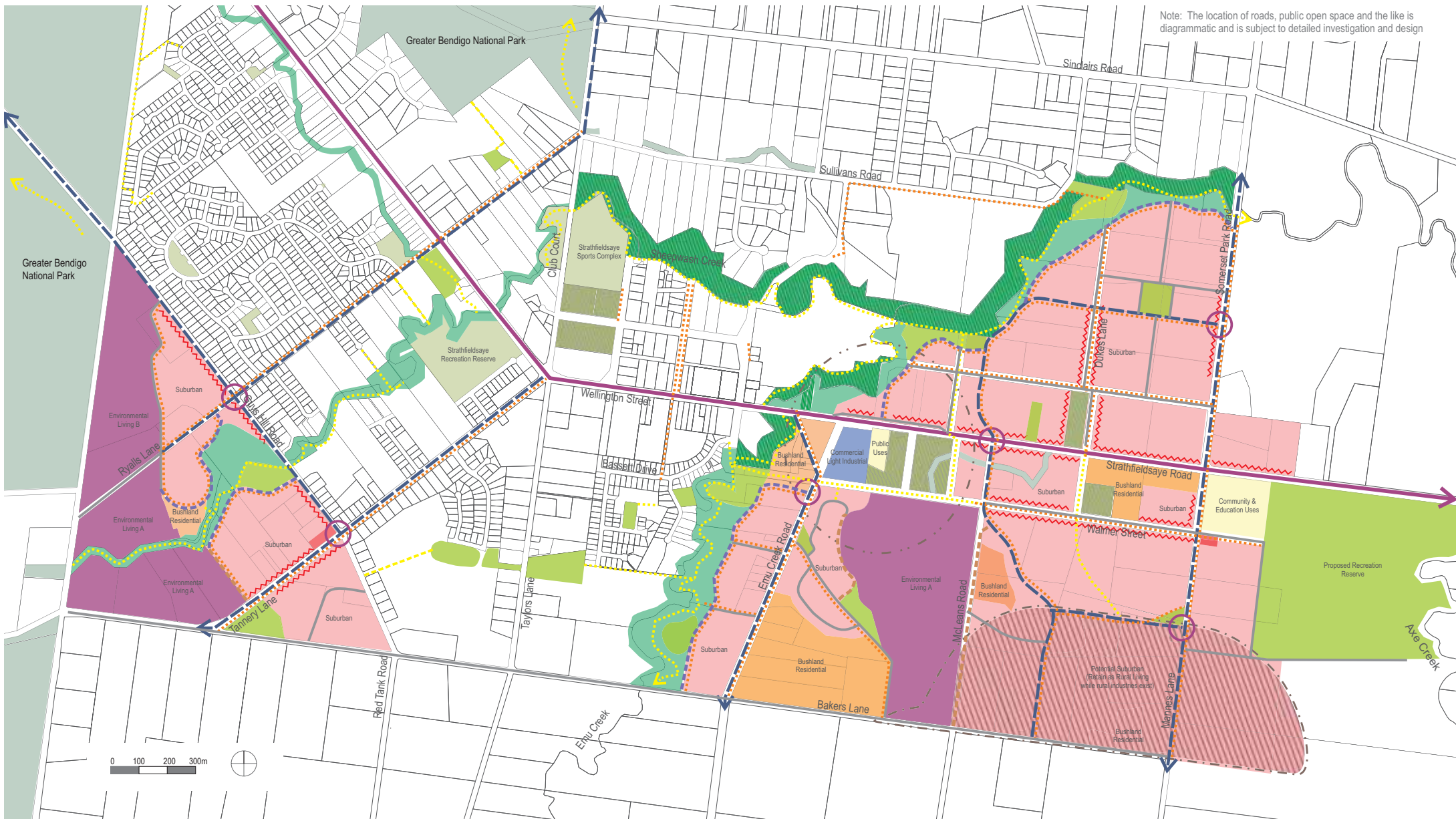
Plans 1-4 should be read in conjunction with the explanatory information in Sections 3 & 4 of this report (themes & existing urban area). The figures are intended to supplement the recommendations of the report and provide a visual representation of the Township Plan. Where the plans do not provide sufficient detail, reference should be made to the report.

The plans have been prepared based on a limited survey of the site conditions. Detailed survey work is required to establish the exact location of existing and proposed features and items of infrastructure.

2.4 Explanatory Notes

The following notes relate to Plans 1-4:

- For clarity, the walking and cycling and footpath network has been shown on one side of streets and creeks only. Reference should be made to Figures 7-9 for more detailed information on the preferred location of footpaths within road reserves.
- The plans show the preferred layout for collector roads. The locations shown should be the starting point for further investigations during the preparation of Outline Development Plans (refer to Section 3.11).
- The locations of the 'creekline interface streets' as shown on the Structure Plan should be determined following the investigations recommended in Section 3.5 Waterways, Drainage & Land Capability.
- 'Access streets' have been shown in to provide examples of how the design guidelines for street layouts could be applied at the local level. Reference should be made to the design guidelines Section 3.4 for the principles that should be used in the design and location of the local road network.



LEGEND

- | | | | |
|---|--|----------------------------|---|
| Greater Bendigo National Park | Suburban residential | Arterial road | Entry points |
| Existing vegetated creeklines (crown land) | Bushland residential | Connector road | Buffers to industry |
| Proposed vegetated creeklines | Environmental living | Creekline interface street | Larger suburban lots / frontage treatments |
| Existing public open space (crown land) | Commercial / employment | Bushland interface street | Proposed off-road walking and cycling paths (both sides along creeks) |
| Existing public open space (council reserves) | Public / Education uses | Access street | |
| Proposed public open space | Potential Neighbourhood Activity Centres | Proposed key footpaths | |

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LEGEND

- Greater Bendigo National Park
- Existing vegetated creeklines (crown land)
- Proposed vegetated creeklines
- Existing public open space (crown land)
- Existing public open space (council reserves)
- Proposed public open space

- Arterial road
- Connector road
- Creekline interface street
- Bushland interface street
- Access street
- Intersections to be upgraded

- Existing bus route
- Existing footpaths
- Proposed key footpaths
- Existing off-road walking and cycling paths
- Proposed off-road walking and cycling paths (both sides along creeks)
- Proposed pedestrian bridges

3 Themes

This chapter provides objectives, strategies and priority actions for the key themes that comprise the Township Plan. The eleven themes are:

- Residential Land Use
- Urban Structure
- Residential Character
- Transport & Access
- Waterways, Drainage & Land Capability
- Public Open Space
- Biodiversity & Bushland Interfaces
- Social & Community Infrastructure
- Physical Infrastructure
- Non Residential Land Uses
- Development Staging & Funding

The themes focus on issues relevant to the future development of the new development areas. The themes relevant to the future development of the existing urban area including the Town Centre are described in Section 4 of the report.

The themes are structured in the following way:

Summary: Provides an overview of why the theme is important, the key issues that have influenced the strategy and a summary of the theme.

Objectives: Outline what the Township Plan seeks to achieve. All objectives must be met.

Strategies: Describe the recommended strategies for achieving the objectives. The strategies describe an initiative or development principle that should be achieved.

Design guidelines: Provide guidelines for design that should be followed when implementing the strategies. Adopting the guidelines will usually mean that the objectives have been met.

The design guidelines describe the preferred outcome for development. Alternative approaches that meet the objectives may be considered by the City of Greater Bendigo when assessing planning applications.

Application

The objectives and design guidelines must be considered when assessing all applications for residential development in both the new development areas and existing urban area.

The strategies apply to the areas specified in the Plan.

3.1 Residential Land Use

Summary

Residential uses will continue to be the primary land uses in Strathfieldsaye and residential development will be the key driver of change in the new development areas. The Township Plan anticipates that 1,510 new dwellings will be accommodated in the new development areas in four different housing types; Medium Density, Suburban, Bushland Residential and Environmental Living (refer to Table 1 and land budget in Table 3).

Population projections indicate that most of the people who will live in the new development areas will be young families. The Plan acknowledges that these people are likely to prefer separate dwellings on allotments at urban densities similar to those found in most new growth areas in Bendigo. It also acknowledges the demand for lower density residential allotments in a bushland setting.

The Plan anticipates that medium density housing will be concentrated within the Town Centre to maximise the benefits gained from living within close proximity to shops, services and public transport. The Plan strongly encourages smaller medium density housing developments in appropriate locations and subject to high standards of urban design.

Development will occur within subdivisions that are carefully planned from the earliest stages to protect environmental features such as creeks and to avoid the removal of native vegetation. The main tool for protecting the vegetation will be through the zoning of the land as this has the greatest influence over lot densities.

The Township Plan specifies the most stringent controls on land that is identified for 'Environmental Living' to assist in protecting the environmental qualities of the land.

Objectives

- O1.1 To protect significant native vegetation and prevent development on land with environmental constraints
- O1.2 To ensure a range of housing choices for people of different ages, incomes and preferences
- O1.3 To increase average residential densities across Strathfieldsaye

Strategies

- S1.1 Undertake detailed flora and fauna assessments prior to the approval of Outline Development Plans and subdivisions
- S1.2 Encourage subdivisions that set aside large allotments with wide street frontages and dual street access suitable for integrated medium density housing
- S1.3 Remove the Incorporated Plan Overlay (Schedule 1) from the new development areas
- S1.4 Rezone land in accordance with Table 1 with reference to the existing zones that apply to the study area as shown in Appendix A

Table 1 Framework for residential development

Housing Type	Location	Proposed Controls	Minimum Lot Size
<p>Medium Density</p> <p><i>Two or more dwellings on a lot, semi detached or terrace houses)</i></p> <p><i>Dwellings on lots of less than 300 square metres</i></p>	<ul style="list-style-type: none"> • Within the Town Centre • Within 200 metres of the arterial and connector road network • Fronting public open space 	Residential 1 (R1Z) & Development Plan Overlay	No minimum lot size
<p>Suburban</p> <p><i>Single dwellings on lots of greater than 300 square metres</i></p>	<ul style="list-style-type: none"> • Cleared land • Land with low conservation significance native vegetation 	Residential 1 (R1Z) & Development Plan Overlay	No minimum lot size
Bushland Residential	<ul style="list-style-type: none"> • Land with medium conservation native significance vegetation • Land constrained by flooding, access or the location of existing dwellings 	Low Density Residential Zone (LDRZ) & Development Plan Overlay	4,000 square metres (1 acre)
Environmental Living A	<ul style="list-style-type: none"> • Land with high conservation significance native vegetation • Significant areas of contiguous native vegetation 	Low Density Residential Zone (LDRZ) & Design and Development Overlay	2 hectares
Environmental Living B	<ul style="list-style-type: none"> • Land with high conservation significance native vegetation • Significant areas of contiguous native vegetation • Land adjoining Greater Bendigo National Park 	Low Density Residential Zone (LDRZ) & Design and Development Overlay	2 hectares

3.2 Urban Structure

Summary

The structure of urban areas is important because a well-designed urban structure contributes to community safety, health and wellbeing. Urban structure is particularly important for urban areas because it is the structure of the street network that remains as places and buildings change over time.

The Township Plan emphasises walkable neighbourhoods and a high level of integration between neighbourhoods and the Town Centre. The Plan proposes an urban structure that connects key destinations including the creeks, open space, recreation facilities and the Town Centre. This approach reduces travel distances, energy use and encourages community wellbeing and safety by encouraging people to spend time in public spaces.

The Plan recognises that the layout of the street network plays a role in enabling new dwellings to be oriented to maximise solar gains in the winter and to allow natural ventilation to cool dwellings in the summer. This reduces the use of fossil fuels and increases levels of comfort within the home.

Objectives

- O2.1 To create an urban structure that encourages walking and cycling
- O2.2 To create an urban structure that contributes to public safety
- O2.3 To create neighbourhoods that are easy to navigate by car, bicycle or on foot
- O2.4 To create gradual transitions between areas of different urban densities
- O2.5 To create an urban structure that minimises fire risk

- O2.6 To ensure that new development allows dwellings to maximise solar gains for heating and natural ventilation for cooling

Strategies

- S2.1 Prepare Outline Development Plans for the precincts shown in Section 3.11
- S2.2 Incorporate the design guidelines for suburban and bushland residential development listed below in a Schedule to the Development Plan Overlay
- S2.3 Incorporate the design guidelines for Environmental Living listed below in a separate Schedule to the Design and Development Overlay

Design guidelines

For all development

- Residential development should front, and maximise views to, open space, creeks and the Greater Bendigo National Park
- Different urban densities should be separated by roads, drainage lines, creeks and other key features
- Rear fences should be used as the transition between lot densities to soften the impact of interfaces between lot densities
- All dwellings should be located within walking distance (400 metres) of a walking and cycling path

Design guidelines cont'd*Suburban development*

- Dwellings should front Strathfieldsaye Road, connector roads and access streets
- Extensive networks of curvilinear roads and cul-de-sacs should be avoided (refer also to strategies in Section 3.4 Transport & Access)
- Connector roads should emphasise long views to open space, creeks or Strathfieldsaye Road
- Lots should be located on streets that are aligned on a north-south or east-west axis to maximise solar efficiency
- Lots should generally be rectangular in shape and wedge shaped and 'battle axe' shaped allotments with small frontages should be avoided

Bushland residential development

- Dwellings should front roads or open space
- Solid front fences and 'gated' developments should be avoided
- Post and wire side fences should be used along side and rear boundaries

Environmental living

- Existing road reservations should be used to provide access to lots
- The construction of new roads is discouraged to protect existing native vegetation

- Not more than one driveway crossover per allotment should be permitted. The location of the driveway should be located in the area of lowest disturbance to native vegetation based on a detailed flora and fauna assessment
- All service infrastructure should be located within the driveway to minimise the removal of native vegetation
- The size of building envelopes should be limited to 2,000m² unless larger building envelopes are required by the CFA to reduce fire risk or if exemptions under Clause 52.17 of the Planning Scheme apply to areas not covered by Vegetation Protection Overlays
- All buildings, outbuildings and ancillary structures such as pools should be located within the building envelope. Building envelopes should be enforced as restrictions on plans of subdivision. The location of building envelopes should be determined following further detailed flora and fauna assessments and consultation with the CFA
- Section 173 Agreements should be required to:
 - control domestic pets, horses, cattle and sheep
 - prevent activities that may cause significant damage to native vegetation such as the use of dirt bikes
 - require post and wire fencing
 - prevent the construction of dams
- Enforce any additional requirements or protection works to gain offset requirements as per *Victoria's Native Vegetation Management: A Framework for Action* (DNRE, 2002)

3.3 Residential Character

Summary

Residential character refers to the combination of elements that make urban areas distinctive from one another. These include the scale of development, setbacks, front fencing and architectural and roof styles (Clause 55).

The character of an area is important because it can contribute to a sense of local identity and place. It is linked closely with other themes outlined in this report including the strategies for residential land use and urban structure and the strategies relating to open space.

This theme has been influenced by the consultation process that revealed a strong desire amongst the community to create a residential character that is derived from the bushland and semi-rural setting of the area.

Recognising that the character of the built form will emerge as areas develop, it is the intention of the Plan that the treatment of streets, which are the threads that connect urban areas, will have the greatest influence on the future residential character of Strathfieldsaye. The Township Plan proposes that this character will be derived to a large extent from the native vegetation that is retained within road reservations and the backdrop of the creeks and Greater Bendigo National Park.

Retaining existing vegetation for amenity purposes, irrespective of its biodiversity value, is an important element of the Plan. As such, large areas of private forest will be protected via the zoning of the land including land to the west of McLeans Road and land adjoining the Greater Bendigo National Park.

Whilst these areas will be privately owned and developed for a small number of dwellings, the retention of much of the existing native vegetation will ensure that many new suburban areas will have direct visual connections with significant native vegetation or will feature a backdrop of native vegetation.

Along key roads, residential lots will be developed that are large enough to contain native vegetation within their frontages. These areas will have an open appearance and will connect native vegetation that has been retained in road reserves to establish a strong streetscape character.

Objectives

- O3.1 To retain existing native vegetation for its amenity values
- O3.2 To encourage the development of a spacious urban form along key entrances to new residential neighbourhoods
- O3.3 To create coherent planting themes in streets that contribute to an urban character that is distinctive for Strathfieldsaye



Strategies

- S3.1 Incorporate remnant native vegetation into the design of subdivisions, with a preference for locating vegetation in road reservations, open space, reserves and common property
- S3.2 Develop consistent tree planting schemes during the preparation of Outline Development Plans that define the road hierarchy by consistent species choice
- S3.3 Require landscape plans to be provided with subdivision applications that are consistent with the approved Outline Development Plans
- S3.4 Encourage larger than average lots fronting roads that are located on high points in the landscape or where significant roadside vegetation contributes to the character of the streetscape (as shown in Plan 1)
This requirement may be varied if alternative methods are proposed to maintain the spacious character of new neighbourhoods by:
- discouraging front fences
 - limiting the height of side fences that extend from the front of the lot to the building line
 - maintaining a generous setback for dwellings (ie 9 metres)
 - other methods that satisfy the objectives of this theme to the satisfaction of the responsible authority

- S3.5 Encourage larger than average lots fronting Strathfieldsaye Road and connector roads (as shown in Plan 1). The intention of this strategy is not to provide for larger back yards but to provide for generous front setbacks within which gardens can be established and native vegetation can be retained. This requirement may be varied if alternative methods are proposed to maintain the spacious character of new neighbourhoods by:
- discouraging front fences
 - limiting the height of side fences that extend from the front of the lot to the building line
 - *dot-point deleted to ensure consistency with Panel's recommendations*
 - other methods that satisfy the objectives of this theme to the satisfaction of the responsible authority

- S3.6 Include the design guidelines in a Development Plan Overlay

Note: For the purposes of applying the strategies, the 'average' lot density should be determined with reference to the density of allotments shown on the approved Development Plan for each precinct.

Design guidelines

Medium density development

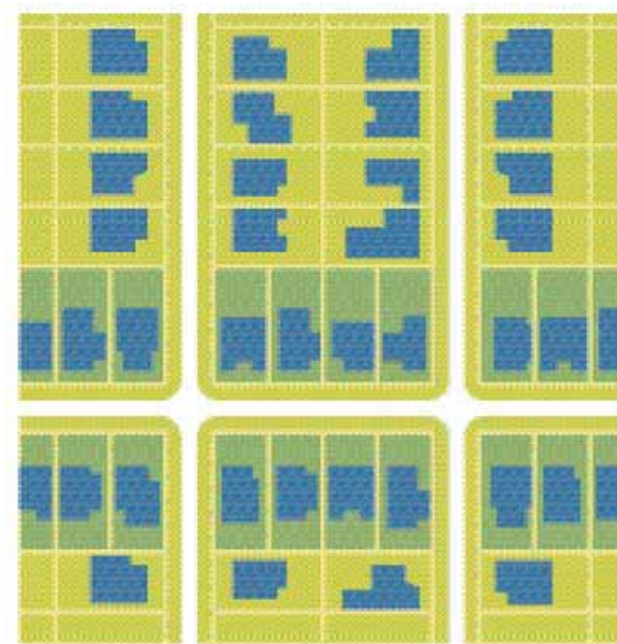
- Dwellings should have a strong connection with the street through small or no front setbacks and windows and entrances that present to the street
- Garages should be located in internal courtyards where development sites have two road frontages and more than two dwellings are proposed
- Dwellings with direct frontage to open space should have wide pedestrian paths along the frontage to provide a sense of address
- Narrow fronted lots or lots fronting open space should incorporate rear access
- High front fences and 'gated' developments should be avoided
- Garages set forward from the building line should be avoided

Suburban development

- Dwellings should front Strathfieldsaye Road, connector roads and access streets
- Lots on the short end of blocks should front the side street to avoid large expanses of side fences facing the side street and increase opportunities for passive surveillance (refer to Figure 7)
- High front fences and 'gated' developments should be avoided

- Native species should be used for street tree plantings, with exotic trees to be used in particular circumstances to highlight areas of interest. Spacing between street trees should not exceed 15 m

Figure 7 Example of development fronting side streets



Source: DSE, 2005, p19

3.4 Transport & Access

Summary

The Township Plan envisages a movement network that is highly accessible, safe and integrated with the existing network of roads and walking and cycling paths in Strathfieldsaye. The network will allow people to move around between neighbourhoods and to key destinations such as the Town Centre using different modes of transport including car, bus, walking and cycling. This approach is underpinned by the principle that walking and cycling play an important role in developing and maintaining a healthy, active and cohesive community.

Strathfieldsaye Road will continue to act as the main east-west link through the Township. VicRoads anticipates that Strathfieldsaye Road will need to be duplicated to four lanes in the medium to long term as outlined in the *Bendigo 2020 Transportation Study*. The strategic need for an arterial link from the Calder Highway via Tannery Lane and the Strathfieldsaye-Junortoun Road, to McIvor Highway was also identified in this study. The arterial link will be reviewed as part of the *Bendigo Transportation Study* by VicRoads in 2009.



Traffic volume estimates undertaken as part of this strategy indicates that the upgrading of Strathfieldsaye Road may be required within the timeframe considered in this Plan (refer to Transport & Infrastructure Background Report, p29 for more detail).

The Plan envisages that Strathfieldsaye Road will be fronted by residential development that will create an attractive entry point for the residential neighbourhoods beyond. The need for other arterial roads is currently under investigation as part of a review of the *Bendigo 2020 Transportation Study*.

In New Development Area (East), new connector roads will provide direct access to Strathfieldsaye Road from the residential precincts to the north and south of Strathfieldsaye Road. These roads will avoid existing native vegetation and will offer views over areas of significant native vegetation and the creeks.

Existing roads that contain significant native vegetation such as Bakers Lane and Walmer Street will be maintained as roads but will play a secondary role in the movement network to preserve their environmental qualities. In New Development Area (West), existing roads will be upgraded to service the new residential areas.

The local road network will be characterised by two distinctive road types; 'creekline interface streets', which will meander along Sheepwash Creek and Emu Creek, and 'bushland interface streets' that will adjoin areas of private or public bushland. Residential development will front one side of these roads and will provide passive surveillance of the walking and cycling paths and open space that adjoins them. These streets will help to establish an urban structure that protects these important landscape features and allows them to contribute significantly to the character of the area.

Objectives

- O4.1 To provide a transport system which is accessible and links communities to retail, commercial and community services within Strathfieldsaye and to Bendigo in a safe and environmentally friendly way
- O4.2 To ensure that a recognisable hierarchy of roads is developed with different widths, appearances and functions
- O4.3 To ensure that the road network is legible, safe and inter-connected
- O4.4 To reduce car dependence and encourage other forms of transport including cycling and walking for commuter and recreational purposes
- O4.5 To create attractive and safe interfaces between residential development and arterial roads
- O4.6 To create a well designed public transport network that and connects residential neighbourhoods with the Town Centre, major community and recreation facilities and Bendigo
- O4.7 To improve walking and cycling connections in the existing urban area

Strategies

New development areas

- S4.1 Apply a Public Acquisition Overlay (PAO) to reserve land for the future widening of the Strathfieldsaye Road (Bendigo Redesdale Road / Wellington Street) throughout the entire study area. The Public Acquisition Overlay will need to make provision for an overall road width of 50 metres in accordance with the design recommendations outlined in the *Principle Traffic Routes Program 1999*
- S4.2 Include the design guidelines outlined in this theme in a Development Plan Overlay for all new development areas

Existing urban area

- S4.3 Develop a road hierarchy for Strathfieldsaye in accordance with the table in Appendix C
- S4.4 Construct footpaths and safe crossing points along the following existing roads:
 - Ryalls Lane connecting with the proposed off-road walking and cycling path network (refer also to Section 3.6 Public Open Space)
 - Tannery Lane
 - Somerville Street north of the Town Centre
- S4.5 Develop a pedestrian path in the Wellesley Street road reserve to the north of Basset Drive, connecting with Strathfieldsaye Road

Strategies cont'd*Strathfieldsaye Road*

- S4.6 Maintain the role of Strathfieldsaye Road as the main east-west road through the Township
- S4.7 Support VicRoads' plans to duplicate Strathfieldsaye Road through the acquisition of land as part of the subdivision process
- S4.8 Develop a series of service roads on Strathfieldsaye Road to provide access to residential development adjoining Strathfieldsaye Road. If this is not possible due to topography or for traffic safety reasons, pursue an alternative road structure that allows dwellings to front Strathfieldsaye Road
- S4.9 Minimise the number of new access points and intersections along Strathfieldsaye Road subject to the advice of VicRoads
- S4.10 Close unused road reservations adjoining Strathfieldsaye Road and consolidate these with adjoining land
- S4.11 Liaise with VicRoads to seek the construction of a bicycle lane along Strathfieldsaye Road / Wellington Street from the Town Centre to Strathdale
- S4.12 Investigate the potential for the provision of bike/bus interchange facilities at selected bus stops to promote combined bus and bike travel
- S4.13 Review the arterial and collector road network upon completion of the review of the *Bendigo 2020 Transportation Study*

New connector roads

- S4.14 Develop new connector roads as per Plan 3 and the concept shown in Figure 8 Indicative road cross section
- S4.15 Acquire land to achieve appropriate road reservations for:
 - McLeans Road (north of Walmer Street)
 - Mannes Lane (north of Walmer Street)
 - Emu Creek Road (north of Walmer Street)
 - Guys Hill Road
- S4.16 Upgrade the following key intersections:
 - Strathfieldsaye Road & Emu Creek Road– potential roundabout
 - Strathfieldsaye Road & McLeans Road – potential roundabout
 - Strathfieldsaye Road & Mannes Lane/Somerset Park Road
 - Ryalls Lane & Guys Hill Road – potential roundabout
 - Tannery Lane & Guys Hill Road – potential roundabout
- S4.17 Incorporate pedestrian and cycle paths within the reservations of connector roads and access streets (in accordance with Figures 7-9)
- S4.18 Limit the number of road connections with McLeans Road from new development in the area bounded by Walmer Street, McLeans Road, Mannes Lane and Bakers Lane in New Development Area (East) to maintain the character of McLeans Road

Strategies cont'd

- S4.19 In the long term, investigate opportunities to upgrade Bakers Lane to provide an alternative route for residents to access Bendigo from the new residential areas on the south side of Strathfieldsaye Road

New access streets

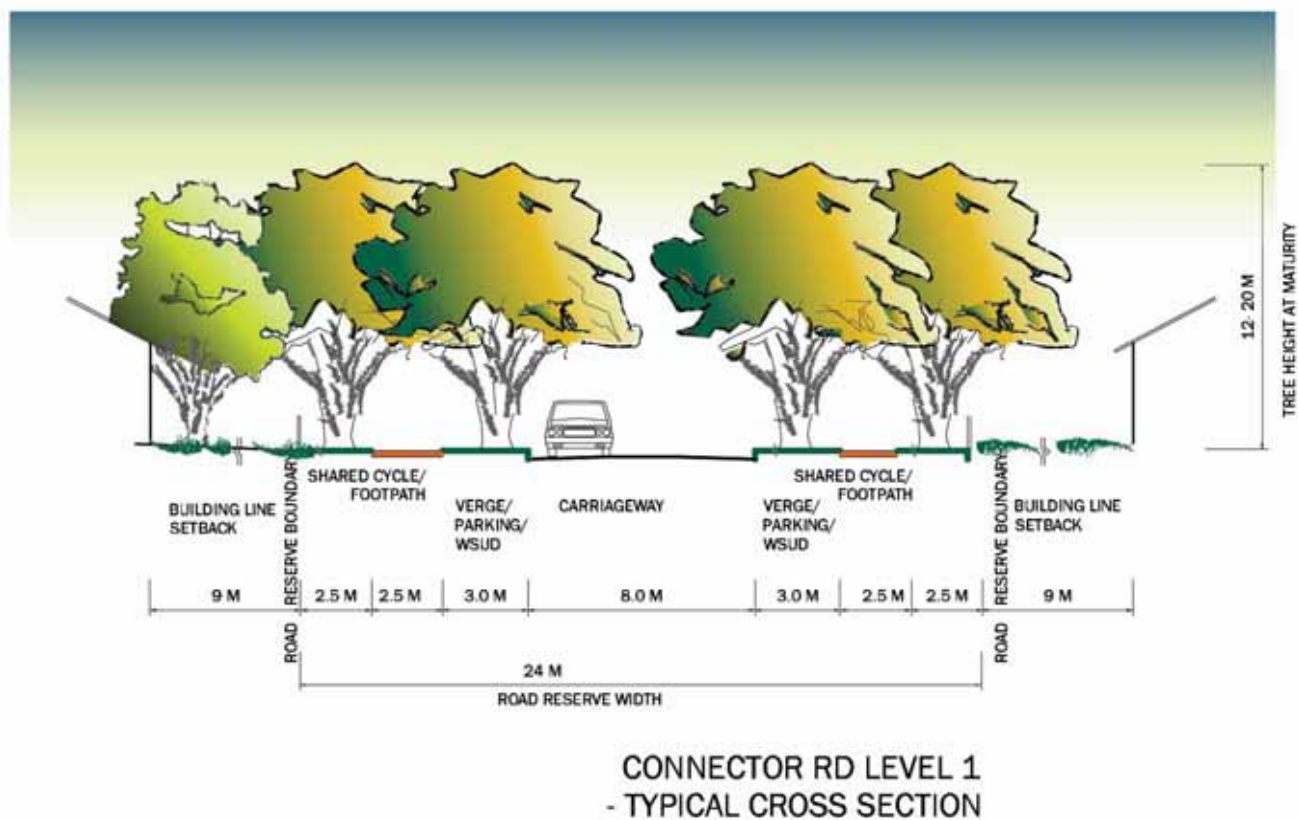
- S4.20 Develop 'creekline interface streets' where development adjoins Emu Creek or Sheepwash Creek generally in accordance with Figure 9
- S4.21 Develop 'bushland interface streets' where development adjoins significant private or public vegetation, generally in accordance with Figure 10
- S4.22 Develop a network of access streets through the preparation of Outline Development Plans based on the design guidelines outlined below
- S4.23 Undertake further detailed traffic impact assessment work for the proposed road network through the preparation of Outline Development Plans
- S4.24 Incorporate pedestrian and cycle paths within the reservations of connector roads and access streets, in accordance with Figures 7-9

Design guidelines

- New roads should:
 - be developed within existing road reserves
 - follow existing property boundaries
 - be located on cleared land

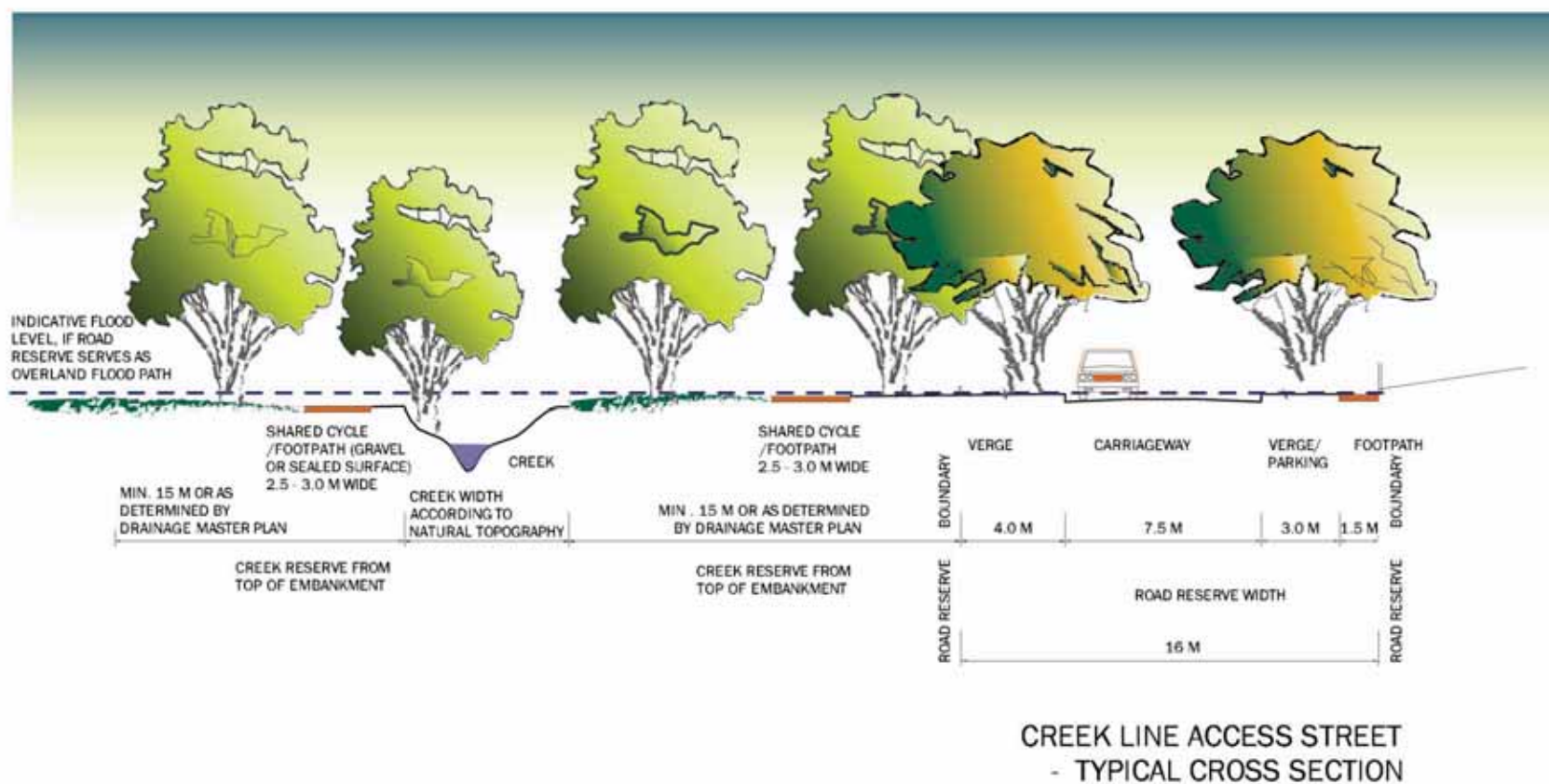
- follow creeks and drainage lines but avoid floodprone land
- be designed to maximise the solar efficiency of new allotments
- be located to maximise views to:
 - Greater Bendigo National Park
 - creeks and waterways
 - areas of significant remnant vegetation
 - public open space
 - areas of environmental living
- Cul-de-sacs and no through roads should be discouraged. These types of roads should only be considered when all of the following conditions are met:
 - a substantial proportion of the lots in the Outline Development Plan have frontage to a through road (in most situations this will be at least 75%)
 - they are less than 75 metres in length
 - they have direct connection to a road that provides access at both ends (not another cul-de-sac)
 - they are straight to maximise visibility
 - the cul-de-sac provides an open ended court that is landscaped and allows pedestrian and cycle linkages linking to a through road or walking and cycle path

Figure 8 Indicative road cross section – connector road



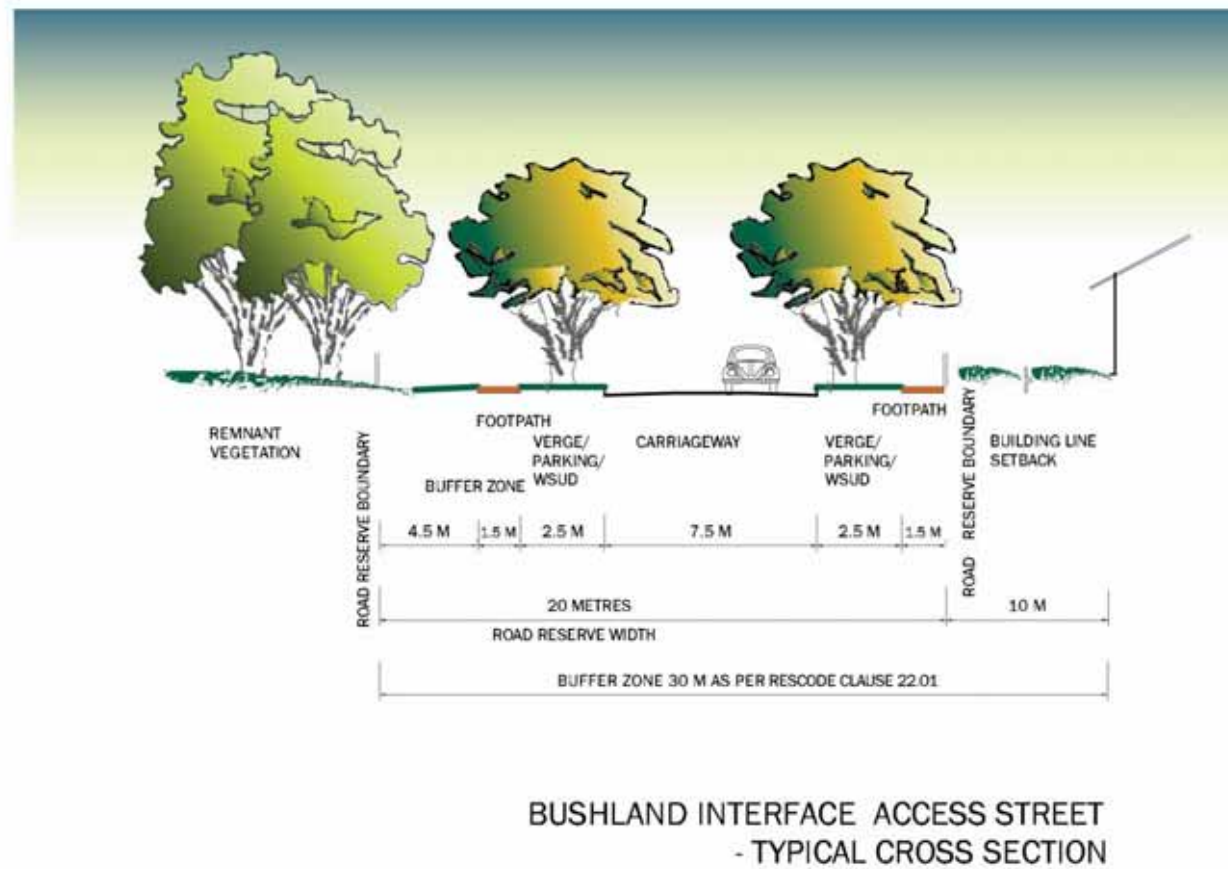
Source: Klein Landscape Architecture, 2009

Figure 9 Indicative road cross sections – creekline interface street



Source: Klein Landscape Architecture, 2009

Figure 10 Indicative road cross section – bushland interface street



Source: Klein Landscape Architecture, 2009

3.5 Waterways, Drainage & Land Capability

Summary

The creeks and waterways within the study area are important environmental assets. In particular, Sheepwash and Emu Creek provide habitat for fauna and feature riparian tree cover. The condition of the creeks and other minor waterways within the study area varies, but many have been cleared of native vegetation and some are subject to erosion.

There is a significant opportunity to enhance these assets in future residential development in Strathfieldsaye. Riparian areas are extremely vulnerable to degradation from housing developments, which typically reduce water quality, result in habitat removal and cause channel erosion through higher velocity water flows (GHD, 2008).

Addressing these issues is important in Strathfieldsaye, which has a history of flooding and drainage problems in particular areas. These are complex issues for new development in Strathfieldsaye as existing planning controls that address flooding issues have not been derived from flood studies and past flood studies are outdated and do not cover all of the new development areas (refer to GHD, 2008).

The Township Plan recognises the close relationship between the drainage system and waterway health. The Plan recommends the development of a drainage masterplan to confirm more accurately the areas that are subject to flooding and the most appropriate water sensitive urban design strategies for individual areas.

In some parts of the new development areas and in the existing urban area, salinity is also a problem due to high water tables. Further investigations must occur in these areas prior to the approval of any new development.



Objectives

- O5.1 To protect and enhance creeks and waterways as environmental assets and in recognition of the significant contribution they make to the character of Strathfieldsaye
- O5.2 To protect people and assets from risks associated with flooding
- O5.3 To utilise best practice in water sensitive urban design

Strategies

- | | |
|---|--|
| <p>S5.1 Use floodways and flood prone areas as open space, roads and walkways</p> <p>S5.2 Retain large drainage lines as natural features and overland flow paths and incorporate them within road reservations</p> <p>S5.3 Pipe small drainage lines with small catchments to enable development, the detail of which is to be determined via a Drainage Masterplan (refer to strategies below)</p> <p>S5.4 Incorporate large-scale water sensitive urban design (WSUD) systems in new subdivisions, with the location, size and treatment to be determined as part of the Drainage Masterplan and Outline Development Plan process</p> <p>S5.5 Retain the existing Land Subject to Inundation Overlay (LSIO) as a planning mechanism to control subdivision locations and layouts and to ensure buildings and other assets are protected from flooding to a reasonable standard until the strategies listed below are implemented</p> <p>S5.6 Undertake further detailed investigations with a view to developing wetlands and WSUD infrastructure downstream of the subdivision in the new development areas prior to entering Sheepwash and Emu Creek and incorporate into the Drainage Masterplan (refer below)</p> <p>S5.7 Develop a Drainage Masterplan that consists of:</p> <ul style="list-style-type: none"> — a waterway study to identify stream values | <ul style="list-style-type: none"> — a drainage study to identify the nature of remodelled waterways and drainage lines — a new flood study to define flood levels (and Nominal Planning Levels) and provide the basis for the application of the Floodway Overlay and Land Subject to Inundation Overlay <p>This work should incorporate new understandings of rainfall distribution and climate change. The methodologies developed should be consistent and integrated</p> <p>S5.8 Use the findings of the Drainage Masterplan to apply the Floodway Overlay (FO) to the land subject to the highest risk of flooding that is not currently located in a reserve, following consultation with the North Central Catchment Management Authority (NCCMA)</p> <p>S5.9 Use the findings of the Drainage Masterplan to apply the Land Subject to Inundation Overlay (LSIO) to land affected by the 1 in 100 year flood and any other areas as determined by the North Central Catchment Management Authority</p> <p>S5.10 Prepare a Floodplain Development Plan for Emu Creek and Sheepwash Creek based on the findings of the Drainage Masterplan and in conjunction with the NCCMA. The Floodplain Development Plan should specify the requirements for granting of permits for buildings and works and subdivision in the Floodway Overlay and Land Subject to Inundation Overlay. The Plan should generally:</p> <ul style="list-style-type: none"> — prevent suburban development in the Floodway Overlay (FO) — restrict suburban development in the Land Subject to Inundation Overlay (LSIO) |
|---|--|

Strategies cont'd

- S5.11 Include the Floodplain Development Plan as an Incorporated Document in the Schedule to Clause 81.01 of the Greater Bendigo Planning Scheme
- S5.12 When land affected by the Floodway Overlay (FO) is subdivided for residential development, acquire the land and set aside the land as a creekside reserve
- S5.13 Following acquisition of the land, rezone all creekside reserves to Public Park and Recreation Zone (PPRZ)
- S5.14 Re-vegetate minor waterways and drainage lines as vegetated corridors to width determined by the size and ecological value of the waterway or as determined by the Drainage Masterplan
- S5.15 Decommission dams and investigate the potential for some to be converted to wetlands or incorporated as WSUD features as part of new residential developments
- S5.16 In the event that there is no new flood study provided:
- adopt the Nominal Planning Levels (NPL) as + 600 mm above the 1979 Strathfieldsaye Flood Study isolines for new developments to allow for the uncertainties in the current flood levels (refer to the plan provided in Appendix B)
 - redraw the Land Subject to Inundation Overlay (LSIO) based on new 1 metre contours and the above NPL in conjunction with the North Central Catchment Management Authority

- develop additional floodplain hydraulic models for the boundary areas to include areas not previously mapped
- ensure no development is undertaken within a 50-metre buffer of all significant drainage lines

S5.17 Undertake the following actions for areas covered by the Salinity Management Overlay (SMO) or as otherwise identified by the Department of Primary Industries:

- work with the Department of Primary Industries to investigate all areas identified as subject to salinity and update mapping of the Salinity Management Overlay (SMO)
- amend the Greater Bendigo Planning Scheme to reflect the modified extent of the Salinity Management Overlay
- prior to the approval of a subdivision, require developers to undertake further investigations of any other areas identified as subject to salinity
- develop a set of GIS layers of the Land Map Units (LMU) and land capability data and undertake terrain analysis to further refine mapped LMU's using digital elevation data where available

S5.18 Maintain areas subject to major salinity discharge problems as open space and revegetate with salt tolerant plants, subject to detailed investigation and mapping during the preparation of Outline Development Plans

3.6 Public Open Space

Summary

Public open space is important because it contributes to the appearance and character of urban areas and provides opportunities for physical activities and mental relaxation through interaction with the natural environment. This ultimately strengthens the community and helps to protect the environment. In Strathfieldsaye, consultation has revealed that the community has high expectations about the quality of open space and recreation facilities that are available in the local area.

Existing open space in Strathfieldsaye takes a variety of forms, including off-road walking and cycling paths, playgrounds, creek reserves, active recreation reserves and the Greater Bendigo National Park. These spaces often contain large old native trees that provide shade and contribute to the character of the area.

Whilst most suburban neighbourhoods in Strathfieldsaye have access to some form of open space, the network in Strathfieldsaye is fragmented as a whole and has potential for improvement. Consultation with the community indicates there is also a lack of indoor recreation spaces.

The Township Plan emphasises the importance of a co-ordinated approach to open space planning in the new development areas and the need for a variety of different spaces to appeal to a wide range of people.

Large areas of public open space are proposed along the length of Emu Creek and Sheepwash Creek in New Development Area (East), including open space where the creeks meet to the east of the Town Centre (refer to Plan 1). These open spaces will be linked by walking and cycling paths to be developed along the creeks. These paths will form the two spines of a wider network of walking and cycling paths located in unmade road reservations and the Greater Bendigo National Park. The paths will link important environmental and recreation assets in the area including areas of crown land and a proposed new major recreation facility at Mannes Lane. This facility will host a range of activities including playing fields and courts and informal gathering places.

A spine of open space will also be developed along Sheepwash Creek in New Development Area (West) that will ultimately connect with the Town Centre and new walking and cycling paths to the east.



Objectives

- O6.1 To create multi-function open spaces that are connected to each other and attract a wide range of users
- O6.2 To ensure that public open space is well-designed, attractive and well-maintained
- O6.3 To ensure that public open space is accessible to all homes within a reasonable distance via the cycling and walking network
- O6.4 To create an accessible, safe and highly integrated network of shared paths that connects the existing urban area, Town Centre and new development areas

Strategies

Public open space

- S6.1 Locate regional level public open space¹ on Emu Creek and Sheepwash Creek as shown in Plan 1. Develop these spaces in an integrated manner by preparing master plans that accommodate a range of activities (e.g. for walking, cycling, quiet contemplation, social interaction, natural play opportunities and observation of the creek environment)

¹ According to Clause 56.05-2 ResCode, regional level public open space should be located on streams, where appropriate, and regional parks of at least 3 hectares combining passive and active use should be located within 2 kilometres of all dwellings.

- S6.2 Develop large local parks of at least 1 hectare and small local parks in the following areas:
 - along Emu Creek and Sheepwash Creek (potential locations shown on Plan 1)
 - areas with vegetation of medium, high and very high conservation significance
 - where drainage lines exist
 - fronting connector roads
 - in areas where dams have been decommissioned
- S6.3 Determine the location of public open space through the Outline Development Plan process
- S6.4 Prepare masterplans for regional public open space that provide for a mix of active and passive recreational opportunities including play equipment, paths, seats, natural features, facilities and passive facilities such as barbecues and shade structures
- S6.5 Determine the potential use of vegetated crown land adjoining Strathfieldsaye Road for passive recreation uses in consultation with the public land manager
- S6.6 Co-ordinate playground construction in accordance with the recommendations and principles set out in the *City of Greater Bendigo Play Space Strategy (as adopted)*
- S6.7 Levy a minimum 5% public open space contribution for all new developments (refer to Section 3.11 for more detail)

Strategies cont'd*Walking and cycling paths*

- S6.8 Prepare a masterplan for the Sheepwash Creek Reserve between Club Court and Somerset Park Road in consultation with Parks Victoria
- S6.9 Develop walking and cycling paths along Sheepwash Creek and Emu Creek and road reservations as shown on Plan 1

Recreation facilities

- S6.10 Prepare a study at the municipal level to determine the feasibility of establishing a new swimming pool in Strathfieldsaye and explore the potential for public/private partnerships to fund its construction
- S6.11 Commence a masterplan for the proposed regional recreation facility east of Mannes Lane. The masterplan should cover all of the land on the south east corner of Mannes Lane and Strathfieldsaye Road including Precinct 10 as shown in Figure 11. It should investigate and show:
- the location of access points from the road network
 - the preferred location of walking and cycling paths connecting the wider walking and cycling path network with new paths along Axe Creek
 - the preferred land uses immediately adjoining the site and interface treatments

- the need for retarding basins to be incorporated within the open space (refer also to Section 3.5 Waterways, Drainage & Land Capability)

- S6.12 Following the completion of a masterplan, plan for and develop a regional level recreation facility with sporting grounds and a range of other infrastructure (shelters, barbecues, seating) on the south east corner of Mannes Lane and Strathfieldsaye Road

Design guidelines

Open space

- New open space areas should utilise existing natural features such as remnant vegetation, drainage lines or existing dams
- Large local parks should be located within 500 metres of all residential areas (as per ResCode Clause 56.05.2 Standard C13)
- Small local parks should be located within 300 metres of all residential areas (as per ResCode Clause 56.05.2 Standard C13)
- Public open space should be highly visible from public and private land and should not abut side or rear fences or isolated spaces

Walking and cycling paths

- Walking and cycling paths should be continuous and connect directly with the network of local and regional level open space or the Town Centre and other key destinations such as schools, shops and recreational areas
- Walking and cycling paths should be located to follow 'desire' routes to key destinations including schools, open space and recreation facilities. If possible, walking and cycling paths should be located on existing road reservations, along waterways and incorporate viewing points
- The location and design of walking and cycling paths should maximise public surveillance

- Road crossing points should be located in areas where people are most likely to want to cross and avoid crossings at roundabouts
- Walking and cycling paths should be designed with good sight lines and avoid sharp corners and obstructions
- Crossing points should be designed so that all users are accommodated including the elderly, the disabled and people with prams
- Walking and cycling paths should be designed in accordance with Element 5 of the Safer Design Guidelines for Victoria (DSE, 2005)

3.7 Biodiversity & Bushland Interfaces

Summary

Native vegetation is important for its contribution to biodiversity² as habitat for native fauna and for the strong contribution it makes to the bushland character of Strathfieldsaye.

The state government's strategy for native vegetation is to protect, enhance and revegetate. This is expressed in *Victoria's Native Vegetation Management: A Framework for Action* (DNRE, 2002). The main goal of the 'Framework' is to achieve a reversal, across the entire landscape of the long-term decline in the extent and quality of native vegetation, leading to a net gain. Planning strategies such as this Plan must follow the three-step approach: avoid, minimise and offset.

Applying these principles to a structure plan for Strathfieldsaye is a complex task because suburban development generally results in the clearance of native vegetation. In Strathfieldsaye, the task is particularly challenging because the extent, integrity and conservation significance of the vegetation varies significantly across the study area. These issues are combined with high expectations from the community that important vegetation will be protected.

² Biodiversity - the variety of all life-forms, the different plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part (DSE, 2002).

Whilst, the Township Plan recognises that all native vegetation has some biodiversity value, the Plan proposes an approach that aims to protect and enhance public and privately owned land that makes the greatest contribution to biodiversity values across the study area by virtue of its size or strategic location. Key areas that have been identified as part of this project are located adjacent to the Greater Bendigo National Park in New Development Area (West) and to the west of McLeans Road in New Development Area (East). The native vegetation in these areas will be protected by managing the density of development together with other restrictions on how the land can be used and developed (refer to Section 3.3).

Other areas of native vegetation will be retained because they make a significant contribution to the landscape and amenity of residential neighbourhoods. If clearing is supported, areas will be offset accordingly.



Objectives

- O7.1 To protect native vegetation for the contribution it makes to biodiversity and to the landscape character of Strathfieldsaye
- O7.2 To protect and enhance the vegetation that makes the most significant contribution to local biodiversity values
- O7.3 To ensure that the quality and extent of native vegetation is properly assessed prior to the approval of Outline Development Plans or planning permits
- O7.4 To protect and enhance existing wildlife corridors
- O7.5 To ensure that offset initiatives are co-ordinated and offer a net-gain for the local area

Strategies

- S7.1 Apply the avoid, minimise and offset approach to native vegetation as it relates to the relative significance of vegetation across the study area. Assume that all other vegetation is cleared and offset
- S7.2 Protect very high conservation significance vegetation by incorporating it in public open space as part of public open space contributions and/or through the use of building envelopes and management plans
- S7.3 Protect medium and high conservation significance vegetation by controlling the density of development on the land via buildings envelopes and other restrictions (refer to Section 3.1)

- S7.4 Apply the policies for development adjacent to public or private forest as set out in Clause 22.01 of the Planning Scheme, including a 30 metre buffer from residential to public and private forest boundaries (may include a road reserve)
- S7.5 Retain the reservation of Osborne Lane in New Development Area (West) as a buffer between the Greater Bendigo National Park and rural living development
- S7.6 Retain McLeans Road as a buffer between suburban development and environmental living development
- S7.7 Retain unused road reservations on the south side of Strathfieldsaye Road if these provide a buffer between Crown Land and privately owned land identified for suburban development
- S7.8 Retain existing Vegetation Protection Overlays (VPOs) to ensure that the significance of vegetation is considered in any development application
- S7.9 Encourage offset plantings to occur in the floodplain along Sheepwash Creek and Emu Creek to enhance these areas as wildlife corridors
- S7.10 Undertake further detailed flora and fauna investigations prior to the approval of any Outline Development Plan, including the identification of large old trees
- S7.11 Prepare a Native Vegetation Precinct Plan to protect vegetation of the highest significance across the precinct and enable a co-ordinated approach to ensuring that offsets occur in the local area

3.8 Social & Community Infrastructure

Summary

Social and community infrastructure is important for the wellbeing of communities, particularly for places such as Strathfieldsaye where young families will continue to represent a high proportion of the population. Key services such as kindergartens, child care centres and primary schools already exist in Strathfieldsaye, however, additional services are likely to be required to service the population of the new development areas.

Major new community facilities will be located within the Town Centre to take advantage of its location in the geographical heart of the Township, proposed pedestrian and cycling links and proximity to public transport.

The Plan encourages the development of a 'community precinct' in the western part of the Town Centre to create opportunities for integration with the major community facilities that exist in this area including the Primary School and Sports Complex.

The research undertaken as part of this project has revealed that the two existing primary schools in Strathfieldsaye are growing strongly. Whilst the investigations undertaken for this project have not revealed any clear intentions to develop a new school, the Township Plan has identified a large site on the south east corner of Mannes Lane and Strathfieldsaye Road that would be generally suitable for such a use. This site offers significant potential to share facilities with the proposed new major recreation facility on the south side of Strathfieldsaye Road.

Other sites within the study area may also be appropriate for a new school, subject to meeting a series of strategies and design guidelines set out in this plan. These opportunities would need to be pursued independently by the Department of Education and Early Childhood Development or a non-government school.

The consultation process undertaken for this project revealed a range of other facilities that are likely to be required as the town grows. These include library facilities, markets, and areas or facilities that can accommodate cultural events. It is also possible that the Town will need to accommodate facilities for additional emergency services (police, ambulance, fire, SES). Whilst the individual organisations will need to decide whether additional facilities are required, these uses are encouraged subject to suitable siting and design.



Objectives

- O8.1 To provide a range of community facilities, services and education centres that meet the needs of the community
- O8.2 To encourage the co-location and integration of community facilities in accordance with Federal and State government policies to make efficient use of infrastructure and provide a high level of service to the community
- O8.3 To encourage the location of community facilities close to existing and proposed schools to create benefits from shared infrastructure
- O8.4 To encourage social and recreation infrastructure that promotes community interaction
- O8.5 To maximise access to community facilities by public transport, walking and cycling

Strategies

- S8.1 Locate major new community facilities in a 'community precinct' generally bounded by Club Court in the west and Wellesley Street in the east, or in other locations where significantly potential for integration with community or education facilities exists. This is to be investigated as part of an Urban Design Framework
- S8.2 Develop a feasibility study to investigate the potential for a new children's services hub to be developed in Strathfieldsaye. This study should assess the demand for services and assess potential sites against a range of relevant criteria including:

- demographic projections for Strathfieldsaye, particularly in relation to young people and families
- the potential to develop partnerships with other relevant agencies to provide a range of services as well as funding
- specific community demand, based on identified gaps in service provision
- the availability of a suitable site that is centrally located and accessible via cycle / walking tracks, public transport and vehicular transport

S8.3 Locate new schools:

- adjacent to existing or proposed major public open space
- adjacent to existing or proposed community services hubs
- on arterial or connector roads
- within close walking distance (200 metres) of the walking and cycling path network

S8.4 Monitor the demographic projections prepared by the Department of Education and Early Childhood Development regarding the need for additional schools in Strathfieldsaye and update the Township Plan to respond to these needs

S8.5 Investigate the potential for a community garden to be established on land identified in the Township Plan for public open space or community uses

Design guidelines

- New community buildings should be located within close proximity of street frontages, with on site car parking located in the street or in discreet cells at the side or rear of the building
- Applications should be accompanied by a landscape plan demonstrating how the proposed plantings on site retain native vegetation and contribute any existing streetscape character
- Community facilities should be well connected to the existing footpath network and footpaths should be upgraded and extended (as required)

3.9 Physical Infrastructure

Summary

In the past, most of the development in Strathfieldsaye has occurred using traditional approaches to providing services, which involved the provision of reticulated services to each household and disposal of wastewater to a central treatment plant.

The Township Plan has been prepared in the context of a heightened awareness of the need to conserve water and energy resources. The Plan encourages different approaches to service provision, including the treatment and re-use of wastewater and capture of stormwater. The Plan provides a range of principles for energy efficiency that should be encouraged in new development.

The Plan recognises that the City of Greater Bendigo has an important role to play in providing leadership to the development community on these issues, an approach is supported by the recommendations of the *City of Greater Bendigo Residential Development Strategy (2004)*.

The existing urban area in Strathfieldsaye is well serviced with physical infrastructure, however, services will need to be extended to the new development areas. Research undertaken as part of this project has revealed that there are no major issues in providing services to the new development areas, however, the water supply and sewerage systems will need to be upgraded to accommodate a population of up to 10,000 people.

Coliban Water is in the process of undertaking augmentation strategies for water and sewerage in Strathfieldsaye. This study will include a preliminary investigation of the potential for a local wastewater treatment system.

Whilst other authorities are responsible for the provision of reticulated services, the Township Plan the City of Greater Bendigo will need to work closely with the relevant authorities to implement the strategies suggested in the plan.

Objectives

- O9.1 To provide the following services to new residential development:
 - potable water
 - reticulated sewerage
 - gas
 - electricity
 - telecommunications including broadband internet
 - drainage
- O9.2 To reduce household usage of water and energy resources
- O9.3 To make recycled water available to each household for use on gardens or for other suitable uses such as toilet flushing
- O9.4 To ensure that lower density residential development that cannot be serviced by reticulated sewerage can retain and treat wastewater on-site

Objectives cont'd

- O9.5 To encourage the capture of water on-site for re-use on the property
- O9.6 To ensure that the provision of services has minimal impact on native vegetation

Strategies

- S9.1 Ensure that Outline Development Plans integrate with Coliban Water's future augmentation strategy for water and sewerage for Strathfieldsaye
- S9.2 Design and locate service infrastructure in accordance with the requirements of the relevant service authority
- S9.3 Support initiatives by Coliban Water to establish a local wastewater treatment plant in a suitable location. If established, pursue opportunities to re-use the water in residential development for toilet flushing and gardens via a 'third pipe' system
- S9.4 Ensure that all new building projects undertaken by the City of Greater Bendigo significantly exceed minimum requirements for energy efficiency under the Building Code. All new building projects should include water tanks, solar hot water systems, solar electricity panels and materials selection with a low carbon footprint, or as otherwise required to meet the City of Greater Bendigo's adopted Sustainable Building Design Policy
- S9.5 Require energy efficient street lighting in new subdivisions

- S9.6 Investigate the potential for water to be collected from detention basins in the proposed new recreation facility on Mannes Lane and re-used in the recreation reserve
- S9.7 Encourage the use of the following in new dwellings:
- water tanks
 - solar hot water systems
 - photovoltaic panels on rooftops to generate electricity

Design guidelines

- New services infrastructure should be located in shared trenches to minimise ground disturbance and impacts on remnant native vegetation
- Service trenches within road reservations and easements at the rear of properties or bounded by fences should be avoided

3.10 Non Residential Land Uses

Summary

Whilst the Town Centre will be the focus of business activity and employment for Strathfieldsaye, a future population of up to 5,000 in the new development areas is likely to generate demand for additional forms of non-residential development in these areas.

These uses include small convenience stores that would act as destinations for children could reduce car-trips for small shopping trips. In response to this likely need, potential 'Neighbourhood Activity Centres' have been identified in the Township Plan although land will be set aside for these uses by developers in response to market demand.

Several existing non-residential land uses exist in the new development areas. The Township Plan recognises that these uses can to continue to operate and outlines strategies for minimising any adverse amenity impacts they may cause on new residential areas. The Township Plan provides also provides directions for how these sites should be used and developed as circumstances change.

Objectives

- O10.1 To ensure that communities have access to convenience retailing and small scale community uses in their local area
- O10.2 To allow non-confirming uses to continue to operate, within the provisions of the Greater Bendigo Planning Scheme
- O10.3 To encourage non-conforming land uses to be re-developed in accordance with the underlying zone, at the discretion of the landowner
- O10.4 To discourage non-residential land uses that may detract from the appearance or amenity of residential areas

Strategies

The strategies should be read together with the recommendations for development staging in Section 3.11.

- S10.1 Encourage small scale convenience retailing and small scale community uses that service local neighbourhoods (eg child care centres) in the 'Neighbourhood Activity Centres' shown in Plan 1
- S10.2 Alternative locations for Neighbourhood Activity Centres may be considered if the following criteria are met:
- they are located on an arterial or collector road
 - they are located in an area that is central to the surrounding residential neighbourhood
 - they are serviced by footpaths that connect with the surrounding residential neighbourhood
 - they adjoin a community use, open space or existing non residential land use
- S10.3 Encourage service stations, car washes and medical centres to establish in the Town Centre and discourage 'strip' style commercial development on Strathfieldsaye Road and collector roads
- S10.4 Assess any applications for new development on non-conforming land uses against the relevant provisions of the Planning Scheme
- S10.5 Determine the future of the existing City of Greater Bendigo waste transfer station in consultation with the EPA. If these investigations reveal that the station should be decommissioned, rezone the land from the Public Use Zone to the Business 3 Zone
- S10.6 Rezone the former City of Greater Bendigo depot site at 994 Wellington Street from the Public Use Zone to the Business 3 Zone to reflect the private ownership of the land and its current use
- S10.7 When the surrounding land is developed for residential purposes, rezone the existing garden supplies and nursery sites from the Low Density Residential Zone to the Residential 1 Zone. If required, incorporate appropriate buffers between residential development and these uses into the Outline Development Plan for this precinct (Precinct 17)

Design guidelines

- New development in the 'Neighbourhood Activity Centres' should be constructed close to the street frontage and car parking should be located primarily on the street
- New development in the 'Neighbourhood Activity Centres' should be serviced by footpaths that link with the surrounding residential neighbourhood and should accommodate storage facilities for cyclists
- Loading and storage areas should not be highly visible from the street

3.11 Development Staging & Funding

Summary

The sequence of new development and the funding arrangements for physical and community infrastructure are important issues for the Township Plan. Communities should have access to open space, walking and cycling paths, roads and community infrastructure early in the development process to achieve the overall vision for Strathfieldsaye as a desirable and healthy place to live.

The Township Plan recommends that the City of Greater Bendigo prepares a Development Contributions Plan to ensure that infrastructure costs are apportioned fairly between developments. This approach recognises that significant funds will be required to upgrade road intersections and fund the development of the extensive open space improvements proposed under the Plan. If this approach is not possible, the Plan recommends that alternative funding mechanisms be used that achieve similar objectives.

Land will be developed in response to the desire by landowners or developers to develop land. Recognising that most services that will be required by new communities will be located in the Town Centre, the Township Plan anticipates that development will occur in an easterly direction from the Town Centre.

One of the key challenges for residential development in Strathfieldsaye is the small size of existing allotments and fragmented ownership pattern. This tends to encourage the development of cul-de-sacs from existing roads rather than an integrated development approach that is encouraged by the Plan.

In response, the Township Plan proposes a flexible approach to how development should be staged. It allows for consideration of larger scale development that does not occur in a sequential manner under strict conditions regarding services and infrastructure.

This acknowledges that such developments have the potential to provide a quality of development that might otherwise not be achieved in Strathfieldsaye due to fragmented land ownership and small allotments.

The Township Plan also envisages that the City of Greater Bendigo in partnership with the state government will play a role assembling parcels of land that can be developed in accordance with the vision set out in the Plan.

Objectives

- O11.1 To ensure that development is staged so that communities have access to the necessary physical and community infrastructure in a timely manner
- O11.2 To ensure that developments are well integrated with one another
- O11.3 To ensure that community and physical infrastructure is funded in a fair and equitable way
- O11.4 To protect future residential communities from adverse amenity impacts from existing rural industries
- O11.5 To co-ordinate development with the capital works budgets of service authorities and government agencies

Strategies

- S11.1 Encourage development in New Development Area (East) to occur generally in an easterly direction from the Town Centre along Strathfieldsaye Road, with the land in precincts 12&13 the last to develop and linked to the operation of existing rural industries (refer to Figure 11)
- S11.2 Retain land located within the 300 metre buffer around the waste transfer station in the current zone until the City of Greater Bendigo & Environment Protection Authority are satisfied that no detriment will occur to residents within the buffer area
- S11.3 Upon decommissioning of the waste transfer station, prepare a planning scheme amendment to rezone the land within the 300 metre buffer to the Residential 1 Zone
- S11.4 Retain land in the 500 metre poultry industry buffer zones in the Rural Living Zone while the industries continue to operate. Rezone land to the Residential 1 Zone when there is less than 5 years worth of land supply remaining in the new development areas
- S11.5 Encourage development in New Development Area (West) to occur generally from the north west (Precinct 15) to the south east (Precinct 18)
- S11.6 Use the Development Plan Overlay (DPO) to require the preparation of Outline Development (ODPs) for each precinct in the new development areas as shown in Figure 11

- S11.7 Prepare Outline Development Plans in accordance with the following guidelines:

- developers seeking to subdivide land should prepare the Outline Development Plan for an entire precinct, at minimum
- the recommended precinct boundaries may be altered if the responsible authority is satisfied that an alternative precinct would better enable the objectives of the Township Plan to be achieved based on the outcomes of more detailed survey and site analysis investigations
- the Outline Development Plan for precinct 10 should be prepared concurrently with the proposed masterplan for the Recreation precinct (refer to Section 3.8)

- S11.8 Monitor land supply in Strathfieldsaye through regular reviews of the *Greater Bendigo Residential Land Strategy*

Strategies cont'd

S11.9 Prepare and adopt a Development Contributions Plan or pursue alternative mechanisms to fund the following items of infrastructure:

- upgrading key new intersections on Strathfieldsaye Road
- the construction of connector roads
- improvements to regional level public open space
- the construction of the off road walking and cycling path network
- the construction of new recreation facilities at the proposed new recreation facility on Strathfieldsaye Road
- the construction of wetlands and water sensitive urban design treatments
- the development of a new children's services centre in Strathfieldsaye

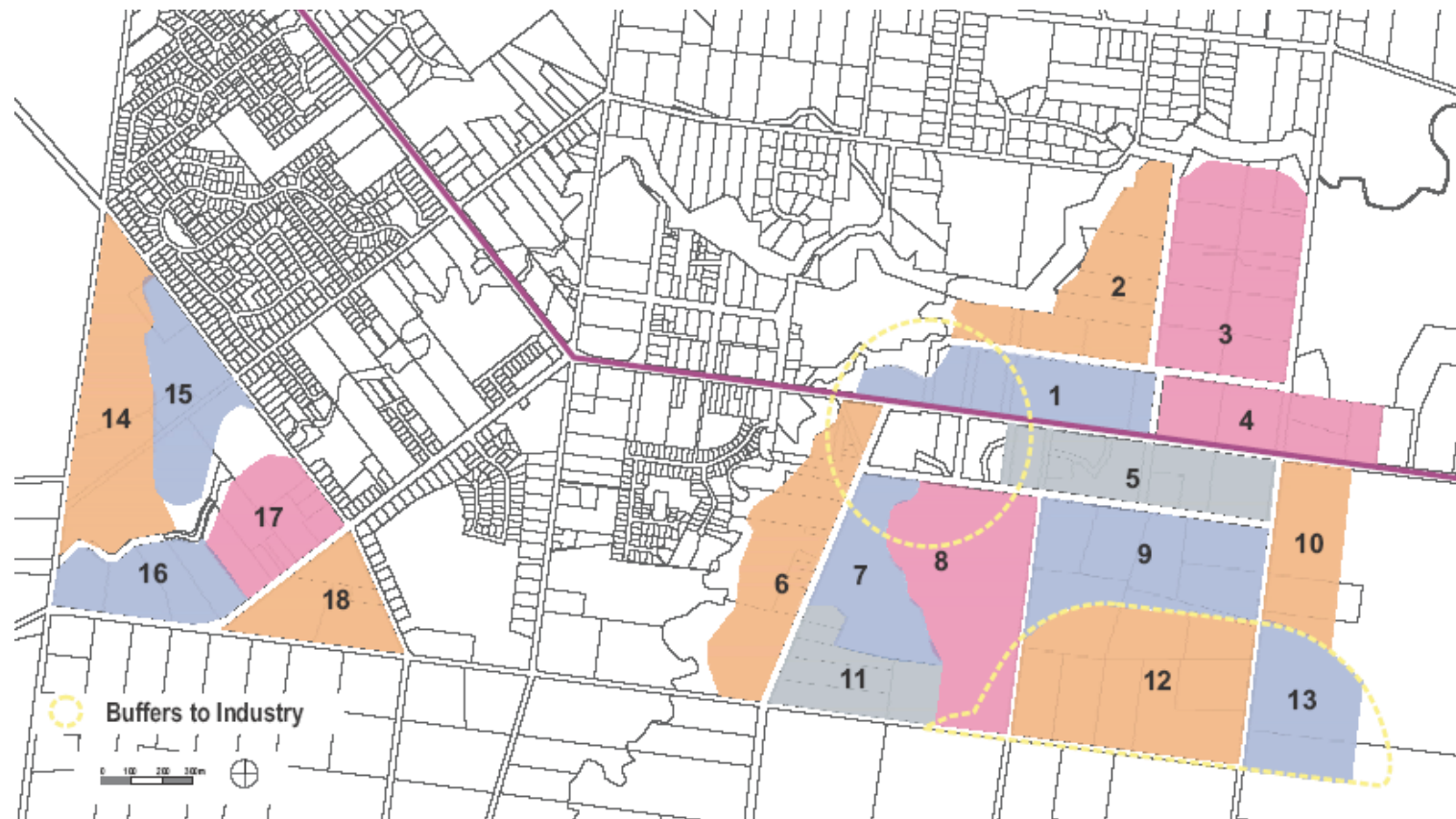
S11.10 Levy a minimum 5% open space contribution for public open space for all subdivisions in the new development areas, or a greater percentage as required to cover the costs of improvements to regional level public open space as recommended in Strategy 11.9 above.

The final amount should be determined through the preparation of a Development Contributions Plan or other funding mechanism and should be based on a more precise analysis of encumbered and unencumbered land. The analysis should be based on the findings of a new flood study (refer to Section 3.5)

S11.11 Consider larger scale subdivisions that are not integrated with existing urban areas *only* if the following conditions are met to the satisfaction of the responsible authority:

- it can be demonstrated that there would be negligible net long term loss for the new residential communities from the lack of integration with existing urban areas. This would usually involve the developer funding significant road, open space and walking and cycling path infrastructure to maximise physical connections the development with the existing urban area and Town Centre
- the development can demonstrate best practice at the state level for sustainability principles regarding water treatment and re-use, energy conservation strategies and the provision of public open space

Figure 11 Recommended development plan precincts – new development areas



Note: The numbers on the plan are intended for reference purposes and do not indicate the preferred order of development. The precincts share common characteristics such as access arrangements and interfaces with creeks or bushland.

4 Existing Urban Area

4.1 The Town Centre

Summary

The Township Plan envisages that the Town Centre will be developed as the focal point of community life in Strathfieldsaye. The Town Centre will continue to act as a 'Village Centre' within the retail hierarchy set out in the *Bendigo Commercial Land Strategy*, but with a more comprehensive range of shopping opportunities, commercial activities and other community services commensurate with its population growth. The expansion of commercial uses will provide greater employment opportunities for the community.

The strategy aims also stimulate development of an intimate shopping environment that can easily be navigated by walking. In order to achieve this, the supply of Business 1 zoned land will be reduced to improve the match between land supply and likely land development over the 20 year planning horizon of the Township Plan. The intent of this approach is to discourage disconnected commercial developments that would compromise the vision for an intimate, walkable Town Centre.

Wellington Street will continue to be the 'main street' with core retail uses on the north side and a mix of office, service business and residential uses to the south. This will be surrounded by a mixed use area where residential and community uses will adjoin commercial uses. In these respects, the Plan builds upon aspects of the previous vision for the Town Centre as set out in the existing *Strathfieldsaye Township Plan (2006)*.

The future development of the Town Centre will require the development of existing vacant or underutilised land in the 'Core Area'. Whilst the plan anticipates further commercial development along Blucher Street in the short and medium term, the Township Plan anticipates that Wellesley Street will ultimately be developed with core retail uses with the road reserve to act as a 'shared space' for pedestrians and vehicles.

The concept for Wellington and Wellesley Streets is a long-term vision for the Core Area. The potential for the vision to be realised over the next 20 years will be influenced by a range of factors including the rate of population growth and competition from other retail centres, particularly in the south eastern corridor of Bendigo.



Summary cont'd

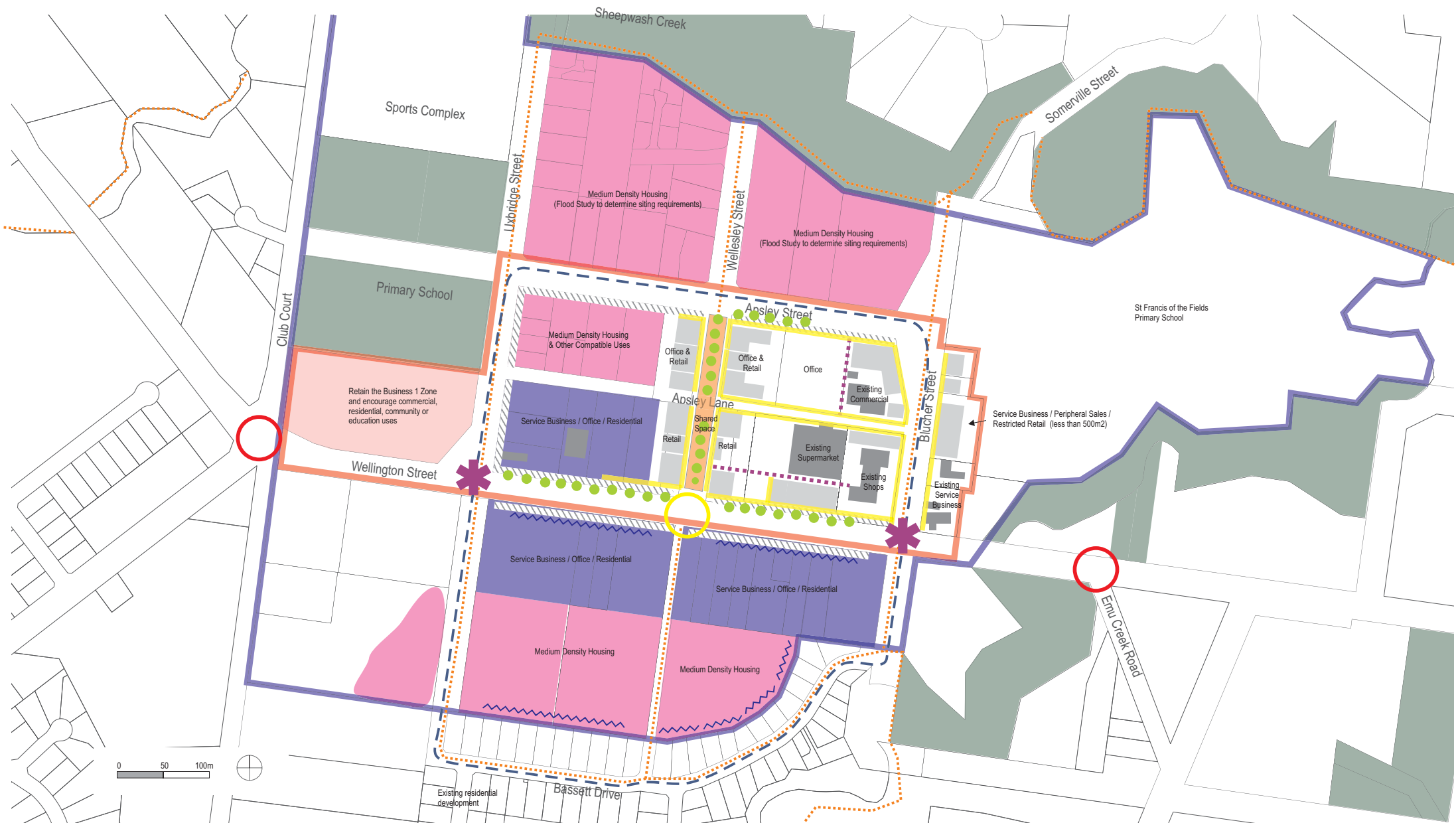
New development in the Town Centre will emphasise the development of people friendly places that are safe and inviting. Built form will generally be low-scale to reflect the character of Strathfieldsaye, however, higher forms to be encouraged in the Core Area and along the Wellesley Street shared space where pedestrians and vehicles will mix in a low speed environment. The Town Centre will be well connected with the surrounding residential areas by footpaths and shared pedestrian and bicycle paths.

The Plan acknowledges that residents in Strathfieldsaye will continue to rely significantly upon the range of employment, education and higher order retail, opportunities in Bendigo. In response to this, the public transport system will be improved to encourage people to use this form of transport within Strathfieldsaye and for trips to Bendigo. Buses will circulate around the Town Centre and link with the wider public transport network, including the Bendigo Railway Station and CBD.

Residential densities will increase in the Town Centre through the development of high quality medium density housing that has good walking connections with the Core Area. Whilst this will change the existing urban character, the character of the streetscapes will be maintained by retaining native vegetation wherever possible.

Objectives

- O1.1 To create a Town Centre that is the focal point of community life and urban spaces that are valued by the community
- O1.2 To develop the Town Centre as a 'village' that offers a mix of retail, commercial, community and education services and facilities to meet the daily needs of Strathfieldsaye residents
- O1.3 To encourage the development of an intimate shopping environment that minimises car travel within the Town Centre
- O1.4 To create public places in the Core Area that are safe and attractive
- O1.5 To make streets the focus of activities within the Town Centre and provide a safe, pleasant and convenient place for pedestrians
- O1.6 To accommodate all modes of transport including cars, public transport, cyclists, pedestrians and taxis
- O1.7 To integrate the Town Centre into the surrounding street and path network
- O1.8 To achieve buildings that are attractive and of high quality
- O1.9 To integrate larger developments into the street network and surrounding buildings and places
- O1.10 To maximise on street parking opportunities and discourage large off-street car parking areas
- O1.11 To preserve native vegetation in road reserves that contribute to the character of the area



LAND USE

- Town Centre Area
- Core Area
- Service Business / Office / Residential
- Suburban
- Medium density residential
- Public open space
- Crown land

ACCESS & MOVEMENT

- Shared space
- ✱ Potential future traffic lights
- Potential roundabout
- Potential pedestrian activated crossing
- Mid block pedestrian links
- Walking & cycling paths
- Road link

URBAN DESIGN

- Existing commercial buildings (core area)
- Possible future buildings (indicative)
- Consistent front setbacks
- Active building frontages
- Upper storey building setbacks
- New tree planting theme

Strategies

Land use

- | | |
|--|--|
| <p>S1.1 Consolidate commercial activity within the Core Area centered on Wellington Street and bounded by Club Court, Apsley Street and the west side of Emu Creek (refer to Plan 4) - <i>strategy modified to ensure consistency with Panel's recommendations</i></p> <p>S1.2 Continue to develop the west side of Blucher Street for retail purposes</p> <p>S1.3 Develop Apsley Street with a mix of residential, office and other compatible commercial uses</p> <p>S1.4 <i>Strategy deleted to ensure consistency with Panel's recommendations</i></p> <p>S1.5 In the long term, develop Wellesley Street between Wellington Street and Apsley Lane for retail purposes. Develop Wellesley Street from Apsley Lane to Apsley Street for a mix of office and retail uses</p> <p>S1.6 Develop small scale office, residential and service business uses on the south side of Wellington Street and in the area between Wellington Street and Apsley Lane</p> <p>S1.7 Approve commercial floorspace in accordance with the strategies and recommendations of the Bendigo Commercial Land Strategy 2004 (as updated)</p> | <p>S1.8 Allow reductions in on-site parking requirements for new commercial and residential developments in order to encourage on-street parking that will enliven activity on the street</p> <p>S1.9 Develop medium density housing within the Core Area in terrace houses, apartments or dwellings on the upper floors of commercial premises</p> <p>S1.10 Develop a range of medium density housing on the sites identified for this use in Plan 4 or in other suitable areas within 400 metres of the Core Area or at interfaces with public open space</p> <p>S1.11 Investigate urban design treatments that will encourage non car-based travel between land at 2 Club Court and the remainder of the Town Centre, including tree planting themes, signage and footpath treatments - <i>strategy modified to ensure consistency with Panel's recommendations</i></p> <p>S1.12 Rezone land in the Town Centre in accordance with the recommendations presented in Table 2 with reference to the map of existing zones in Appendix A</p> <p>S1.13 Amend Clause 22.22 of the Planning Scheme (Strathfieldsaye Residential Character Policy) to remove SF1 from the area covered by the policy</p> <p>S1.14 Amend Clause 22.22 of the Planning Scheme (Strathfieldsaye Residential Character Policy) to remove SF2 from areas identified in Plan 4 as being suitable for medium density housing, if this use is supported by the findings of the Drainage Masterplan</p> |
|--|--|

Table 2 Town Centre development framework

Land	Existing Planning Controls	Proposed Planning Controls	Purpose of Controls
Town Centre area as shown in Plan 4 (excluding public land, school sites and sites listed in this table).	Various Zones Incorporated Plan Overlay	Retain Existing Zones Design & Development Overlay	To give statutory weight to the proposed design guidelines with reference to the objectives and strategies of this section.
Medium density housing sites as identified in Plan 4	Residential 1 (R1Z) Incorporated Plan Overlay	Residential 2 (R2Z) Design & Development Overlay	To facilitate development of medium density housing
Land at 2 Club Court	Business 1 (B1Z) Incorporated Plan Overlay	Business 1 (B1Z) Development Plan Overlay ; <i>(modified to ensure consistency with Panel's recommendations)</i>	To encourage education, community or residential uses on the site.
Land between Apsley Lane and Wellington Street from Uxbridge Street up to 40 metres west of Wellesley Street	Business 1 (B1Z) Incorporated Plan Overlay	Business 5 (B5Z) Design & Development Overlay	To discourage isolated retail developments and encourage the development of commercial uses fronting Wellesley Street

Strategies cont'd*Transport*

S1.15 Commence negotiations with VicRoads to prepare a masterplan for streetscape upgrades to Wellington Street from Club Court to Emu Creek, which should include:

- a cohesive tree planting scheme with indigenous / exotic plantings
- the placement of above ground power poles below ground in consultation with Powercor
- the preferred location of pedestrian activated crossing across Strathfieldsaye Road in the vicinity of Wellesley Street
- the preferred intersection treatments at Uxbridge and Blucher Street and pedestrian crossing points
- the location of service roads and access points
- consistent lighting treatments
- footpaths on the south side of Wellington Street
- a signage scheme for the public realm

S1.16 Commence negotiations with VicRoads to upgrade the following key intersections:

- Strathfieldsaye Road & Club Court – potential roundabout
- Strathfieldsaye Road & Uxbridge Street – potential traffic lights

- Strathfieldsaye Road & Blucher Street – potential traffic lights

S1.17 Locate bus stops along Apsley Street, Blucher Street and Uxbridge Street or as determined by the Department of Transport

Urban design

S1.18 Prepare an Urban Design Framework to increase the density of buildings within the Core Area in accordance with the design guidelines in this section of the report

S1.19 Develop Wellesley Street as a 'shared space' where traffic is slowed by the design of the road environment and pedestrians have equal priority (refer to the concept shown in Figure 12)

S1.20 Develop a wide central median area within Wellesley Street with seating, shade trees and urban art in the central portion of this space (refer to Figure 12)

S1.21 Encourage the development of a small central park or 'village green' on a prominent corner location on the corner of Apsley Lane and Wellesley Street

S1.22 Encourage the long-term redevelopment of the car park area in front of the supermarket for retail purposes with an active frontage to Strathfieldsaye Road

S1.23 Incorporate the supermarket building into any new adjoining development to improve physical connections to other retail activities in the precinct

Strategies cont'd

- S1.24 Retain and protect the large old trees in the existing road reservations in the Town Centre for their contribution to the character of the Town Centre
- S1.25 Engage with VicRoads to facilitate the development of a Wellington Street as an avenue through consistent tree plantings and a range of other strategies identified in the masterplan for Wellington Street

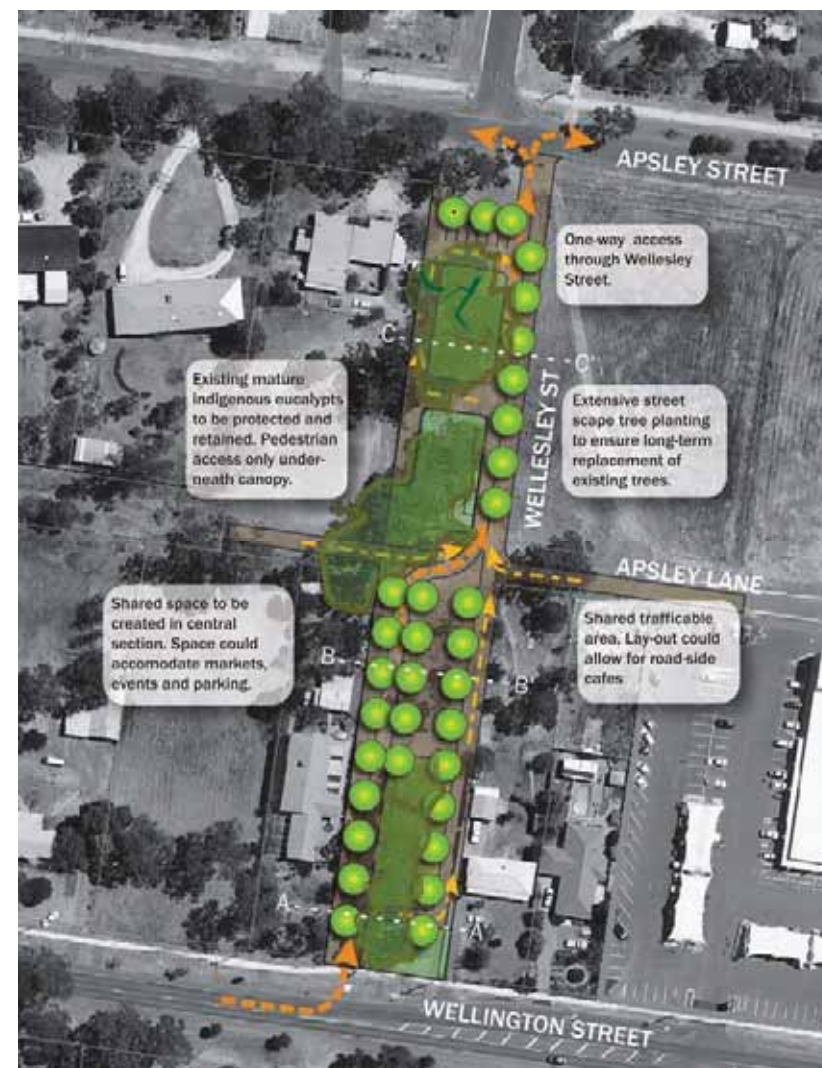


Figure 12 Potential long term concept for Wellesley Street (opposite)

Source: Klein Landscape Architecture, 2009

Design guidelines

- Buildings should have active frontages to:
 - streets
 - pedestrian accessways
 - open space
- Buildings should be encouraged to incorporate multiple uses that are spread vertically, with a preference for:
 - shops, cafes and restaurants on the ground floor
 - offices, service businesses and residential uses on upper floors
- Front and side boundaries should be as follows:
 - no front setbacks and minimal side setbacks in the central part of the Core Area along Wellesley Street
 - buildings set 'in grounds' at the perimeter of the Core Area with front and side setbacks to be consistent with adjoining buildings in these areas

- New development should be constructed up to the height limits if possible, with allowance for taller buildings that offer exceptional design outcomes and high levels of compliance with the design guidelines for the Town Centre



Design guidelines cont'd

- Car parking should:
 - be located within the road reservation where retail uses predominate
 - be located at the side or rear of buildings where service business or office uses predominate
 - utilise parallel parking in order to maximise footpath widths where commercial development is constructed to the street frontage
- Large car parks in front of commercial premises should be avoided
- Mid-block pedestrian linkages should be incorporated within new developments to facilitate pedestrian access through the Core Area
- Road verges and footpath layouts should provide sufficient space for tree planting to be incorporated in streets
- The ultimate height of street trees should match the scale of the surrounding development
- Street trees should be planted at spacings that provide continuous shade along streets

Shared space

This approach uses the design of roads and their immediate surrounds to alter people's driving behaviour and enable pedestrians and vehicles to co-exist safely.

The shared space approach produces an environment which is extremely safe for pedestrians as vehicle speeds are slowed. Shared space is successful because the perception of risk is increased, people are more alert and there are fewer accidents (Tolley, 2007). According to work prepared for the City of Greater Bendigo for the Bendigo CBD, key measures of shared space are the removal or reduction of traffic signs, markings and other instructions to drivers (Tolley, 2007).

The underlying objectives of this initiative are to improve access for pedestrians and cyclists into activity centres, the design of buildings, and the layout of the city. By doing this physical activities can be incorporated into daily lives.

4.2 Residential Areas

Summary

Unlike traditional townships where urban development radiates from a core area, most of the residential development in Strathfieldsaye has occurred in areas that are remote from the Town Centre. As a consequence, most of the undeveloped urban land exists within a one kilometre radius of the Town Centre.

The way in which these areas develop is important, particularly for the creation of connections between the existing urban areas, new development areas and the Town Centre.

For areas that are substantially developed, the Plan proposes to remove controls that facilitate urban development as there is sufficient policy in the Greater Bendigo Planning Scheme to guide infill development in these areas.

The Township Plan proposes to retain development controls on land with subdivision potential where there are significant environmental features such as creeks and in areas that contribute significantly to the landscape character of Strathfieldsaye.

The Plan anticipates that the existing Outline Development Plans will be reviewed to incorporate key recommendations relating to the road network, open space and shared paths identified in this Plan. In particular, the existing network of walking and cycling paths will be improved to provide safe access to the Town Centre, existing schools and recreation facilities

Objectives

- O2.1 To facilitate the further development of the existing urban area with improvements to ensure compliance with current planning provisions
- O2.2 To ensure that future development in the existing urban area has regard to the objectives and design guidelines for new development contained in the Township Plan
- O2.3 To maintain the diversity of residential precincts within the existing urban area, particularly where these contribute to the landscape character of the Township
- O2.4 To improve walking and cycling connections between existing neighbourhoods and the Town Centre
- O2.5 To improve the operation of the statutory controls in the Greater Bendigo Planning Scheme to facilitate better planning outcomes
- O2.6 To recognise the planning history of the existing urban area in the development of the Township Plan

Strategies

The strategies should be read together with the recommendations and plan contained in Appendix D.

Residential development

- S2.1 Encourage lower urban densities in the following areas:
- on the north east side of Strathfieldsaye Road (Precinct 5)
 - fronting Strathfieldsaye Road (Precincts 2&4)
 - adjoining waterways
- S2.2 Encourage suburban densities in fully serviced areas on the south side of Strathfieldsaye Road
- S2.3 Encourage infill development in other full serviced areas on the south side of Strathfieldsaye Road, including medium density housing up to 400 metres from Strathfieldsaye Road (as per the *Residential Land Strategy*)
- S2.4 Liaise with Coliban Water to extend reticulated sewerage to areas where significant problems exist with on-site wastewater disposal
- S2.5 Review all Outline Development Plans for Precincts 11-14 if reticulated sewerage is extended to these areas
- S2.6 Require developers to undertake further investigations of land subject to the Salinity Management Overlay (SMO) between Tannery lane and Taylors Lane prior to any rezoning from LDRZ to R1Z and any subdivision approval

Planning controls

- S2.7 Remove the Incorporated Plan Overlay (Schedule 1) from the existing urban area
- S2.8 Retain the existing zoning arrangements for residential land within the existing urban area (R1Z & LDRZ)
- S2.9 Apply a new Schedule to the Development Plan Overlay and adopt the existing approved Outline Development Plans with changes as outlined in the table in Appendix D
- S2.10 Discourage multiple extensions of time for approved subdivisions and require fresh applications to be considered against the requirements of the Township Plan

Open space

- S2.11 Acquire the land associated with a waterway on the south side of the Strathfieldsaye Road / Ryalls Lane intersection and convert to public open space (refer to Plan 1). Connect this land with the former Shire Hall site on Strathfieldsaye Road

Strategies cont'd*Walking & cycling paths*

- S2.12 Establish a new walking and cycling path from Ryalls Lane to the Sheepwash Creek path and Town Centre through the land identified above
- S2.13 Complete the construction of the Sheepwash Creek walking and cycling path near Guys Hill Road and link the Battunga Park subdivision to the path via a bridge crossing at Clarendon Court
- S2.14 Complete the following gaps in the existing Sheepwash Creek walking and cycling path through the acquisition of land as part of the subdivision process or by a separate acquisition program:
- Guys Hill Road and Strathfieldsaye Road
 - Ryalls Lane and Strathfieldsaye Recreation Reserve
- S2.15 Better integrate the Strathfieldsaye Recreation Reserve and the Sports Complex/Brian Keogh Reserve into the walking and cycling path network by providing a safe crossing point at or near the Strathfieldsaye Rd, Club Court /Tannery Lane intersection
- S2.16 Complete and formalise the existing off-road path that links Strathfieldsaye Town Centre with Bendigo through the Greater Bendigo National Park. Liaise with Parks Victoria to improve surfaces and signage
- S2.17 Investigate the construction of an off-road walking and cycling path between Strathfieldsaye Road and Junortoun

Recreation facilities

- S2.18 Better integrate the Strathfieldsaye Recreation Reserve and the Sports Complex/Brian Keogh Reserve into the open space network by providing shade, seating and improved connections with the existing walking/bike paths
- S2.19 Conduct a feasibility study into the potential redevelopment or adaptive re-use of the Sport Complex in Club Court

Social & community infrastructure

- S2.20 Use the old Strathfieldsaye Shire Hall for lower usage community activities such as art galleries
- S2.21 Investigate the potential for existing schools to share their libraries with the community
- S2.22 Investigate the potential to develop a shared school / community performing arts centre at St Francis of the Fields Primary School

5 Land Budget

Summary

This section contains a land budget that reveals the estimated future population of the new development areas and its likely distribution across the study area.

The land budget will assist in determining the timely release of land and in calculating funding requirements for physical and community infrastructure.

The land budget reveals that the new development areas will provide for approximately 1,614 new dwellings and a population of 4,680.

The land budget has been prepared for the purpose of determining the net developable area and will need to be refined following the preparation of a new flood study and prior to use for calculating any development contributions.

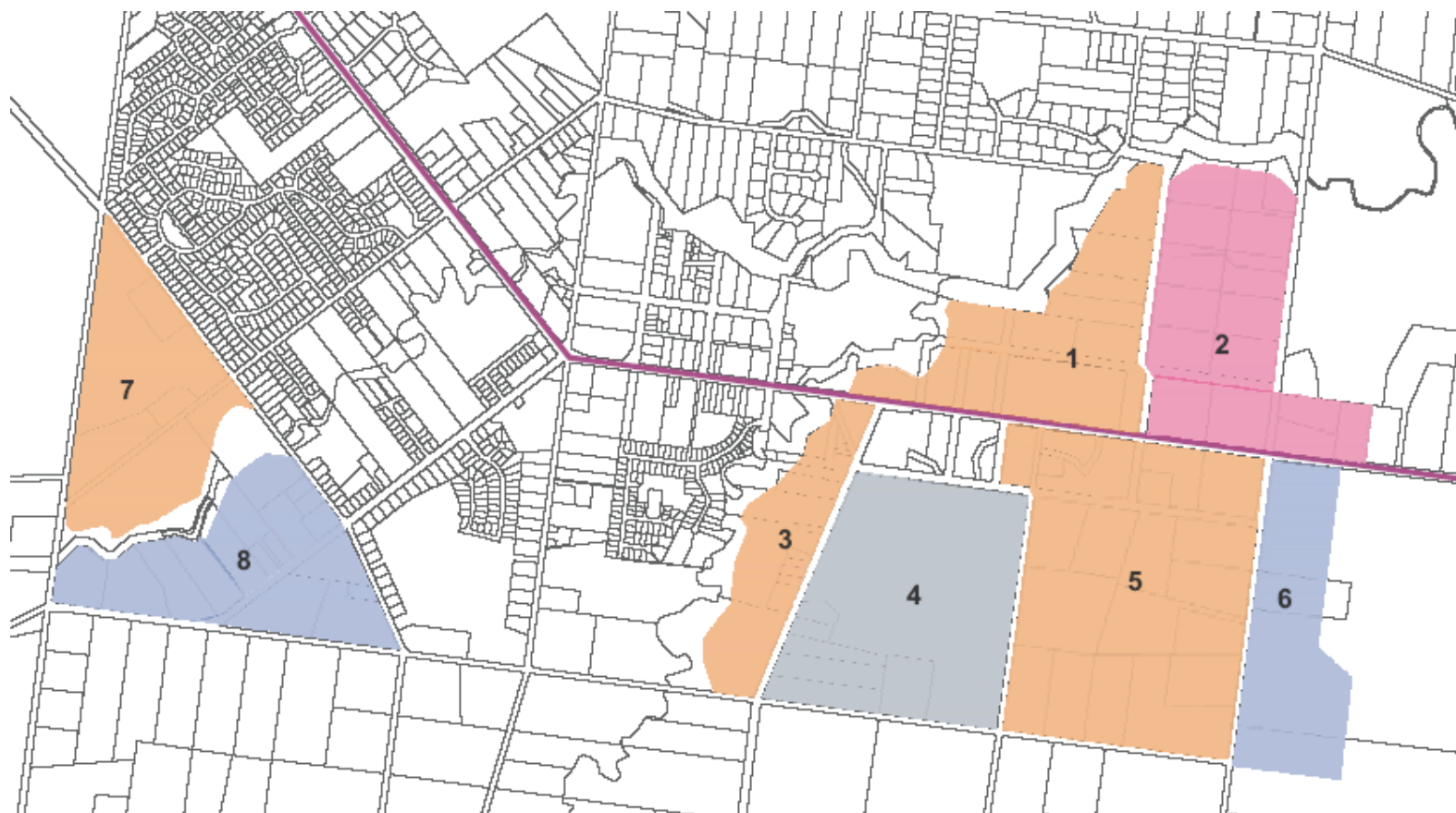
Explanatory notes:

- All figures are approximate
- The new development areas have a combined area of approximately 385 hectares, with 356 hectares in private ownership
- The following components have been deducted to determine the Net Developable Area for each precinct:
 - proposed vegetated corridors around Sheepwash Creek and Emu Creek (creek reserves)
 - 50 metre buffer around drainage lines (drainage lines)
 - land subject to inundation identified in the 1979 flood study (land subject to inundation)
 - 500 metre buffer to rural industries as shown on Plan 1 (buffer to rural industry)
 - proposed land for community or education uses on Strathfieldsaye Road and Mannes Lane (community/ education uses)
- Land subject to inundation is the area identified as FDTP FO or FDTP LSI in the Hydrology and Water plan in Appendix B
- Drainage lines are identified as 'Probable Flood Areas' in the Hydrology and Water plan in Appendix B
- Average household size is based on ID Consulting (2008) estimate of 2.9 persons in 2030
- The estimated future population is based on the development of suburban land at an average of:
 - 12 dwellings per hectare for suburban development
 - 2.5 dwellings per hectare for bushland residential development
 - 0.5 dwellings per hectare for environmental living A&B
- Open space has been averaged at 5% of developable land area across the study area

Table 3 Land budget

Land Use (ha)	Precinct								Total
	1	2	3	4	5	6	7	8	
Total area (privately owned)	37	45	33	55	75	30	44	37	356
Deductions									
Proposed creek reserves	5	2	17				1	1	26
Drainage Lines	3	0		4	6	5	2	2	22
Land subject to inundation	1	1	6					5	12
Community/education uses						6			6
Buffer to rural industry				3	47	4			54
Net Residential Land	28	42	10	49	23	14	41	29	235
5% Public open space	1	2	0	2	1	1	2	1	12
Net Developable Area	26	40	9	46	22	14	39	27	224
Residential Land Use									
Suburban	24	40	6	10	6	14	8	17	124
Bushland Residential	3		4	15	16		2		39
Environmental Living A				22			11	10	42
Environmental Living B							18		18
Estimated Future Population									
Dwellings	292	482	76	163	107	164	118	213	1,614
Population	846	1,397	220	472	310	477	341	617	4,680

Figure 13 Precinct plan for land budget



6 Implementation

The priority actions to implement the recommendations of the Township Plan for the existing urban area and the new development areas are listed in Table 4 below.

Table 4 Implementation plan

Number	Action	Responsibility	Partners	Timeframe
1	Commence the preparation of a Drainage Masterplan including a flood study, drainage study and waterway study as described in the Plan.	COGB Asset Planning and Design	North Central Catchment Management Authority	2009-
2	Develop a feasibility study to investigate the potential for a new children's services hub to be developed in Strathfieldsaye.	COGB Community Wellbeing	Strathfieldsaye Pre-School	2009
3	Prepare planning scheme amendment to incorporate the recommendations of the Township Plan in the Municipal Strategic Statement, include the Plan as a Reference Document in the Planning Scheme and amend zone and overlays as required.	COGB Strategy Unit	Department of Planning & Community Development	2010
4	Investigate funding requirements and mechanisms to levy developer contributions for items of physical and community infrastructure	COGB Strategy Unit & COGB Asset Planning and Design		2010

Number	Action	Responsibility	Partners	Timeframe
5	Investigate all areas identified as subject to salinity and update mapping of the Salinity Management Overlay (SMO)	COGB Strategy Unit	Department of Primary Industries	2010
6	Update the Outline Development Plans for the existing urban area in accordance with the recommendations of the Township Plan.	COGB Strategy Unit / COGB Statutory Planning Unit		2010 -
7	Investigate the future use of the City of Greater Bendigo waste transfer station	COGB Strategy Unit and COGB Asset Planning and Design	Environment Protection Authority	2010
8	Investigate the potential to prepare a Native Vegetation Precinct Plan for the study area.	COGB Strategy Unit	Department of Sustainability & Environment	2010
9	Co-ordinate the provision of new services infrastructure	COGB Strategy Unit and COGB Asset Planning and Design	Telstra, Powercor, Tenix, Coliban Water	2010 -
10	Upgrade the walking and cycling path network in the existing urban area as per the recommendations of the Township Plan	COGB Asset Planning and Design		2010
11	Rezone land in accordance with Table 1 with the exception of land identified in Appendix B as being subject to inundation or flooding. Retain this land in the current zone until the drainage masterplan is completed.	COGB Strategy Unit		2010

Number	Action	Responsibility	Partners	Timeframe
12	Commence the preparation of Outline Development Plans (ODPs) for precincts within the new development areas.	COGB Strategy Unit		2011-
13	Investigate strategies to assemble larger parcels of land within the new development areas.	COGB Strategy Unit & DPCD	Department of Planning & Community Development	2011-
14	Commence negotiations with VicRoads to prepare a masterplan for streetscape upgrades to Wellington Street from Club Court to Emu Creek	COGB Asset Planning and Design & VicRoads	VicRoads	2012-
15	Prepare a feasibility study into the potential redevelopment, adaptive re-use of the Sport Complex in Club Court	COGB Community Wellbeing		2013
16	Prepare a masterplan for the Sheepwash Creek Reserve between Club Court and Somerset Park Road	COGB Community Wellbeing	Parks Victoria Department of Sustainability & Environment	2013
17	Prepare a study at the municipal level to determine the feasibility of establishing a new swimming pool in Strathfieldsaye	COGB Community Wellbeing		2014

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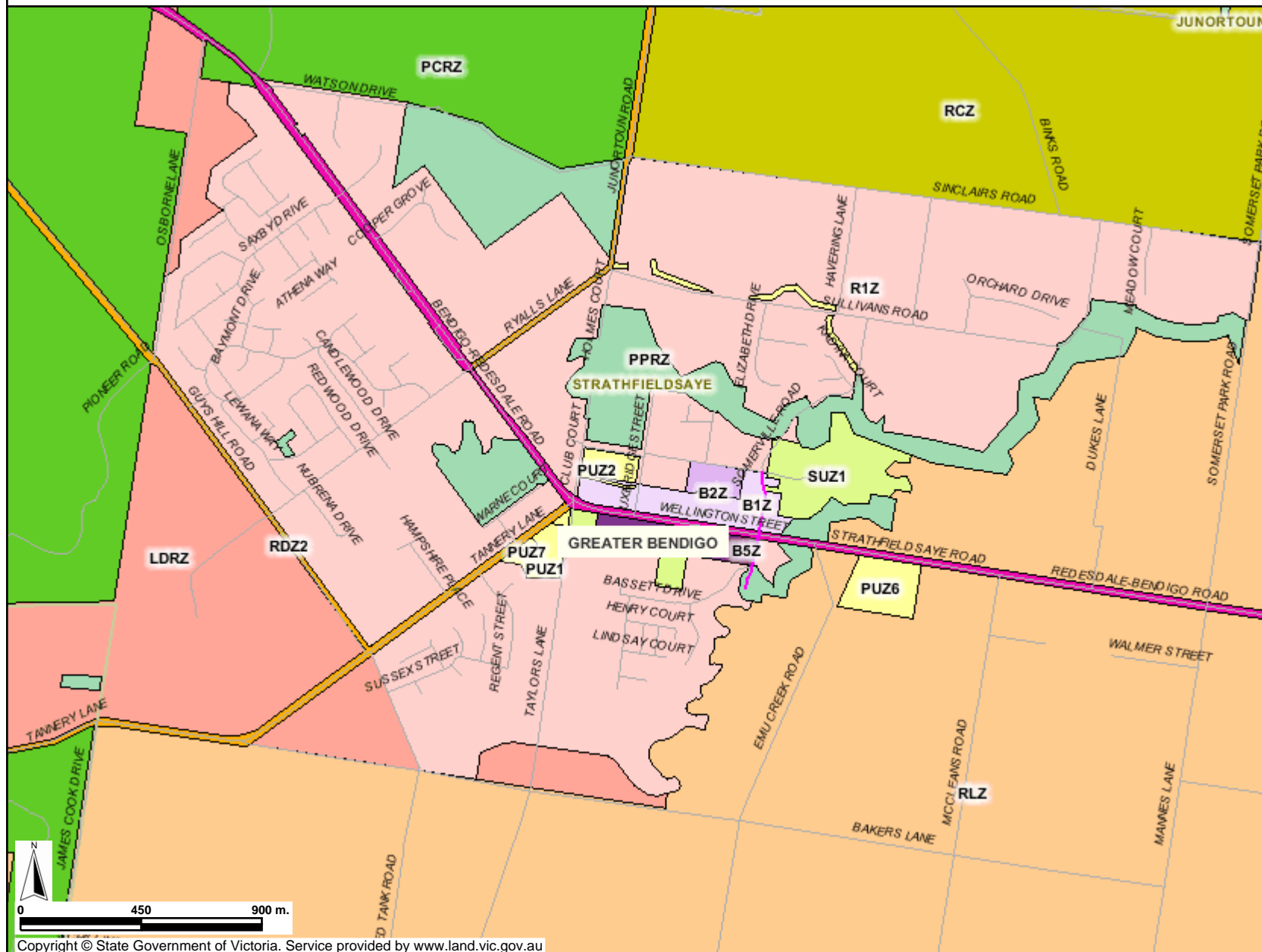
Appendices

Appendix A. Map of existing zones

Planning Map

Existing Zones - Study Area

Department of
Planning and
Community Development



Legend

- WARRNAMBOOL Major Town
- BOURKE STREET Major Road, Road
- Road name
- Railway, Tramway
- Property/Parcel, selected
- 25 2 1C Address, Lot, Crown allotment
- River, Stream, Coastline
- Water body
- Locality
- Locality name
- Local Government Area
- Local Government Name
- Urban Growth Boundary (UGB)
- Area outside of the UGB
- Investigation Area

ZONES

- B1Z - Business 1
- B2Z - Business 2
- B3Z - Business 3
- B4Z - Business 4
- B5Z - Business 5
- CA - Commonwealth Land (not in scheme)
- CCZ - Capital City
- CDZ - Comprehensive Development
- DZ - Dockland
- ERZ - Environmental Rural
- FZ - Farming
- GWAZ - Green Wedge A
- GWZ - Green Wedge
- I1Z - Industrial 1
- I2Z - Industrial 2
- I3Z - Industrial 3
- LDRZ - Low Density Residential
- MUZ - Mixed Use
- PCRZ - Public Conservation & Resource
- PDZ - Priority Development
- PPRZ - Public Park & Recreation
- PUZ1 - Public Use - Service & Utility
- PUZ2 - Public Use - Education
- PUZ3 - Public Use - Health Community
- PUZ4 - Public Use - Transport
- PUZ5 - Public Use - Cemetery / Crematorium
- PUZ6 - Public Use - Local Government
- PUZ7 - Public Use - Other Public Use
- R1Z - Residential 1
- R2Z - Residential 2
- R3Z - Residential 3
- RAZ - Rural Activity
- RCZ - Rural Conservation
- RDZ1 - Road - Category 1
- RDZ2 - Road - Category 2
- RLZ - Rural Living
- RUZ - Rural
- SUZ - Special Use
- TZ - Township
- UFZ - Urban Floodway
- UGZ - Urban Growth

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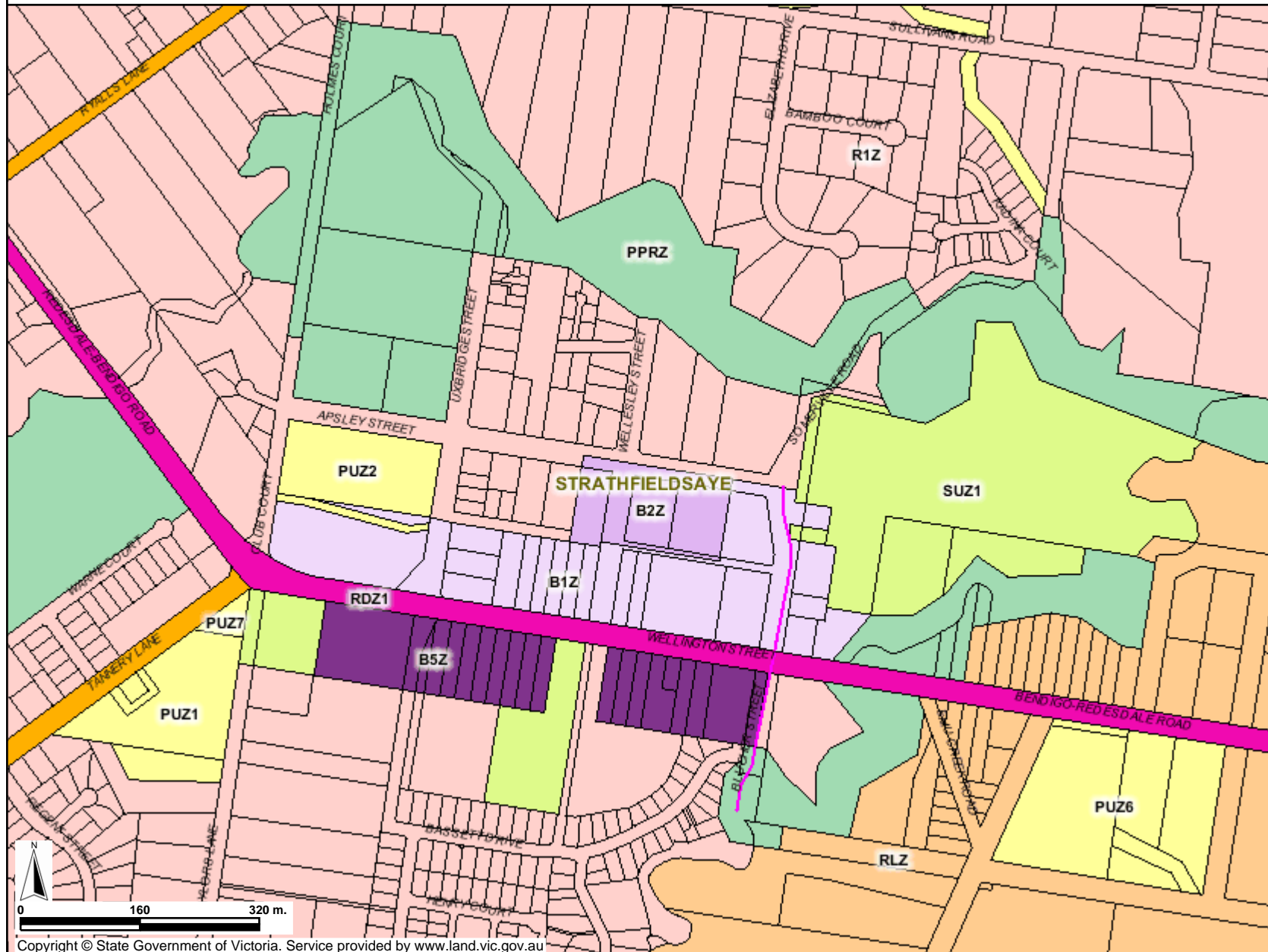
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Planning Map

Existing Zones - Town Centre

Department of
Planning and
Community Development



Legend

- WARRNAMBOOL Major Town
- BOURKE STREET Major Road, Road
- Road name
- Railway, Tramway
- Property/Parcel, selected
- 25 2 1C Address, Lot, Crown allotment
- River, Stream, Coastline
- Water body
- Locality
- Locality name
- Local Government Area
- Local Government Name
- Urban Growth Boundary (UGB)
- Area outside of the UGB
- Investigation Area

ZONES

- B1Z - Business 1
- B2Z - Business 2
- B3Z - Business 3
- B4Z - Business 4
- B5Z - Business 5
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- CCZ - Capital City
- CDZ - Comprehensive Development
- DZ - Dockland
- ERZ - Environmental Rural
- FZ - Farming
- GWAZ - Green Wedge A
- GWZ - Green Wedge
- IN1Z - Industrial 1
- IN2Z - Industrial 2
- IN3Z - Industrial 3
- LDZ - Low Density Residential
- MUZ - Mixed Use
- PCRZ - Public Conservation & Resource
- PDZ - Priority Development
- PPRZ - Public Park & Recreation
- PUZ1 - Public Use - Service & Utility
- PUZ2 - Public Use - Education
- PUZ3 - Public Use - Health Community
- PUZ4 - Public Use - Transport
- PUZ5 - Public Use - Cemetery / Crematorium
- PUZ6 - Public Use - Local Government
- PUZ7 - Public Use - Other Public Use
- R1Z - Residential 1
- R2Z - Residential 2
- R3Z - Residential 3
- RAZ - Rural Activity
- RCZ - Rural Conservation
- RDZ1 - Road - Category 1
- RDZ2 - Road - Category 2
- RLZ - Rural Living
- RUZ - Rural
- SUZ - Special Use
- TZ - Township
- UFZ - Urban Floodway
- UGZ - Urban Growth

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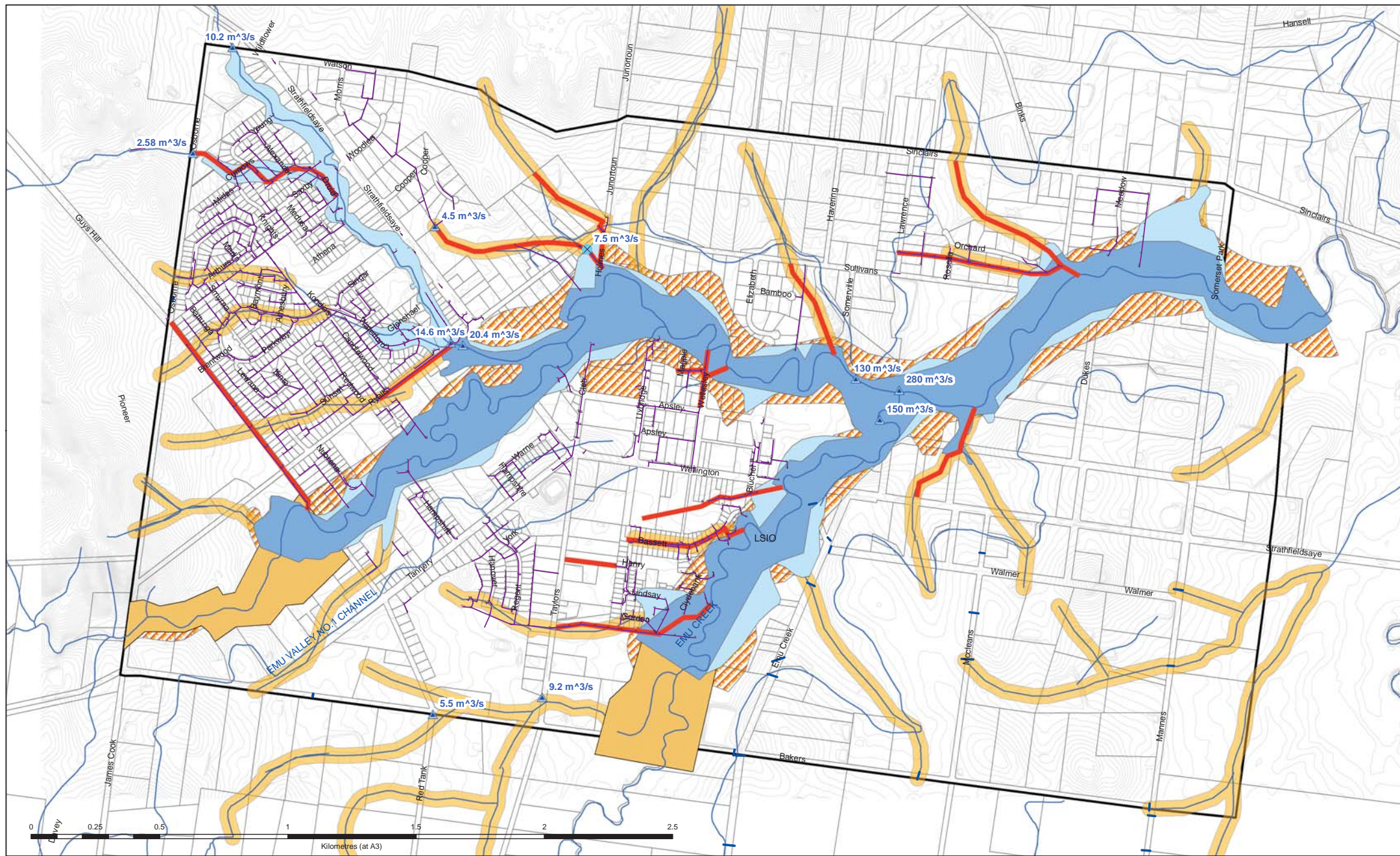
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Appendix B. Hydrology & water, flood & drainage characteristics



Appendix C. Proposed road hierarchy

Road/ Street Type	Vehicles Per Day		Road Reservation		Function & Configuration	
	Existing ³	Ultimate ⁴	Existing:	Proposed	Existing	Proposed
Arterial Road (VicRoads) Strathfieldsaye Road / Wellington Street	11,684	20,000	46m at Ryalls Lane (25m reserved but not zoned RZ1), 30m from Club Court to Emu Creek Road	To be determined by VicRoads	Main east-west arterial road through Strathfieldsaye 2 lane, 2 way highway	Main east-west arterial road through Strathfieldsaye Four lane divided road or as determined by VicRoads. Consideration to duplication to be given when traffic volumes approach 15,000 vehicles per day (<i>VicRoads Principle Traffic Routes Program</i>). Access points in accordance with the Access Management Policy prepared by VicRoads (when completed) Access to residential development via service lanes Bus route
Existing Connector Roads						
Emu Creek Road	503 (2000)	2,240	30 metres / 20 metres	30 metres / 24 metres	2 lane, 2 way	Direct property access Bus route

³ Lists vehicles per day and year when count was made. Derived from data collected by the City of Greater Bendigo – refer to Appendix E of GHD Transport & Infrastructure Background Report (2008)

⁴ Refer to assumptions in GHD Transportation Background Report (GHD, 2008)

Road/ Street Type	Vehicles Per Day		Road Reservation		Function & Configuration	
	Existing ³	Ultimate ⁴	Existing:	Proposed	Existing	Proposed
Somerset Park Road	720 (2001)	1,710	28 metres	28 metres	2 lane, 2 way	Direct property access Shoulder widening Bus route
Ryalls Lane	N/A	3,530	20m	20m	2 lane, 2 way	Direct property access Shoulder widening Bus route
Mannes Lane	194 (2002)	1,750	30m north of Walmer Street, 23m south of Walmer Street	30 metres / 24 metres	2 lane, 2 way	Direct property access Bus route
Junortoun Road	1,096 (2003)	N/A	20m-30m	N/A	2 lane, 2 way	No change
Guys Hill Road	1,126 (2000)	N/A	20m	N/A	2 lane, 2 way	Direct property access Bus route
Tannery Lane	1,318 (2000)	1,810	30m	N/A	2 lane, 2 way	Direct property access Bus route

Road/ Street Type	Vehicles Per Day		Road Reservation		Function & Configuration	
	Existing ³	Ultimate ⁴	Existing:	Proposed	Existing	Proposed
New Connector Roads			n/a	24 metres	n/a	1 x 8 metre wide carriageway Direct property access Bus route Refer to Figure 7
Access Streets						
Creekline interface streets	n/a		n/a	16 metres	n/a	1 x 7.5 metre wide carriageway Direct property access Refer to Figure 8
Bushland interface streets	n/a		n/a	20 metres	n/a	1 x 7.5 metre wide carriageway Direct property access Refer to Figure 9

Appendix D. Recommendations for precincts in existing urban area

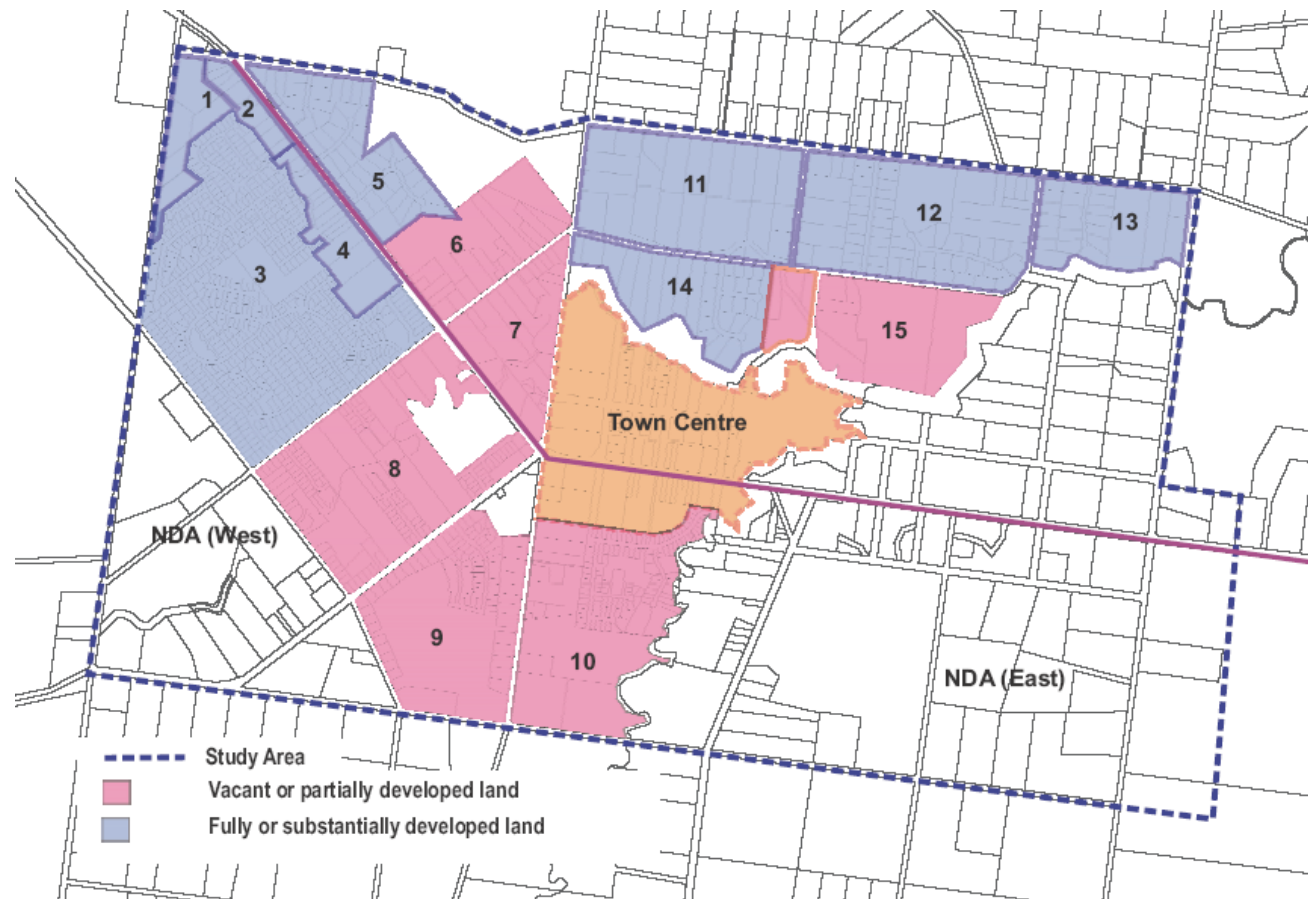
Precinct Reference	2001 Plan Reference	Vision	Preferred Development Density ⁵	Recommended Development Controls	Recommended changes to ODP Plan
1	14	Low density residential development	2ha.	Introduce new Schedule to the Development Plan Overlay	Update to reflect actual residential development. Modify floodplain limits in accordance with future drainage masterplan Incorporate other recommendations of Section 3.5 as appropriate
2	14	Residential development at low densities	0.4 ha or greater	Introduce new Schedule to the Development Plan Overlay	Incorporate requirements of VicRoads regarding access arrangements (following further consultation)
3	1	Suburban development	500 to 1,000 square metres	None required. Area is substantially developed.	N/A
4	1	Residential development at low densities	1,000 to 4,000 square metres or as determined by drainage masterplan	Introduce new Schedule to the Development Plan Overlay	Incorporate floodplain limits in accordance with future drainage masterplan Incorporate requirements of VicRoads regarding access arrangements (following further consultation)
5	7	Residential development at low densities	0.4 ha unless serviced with reticulated sewerage and sealed roads	None required. Area is substantially developed.	N/A

⁵ Denotes the preferred development density for the majority of allotments. This does not prevent the creation of smaller or larger allotments, subject to compliance with the requirements of ResCode.

Precinct Reference	2001 Plan Reference	Vision	Preferred Development Density ⁵	Recommended Development Controls	Recommended changes to ODP Plan
6	7	Residential development at a mix of densities	1,500m ²	Introduce new Schedule to the Development Plan Overlay	Revise road layout to incorporate vehicle and pedestrian linkages to Ryalls Lane Incorporate the requirements of Local Planning Policy for Development at the Urban-Forest Interface for allotments adjoining the National Park.
7	5	Residential development at a mix of densities	500m ² – 1,500m ²	Introduce new Schedule to the Development Plan Overlay	Modify road layout to convert cul-de-sacs to through roads linking with Ryalls Lane.
8	4	Residential development at a mix of densities	500m ² – 1,200m ²	Introduce new Schedule to the Development Plan Overlay	Revise existing ODP to avoid lots on the creek side of roads that run parallel with the creek
9	6	Residential development at a mix of densities	300m ² – 1,200m ²	Introduce new Schedule to the Development Plan Overlay	Encourage smaller allotments 300-500m ² fronting central open space Create pedestrian / cycle connection to Bakers Lane to ensure a permeable movement network Resolve drainage issues prior to adoption of any revised ODP
10	3	Residential development at a mix of densities	300m ² – 1,200m ²	Introduce new Schedule to the Development Plan Overlay	Adopt the use of a landscaped court bowls with access to the creek reserve and footpaths to avoid narrow pedestrian paths along rear fences Incorporate floodplain limits in accordance with future drainage masterplan

Precinct Reference	2001 Plan Reference	Vision	Preferred Development Density ⁵	Recommended Development Controls	Recommended changes to ODP Plan
11	9	Residential development at low densities	1 hectare	Retain existing Development Plan Overlay (Schedule 3), including Map 7.	Prepare an Outline Development Plan in accordance with the existing ODP and Schedule 3 as required. Update the ODP with requirements under the Victoria's Native Vegetation Management: A Framework for Action.
12	13 & 11	Residential development at low densities	4,000m ²	Retain existing Development Plan Overlay (Schedule 3)	An ODP prepared for eastern part of the area only. Prepare an Outline Development Plan in accordance with the existing ODP and Schedule 3 as required.
13	10	Residential development at low densities	4,000m ²	Retain existing Development Plan Overlay (Schedule 3)	Prepare an Outline Development Plan in accordance with the existing ODP and Schedule 3 as required. Update the ODP with requirements under the Victoria's Native Vegetation Management: A Framework for Action. Incorporate floodplain limits in accordance with future drainage masterplan
14	8	Residential development at a mix of densities	300m ² – 4,000m ²	Retain existing Development Plan Overlay (Schedule 3)	No approved ODP exists. Incorporate floodplain limits in accordance with future drainage masterplan
15	12	Suburban development	300m ² – 1,200m ²	Introduce new Schedule to the Development Plan Overlay	No approved ODP exists. Incorporate floodplain limits in accordance with future drainage masterplan The ODP should include a creekline interface access street (refer to design guidelines in this Plan)

Figure 14 Precincts –existing urban area



Appendix E. Summary of changes recommended by Panel

The following changes were made to the report in April, 2012, as a result of recommendations made by a Panel appointed by the Minister for Planning in its report dated November, 2010:

- Residential Character S.3.5, 3rd sub-point deleted
- Existing Urban Area S1.1: 'Uxbridge Street' replaced with 'Club Court'
- Existing Urban Area S1.4: strategy deleted
- Existing Urban Area S1.11: strategy modified
- Table 2 Town Centre development framework: recommendations for land at 2 Club Court modified
- Plans 1 & 3: 'Bushland interface street' north and south of Ryalls Lane converted to 'access street'
- Plan 2: 'Possible wetland/retarding basin' on the north side of Ryalls Lane deleted
- Plan 4: 'Core area' extended to include land at 2 Club Court and caption modified