

WARRNAMBOOL CITY COUNCIL


## North East Warrnambool Structure Plan

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# Executive Summary

Warrnambool is the capital of South West Victoria. It provides a regional focus for business, tourism, education and industry, and is also a great place for those who just want to live or raise a family.

Warrnambool continues to grow at rates that exceed expectations. Warrnambool's projected 1.3% growth rate to the year 2019 is high for regional Victoria, and will see the City's population increase by around 6,000 during this period. The type of growth will also change a little, with trends to an ageing population and smaller household sizes.

These trends emphasise the importance of effective and early planning to ensure growth is sustainable, is matched by physical and community services and enhances quality of life opportunities for existing and future residents.

The Warrnambool Land Use Strategy (Parsons Brinckerhoff, 2004) provides a clear direction for the future growth and development of Warrnambool, and how such growth should take place. The Strategy emphasises the importance of undertaking structure planning as a critical first step in achieving socially, environmentally and economically sustainable development.

The preparation of the structure plan for the North-East Warrnambool corridor was a priority for action within the Strategy.

This report has two parts.

Part A provides a Strategic Background for the subsequent development of the Structure Plan, which occurs in Part B of the report.

Part A includes an assessment of existing conditions, servicing issues, land zonings and current planning policy. Extensive community consultation, involving workshops and one on one meetings was also used to develop a list of key issues and to undertake a Strengths, Weaknesses, Opportunities and Threats analysis.

The assessments and consultation formed the basis for the development of draft Sustainable Planning Principles for community review and comment.

Part B takes this work and develops vision and objectives statements and a Structure Plan for the area.

The Plan seeks to reflect the planning needs of the greater Warrnambool community as articulated in the *Warrnambool Land Use Strategy (2004)*, and to marry these with the needs and aspirations of local communities and key stakeholders in the North East Warrnambool area.

At the highest level, there will be conflict between some of these needs, as some in the community would prefer that land is not developed. However, land is needed for Warrnambool to support its role as a growing regional centre.

The draft Structure Plan was formally exhibited for comment, and some revisions were made as a result. These are articulated in Section 8 of this report.

The final Structure Plan recognises the different characters of the study area in its vision, objectives and design.

The **North East Warrnambool Structure Plan** provides for in the order of 1,500 –1,600 lots, predominantly of a conventional residential density. The Plan highlights existing drainage lines as key recreational and pedestrian/cyclist access routes, and provides the opportunity for wetland bio-filter systems as part of the response to drainage management issues in this area. This plan also provides for a connection from the North East Warrnambool area to the Princes Highway near the Eastern Activity Precinct,.

The Plan recognises the need to upgrade Wangoom and Aberline Roads, and several intersections including Wangoom Road and Hopkins Highway, Wangoom and Aberline Roads, and Aberline and Whites Roads.

Part B of this report concludes with a recommended Implementation Plan for the Structure Plan area, including addressing the need for planning scheme amendments, funding issues (including developer contributions) and implementation roles and responsibilities.

# 1. Introduction

## 1.1 Context

In recent times Warrnambool has experienced population growth and land development that has exceeded expectations. According to the recent Warrnambool Land Use Strategy (Parsons Brinckerhoff, 2004: 22), the 1.6% population growth rate achieved between 1996 and 2001 was significantly higher than the State average. The projected 1.3% growth rate over the forthcoming 15 years is high for regional Victoria and will see the City's population increase by around 6,000 during this period. Warrnambool is a vital, growing western district hub. With the trends to an ageing population and smaller households it is expected that the average annual household growth rate will be about 2.2%.

This combined trend emphasises the importance of effective and early planning to ensure growth is sustainable, occurs in an orderly and proper manner and enhances quality of life opportunities for existing and future residents. Council has responded to this challenge by undertaking the recent Warrnambool Land Use Strategy and this Structure Planning exercise.

The Strategy provides a clear direction for the future growth and development of Warrnambool and how such growth should take place. The Strategy recognises that traditional piecemeal approaches to land development are not acceptable, and emphasises the importance of undertaking structure planning as a critical first step toward achieving socially, environmentally and economically sustainable development.

Within the Strategy, preparation of a structure plan for the North-East Warrnambool corridor was identified as a priority action in the Immediate 5 Year Planning Program.

## 1.2 The Project

The overall aim of the North East Warrnambool Structure Plan will be to guide the major changes in land use, built form and public spaces that together will achieve economic, social and environmental objectives for this area. Specifically the Structure Plan outcomes will inform Council decision making on matters such as building form and scale, vehicular access, landscaping and open space and infrastructure provision.

## 1.3 Structure Plan Process and Stages

The methodology that will be used for this project is closely aligned to the Department of Sustainability and Environments Practice Note for the Preparation of Structure Plans, which provides a comprehensive approach to the development of a structure plan.

### What is a Structure Plan?

A Structure Plan is a strategic planning document, prepared with input from the local community that presents a vision and future planning framework for the integrated development of a town or area. Structure plans guide the major changes to land use, built form and public spaces that together can achieve identified economic, social and environmental objectives for an area.

Structure plans provide the foundation for changes within an area by defining the preferred direction of future growth and articulating how that change will be managed.

The structure planning process should produce both a framework articulating how the area will develop, and the actions needed to deliver that framework.

### **Who uses a Structure Plan?**

The Structure Plan will be utilised primarily by the Warrnambool City Council, the local community and key stakeholders to guide future development and land use within the Structure Plan areas.

The framework will:

- Strategically plan for future growth and development;
- Form the basis for future capital works project scheduling;
- Provide guidance for future public sector funding applications and the assessment of private sector developments; and
- Provide future strategic planning directions for the areas.

### **What does a Structure Plan contain?**

- An analysis of existing conditions.
- A vision for the area.
- A set of key directions and guidelines directed at achieving the vision.
- A township framework plan.

This report also presents:

- Information and analysis used to inform the Structure Plan preparation.
- An account of emerging themes and issues.
- A description of the Structure Plan, highlighting key features; and
- An implementation program.

## **1.4 What has been done?**

In preparing the Structure Plan, the following activities have been undertaken:

- Review of the existing plans, policies and strategies relating to the area.
- Consultation with the community at large and with key stakeholders.
- Identification of issues and the strengths, weaknesses, opportunities and constraints within the area.
- Analysis of the study area, including:
  - Land use patterns, activities, key events and commercial activities.
  - Movement patterns including transport routes, pedestrian and vehicular access and movement.
  - Significant natural, cultural and heritage features.
- The development of:
  - Sustainable Planning Principles.
  - Vision and Objectives Statements.
  - Conceptual Options and Draft Framework Plans.
  - Implementation Programs.



# PART A – STRATEGIC BACKGROUND

Warrnambool is considered to be the 'hub' of the Western District and is a vibrant coastal community with a population of almost 30,000 (2001). The following map shows Warrnambool in the context of the Western District.



Figure 1. Warrnambool Context. Source: Victorian Government, [www.visitvictoria.com](http://www.visitvictoria.com)

The Warrnambool population contains a large number of young people who are drawn to the city from surrounding small towns and rural areas by factors such as employment and education. Retail trading and manufacturing are the main employment generators in Warrnambool, each experiencing growth in recent years (Parsons Brinckerhoff, 2004: 11-12). Tourism is also strong in Warrnambool due to its location on the Great Ocean Road, and activities such as whale watching also seasonally attract visitors. The City is surrounded by rural land, a large portion of which is used for dairying.

Due to its role as a key town in the Western District, Warrnambool is also attractive to many people looking to enjoy a coastal lifestyle whilst still achieving affordability in housing. The Warrnambool Land Use Strategy estimates there is approximately 3-4 years supply of residential land currently available, hence the need to investigate options for longer term supply.

## 2. North East Warrnambool

### 2.1 The Study Area

The study area is located within North-East Warrnambool. This area has experienced recent population growth associated with new housing development.

The following map depicts the study area in the context of the Warrnambool township.

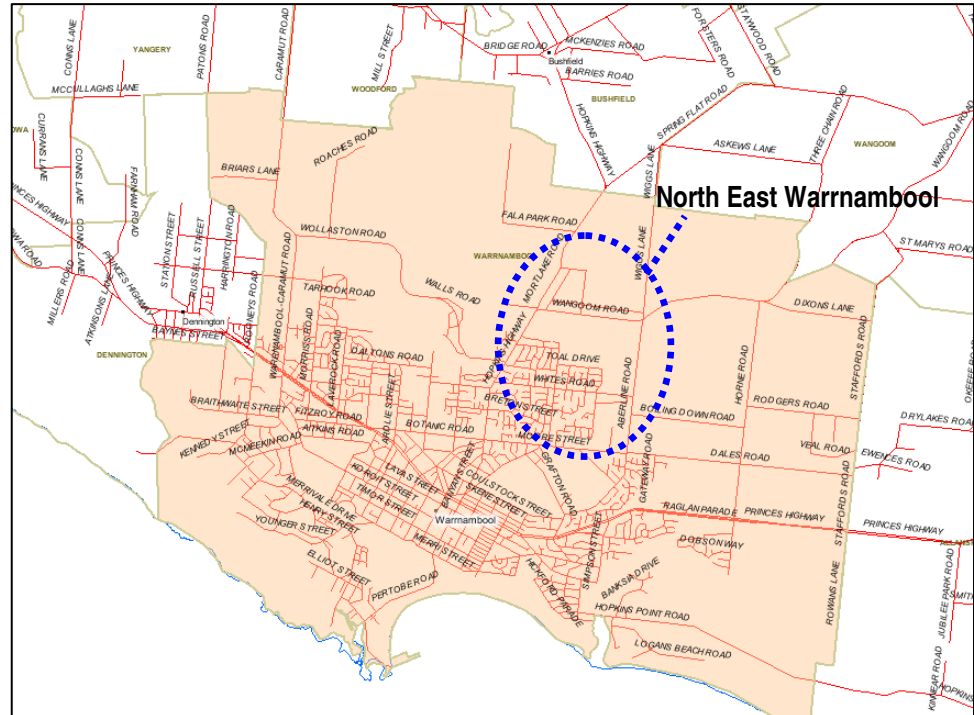


Figure 2.1: Warrnambool Context Map. Source: State Government of Victoria.

#### 2.1.1 North East Warrnambool

The North East Warrnambool study area boundary begins approximately 1km north of the intersection of Banyan Street and the Princes Highway. The area extends north and east, and is generally defined by the Hopkins Highway to the west, Conheadys Road to the north, Aberline Road to the East and Moore Street to the south. Figure 2.2 depicts this study area.

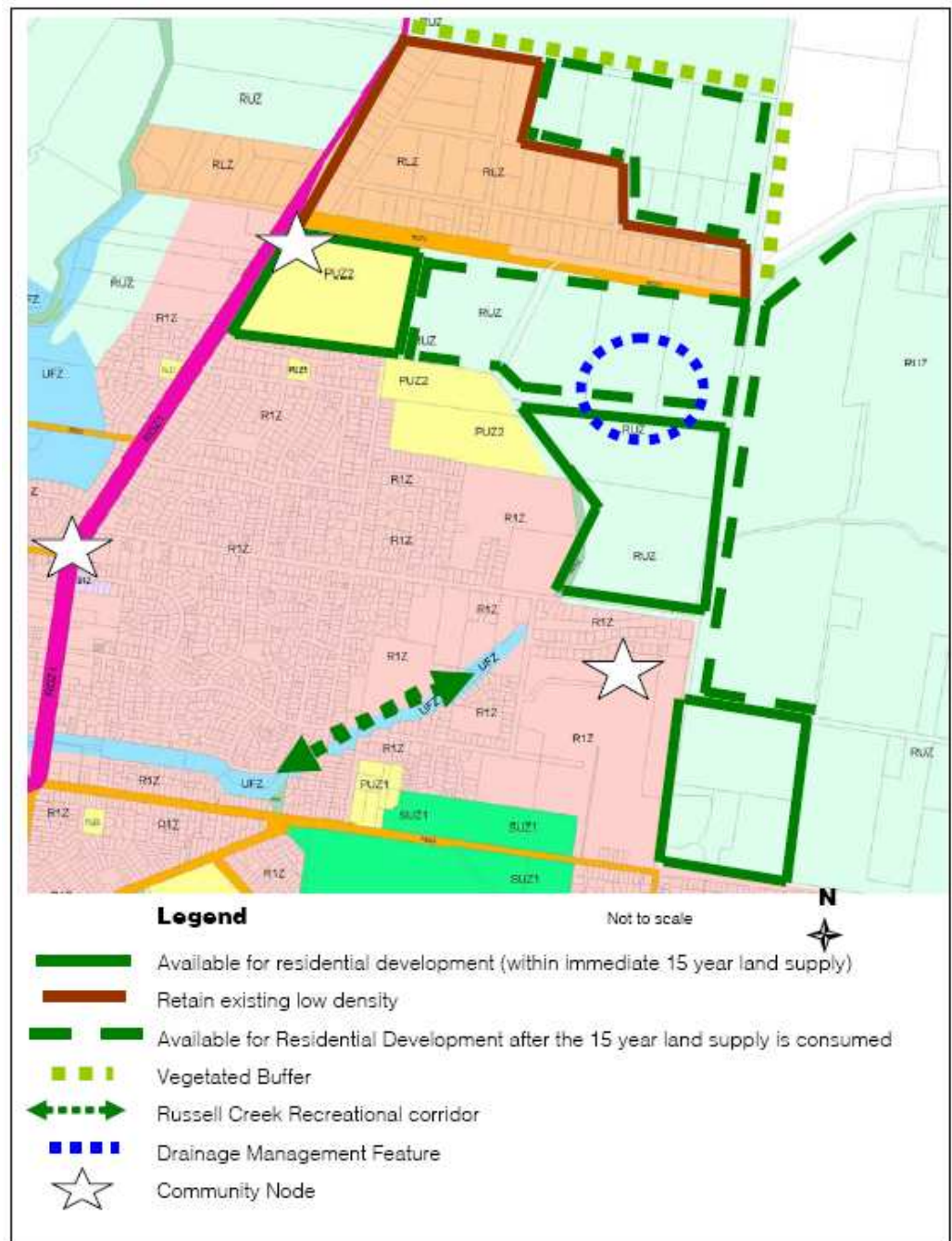


Figure 2.2 North East Warrnambool Study Area. Source: Parsons Brinckerhoff, 2004: 53.

## 3. Policy and Strategic Context

### 3.1 State

#### 3.1.1 State Planning Policy Framework (SPPF)

The SPPF sets out general policies and principles for land use and development in Victoria. The policies are grouped into six headings – settlement, environment, housing, economic development, infrastructure and particular uses and developments.

Key components that are relevant to the Structure Plan include:

#### **Clause 14.01 Planning for Urban Settlement**

This policy aims to ensure that there is a sufficient supply of land for all types of uses and that urban areas are developed in an orderly manner.

#### **Clause 15.01 Protection of catchments, waterways and groundwater**

In relation to the Structure Plan area, the implementation measures relating to water quality protection by ensuring run-off from urban areas is not contaminated is the most relevant component of the policy.

#### **Clause 15.02 Floodplain management**

This clause aims to protect property, infrastructure, and humans from floods and flood damage, and also protect waterways and floodplains of environmental significance.

#### **Clause 15.09 Conservation of native flora and fauna**

This clause relates to the protection and conservation of biodiversity, the provision of habitat for native plants and animals and the control of pest plants and animals.

#### **Clause 15.10 Open space**

The general aim of this clause is to ensure that adequate areas of open space are provided to urban and rural settlements.

#### **Clause 16 Housing**

This policy incorporates objectives relating to the provision of single dwellings, medium density housing and rural living / rural residential development. Its aim is to ensure new residential development is well serviced, that medium density housing respects neighbourhood character, that densities be increased wherever possible and that rural living allotments are appropriately sited.

#### **Clause 17.05 Agriculture**

The objective of this clause is to ensure that viable and productive agricultural land is not lost due to permanent changes in land use where the land can be proven to be economically viable for agricultural production.

#### **Clause 18 Infrastructure**

This policy contains clauses relating to declared highways, railways and tramways, car parking and public transport access to development, bicycle transport and water supply, sewerage and drainage.

Generally, the objectives are to ensure that land use is located close to existing or planned transportation (public and private), and that appropriate infrastructure is provided to new development.



### Clause 19.03 Design and Built Form

The objective of this clause is to achieve high quality urban design and architecture that reflects the particular characteristics, aspirations and cultural identity of the community, enhances livability, diversity, amenity and safety of the public realm and promotes attractiveness of towns and cities within broader strategic contexts.

#### 3.1.2 Department of Sustainability and Environment – Structure Planning for Activity Centres

The Department of Sustainability and Environment has developed guidelines for the preparation of structure plans for activity centres. These are largely based around Melbourne 2030, and draw on the performance criteria for activity centres as stipulated in Melbourne 2030. Despite this, the guidelines set out a useful process for structure planning, which contains seven steps as outlined below.

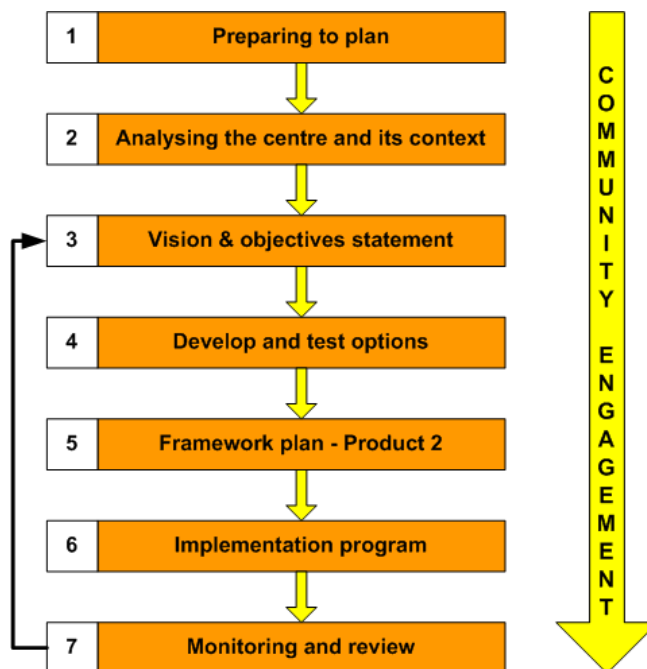


Figure 3.1 Process for preparing a structure plan. Source: DSE, 2003.

This process has been followed in the preparation of the structure plan for the North East Warrnambool area.

#### 3.1.3 Melbourne 2030

*Melbourne 2030*, although relating primarily to metropolitan Melbourne, has some relationship to the study. There are seven principles for urban growth by which the strategy was developed. These are presented in table 3.1 below.



Principle	Description
Sustainability	Inter- and intra-generational equity, protect biodiversity and maintain essential systems
Innovation	Developing new answers and approaches
Adaptability	Ability to plan for change and produce plans that are adaptable
Inclusiveness	Considering all individuals and groups within society
Equity	Ensuring fairer access to benefits of growth and change
Leadership	Providing direction from government
Partnership	Ensuring levels of government, as well as non-government organisations, the private sector and community work together

Table 3.1 Melbourne 2030 Principles. Source: DOI, 2002: 29.

These principles guide the development of sustainable planning principles, visions and objectives for the study area.

## 3.2 Local

### 3.2.1 *Municipal Strategic Statement (MSS)*

The MSS was revised in December 2006, and is based on the recommendations of the *Warrnambool Land Use Strategy*. A summary of the relevant objectives and strategies is provided below.

#### Housing

- The need to set a strategic direction for the North East Warrnambool area through the development of a structure plan. This should facilitate the creation of around 700 lots to meet demand within the next 15 years.
- The need to encourage uses to locate around community nodes.
- The importance of ensuring good design and siting outcomes are achieved for North East Warrnambool.
- The need to prepare development contributions plans for North East Warrnambool.

Following is the outline plan for the North East Warrnambool area.



### NORTH EAST CORRIDOR OUTLINE PLAN. LEGEND



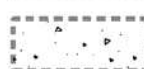





-  AVAILABLE FOR RESIDENTIAL DEVELOPMENT  
\*WITHIN IMMEDIATE 15 YEAR LAND SUPPLY.
-  RETAIN EXISTING RURAL LIVING.
-  AVAILABLE FOR RESIDENTIAL DEVELOPMENT AFTER  
THE 15 YEAR LAND SUPPLY IS CONSUMED.
-  VEGETATED BUFFER.
-  RUSSELL'S CREEK RECREATIONAL CORRIDOR.
-  URBAN GROWTH BOUNDARY.
-  DRAINAGE MANAGEMENT FEATURE.
-  COMMUNITY NODE.

Figure 3.2.1. North East Corridor Outline Plan. Source: Warrnambool City Council, 2006.

### **Infrastructure**

- Drainage impediments in the Aberline Road area will have an impact on development and may require the provision of retarding basins.
- Community services and facilities should be provided in new growth areas.
- Water sensitive urban design should be implemented into new development in the Mortlake Road area.
- Appropriate infrastructure upgrading should be undertaken in the Mortlake Road area to accommodate additional growth.

### **3.2.2 Local Planning Policies**

A number of local policies relate to the current project, and these include:

#### **Clause 22.02-1 Urban Floodway Local Policy**

The objective of this policy is to identify potential flood hazards adjacent to Russells Creek and provide a sound basis for the future development and use of land considered liable to be at risk of flooding.

#### **Clause 22.02-3 Susceptibility to Mass Movement**

Some areas within Warrnambool have been identified as being susceptible to mass movement and this policy aims to ensure that development does not occur on land with such constraints.

#### **Clause 22.02-4 Steep Land**

This policy is applicable to land with a slope exceeding 20%, and aims to ensure all development on this land takes into account environmental constraints.

#### **Clause 22.02-5 Hilltop and Ridgeline Protection**

This is applicable to buildings and works occurring on hilltops or ridgelines, with the aim to ensure such development does not compromise the visual or sight lines, and that it does not cause environmental degradation.

#### **Clause 22.02-8 Agricultural Protection**

This policy primarily relates to the protection of agricultural land from fragmentation into smaller allotments and encroachment by urban uses, and promotes sustainable agricultural industries.

### **3.2.3 Warrnambool Land Use Strategy 2004**

This strategy forms the background research that suggests that the North East Warrnambool area should be allocated for future growth within Warrnambool. The strategy outlines current issues within Warrnambool associated with high population growth, urban development, infrastructure, the environment and the like.

The preferred development scenario in Section 6 of the report contains comments relating to the North East Warrnambool corridor. Some of the key aspects included in these sections are:

#### **North East Warrnambool Corridor**

- Opportunities to create community focal points including minor retail, recreational and community services in the former Brierly Psychiatric hospital and the St Josephs owned land on the corner of Wangoom and Mortlake Roads;

- Identification of four sites within the area as being available for residential development within immediate 15 year land supply. They include the area north of Wangoom Road, land south of Wangoom Road and north of Balmoral Road, land on the corner of Whites Road and Aberline Road and a portion of land between Dales and Boiling Down Roads east of Aberline Road;
- To ensure new subdivisions within the area address drainage constraints, incorporate water sensitive urban design (WSUD), road capacity and public safety requirements by applying a Development Plan Overlay; and
- Improve mobility for the frail and physically disabled or people with young children.

The Warrnambool Land Use Strategy identifies a number of sustainability indicators for urban form within Warrnambool, and they are summarised in Figure 3.2.3 below.

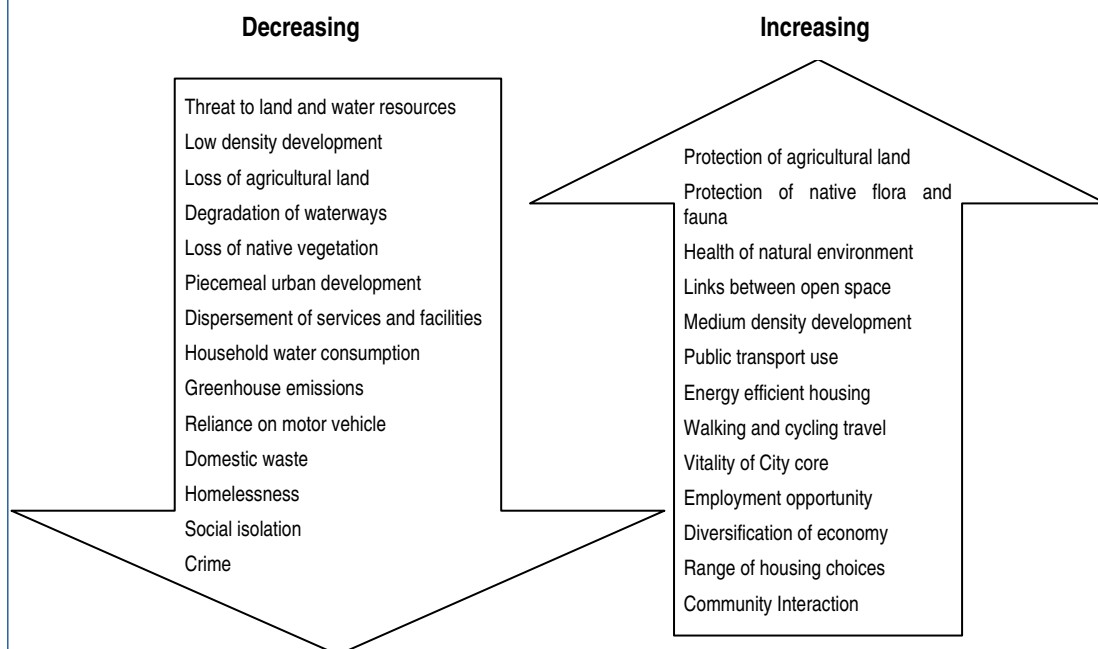


Figure 3.2.2. Urban Form Sustainability Indicators for Warrnambool. Source: Parsons Brinckerhoff, 2004: 19.

### 3.2.4 Industrial Land Strategy 2001

This document identifies the available industrial land in various areas of Warrnambool and makes recommendations with regard to future siting of industrial uses.

### 3.2.5 Draft Public Open Space Strategy 2000

This strategy, entitled *Public Open Space – A Municipal Review and Strategy (Draft)*, presents an audit of the existing public open space within Warrnambool, and includes factors such as public safety, maintenance and practicality. The key component of this strategy is the proposed hierarchy for future provision of public open space areas, which includes local/neighbourhood, subregional and linear parks.

This document is still in draft form and has not yet been incorporated into the Planning Scheme. As such, its use will be as a reference document when considering the type and location of public open space to be provided within the study area..

### 3.3 Other Relevant Documents

#### 3.3.1 *East Warrnambool Neighbourhood Plan 2005-2010*

Residents of the East Warrnambool community have recently been involved in the formulation of the *East Warrnambool Neighbourhood Plan 2005-2010*. The Plan provides information on the current state of various types of services and factors that make up a community such as access, transportation, leadership, health and safety and community facilities, and presents the community's aspirations for these elements.

A number of issues were raised through the consultation process undertaken in the formulation of the Plan. Those directly relevant to the current project include:

- Lack of footpaths;
- Agency and government consultation and partnerships;
- Transport;
- Roads and traffic;
- Neighbourhood facilities (lack of);
- General health and safety;
- Development (i.e. the need for well planned development with community facilities and good connectivity within and to the development);
- Public open space; and
- Public housing.

The five goals for immediate action arising out of the consultation and consideration of issues are:

- To ensure there is meaningful consultation;
- To maintain and develop the activities of the East Warrnambool Residents' Group;
- To oversee the implementation of the East Warrnambool Residents' Group's plans for neighbourhood facilities including the three parks;
- To welcome new residents to the area; and
- To make East Warrnambool a healthy and safe neighbourhood for everyone.

Some of the strategies proposed in relation to the goals include:

- Holding more regular public meetings and establishing more community activities;
- Developing plans for the provision of neighbourhood infrastructure;
- Investigating alternative funding sources; and
- Encouraging developers and Council to develop health care facilities near Gateway Plaza.



## 4. Existing Conditions

The information in this section has been derived from a number of sources, namely the literature reviewed, as well as discussions with relevant stakeholders and service authorities and on-site observations.

### 4.1 Zoning and Land Use

The North East Warrnambool area is comprised of a mix of zones reflective of its current uses.

The predominant zone within this study area is **Residential 1**, which occurs to the southwest. The majority of this land has been developed, although there are land parcels that are yet to be subdivided. This zone allows for development at a variety of densities, as well as several non-residential uses to serve local community needs. Also included in the Residential 1 zone is the former Brierly Hospital located on the corner of Moore Street and Aberline Road.

A large amount of land in the study area north of Wangoom Road is zoned **Rural Living**, with a number of allotments subdivided into lots of a low density, many of which have been developed for housing. This zone allows for residential uses in a rural environment and low scale agricultural uses that are conducted in a sustainable manner.

The **Farming Zone** applies to land in the northeastern and eastern parts of the study area. The Farming Zone supports the use of land for agricultural and horticultural purposes, and allows limited residential and commercial uses in appropriate areas.

The Kings College site and surrounding land has been zoned **Public Use 2 – Education**. The vacant land on the corner of Wangoom Road and the Hopkins Highway is also zoned Public Use 2 – Education. Whilst no uses are prohibited in this zone, a planning permit is required for uses that are not for education purposes and conducted on behalf of the public land manager.

There are two parcels of land zoned **Public Use 1 – Service and Utility**. One of these is situated on Connemarra Road, and is occupied by a water tower. The other is located on the corner of Brierly Street and Moore Street, and is used for water storage purposes.

Land on either side of Moore Street, east of Brierly Street, is zoned **Special Use Zone 1 – Warrnambool Racecourse**. The zone allows for the racecourse and uses normally associated with a racecourse, such as horse stables, food and drink premises and gambling premises, to occur without the need for a planning permit. Within this zone, retail premises, industries and offices are prohibited.

Russell Creek runs through the structure plan area. Part of the creek south of Wangoom Road is zoned **Public Park and Recreation (PPRZ)**, with other parts south of Whites Road zoned **Urban Floodway (UFZ)**. Within the PPRZ some commercial uses are permitted, however the main purpose is to protect and conserve areas of significance and set aside areas of public open space value. The UFZ effectively prohibits most development due to flooding and drainage constraints.

Notable land uses in the area include:

- Kings College;
- The Eastern Activity Precinct Shopping Centre;
- The Warrnambool Racecourse;
- The former Brierly hospital site; and

- Several smaller shopping centres along the Hopkins Highway towards the town centre.

## 4.2 Overlays

The **Development Plan Overlay 1** has been applied to a small area to the north of the R1Z, and requires that a development plan be submitted for subdivisions greater than two allotments.

This DPO1 also applies to some land within the North East Warrnambool area, namely on the eastern side of Balmoral Road north and south of Whites Road.

The **Development Plan Overlay 4** (Brierly Development Plan) relates to the former Brierly Hospital site located on Aberline Road between Moore Street and Whites Road. Developers must demonstrate the layout of major activity areas (eg education, community uses), provision for recreational facilities, use of existing buildings, proposed road and pedestrian network and proposed alterations to the zoning of the land.

The **Design and Development Overlay 4** applies over the R1Z area within North East Warrnambool, and contains a permit trigger for proposals for residential buildings over a height of 7 metres.

A small amount of land within the North East Warrnambool study area is covered by the **Land Subject to Inundation Overlay**, to ensure that development in this area is constructed to suitable standards so as to prevent damage through flooding.

## 4.3 Transport

Transport in this context relates to private motor vehicles as well as public transport, pedestrian and cycle transportation.

### 4.3.1 Roads

The main access route for the North East Warrnambool study area is the Hopkins Highway (Mortlake Road), which forms the western boundary of the site, with Aberline Road running along the majority of the eastern boundary. Whites and Wangoom Roads provide the main east/west thoroughfares through the study area, with Garden Street/Balmoral Road acting as the north/south linkage from Balmoral Road to Moore Street.

Preliminary discussions with Vic Roads have highlighted increasing traffic pressure on Mortlake Road, which currently carries approximately 12 500 to 13 000 vehicles per day, and with a capacity of approximately 20 000 vehicles per day. Congestion is currently being experienced at the Moore Street roundabout, and concern has been expressed with regard to the impact of additional traffic from the North East Warrnambool area.

Council engineers have also highlighted a need to upgrade Whites Road should further development occur in North East Warrnambool. Although there are no current plans to upgrade this road, a roundabout is planned to be constructed in the near future on the corner of Whites Road and Balmoral Road.

#### 4.3.2 Public Transport

Buses are the main form of public transport within Warrnambool and are operated by Transit Southwest. Route 2 (Brierly) runs in the established residential areas around Balmoral Road, and along Garden Street and Moore Street to The Eastern Activity Precinct. This route also connects to central Warrnambool along Moore Street and roughly via Mortlake Road / Queen Street.

The number 4 route connects the North East Warrnambool area with the city centre and Gateway Plaza, and runs along Aberline Road, Whites Road, Couch Street and Balmoral Road.

All routes operate on the hour between approximately 9am and 5pm, with only three services operating on Saturdays for the number 3 route. Routes 1 and 4 do not operate at all on Saturday or Sunday.

Warrnambool is also serviced by the V/Line train service, and is located on the Melbourne to Warrnambool via Apollo Bay and Geelong (Coast Link) route train/bus route. V/Line also offers daily coach services running from Warrnambool to Adelaide via Mt Gambier.

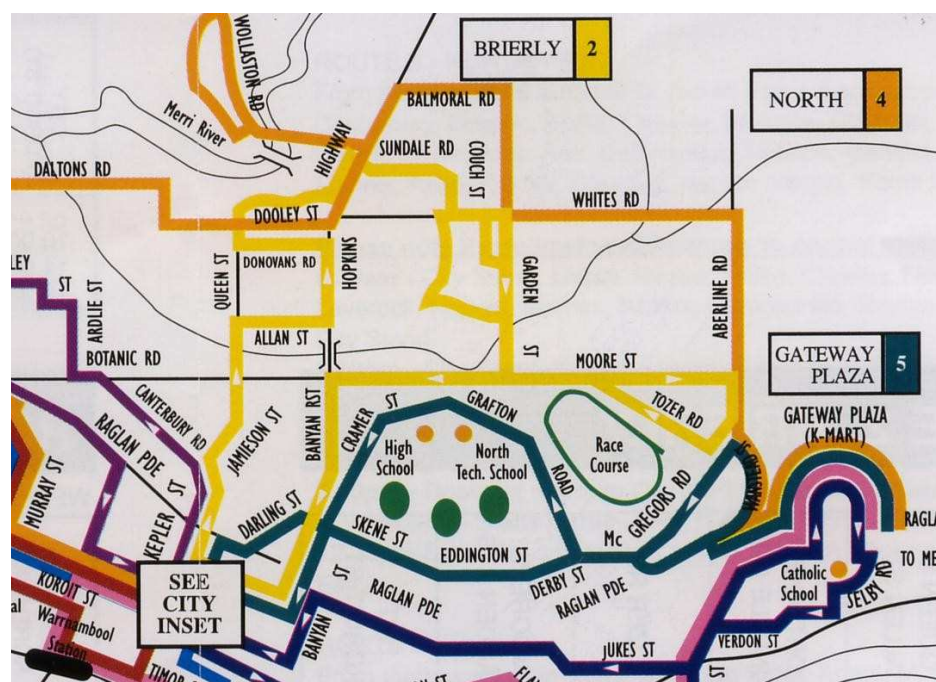


Figure 4.3.1 North East Warrnambool Bus Routes. Source: Transit Southwest, 2005.

#### 4.3.3 Bicycle / Pedestrian Linkages

The Warrnambool Bicycle Plan 2003 contains information about the current bicycle usage within Warrnambool, and presents recommendations for future development of bicycle transport. A map showing bicycle routes within Warrnambool is shown in Figure 4.3.3.

The Plan presents results from a survey conducted of cyclists in Warrnambool, of whom 71% were male and the majority aged 41-60 years. The survey found that 23% of respondents cycled everyday and 52% cycled a few times a week, with 70% of cyclists taking trips greater than 10km in length. The Garden Street and Balmoral Road cycling routes are heavily used.



School students were also surveyed, with 13% of primary school students and 7% of secondary students found to regularly cycle to school along key roads.

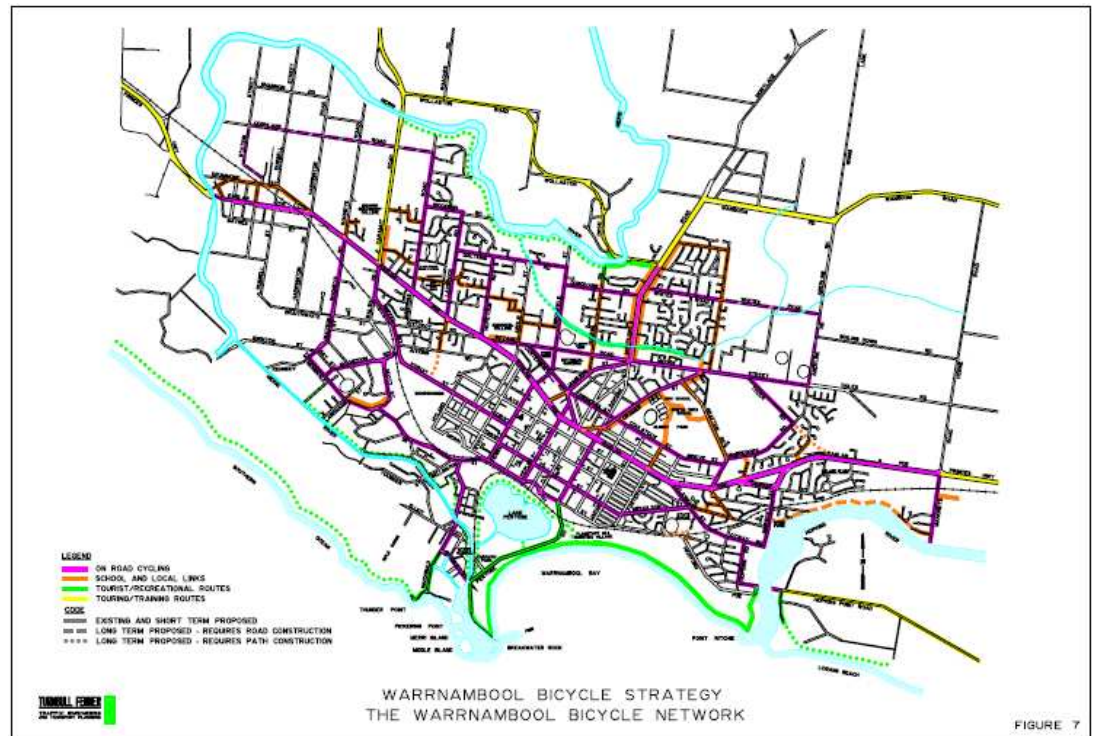


Figure 4.3.2 Warrnambool Bicycle Network. Source: Traffic Group, 2004: 30.

The Strategy identifies bicycle accident sites within Warrnambool, at the corner of Donovans Road and Mortlake Road an 'other injury' has occurred.. Cyclists surveyed saw the fact that many motorists are unaware of cyclists on the roads or rights of cyclists on roadways as the biggest issue relating to cycling, with maintenance of bicycle paths and lanes also raised as an issue.

Recommendations included adopting Bicycle Victoria's "Bicycle Vision for Local Government" as the fundamental principles to address Warrnambool's cycling requirements, and to approve the funding and implementation of several sites within the Warrnambool Bicycle Network.

#### 4.3.4 Accessibility

Accessibility is one of the key issues considered in the *East Warrnambool Neighbourhood Plan*, under the categories of footpaths, transport and roads and traffic. Currently the east Warrnambool community believes that there is a lack of footpaths, particularly those connecting public open space, and would like to see Council undertake footpath works in the local area.

The cost and infrequency of bus transportation is also considered to be a problem in the area. Residents find it difficult to afford public transportation for school students in particular, and are discouraged from using bus services at night time and on weekends due to the lack of services during these times.

Another issue identified in the Plan is speeding on local streets. Residents see the implementation of traffic-calming measures as necessary to ensure cars drive more slowly in local streets.

#### **4.4 Infrastructure**

Preliminary advice was sought from Council and the key infrastructure providers in the Warrnambool area as to issues associated with the existing networks, and whether there exists capacity to cater for new development.

##### **4.4.1 Drainage**

Floodplain management is currently a significant issue around Russell Creek in the North East Warrnambool area.

Preliminary investigations identified the need to reduce or retard the flow of water originating from any new development north of Whites Road into the Creek as a key issue. Wetlands/lakes were suggested as the preferred method of retarding flows, with one wetland/lake located on the northern side of Wangoom Road, and another sited on the northern side of Whites Road. Land on the corner of Whites Road and Aberline Road was also identified for potential allocation as open space with the dual purposes of directing water from the eastern side of Aberline Road to drainage facilities north of Whites Road.

Investigations have subsequently been undertaken by Council as to the extent of inundation of the area generally bounded by Wangoom Road, Conheadys Road, Mortlake Road and Aberline Road.

The study was completed in August 2006 and was for the purposes of “extending the 100 year ARI inundation extent of the Russell Creek tributary between Wangoom Road and Wiggs Lane” (GHD, 2006: 1). This study found that, downstream of Wiggs Lane, the Russell Creek tributary breaks out of the tributary in a westerly direction, and “backs up” approximately 500m upstream of Wangoom Road, which increases the flood extent upstream of Wangoom Road (GHD, 2006: 3).

According to the study, the existing culverts under Wangoom Road are of a size that is inadequate to cater for flows in the 100 year ARI event. During such an event, the road overtops by approximately 80mm. Simplistically, the existing culverts underneath Wangoom Road may not be able to manage significant rain, causing Wangoom Road to effectively serve as a dam wall, with water backing up on land north of Wangoom Road. In more extreme events, water will flow over the top of Wangoom Road. The report recommended that Council considers:

1. Adopting the extent of inundation shown in Figure 2 of the report (see Figure 4.4.1 overleaf) for planning purposes (i.e. creating a Land Subject to Inundation Overlay), and
2. Mitigation options along the Russell Creek tributary to reduce flows.



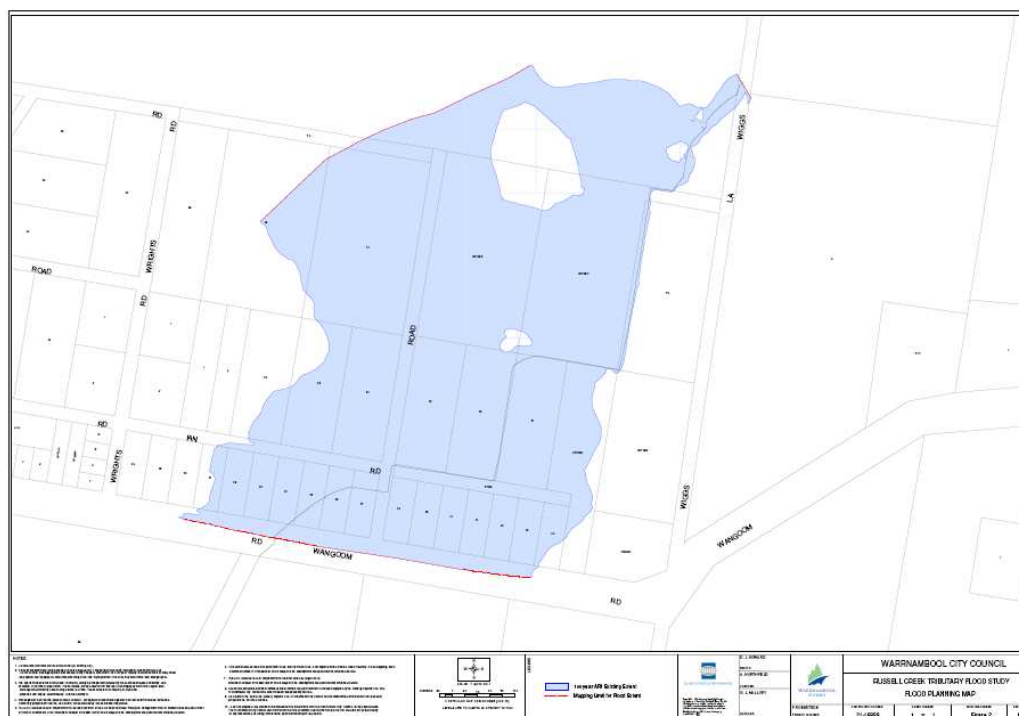


Figure 4.4. Extent of recommended inundation overlay. Source: GHD, 2006: 5).

Council commissioned a further study, to “determine the size of culverts required under Wangoom Road to reduce the inundation extent for the Russell Creek tributary between Wangoom Road and Wiggos Lane” (GHD, 2006a: 1). The objectives were to determine the sizes of additional culverts required under Wangoom Road in three scenarios, being:

1. To prevent over topping of Wangoom Road in a 100 year ARI event
2. To minimise inundation upstream of Wangoom Road in a 100 year ARI event
3. To prevent over topping of Wangoom Road in a 20 year ARI event.

The report concluded the following in relation to the three scenarios listed above:

1. That three, 900mm x 900mm culverts and one, 1800mm x 900mm culvert would be required to prevent over topping of Wangoom Road in a 100 year ARI event
2. That two, 900mm x 900mm and two, 2400mm x 900mm culverts would be required to minimise inundation upstream of Wangoom Road in a 100 year ARI event
3. That two, 900mm x 900mm culverts and one, 750mm x 450mm culverts would be required under Wangoom Road to prevent over topping of Wangoom Road in a 20 year ARI event.

These options may reduce the impact of flooding on Wangoom Road and in areas further downstream, however under scenarios 2 and 3, the land north of Wangoom Road will still experience inundation in a 20 year or greater ARI event. Implementing a Land Subject to Inundation Overlay over the portion of the land north of Wangoom Road that is subject to flooding will limit the ability of this land to be developed. Further work is therefore required to determine options for diverting the flow of water from the Russell Creek tributary away from land between Wangoom Road and Conheadys Road.

Runoff from the redevelopment of the former Briery hospital site is to be collected in a new dam at the corner of Moore and Tozer Roads. Drainage from the land bounded by Boiling Down, Aberline and Dales Roads is also expected to be able to connect to this dam.

#### **4.4.2 Water Supply and Sewerage**

Discussions were held with South West Water regarding the provision of sewerage and water infrastructure in the study area. South West Water has previously proposed to extend sewerage and water supply to the area around Wangoom Road in the North East Warrnambool area, however this has been met with opposition from residents who wish to retain the rural living atmosphere of the locality. South West Water has advised there would not be any operational problems in extending the sewerage and drainage/water infrastructure within the North East Warrnambool area.

#### **4.4.3 Electricity / Gas**

Powercor currently provides electricity to the Warrnambool area.

Preliminary advice from Powercor has indicated that it has no plans for future power line upgrades or extensions in either study area. If the areas are to be developed, it will be necessary to install new underground HV and LV at the cost of the developer.

Gas is supplied by TRU, and discussions with TRU's service provider Tenix has indicated that provision of gas is not expected to be a problem as there are existing connections within the study area.

#### **4.5 Character / Built Form / Urban Design**

The North East Warrnambool area comprises land that contains existing residential dwellings, most of which are generally single storey and of brick construction with tiled roofs. There is an area of land that has recently been subdivided around Sharpe Avenue/Booval Drive, and development is now underway in this area. There is no landscape or footpath treatment in this area.

Land further north is predominantly rural, with some rural residential development to the north of Wangoom Road. It is also relatively flat and has few notable features. There are small pockets of native vegetation and one or two remaining wind rows. Roads are a mixture of asphalt and gravel/dirt and there are generally no footpaths or street lighting in the undeveloped areas. Russell Creek runs through the south east corner of the study area.

#### **4.6 Natural Environment**

##### **4.6.1 Waterways / Flooding**

Discussions were held with staff at the Glenelg Hopkins Catchment Management Authority (CMA) regarding water quality, stormwater and flooding in the study area. These discussions revealed concern regarding the protection of riparian vegetation and water quality of Russell Creek in the North East Warrnambool area.

The CMA is currently trying to implement water sensitive urban design (WSUD) measures into new developments, and encourage new housing developments to include rainwater tanks.

A flood study has recently been conducted for the Warrnambool area. There are areas in the southern part of the North East Warrnambool study area around Russell Creek that are susceptible to flooding. Council is considering measures to mitigate flooding in this area, which include measures to the east and southwest of the North East Warrnambool Study area. These have already been discussed in Section 4.4.1 of this report.

Consultation with South West Water revealed its proposal to harvest stormwater from the roofs of houses within the North East Warrnambool area. The water would gravity feed to the 50ML rural water storage located further down the catchment. It is anticipated that the scheme would provide approximately 70% of the water needs of the area. The proposal was submitted to the State Government for funding however was rejected due to a need for further studies to determine the viability and feasibility of the project. South West Water remains keen to pursue the project and is currently undertaking further research with the view to applying for another grant.

#### **4.6.2 Acid Sulfate Soils**

Acid sulfate soils contain a high amount of iron sulfate that, once oxidised, can produce large amounts of acid, which can affect plants, aquatic life and infrastructure (DPI, 2003: 3)

The Department of Primary Industries has produced Acid Sulfate Soil Hazard Maps showing where acid sulfate soils and probable acid sulfate soils are located (refer Appendix A). In accordance with these maps, the North East Warrnambool area does not appear to have acid sulphate soils within its study area. However, it should be noted that affected areas would be best left undisturbed to avoid costly and potentially environmentally damaging effects associated with their exposure to oxygen.

#### **4.6.3 Flora and Fauna**

The Department of Sustainability and Environment (DSE) provided comment regarding the flora and fauna issues within the study area, and identified the protection of riverine landscapes as a key priority given the proximity of the sites to Russell Creek.

Urban stormwater is also considered to be an issue that needs to be addressed, given the potential effects on water quality of Russell Creek. As such there is a need to incorporate water sensitive urban design measures to new developments to reduce the impact of urban stormwater on the water quality on Russell Creek.

#### **4.6.4 Environmentally Significant Sites**

A search of the Environmental Protection and Biodiversity Conservation (EPBC) Act database has confirmed that there are no world or natural heritage properties, Ramsar sites or threatened ecological communities within either of the study areas.

### **4.7 Cultural Heritage**

A search of the Australian Heritage Places Inventory and the Victorian Heritage Register has revealed no items of heritage significance within the structure plan area.

There has been one Native Title application within the Warrnambool municipality, this being a claimant application under the name of Gournditch-Mara, although it is unknown whether this application affects any land within the study area.

As of May 27, 2007 new legislation has been gazetted to deal with assessment of cultural heritage and archaeological sites. Such legislation, known as the *Aboriginal Heritage Act 2006*, aims to protect Aboriginal cultural heritage in Victoria and minimise inappropriate impacts through a process that more effectively protects heritage.

In line with the new legislation, a developer must check regulations and published guidelines to understand whether a Cultural Heritage Management Plan (CHMP) is necessary.

A CHMP assesses the likely impact of the proposed activity on Aboriginal cultural heritage and makes recommendations to avoid or mitigate the impact of the proposed activity. The development of a CHMP require a site inspection and result in a written report, including such things as background research, consultation, field surveys and excavation.

The process to lodge a CHMP includes;

1. Engaging an appropriate heritage consultant to prepare the CHMP
2. Notifying Registered Aboriginal Party (RAP) and the secretary of the Department of Victorian Communities of intention to prepare the CHMP
3. Preparing the CHMP
4. Submitting the to the RAP, along with a prescribed fee

Once the CHMP is submitted, there is then a 30 day approval/ rejection period. If a refusal occurs, a decision can be appealed at the Victorian Civil and Administration Tribunal. Comments and a final decision must be agreed upon and may take some time, considering the need to involve and satisfy all affected parties.

Council has also undertaken heritage gap study which identifies some items of significance. It is expected that these be dealt with at the development planning stage. It is likely that land in North East Warrnambool would require a further assessment for the need for a CHMP, due to its proximity to waterways.

#### **4.8 Public Open Space**

The Draft Public Open Space Review and Strategy identifies open space by various categories including local and neighbourhood, subregional and linear parks. Brierly Reserve, in the North East Warrnambool area (located off Moore Street near Aberline Road) is identified as a sub-regional park.

Land Russell Creek is designated as linear parkland, with a number of other sites in the North East Warrnambool area also classified as linear parkland.

#### **4.9 Community / Commercial Facilities**

North East Warrnambool, including the study area is primarily rural, rural residential and residential, with currently the only non-residential use being Kings College on Balmoral Road. Commercial centres are situated on the Hopkins and Princes Highways to the south.

Other than public open space, there are no community facilities within the study area.

#### **4.10 Potential Development Sites**

One of the key considerations when determining appropriate locations for future residential growth is the availability of 'developable' land. The study area contains large areas of land, some of which has already been earmarked by landowners and/or developers for future urban development.

One such proposal involves subdivision of land between Wangoom Road and Kings College into 124 'conventional density' lots, although preliminary discussions with Council has indicated that a figure of approximately 100 would be more likely. The landowner is keen to develop as soon as possible.

St Joseph's Catholic Church owns land on the corner of Mortlake and Wangoom Roads, which it wishes to develop for the purpose of office/warehouse/storage facilities, with some residential and some land set aside for the expansion of the school. The land is currently zoned Public Use 2 – Education, and Council has indicated that it does not see the proposed office/warehouse/storage component as being appropriate within the zone, and that there are more appropriate locations for this type of development elsewhere in Warrnambool.



## 5. Community and Stakeholder Consultation

Consultation has been undertaken at several stages of the project with key service providers and agencies, as well as owners of land within the study areas and the broader community.

Consultation has included:

- Two rounds of information sessions prior to the preparation of the draft Structure Plan and as part of the exhibition of the draft. Attendees included:
  - Key council representatives, government agencies, service providers and utilities, and
  - Interested stakeholders and land owners in the North East Warrnambool area.
- One on one meetings with interested stakeholders and land owners in the study area.
- Circulation of a summary of issues identified in the above two steps, and draft Sustainable Planning Principles for comment.
- Circulation of a Project Bulletin summarising the draft Structure Plan.
- Media releases in the local newspapers
- The use of Councils website
- The use of Council's newsletter, the City News.
- Direct mailing of key landowners and stakeholders which included the notes from previous meetings, a project bulletin and the draft Sustainable Planning Principles.

Key issues emerging from consultation for each area prior to the development of the draft Structure Plan are listed in **Appendix B**.

## 6. SWOT Analysis

The following analysis presents the strengths, weaknesses, opportunities and threats in North East Warrnambool study area. This work draws on the analysis undertaken earlier in this report, including the issues identified in Section 5.

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Landscape and urban design qualities</li> <li>• Environment, habitat and biodiversity</li> <li>• Local industry – employment generation</li> <li>• Sense of community</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Physical access for those with disabilities, especially retirement villages, student accommodation and young families</li> <li>• Poor connections to existing services</li> <li>• Lack of affordable land</li> <li>• Lack of “executive land”</li> <li>• Council has no strategic drainage plan</li> <li>• Lack of drainage infrastructure that can treat stormwater</li> <li>• Existing roads need improvement</li> <li>• New growth causing pressure on existing roads</li> <li>• Public transport is infrequent especially on weekends and at night – many existing developments do not provide enough space for manoeuvring of buses</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Set higher design standards for growth in Warrnambool</li> <li>• Create new settlements that are attractive and self contained (urban village concept)</li> <li>• Distinguish development in Warrnambool from development elsewhere in the State</li> <li>• Recognise local character and environment</li> <li>• Build neighbourhoods and neighbourhood character</li> <li>• Provide flexibility and creativity in development options</li> <li>• Incorporate sustainable design / WSUD and crime prevention design into new development</li> <li>• Provide connections along waterways i.e. Russell Creek</li> <li>• Improve safety of open spaces and subdivisions</li> <li>• Utilise community nodes / meeting places, sporting facilities</li> <li>• Incorporate a mixture of lot sizes, household types, densities and affordability</li> <li>• Effectively provide for infrastructure services – developers to support new infrastructure</li> <li>• Create safe and accessible pedestrian networks</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Capacity impacts on local schools</li> <li>• Impacts on nearby agricultural and industrial operations</li> <li>• Impact on ridgelines</li> <li>• Impacts on existing land owners</li> </ul>

## 7. Sustainable Planning Principles

### 7.1 Development of Sustainable Planning Principles

The Sustainable Planning Principles developed from this report are intended to be used as a guide in determining the future of the North East Warrnambool area.

### 7.2 Approach

One of the most popular explanations of the concept of sustainable development is:

*“Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs”,* derived from the Brundtland Report, *Our Common Future* (WCED, 1987: 43).

The Sustainable Planning Principles reflect this concept with respect to social, economic and environmental values. A review of appropriate literature at the State and Local Government levels and the assessment of community values through the consultation program have formed the basis for the development of these principles.

### 7.3 Sustainable Planning Concepts

The fundamental sustainable planning concepts identified are presented in the diagram below and form the basis for and the development of detailed principles presented later in this report. The concepts are to:

- *Manage growth* – Appropriately managing the type, rate and location of future growth to achieve an efficient urban form and development patterns.
- *Enhance Environmental Benefit* – Managing the environmental consequences of new development both in terms of land use, resource allocation and consequential impacts.
- *Balance Service Provision* – The provision of services is a long term expense and commitment for any community. Therefore, it will be important to achieve the best possible use and efficiency from existing and new services to achieve a sustainable long-term outcome.
- *Integrate Social Change* – Balancing the requirements of population growth to the provision of services will be important considerations in determining the future of the community.

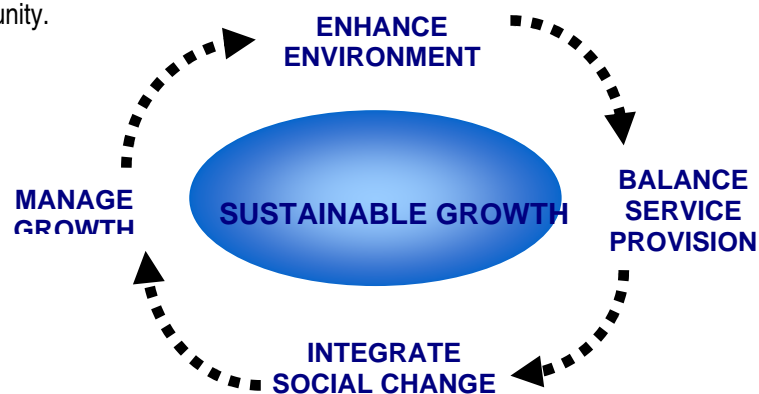


Figure 7.3 Aspects of Sustainable Planning



## 7.4 Sustainable Planning Principles

The Sustainable Planning Principles are as follows:

### Manage Growth

- *Principle 1-* Provide for the location and staging of new growth in appropriate areas so as to minimise environmental, economic and social impacts.
- *Principle 2-* Promote high quality design standards and urban design outcomes.
- *Principle 3-* Define boundaries to growth based upon population and geographic limitations.
- *Principle 4-* Use local character, history and environment to distinguish development in Warrnambool.

### Balance Service Provision

- *Principle 5-* Encourage new growth that maximises the efficiency and effectiveness of infrastructure and services and the timely provision of those services.
- *Principle 6-* Encourage user pays principles in the provision of services and other infrastructure.
- *Principle 7-* Enhance connections to commercial precincts and community facilities.
- *Principle 8-* Plan and design for high levels of connectivity through improved pedestrian, traffic and transport links and efficiency.

### Enhance Environmental Benefit

- *Principle 9-* Recognise biodiversity, habitat protection, heritage and character in the planning, management and development of public and private land.
- *Principle 10-* Encourage the most efficient use of resources in the location, design, staging, construction and operation of development.
- *Principle 11-* Encourage urban design and management practices that help the community reduce, reuse and recycle consumable resources such as water, energy and waste.

### Integrate Social Change

- *Principle 12-* Provide choice in housing and lifestyle opportunities.
- *Principle 13-* Plan growth to meet forecast demographic change.
- *Principle 14-* Improve social connectivity and community potential through enhanced technology and infrastructure provision.
- *Principle 15-* Assist crime prevention through environmental design.



## ***PART B – STRUCTURE PLAN***

## 8. Structure Plan

### 8.1 Moving From Draft to the Final Structure Plan

The draft Structure Plan reflected the key issues and needs identified in the Warrnambool Land Use Strategy and during the consultation undertaken prior to their preparation, as well as the draft Sustainable Planning Principles. A draft vision and objectives were prepared for the structure plan area, as well as example design guidelines providing more specific direction as to how the needs and aspirations of the communities in the area might be met.

The draft Structure Plan was reviewed following the consultation period. Any issues and changes were then made to the final Structure Plan which is detailed in **Appendix C**.

Section 9 presents the final North East Warrnambool Structure Plan.

## 9. North East Warrnambool

### 9.1 Sub-Regional Context

The North East Warrnambool area is effectively the next stage of a growth corridor. There is significant new growth to its south, and the growing the Eastern Activity Precinct to its south east. New development has also triggered the need for additional neighbourhood shopping facilities, the result being the new Northpoint development on Mortlake Road.

There is also the potential for further growth to the north and/or east once land in this study area is exhausted (albeit subject to further strategic and technical studies confirming the appropriateness of that land for further development). Development of the North East Warrnambool area (and structure plan) will generate off-site impacts that will need to be addressed. Conversely, certain activities that occur outside of the structure plan area will also have an effect on land within the structure plan area. These sub-regional relationships can be divided into five categories, and are discussed further in the following sections.

#### 9.1.1 Road Hierarchy

Within the North East Warrnambool area there are several roads that play a sub-regional role in moving people through the area (particularly east/west around Warrnambool) and to significant sites and developments nearby.

Mortlake Road provides an important north-south link along the western boundary of the structure plan area. It carries traffic along the Hopkins Highway to Mortlake, and eventually onto the Hamilton Highway. Mortlake Road currently carries a substantial and increasing amount of traffic. The proposed increase in development in the North East Warrnambool area will add to this traffic and needs to be considered in the future planning of Mortlake Road.

On the eastern side of the structure plan areas is Aberline Road, which is currently not constructed past Whites Road. The structure plan proposes to upgrade and extend this road so as to provide a key north-south link along the eastern edge of the North East Warrnambool area, and provide a link through to the Eastern Activity Precinct in the south. The benefits of this will be improved linkages for existing and future residents to the key shopping node within Warrnambool. This will also reduce some reliance on Mortlake Road, and may also have the effect of increasing traffic in the area surrounding McKiernan Road. Any such impacts will need to be considered and mitigated as required.

Within the North East Warrnambool structure plan area there are three existing east-west connections, being Wangoom Road in the north, Whites Road in the middle and Moore Street in the south. The latter two presently play a role in carrying traffic from existing residential development to Mortlake Road. Wangoom Road is also mooted as a ring road extending east beyond Aberline Road before returning to meet the Princes Highway on Warrnambool's eastern outskirts via Horne Road. Whites Road currently carries a large amount of traffic in an east-west direction, feeding traffic onto Mortlake Road. The future capacity of this road will need to be carefully managed when considering future development in the North East Warrnambool area.

### **9.1.2 Waterways**

As discussed previously, the impact of flows from the Russell Creek catchment is experienced further downstream on the land contained within the North East Warrnambool Structure Plan. Land that is particularly affected is:

- The area bounded by Wangoom Road, Mortlake Road, Conheadys Road and Wiggs Lane
- Land immediately surrounding Russell Creek, south of Breton Street.

Russell Creek runs in a southwesterly direction through the study area from Whites Road, and is also fed by a tributary running in a southwesterly direction from near the corner of Conheadys Road and Wiggs Land in the northern part of the study area. This tributary originates in the neighbouring Shire of Moyne, and during storm events greater than the 20 year ARI, has the potential to flood land north of Wangoom Road.

Russell Creek itself experiences inundation in the southern part of the study area, and flows from further upstream and the tributary in the northern part of the study area contribute to this issue.

In order to manage these issues, investigations are required on a wider catchment basis. These should determine:

- The extent (and origin) of water flow through Russell Creek and its tributaries
- The extent of flooding during 20 year ARI and greater on the entire North East Warrnambool area
- Measures for mitigating flooding in the North East Warrnambool area, including retention on sites outside of the structure plan area.

Development in the North East Warrnambool Structure Plan area also has the potential to increase the flow of water through the Russell Creek catchment, unless appropriate measures to control stormwater and surface water runoff are implemented. These measures should include reducing flows into the catchment area, and using water sensitive urban design, including a series of retarding basins / wetlands.

### **9.1.3 Open Space**

Significant open space within the area includes two sub-regional parks, being Brierly Reserve and St James Park. The increase in development in the North East Warrnambool structure plan area is likely to increase the use of these open space areas in the short term, hence careful consideration should be undertaken as to the timing of development of new sub-regional parks within the structure plan area.

The new open space areas proposed in the structure plan will serve a sub-regional role, and will most likely draw users from the surrounding areas due to their dual function as linear corridors. This will create benefits for residents of the North East Warrnambool area, and is likely to increase surveillance of open space areas. Benefits to the sub-region will be the filling of a gap in the provision of sub-regional parks in the North East Warrnambool area, which has been identified as an issue in the report entitled *Public Open Space – A municipal review and strategy* (Warrnambool City Council, 2000).



#### **9.1.4 Retail Development**

Within North East Warrnambool are a number of facilities that provide for a variety of residents' shopping needs.

The Eastern Activity Precinct (including Gateway Plaza) is the secondary regional retail facility (behind the Warrnambool CBD), and is located on the Princes Highway in the eastern part of the town. The Plaza serves a regional function within the retail hierarchy, providing higher-order shopping, generating trips from around Warrnambool (Essential Economics, 2003: 2). The Eastern Activity Precinct and will continue to service existing and new development in the North East Warrnambool area.

Other smaller retail facilities exist, including the Northpoint development on Mortlake Road, and these will continue to provide a neighbourhood / local shopping function to residents of North East Warrnambool. The function of Northpoint is to provide for day-to-day shopping needs of a convenience nature (Essential Economics, 2003: 2).

Council is currently preparing a retail strategy, which will build on the work previously undertaken in the *Warrnambool Retail Strategy Update 2001*. The draft strategy is expected to be released for exhibition at the end of June 2007.

#### **9.1.5 New Residential Development**

Although not located within the structure plan area, there are two new nearby developments that will impact on the structure plan area in terms of the provision of services and facilities. These are:

- The Brierly Hospital redevelopment
- The Grange Road development.

These developments will contribute to the load upon on existing facilities such as open space, infrastructure (e.g. roads) and the natural environment (waterways etc), and should be considered in the overall development of the North East Warrnambool area.

Both new developments have provided a relatively large amount of new open space, which will form part of the overall hierarchy of open space to be provided within the North East Warrnambool area.

### **9.2 Vision and Objectives Statements**

#### Vision

A residential community providing for diverse housing densities, high quality and sustainable urban design outcomes, the timely provision of physical and social infrastructure and the effective management of drainage issues.

#### Objectives

##### *Managing Growth*

- Facilitate developments that incorporate a high standard of urban design, providing safe and inviting streetscapes, roads, gateways, open space areas and pedestrian linkages.

- Provide a diversity of affordable housing styles and choices to meet the needs and expectations of the community.
- Provide relevant and useable open space nodes and linear linkages within the structure plan area, to Russell Creek, to existing urban areas and to community nodes.
- Ensure urban development does not adversely impact surrounding rural uses to the north and east.

#### *Enhancing Environmental Benefits*

- Enhance Russell Creek and its environs to improve habitat and biodiversity.
- Incorporate watercourses as parts of a safe, inviting and accessible open space system.
- Ensure new development incorporates water sensitive urban design principles.

#### *Balancing Service Provision*

- Incorporate management responses to drainage issues as a part of high quality open space nodes and linear linkages.
- Ensure that necessary social and physical infrastructure is adequately funded and delivered in a timely fashion.
- Ensure that development is designed to facilitate the provision of efficient and effective public transport systems.

#### *Integrating Social Change*

- Promote new residential development at conventional densities in a staged manner.
- Enhance links to the existing residential areas and community nodes.

### **9.3 The Structure Plan**

The Structure Plan for North East Warrnambool has been prepared by drawing on the issues identified through consultation with stakeholders as well as research into various other matters affecting the study area. Figure 9.1 overleaf is a plan of the proposed Structure Plan.



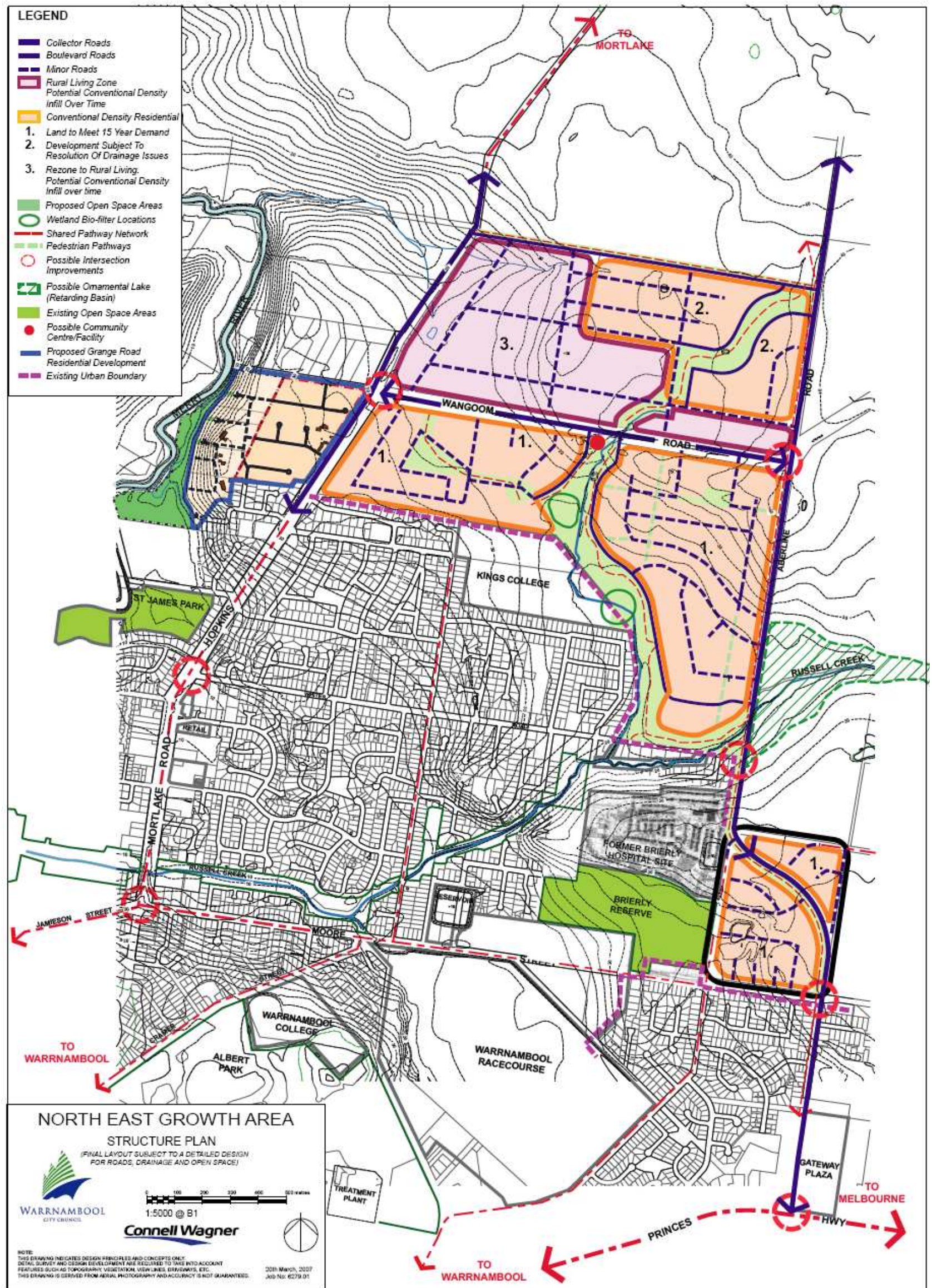


Figure 9.1 North East Warrnambool Structure Plan



The Plan promotes a strong level of residential growth in conjunction with a network of public open space that will provide enhanced recreational opportunities for residents of both existing and new residential developments in North East Warrnambool. This layout also provides an integrated network of bicycle and pedestrian paths to encourage residents to travel to nearby sub-regional nodes such as the Eastern Activity Precinct using non-motorised transportation.

An improved road network should facilitate efficient transport within, to and from the North East Warrnambool area, and features such as an extension of Aberline Road are proposed to encourage vehicles to avoid the already congested Mortlake Road.

Land east of Balmoral Road and north of Kings College has been allocated for a community centre and recreation area, and residents from the existing and planned residential areas should be encouraged to converge in this area.

Water sensitive urban design is promoted through the use of wetland bio-filters to remove sediment and pollutants from urban stormwater prior to it being discharged to an outfall main.

### **9.3.1 Development Density**

The demographic profile of Warrnambool was examined through the Warrnambool Land Use Strategy, and this included population and housing projections to the year 2024. Through the Strategy it was proposed to accommodate a portion of the anticipated increase of approximately 6000 people by developing the North East Warrnambool area for residential purposes. The Warrnambool Land Use Strategy estimated 700 lots could be provided in this area.

The development scenario proposed in this Structure Plan allows Conventional Density Residential development in the short term on vacant land, and the gradual redevelopment of land north of Wangoom Road at conventional densities over time. A yield of about 1600 lots is more likely in this area based upon land availability.

### **9.3.2 Precincts**

#### **Conventional Density Residential Precinct**

The Structure Plan provides for the development of the majority of the North East Warrnambool area for the purposes of conventional density residential. The staging of this development should be such that growth outwards from existing development is incremental. This would allow for immediate use of the land east of Aberline Road on the corner of Dales Road and east of Mortlake Road south of Wangoom Road.

Whilst there have been proposals to use land on the south-eastern corner of Mortlake Road and Wangoom Road for commercial purposes (including offices), this use is not considered appropriate in this location. There are several commercial precincts nearby and in Warrnambool which are better located and would benefit from the consolidation of commercial development.

The land in question is prime residential land, although the use of this land for a school or other community/commercial purpose permitted under a residential zoning and serving the local residential area would also be consistent with the desired form of development for North East Warrnambool.



### **Community and Recreation Precinct**

This precinct has been shown as being located on the southern side of Wangoom Road within the area identified for public open space, and should form a community hub for the North East Warrnambool area. The community and recreation precinct could contain a community centre/facility and a landscaped wetland adjacent to the facility will provide an important recreational node. It is intended that the node cater for the broader community as it will be linked to open space that will perform a sub-regional role.

Other locations for the community and recreation precinct are possible, provided certain locational and siting criteria are met. Such criteria should include, as a minimum:

- Accessibility to residential areas, including new and existing
- Ability to co-locate with open space areas or other activity precincts, to enhance the role and function of the community and recreation precinct
- Ability to link with existing and proposed public transport nodes and bicycle / pedestrian paths
- Siting to allow for a building of sufficient size for the provision of a variety of services and facilities.

### **Wangoom / Mortlake Roads Precinct**

The area of land located north of Wangoom Road has been designated as part Rural Living with the potential to convert to Conventional Density Development over time (Stage 3), and part Conventional Density (Stage 2). Development in the Stage 2 area will depend on the ability to divert overflows from the Russell Creek tributary to an alternative discharge point. Further work is required to determine the type and scale of infrastructure that would significantly reduce the risk of inundation to this land.

The timing of the development of these areas will be dependent on:

- Demand for development
- The resolution of drainage issues
- The length of occupation of the existing residences in this area, and the priorities of land owners in this area;
- The availability of sufficient parcels of land for subdivision.

It will be important to provide a buffer between future residential development and rural living land further north of Wangoom Road. Using a road as a buffer rather than a back fence would be preferential in order to provide a clear distinction between the residential and rural development. The treatment of such a road should incorporate urban design principles, and should include the planting of roadside vegetation.

### **Nearby Developments**

Two residential developments have recently been approved on sites adjoining or nearby the structure plan area. These are:

- The Brierly Hospital redevelopment off Aberline Road: a total of 118 new lots and new retirement village
- The Grange Road development off Mortlake Road: a total of 182 lots in two stages (including future rezoning).

The location and street layout of these developments has been shown on the structure plan.

### **9.3.3 Traffic**

The suggested development yields in the North East Warrnambool area are expected to generate an increase of approximately 16 000 vehicle movements per day. As this will place an increased demand on existing roads it will be necessary to upgrade these roads and provide new connections.

The main east-west link through new development in the North East Warrnambool area should be via Wangoom Road. It is noted that Wangoom Road has already been designated as a part of the ring road connecting to the Princes Highway via Horne Road. Wangoom Road will require upgrading to the required width and pavement standard to cater for the anticipated increase in traffic. Whites Road should continue to service the established residential development in the southern part of the North East Warrnambool area. New development should be directed to the new roads in the structure plan area unless Whites Road is deemed to be of sufficient capacity to accommodate additional traffic, as verified by traffic impact assessment.

Aberline Road should be upgraded to form an alternative north-south link on the eastern edge of the Structure Plan area, and be extended to connect with the Eastern Activity Precinct in the south. This should assist in directing traffic away from Mortlake Road and also provide a convenient linear link to shopping facilities and the Princes Highway. In the lower stretches of this road, traffic should be diverted away from the existing residential areas around Baileyana and Caroville Drives. Further north south links will also be required within the new areas of North East Warrnambool.

Road width, construction and grades and turning bays must be in accordance with the Country Fire Association (CFA) *Requirements for Water Supplies and Access for Subdivisions in Residential 1 and 2 and Township Zones*.

Opportunities to connect existing residential development in North East Warrnambool to the structure plan area via an extension of Balmoral Road were investigated. Whilst this link is extremely unlikely, and therefore is not shown on the structure plan, this option should be reconsidered through the development plan process and/or through periodic reviews of the structure plan.

### **9.3.4 Transport**

Currently the Transit Southwest bus routes service a relatively large area of North East Warrnambool, although services are not frequent. The number 4 route runs along Aberline, Whites and Balmoral Roads, and there is the potential to extend this route so as to serve new development east of Aberline Road between Boiling Downs and Dales Roads, and also to the area north of Whites Road. Given the increase in density in this area, it is suggested that the frequency of bus services also be increased during the week, and weekend services be established.

Land north of Kings College is currently not serviced by any bus routes. It is recommended that investigations be conducted into establishing a new bus route to service the area around Wangoom Road. Alternatively, the existing number 4 route could also be extended north of Wangoom Road, although this may result in an increase in travel times for existing users.



### **9.3.5 Activity Nodes / Community Facilities**

The development of North East Warrnambool will result in a significant increase in the number of households in the area, which may result in the existing services within the area, such as schools, reaching their capacity. The Department of Education and Training Barwon-South Western Regional Office for School Education should be consulted to confirm the Department's requirements. Consultation should also be undertaken with the Catholic Education Commission of Victoria and the Association of Independent Schools of Victoria.

The development of a community centre and associated recreation facilities would provide the opportunity for community activities to take place and residential services such as childcare facilities to be developed. Land in the centre of the study area has been suggested for this purpose, so as to maximise access to and from all areas of North East Warrnambool.

While the site on the southeast corner of Wangoom Road and the Hopkins Highway was originally earmarked in the *Warrnambool Land Use Strategy 2004* for commercial development, it is considered that this land would be more suited to residential development, a school or community / commercial purposes allowed under a residential zoning.

The Eastern Activity Precinct will remain as the secondary retail facility (outside the Warrnambool CBD) to service the North East Warrnambool area. This should be facilitated by the extension of Aberline Road to the Princes Highway, which would make this centre more easily accessible to residents. Further north south links will also be required within the new areas of North East Warrnambool, and be linked with Aberline Road in the east.

Market forces may dictate the need for the development of smaller scale, convenience type shops within the North East Warrnambool area. These are likely to be located adjacent to the community centre, but may be located on the St Josephs owned land on the corner of Mortlake and Wangoom Roads. Key considerations should include accessibility to users by car, public transport, bicycle or on foot.

### **9.3.6 Open Space, Bicycle and Pedestrian Networks**

A network of public open space is to be provided in the structure plan area through various linear parklands. These would serve a number of purposes; to act as bio filters for stormwater from future residential development, provide pedestrian and cyclist connections through new development and to existing development, and to provide residents with opportunities for active and passive recreation. They may also be revegetated so as to enhance the biodiversity of the area, and provide a tool for educational purposes.

Open space south of Wangoom Road may eventually serve a regional function, particularly if a community node is to be developed in this area. The narrower linear pathways are more likely to serve as neighbourhood open spaces as well as connections to other areas.

Pedestrian and cyclist linkages should also continue along the proposed extension of Aberline Road to connect the North East Warrnambool area with the Eastern Activity Precinct. This connection would be easily accessible to residents in the proposed residential areas as well as existing residents via Whites Road, and would serve a role as active linear open space. Also important is the linking of linear open space within the North East Warrnambool area with existing and new linear open space outside the structure plan area. This is particularly relevant for new areas such as the Grange Road development and the Brierly Hospital redevelopment.

It is important to ensure that in addition to the major linear open space linkages, smaller neighbourhood and local open space areas are provided. The planning and location of these spaces should be undertaken as part of the development planning process for precincts within the structure plan area. Local and neighbourhood parks should be sited so as to all residents are within a 300m radius of such open space, in accordance with Warrnambool City Council's draft open space strategy.

### **9.3.7 Gateways**

The extension of Aberline Road to the Eastern Activity Precinct presents an opportunity to provide a gateway into the North East Warrnambool area through the development on the corner of Aberline Road and Dales Road and the redevelopment of the former Brierly Hospital site. Opportunities to consider gateway treatments also exist in at the Wangoom Road/Hopkins Highway intersection, and at other intersection upgrades.

### **9.3.8 Staging**

The Warrnambool Land Use Strategy identifies two stages for residential development in North East Warrnambool, these being land available to meet the 15 year demand and land available once the 15 year supply is consumed. The 15 year supply generally represents a logical sequence of outward expansion from existing development, although there are some exceptions.

The North East Warrnambool Structure Plan has proposed a slightly different staging pattern (see figure 9.1), with some land identified as being ready to develop immediately, with other land to be developed once the first stage is nearing consumption.

Land to the north of Wangoom Road contains a number of rural residential type dwellings, and land parcels are relatively fragmented. It is suggested in the North East Warrnambool Structure Plan that this land be designated for rural living purposes in the short term, with the potential for conventional density infill to occur over time, once the land south of Wangoom Road is developed and issues associated with the potential inundation of this land are resolved.

Some land south of Wangoom Road and east of the end of Balmoral Street is identified in the Warrnambool Land Use Strategy as being available once the 15 year supply has been consumed. In contrast, the North East Warrnambool Structure Plan designates this land as being available immediately, in order to follow a logical sequence of development along the southern side of Wangoom Road and connect to new residential development to occur on the western side of Aberline Road.

### **9.3.9 CFA Requirements**

As mentioned previously, the Country Fire Association (CFA) has certain requirements for residential subdivisions, and they are set out in the document titled "CFA Requirements for Water Supplies and Access for Subdivisions in Residential 1 and 2 and Township Zones". The requirements relate to:

- Provision, location and marking of hydrants
- Minimum road width
- Road construction (including grade)
- Turning bays.



This will need to be considered in the detailed design stage, although referral of development applications to the CFA may also be necessary to ensure compliance with the relevant requirements. It is also noted that discussions with CFA officers indicated that new development in North East Warrnambool would most likely warrant the provision of a new station so that the State Government service delivery guidelines could be met in the case of a fire.

#### **9.4 Infrastructure**

Following is a brief description of the types of upgrades that will most likely be required to service new development in North East Warrnambool.

##### **9.4.1 Drainage**

Drainage infrastructure needs to be installed prior to the commencement of any development in the North East Warrnambool area. Further strategic work is required to determine the likely impact of future development and the type of infrastructure (e.g. retarding basins) that need to be constructed to reduce the rate of flow of stormwater and direct it to appropriate outlets. The cost of providing drainage infrastructure to North East Warrnambool may be able to be partially funded by developer contributions.

It is recommended that more detailed work be undertaken to determine the feasibility of draining the land north of Wangoom Road by diverting water west following Conheadys Road, across Mortlake Road down to the Merri River. This could potentially alleviate much of the overflow from the Russell Creek tributary and may also significantly reduce the likelihood of flooding of Wangoom Road. The investigation should be undertaken as part of a wider catchment study to ensure that a broader scenario is considered.

Such investigations should be undertaken as a priority, to give landowners and the community certainty as to the potential development yield of the land, and the impacts of inundation on the wider catchment.

##### **9.4.2 Sewerage**

The increase in population in the North East Warrnambool area will require new sewerage infrastructure to be installed. This will most likely include gravity sewer feeds to a new outlet at Wangoom Road, although further design and verification by South West Water will be required.

The cost of providing sewerage infrastructure to North East Warrnambool may be able to be partially funded by developer contributions.

##### **9.4.3 Water Supply**

Provision of water to the North East Warrnambool area should be through connections to the existing supply around Mortlake Road, Balmoral Road, Whites Road and Moore Street. Extensions to the existing connections can be partly funded through developer contributions.

When developing land for residential purposes, the water supply requirements contained in the CFA's *Requirements for Water Supplies and Access for Subdivisions in Residential 1 and 2 and Township Zones* must be met.

#### **9.4.4 Electricity Supply**

Provision of electricity to North East Warrnambool should be via an extension of the existing supply in the established residential areas. This may require the construction of several substations, however this will need to be determined through more detailed design and verification by Powercor. Developers may fund part of the cost of this through direct contributions to Powercor.

Tenix, the service provided for Powercor in Warrnambool, has indicated that new underground high and low voltage assets will need to be installed, and this will be at cost to the developer.

#### **9.4.5 Telecommunications**

Telstra provides telecommunications infrastructure to new estates as required, and has not identified any issues in extending existing infrastructure to North East Warrnambool. Telstra covers headworks charges, although developers will be required to cover the cost of trenching.

### **9.5 Implementation**

Implementation of the North East Warrnambool Structure Plan should be through a number of mechanisms that will be underpinned by changes to the Warrnambool Planning Scheme.

#### **9.5.1 Review**

A regular review of the Structure Plan is recommended due to factors such as land availability and future strategic work to be completed. This review is recommended at three year intervals when the Municipal Strategic Statement is reviewed, or sooner if there is a significant change in circumstances or a dramatic and sustained shift in growth rates in the area.

The review should focus on determining which aspects of the structure plan have been successful, and which require reconsideration. Particular attention should be paid to the staging of development, as a significant increase in growth may require more land to be made ready for development at an earlier stage.

#### **9.5.2 Developer Contributions**

Developer contributions are a mechanism to help fund the servicing of land. There are two stages involved in implementing developer contributions, being the preparation of a Development Contributions Plan, and the subsequent implementation of the Development Contributions Plan via the Warrnambool Planning Scheme through a planning scheme amendment.

The *Planning and Environment Act 1987* sets out the statutory framework for the formation and scope of development contributions plans (DCPs), and the Department of Sustainability and Environment Development Contributions Guidelines give practical guidance on how to develop and implement DCPs. DCPs are “a mechanism used to levy new development for contributions to planned infrastructure needed by the future community” (DSE2, 2003: 11) and enable Councils to charge developers for the provision of both development and community infrastructure.

For development contributions plans to be valid they must specify details such as:

- The land the plan applies to, and the infrastructure that is required for future development in that area;
- The cost of works and levy payable; and
- The method for determining the levy payable by each developer.

Types of infrastructure that can be levied through developer contributions include water, sewerage, drainage, community infrastructure, parks and transport infrastructure, and levies are implemented through the inclusion of conditions on planning permits issued.

The development contributions scheme ensures that the total cost of infrastructure required to service future development is realised at an early stage, so that each developer, regardless of size or the timing of their development pays a fair contribution to the overall cost of developing the area.

It is, however, important to note that not all costs are borne by the developer. Costs are fairly apportioned on the basis of the degree to which the development is likely to benefit from the provision of the infrastructure. In many cases, funding is shared between developer, service agencies and Councils.

Recent changes to the Essential Services Commission mean that many service providers (eg. water authorities) are now obliged to fully fund the provision of some types of infrastructure for new development that previously may have been included under a Development Contributions Plan. This is also a factor in determining the proportion of infrastructure costs recoverable through development contributions and in the timing of the provision of services.

### **Development Excluded from a DCP**

Council may determine which types of development are exempt from inclusion in a DCP. This could include:

- Private schools and hospitals
- Churches
- Community facilities provided by non-profit organisations
- Development in circumstances of hardship
- Development that facilitates achievement of economic development objectives.

There are also certain types of development that are automatically excluded from DCPs, and this essentially includes development on Commonwealth land or development being undertaken by the Commonwealth Government, or by on behalf of the Victorian Ministers for Sustainability and Environment, Education and Training and Human Services (DSE2, 2003).

### **Scope of Infrastructure**

DCPs allow for funding to be provided for infrastructure under the following circumstances:

- When a new item of infrastructure is required
- When an upgrade in the standard of provision of or an extension to an existing infrastructure item is required
- When a total replacement of a redundant infrastructure item is required.

Table 9.1 below describes the infrastructure required within North East Warrnambool that could be included in a development contributions plan for the area.

Infrastructure System	Items
Waterways	<ul style="list-style-type: none"> <li>• Russell Creek corridor acquisition</li> <li>• New relief drainage</li> <li>• Wetland bio-filters</li> </ul>
Transport	<ul style="list-style-type: none"> <li>• New major road links</li> <li>• Upgrade to existing roads</li> <li>• New on-road and off-road paths</li> <li>• Acquisition of road reservation area for bicycle/pedestrian link</li> <li>• Intersection works</li> <li>• Bus stop shelters</li> </ul>
Community Purposes	<ul style="list-style-type: none"> <li>• Acquisition of public open space</li> <li>• Urban design treatment of open space including tree planting and other amenities (eg park benches etc)</li> <li>• Acquisition of land for and development of community facilities</li> <li>• Development of playgrounds</li> </ul>
Acquisition	<ul style="list-style-type: none"> <li>• Acquisition of land associated with all infrastructure.</li> </ul>

Table 9..1 Possible items for inclusion in a development contributions plan

### Process for Developing a DCP

The DSE Development Contributions Guidelines outline the process for preparing a full cost apportionment DCP, and the steps involved are outlined in Figure 9.2 overleaf.

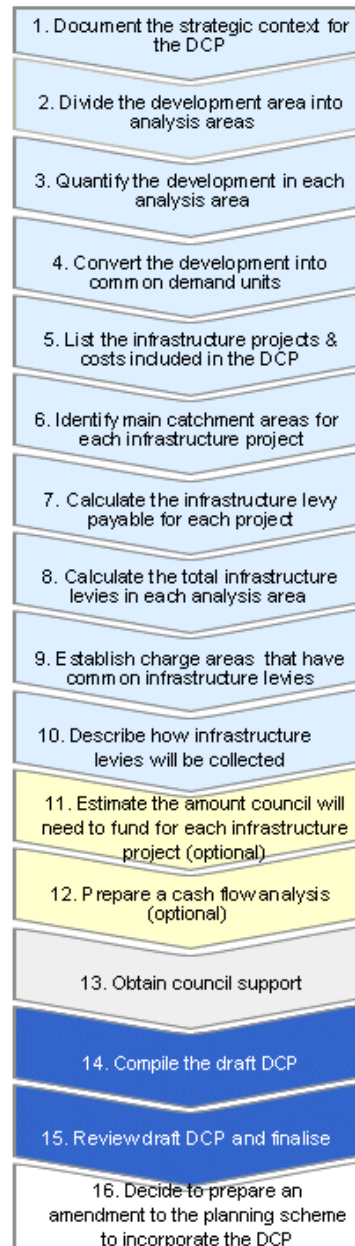


Figure 9.2. Steps in the preparation of a full cost apportionment DCP. Source: DSE2, 2003.

**Appendix D** outlines the requirements of each of the above steps in more detail. Some of these steps have been either partially or fully completed as part of the Structure Plan process. These are:

- Step 1: Document the strategic context for the DCP – the Structure Plan forms the strategic context for the DCP.
- Step 3: Quantify the development in each analysis area – the Structure Plan has determined the likely lot yield and development densities.
- Step 5: List the infrastructure projects and costs included in the DCP

The preparation of a Development Contributions Plan is quite detailed. It is expected that undertaking Steps 1-16 would take approximately six months.



In order to initiate and prepare a DCP for East Warrnambool area, Warrnambool City Council will need to undertake the following:

1. Obtain Council support for preparing a DCP.
2. Determine the type of community facilities (eg. community hall, child care facility etc) and open space (eg. types of park furniture, playground equipment etc) to be provided.
3. Prepare and agree on a Development Plan for the area.

### 9.5.3 Other Land Development Costs

In addition to works that might be funded by Development Contributions Plans, there are also costs incurred by the land developer in preparing the land to the point of it being ready for sale and development. Based on the provision of 1600 lots in North East Warrnambool, it was estimated that it would cost approximately \$24 000 to develop each lot.

A breakdown of the major infrastructure components that are included in the calculation of development cost per lot is shown in Table 9.2 below. Further detail on these costings is contained in **Appendix E**.

Type of Improvement	Approx. Total Cost
Roadworks and Drainage	\$21M
Sewer Reticulation	\$2.7M
Water Supply Reticulation	\$2.5M
Electricity Supply	\$4.2M
Authority Charges	\$5M
Council Charges	\$0.4M
Other Consultant Fees	\$2.6M
<b>TOTAL</b>	<b>~\$38.4M</b>

Table 9.2 Expected development costs based on 1600 allotments.

### 9.5.4 Funding Opportunities

In addition to the use of Development Contributions Plans, other funding opportunities are listed below.

#### Council

Council's capital works budget could be used to implement walking and bicycle paths along the public open space network.

#### Service Authority Capital Works Programs

Certain elements of infrastructure costs may be covered through capital works programs of service authorities, including Telstra, South West Water, Powercor and TRU.

#### Regional Flood Mitigation Programme

Local governments may apply for grants to implement flood mitigation works such as retarding basins, where they will provide benefits such as protecting the community and infrastructure, promoting community safety and preventing loss of life and enhancing the biological diversity / ecological amenity of the area.

### **Victorian Stormwater Action Program**

The Environmental Protection Agency provides grants through this program for the development and implementation of Stormwater Management Plans. Funding may be granted for up to fifty percent of the costs of implementing projects arising from draft or completed Stormwater Management Plans. Projects eligible for funding should include, among other things, partnerships between local government and various agencies including Catchment Management Authorities, include structural and non-structural methods, control of water at source and improve urban stormwater quality and/or management.

### **Community Support Grants**

These are grants available through the Department for Victorian Communities, and are available for building community infrastructure, including developing new community centres. It must be demonstrated that the project can improve the range of participation in activities, can be utilised for a multitude of purposes, provides access to disadvantaged groups such as people with disabilities, young people and those in rural and regional communities and will create lasting economic and employment benefits.

Community support grants are available to community organisations, local government or the philanthropic sector.

### **State Government Pride of Place**

Pride of Place is the State Government's urban design grants program. Grants are available for eligible projects that meet the program's published selection criteria, in the categories of:

- Urban Design Frameworks (UDF)
- Urban Design Advice (UDA)
- Design development and capital works recommended in urban design frameworks (DDCW).

### **Parks Victoria Volunteer Group Grants**

Grants may be available through Parks Victoria for projects that will assist in enhancing and protecting the natural, cultural and heritage values of parks and reserves, and involve the wider multicultural community in environmental and recreational projects.

### **Community Water Grants**

These grants are available through the Australian Government, for projects that are related to water savings-efficiency, water reuse-recycling and surface groundwater health. Grants of up to \$50 000 are available, and could be allocated for projects that relate to restoring the health of the Russell Creek.

### **9.5.5 Methods of Planning Scheme Implementation**

The North East Warrnambool Structure Plan will be implemented primarily through the development of a local planning policy and Development Contributions Plan and the adoption of relevant zones and overlays to be incorporated into the Warrnambool Planning Scheme. Minor modifications may also be required to Council's Municipal Strategic Statement to reinforce the local policy and planning scheme provisions.

#### *Local Planning Policy*

Minor modifications will be required to Council's Municipal Strategic Statement to reinforce the local policy and planning scheme provisions.

#### *Design Guidelines*

Detailed design guidelines should be developed as part of a Development Plan for the North East Warrnambool area, reflecting its vision and objectives.

The guidelines will provide a mechanism or management tool to retain, recognise or modify significantly the urban character emerging or that will emerge in North East Warrnambool. The guidelines will be used to set the parameters for appropriate development in the North East Warrnambool area.

"Example design guidelines" have been developed for the North East Warrnambool area based on the vision and objectives identified in Section 8.1 of this report and are presented in **Appendix F** for comment. They can be added to as part of the preparation of a Development Plan or included in a DDO by Council or a developer provided that they remain consistent with the Vision and Objectives of the area.

#### *Zoning*

It is considered that the Residential 1 Zone should be used for all areas earmarked for conventional residential development.

There are two options for rezoning of the land not required for immediate consumption, these being the Low Density Residential Zone and the Rural Living Zone. The former would allow for subdivision of the land into smaller lots (i.e. 0.4ha). Whilst this could result in a higher short term yield, the creation of lots of this size makes further conventional subdivision at some time in the future unlikely.

The Rural Living Zone, however, would ensure that the current level of residential development on the land can continue, whilst not compromising the ability of the land to be developed for conventional residential purposes in the future. It is therefore recommended that the Rural Living Zone be applied to the land generally north of Wangoom Road that is not identified as conventional density residential for the short term.

The Public Park and Recreation Zone should apply over land set aside as open space.

#### *Overlays*

The rezoning should also be accompanied by a series of overlays as set out in Table 9.3 on the following page.

Overlay	Description / Purpose	Priority
Development Plan Overlay (DPO)	<ul style="list-style-type: none"> <li>Define the preferred layout for future development (in accordance with the Structure Plan)</li> <li>Deal with issues including road layout, drainage, staging, floodplain confirmation and sustainable design.</li> <li>Ensure a coordinated approach to development is achieved.</li> <li>Prevent development from occurring until a Development Plan is prepared giving direction for development of the land.</li> <li>Provide flexibility for developers to make changes to the Development Plan without requiring a planning scheme amendment.</li> <li>Can include design guidelines as discussed under the DDO provisions (below).</li> <li>Provide exemptions from public notification for developments that are in accordance with the Development Plan.</li> </ul>	1
Development Contributions Plan Overlay (DCPO)	<ul style="list-style-type: none"> <li>To be applied to the entire Structure Plan area.</li> <li>Will require the preparation of a full cost apportionment DCP.</li> <li>Allow for levies to be charged by Council to developers for the provision of certain infrastructure items in the Structure Plan area.</li> </ul>	1
Design and Development Overlay (DDO)	<ul style="list-style-type: none"> <li>Remove existing DDO.</li> <li>Replace with new DDO that includes the proposed design guidelines.</li> <li>Ensure development achieves a high standard of design and responds to the physical characteristics of the surrounding environment.</li> </ul>	2
Land Subject to Inundation Overlay (LSIO)	<ul style="list-style-type: none"> <li>Define areas liable to flooding around Russell Creek.</li> <li>Prevent development from occurring on such areas and enable a reservation to be made that includes these areas as open space.</li> <li>Will require the preparation of a flood study to determine flood levels and mitigation measures.</li> </ul>	2

Table 9.3 Overlays to be inserted into the Warrnambool Planning Scheme.

Figure 9.3 below depicts the broad steps involved in undertaking a planning scheme amendment.



Figure 9.3. Planning Scheme Amendment Process.

Dependent on the complexity of the amendment, the level of consultation required and opposition to the amendment, this process could take anywhere between 6 and 18 months. It is noted that this time is in addition to any time required in preparing detail to support the amendment (i.e. a Development Contributions Plan).

#### **9.5.6 Amendment Staging**

A two stage process is one way to implement the proposed changes to the planning scheme.

Stage 1 would include the amendments proposed to the MSS and local policy, the incorporation of the Structure Plan as a reference document and the introduction of a Development Plan Overlay be initiated immediately to translate the strategic direction of the Structure Plan into the Planning scheme. This would allow land owners and developers to move toward developing detailed development schemes, and resolving detail such as zone boundaries, open space boundaries, road alignments and the like.

In Stage 2, the rezoning of land reflecting the development plan detail, as well as the detail of any Design and Development Overlay, or Developer Contribution Plan can be incorporated.

Alternatively, all necessary rezonings could be undertaken in one stage, provided that particular elements of the plan do not require immediate implementation.



### 9.5.7 Sequencing, Roles and Responsibilities

Table 9.5.7 below describes the actions required, roles and responsibility for implementing the Structure Plan. This is also depicted in Figure 9.5.7.

	Action	Priority	Responsibility	Funding
1	Undertake more detailed flood studies	1	WCC	WCC
2	Prepare Development Plan	1	WCC	WCC
3	Prepare planning Scheme Amendment Stage 1: <ul style="list-style-type: none"> <li>Revise MSS to include Structure Plan</li> <li>Include the Structure Plan as an Incorporated Document under Claus 81</li> <li>Development Plan Overlay</li> </ul>	1	WCC	WCC
4	Agree on and prioritise road/intersection upgrades	1	WCC / VicRoads	WCC
5	Review public transport service provision	1	WCC / Transit Southwest / DOI	DOI / Transit Southwest
6	Investigate funding opportunities for community centre and Russell Creek corridor rehabilitation / stormwater mitigation and reuse measures.	1	WCC	WCC
7	Prepare Development Contributions Plan and relevant background studies (e.g. flood study) to implement Overlays.	1	WCC	WCC
8	Analyse community facility needs.	1	WCC	WCC
9	Prepare Planning Scheme Amendment Stage 2: <ul style="list-style-type: none"> <li>Rezoning</li> <li>Implement Overlays</li> </ul>	2		
10	Undertake road upgrades	3	WCC / VicRoads	WCC / Developer Contributions / VicRoads
11	Meet with Department of Employment, Education and Training, Catholic Education Commission of Victoria and Association of Independent Schools Victoria to determine need for and staging of new educational facilities.	3	WCC	WCC

Table 9.4. Implementation plan for North East Warrnambool.

## Process for Implementation of the North East Warrnambool Structure Plan

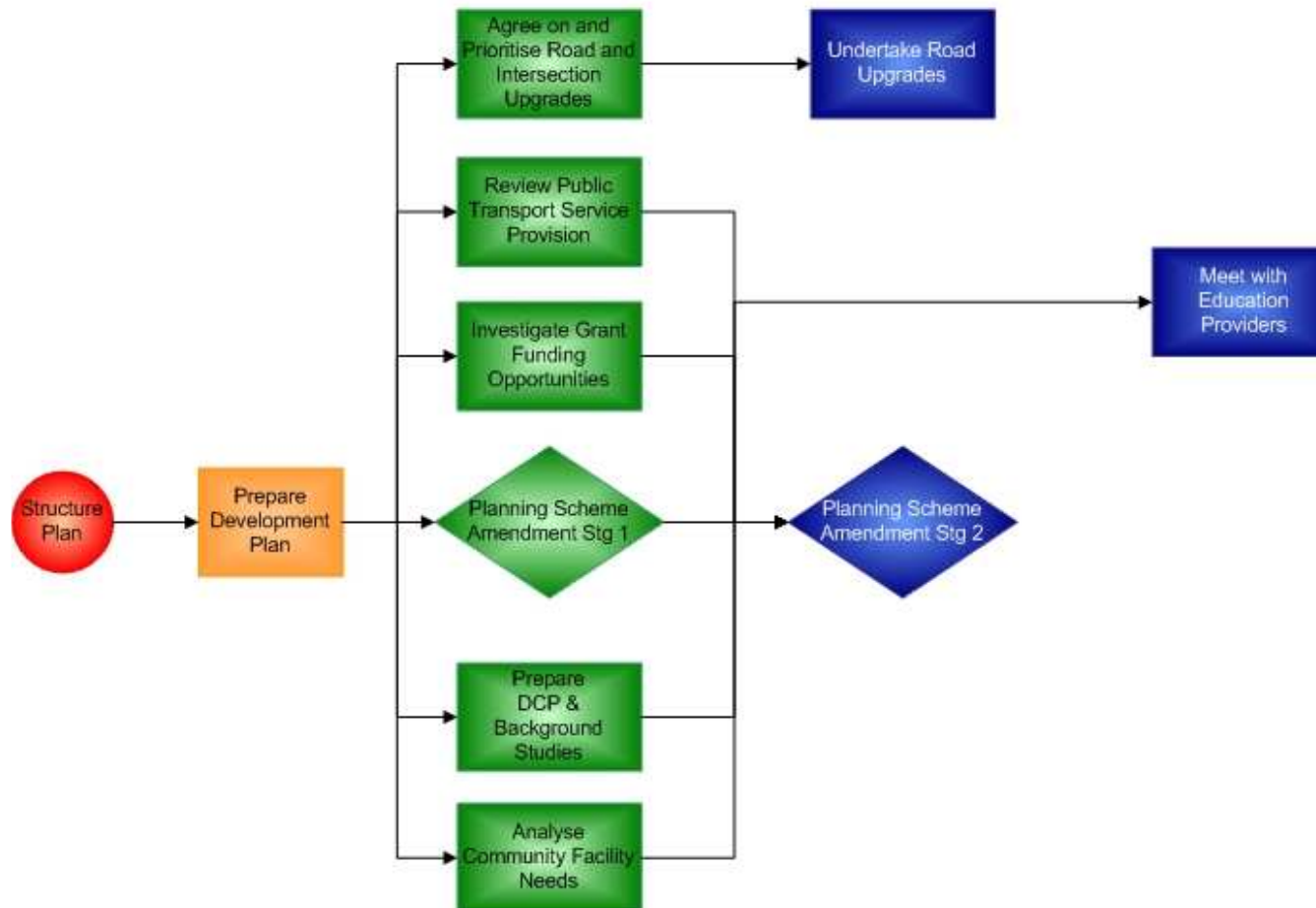


Figure 9.4. Process of implementing the North East Warrnambool Structure Plan.

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# ***Appendix A***

***Acid Sulfate Soil Mapping***



### Locality Map

Catchment Management Authorities



# Coastal Acid Sulfate Soil Hazard

Warrnambool T7321

Universal Transverse Mercator Zone 54

## GLENELG CMA

### ACID SULFATE SOIL

✖ No acid sulfate soils

#### Shallower than 1 m

- Low acid sulfate soils
- Moderate acid sulfate soils
- High acid sulfate soils

#### Deeper than 1 m

- Low acid sulfate soils
- Moderate acid sulfate soils
- High acid sulfate soils

■ Estimated extent of probable acid sulfate soils

### LEGEND

- Freeway
- Major roads
- Watercourses
- Contours
- Waterbodies
- Public land
- 1:100 000 map tile
- Catchment management authority boundaries

### Local government areas

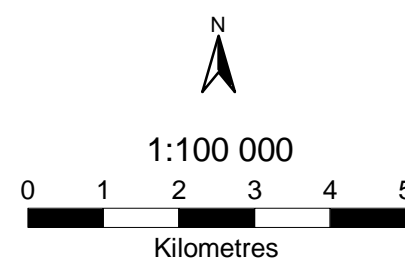
- COLAC OTWAY
- CORANGAMITE
- GLENELG
- MOYNE
- GOLDEN PLAINS
- SURF COAST
- WARRNAMBOOL

### Information on acid sulfate soils

The information for the acid sulfate soil mapping is comprised of two separate sources:

- 1) The estimate of the extent that acid sulfate soil (either potential acid sulfate soil or actual sulfate soil) is most likely to occur. This is a calculated approximation and due to the scale of the mapping there may be areas outside the estimated regions that also have acid sulfate soils.
- 2) The site information has been analysed for the presence of oxidisable sulfur. These sites indicate only that point at which it is marked and may not truly represent the entire area in which it is located.

FOR MORE INFORMATION  
SEE THE ASSOCIATED  
*Guidelines for the Use of Coastal Acid Sulfate  
Soil Hazard Maps for Victoria*



Base data such as roads, rivers, public land (1:100 000) towns, CMA boundaries and irrigation areas (1:250 000) are sourced from the NRE Corporate Geospatial Data Library.

This map may be of assistance to you but the State of Victoria and its employees do not guarantee that the map is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this map.

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# Locality Map

Catchment Management Authorities

## Coastal Acid Sulfate Soil Hazard

Mortlake T7421 Port Campbell T7420

Universal Transverse Mercator Zone 54

GLENELG CMA

### ACID SULFATE SOIL

- ✕ No acid sulfate soils
- Shallower than 1 m**
  - Low acid sulfate soils
  - Moderate acid sulfate soils
  - High acid sulfate soils
- Deeper than 1 m**
  - Low acid sulfate soils
  - Moderate acid sulfate soils
  - High acid sulfate soils
- Estimated extent of probable acid sulfate soils

### LEGEND

- Freeway
- Major roads
- Watercourses
- Contours
- Waterbodies
- Public land
- 1:100 000 map tile
- Catchment management authority boundaries

### Local government areas

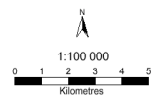
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- CORANGAMITE
- GLENELG
- MOYNE
- COLDEN PLAINS
- SURF COAST
- WARRNAMBOOL

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- 1) The estimate of the extent that acid sulfate soil (either potential acid sulfate soil or actual sulfate soil) is most likely to occur. This is a calculated approximation and due to the scale of the mapping there may be areas outside the estimated regions that also have acid sulfate soils.
- 2) The site information has been analysed for the presence of oxidisable sulfur. These sites indicate only that point at which it is marked and may not truly represent the entire area in which it is located.

FOR MORE INFORMATION SEE THE ASSOCIATED Guidelines for the Use of Coastal Acid Sulfate Soil Hazard Maps for Victoria



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## ***Appendix B***

***Results of Consultation on Draft Structure Plan***

## North East Warrnambool

### Growth management

- Set higher standards for growth in Warrnambool.
- Create new settlements that are attractive and self contained (urban village concept).
- Improve landscape and urban design qualities.
- Distinguish development in Warrnambool from development elsewhere in the State.
- Recognise local character and environment.
- Build neighbourhoods and neighbourhood character.
- Flexibility/creativity in development options.
- Consider transition/needs of existing land owners as land is redeveloped.

### Environment and open space

- Protect environment, habitat and biodiversity.
- Incorporate sustainable design/water sensitive design.
- Improve connectivity along waterways, ie. Russell Creek.
- Create open space and recreation linkages.
- Utilise natural assets in new development (ie. use watercourses as passive open space/linear open space links).

### Community/safety

- Create safe open spaces – good design allowing surveillance.
- Utilise community nodes/meeting places, sporting facilities.
- Maximise opportunities for access to existing community, commercial and sporting facilities.
- Consider principles of disability access – physical access is an issue, especially retirement villages, student accommodation and young families.
- Crime prevention through environmental design.
- Capacity impacts on local schools.

### Social

- Mixture of lot sizes, household types, densities and affordability.
- Warrnambool needs affordable land quickly.
- Warrnambool has a shortage of “executive home” land.

### Infrastructure (general)

- Effective provision of infrastructure services.
- Growth and provision of infrastructure needs to be integrated and staged.
- Developers need to support funding of infrastructure.

### Infrastructure (drainage and stormwater)

- Council needs a strategic drainage plan.
- Need drainage infrastructure that can treat stormwater.
- Use of retarding basins (simulate natural retention).
- Use natural drainage lines for public open space

### Roads, public transport and pedestrian access

- Road capacity and access routes.
- Improvements of existing roads are required.
- Traffic issues on existing roads exacerbated by new growth
- Pressure on Mortlake Road and Moore Street round-a-bout
- Need to design new growth to enhance connections, including roads designed to facilitate bus movement, and pedestrian networks.
- Public transport – weekend and evening bus services are required.
- Need safe and accessible pedestrian networks.



Non residential land uses

- Clarification required regarding “community facilities” on corner Wangoom and Mortlake Roads.
- Minimise impact on nearby agricultural operations.

## ***Appendix C***

***Issues Raised and Changes Made to Draft Structure Plan***

## Issues and Changes to Structure Plans

### *North East Warrnambool*

Key issues raised in feedback on the draft Structure Plan include:

#### **Residential development**

##### Staging

- How will development be staged?

##### Land acquisition

- What will be the cost to landowners?
- Will landowners be compensated for acquisition of land?

##### Lot orientation

- Development should front both sides of collector roads

##### Residential / rural interface

- How will Council manage the rural-city interface and will this be addressed in the structure plan?
- Farming may impact on conventional density development and vice versa

The issue of retaining low density / rural areas has been raised by several landowners in the northern part of the study area. While this land is likely to be required for future conventional residential development, there are many landowners who wish to retain the rural / residential atmosphere. The issue of conflicts at the rural / residential interface is also one that has been highlighted, as residential uses can have adverse affects on farm land and vice versa.

Maintaining a Low Density Residential buffer is one way of overcoming such issues. The structure plan allows for an area in the northern part of North East Warrnambool to continue to be used for low density purposes, albeit with infill development as appropriate. Another way of overcoming the rural / residential interface issue is to separate both uses with a vegetative buffer or roadway.

Several queries were raised regarding the acquisition of land, and whether landowners would be compensated in such an event. In responding to this, it is necessary to highlight that Councils are regulated by the Local Government Act 1989 in this regard and these principles would be adhered to when considering risks and benefits to the orderly long term planning for an area.

One submitter suggested that development should front both sides of collector roads, to maximise residential development opportunities. Preventing residential development from occurring on the non open space side of collector roads was seen as an important design element to ensure that dwellings front rather than back onto open space areas, to make these areas more inviting and increase the safety of users of the space.

Staging of the development will be largely influenced by the ability to supply infrastructure to new development. It is likely that growth will occur in an outward manner from the existing development in North East Warrnambool, as this will be the most efficient way to provide new infrastructure.

The structure plan has been modified to include a vegetative buffer along that part of the area's northern boundary abuttal with rural land.

## **Open space**

### **Amount**

- Too much land has been allocated for open space and this will inhibit residential development opportunities.
- Will landowners be compensated for land only being used for open space?
- St Joseph's land should be used for open space.
- Kings College could consider providing a formal pedestrian/cyclist access through the northwestern side of the North East Warrnambool area
- Walkways / shared trails shouldn't go through private property

A predominant theme in the responses received was that the amount of open space allocated is excessive, and should be reduced. Among the arguments for reducing the area of open space included the fact that the land available for residential development will be compromised and that the areas designated for open space occupy a substantial proportion of many landowner's property.

The primary reason for allocating large amounts of land in North East Warrnambool for public open space was the need to allow sufficient land to enable retarding basins to be constructed to address the current drainage issues that will be exacerbated by future residential development in the area. Despite this, the amount of land required is negotiable subject to further drainage studies to be completed prior to development of the land.

The St Joseph's land was not considered to be the most appropriate location for open space, as it is inaccessible to a large area of North East Warrnambool. The proposed open space should follow major drainage lines and topography so as to incorporate wetlands for the retention/detention of stormwater.

Further, the walkways / shared pathways should be located throughout the open space network. Details of these pathways will be determined following the completion of the flood study. The open space network and shared trails will ultimately be in the public domain, and will not traverse private property.

## **Infrastructure**

### **Drainage**

- King's College could use retained surface water for watering their ovals and could extend their own wetlands to retain additional water
- King's College is interested in using wetlands for educational purposes
- Land in the northern part of the study area would need to be filled to avoid flooding issues
- An underground drainage system should be implemented – this should rain water from Aberline Road, down Conheady's Road, across the Hopkins Highway and down to the Merri River.

### **Water / Sewerage**

- Water and sewerage infrastructure should not be provided to properties around Wangoom Road (low density area) as this would impact on the low density nature of this area

### **Traffic**

- Traffic and pedestrian congestion increases around Kings College
- Heavy traffic should not be able to utilise Aberline Road

### **Roads**

- Balmoral Road should not be extended to link with Wangoom Road
- Collector road would create awkward shaped lots
- Aberline Road should not be extended



- Traffic should be directed along east to Aberline Road rather than extending Balmoral Road to the north

One of the key issues identified in the development of the structure plan was the ability to drain the large amounts of stormwater that will be generated from conventional density development. This issue has also been raised in a number of submissions, and also relates to the issue of provision of open space to incorporate wetland bio-filters.

Several options for stormwater drainage have been considered in the development of the structure plans, however the preferred option outlined in the structure plan will be subject to further review pending additional flood studies to be completed. The potential for re-use of stormwater should also be further investigated and has been suggested as an action in the implementation of the structure plan.

The creation of a link from Balmoral Road in the southern portion of the study area to Wangoom Road has generated some concern amongst existing residents, who fear this will exacerbate traffic problems by encouraging more traffic to utilise this route. This issue was raised particularly by those living close to King's college, who felt that traffic was already an issue in this area. However, the Balmoral to Wangoom Road link may in fact help to alleviate current congestion, providing an alternative to the current 'dead end' situation and direct traffic to the community node.

Several submitters were also concerned that the extension of Aberline Road to Gateway Plaza would encourage more vehicles to utilise Aberline Road and therefore create additional traffic in the area.

Despite these concerns, there is a definite need to address the traffic congestion experienced on Mortlake Road. Additional development in the North East Warrnambool area is likely to place increased strain on this road, hence the need to create alternative routes through the structure plan area, as well as from new development to the Princes Highway. The extension of Balmoral Road to Wangoom Road provides a for a logical local traffic route, and Aberline Road would easily direct traffic from North East Warrnambool to key nodes such as Gateway Plaza and central Warrnambool. As such no change has been made to the structure plan.

#### **Other**

- Development contributions plan should be prepared in conjunction with the Planning Scheme amendment
- St Joseph's Parish land should be zoned commercial and clearer direction should be provided as to the future of the land

The implementation plan was prepared to address the timing of various other studies and further work required to implement the structure plans. The preparation of the Planning Scheme amendment and development contributions plans have both been earmarked as first priority measures.

Land on the corner of Wangoom Road and Mortlake Road was previously identified in the *Warrnambool Land Use Strategy* for commercial development, however the structure plan has not recognised this as the land is considered to be better suited for residential development. This has been addressed in Section 10.2.5 of the report.

## ***Appendix D***

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***Explanation of the Development Contributions Plan Process***

<b>Phase 1: Calculate the infrastructure levies</b>		
<b>Number</b>	<b>Stage</b>	<b>Description</b>
1	Document the strategic context for the DCP	Review and summarise the relevant strategic planning information, and identify potential infrastructure projects that will be required to service the future community within the strategic planning and DCP timeframe.
2	Divide the DCP area into analysis areas	Decide the appropriate analysis areas to be used as the basis for collecting and quantifying information about existing and future development. Divide the DCP area into analysis areas and map them.
3	Quantify the development in each analysis area	Quantify and create tables showing the existing and projected future development for each of the analysis areas over the timeframe of the DCP.
4	Convert the development projections into common demand units to quantify the total demand for infrastructure	Identify the appropriate demand unit to use in the calculation and charging of infrastructure levies. Convert the estimates of existing and future development for each land use into common demand units using equivalence ratios, and calculate the total demand for infrastructure expected in each analysis area.
5	List the infrastructure projects and costs included in the DCP	Confirm the infrastructure projects to be included in the DCP, by assessing each project against the criteria set out in the guidelines. Classify each project as either community or development infrastructure and document the costs for each project.
6	Identify the main catchment area for each infrastructure project	Identify and map the analysis areas that comprise the main catchment area (MCA) for each infrastructure project, and make an estimate of external and/or future usage.
7	Calculate the infrastructure levy payable for each infrastructure project	For each project, calculate the infrastructure levy payable per demand unit by: <ul style="list-style-type: none"> <li>? calculating the total number of demand units within the MCA, and</li> <li>? dividing the cost of the project by the total number of demand units in the MCA.</li> </ul>
8	Calculate the total infrastructure levies in each analysis area	Add up the infrastructure levies applicable in each analysis area for community infrastructure projects and development infrastructure projects.
9	Establish charge areas that have common infrastructure levies	Aggregate analysis areas with common infrastructure levies for common infrastructure projects into charge areas. Provide a map of the charge areas and a table of development and/or community infrastructure levies that apply in each area.

10	Describe how infrastructure levies will be collected	For each charge area, assess whether the set procedures for collecting development and community infrastructure levies capture all the types of development that should be charged. If necessary, decide on and document the method for collecting development infrastructure levies from development that does not require a planning permit.
<b>Phase 2: Analyse the budget implications</b>		
<b>Number</b>	<b>Stage</b>	<b>Description</b>
11	Estimate the amount the council will need to fund for each infrastructure project (optional)	Calculate the amount that the council can expect to collect through the DCP for each infrastructure project, and estimate the amount the council will need to fund to make up the shortfall associated with existing development and exempted uses or land.
12	Prepare a cash flow analysis (optional)	Prepare a cash flow analysis table for each infrastructure project documenting the expected timing for collection of levies and expenditure. Assess the budget implications of each infrastructure project.
<b>Phase 3: Obtain council support</b>		
<b>Number</b>	<b>Stage</b>	<b>Description</b>
13	Obtain council support	Obtain council agreement on key issues such as the amount of levies, infrastructure costs, timeframes for delivery of projects and the list of projects that will be included in the DCP, given the budget implications.
<b>Phase 4: Compile draft DCP and review</b>		
<b>Number</b>	<b>Stage</b>	<b>Description</b>
14	Compile the draft DCP	Compile information prepared in previous stages into a draft DCP.
15	Review draft DCP and finalise	Seek comments on the draft DCP from stakeholders within the organisation and external stakeholders such as developers, State Government agencies and adjoining municipalities. Consider all comments and change the draft DCP, if required. Prepare final version of DCP for exhibition.
<b>Phase 5: Decide to prepare planning scheme amendment for DCP</b>		
<b>Number</b>	<b>Stage</b>	<b>Description</b>
16	Decide to prepare an amendment to the planning scheme to incorporate the DCP	Obtain council decision to prepare an amendment to incorporate the DCP into the planning scheme.

# ***Appendix E***

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## ***Infrastructure Costs***



PROJECT : WARRNAMBOOL - NORTH EAST GROWTH AREA			SITE DETAILS:		
CLIENT : WARRNAMBOOL CITY COUNCIL			1600	LOTS	
REF. NO. : 6298.02					
PREPARED : LES MAZUR					
MUNICIPALITY : WARRNAMBOOL CITY COUNCIL					
<b>ESTIMATED DEVELOPMENT COSTS</b>					
	Internal	External	NET	GST	GROSS (including GST)
<b>CONSTRUCTION</b>					
Roadworks and Drainage	\$21,045,000	\$0	\$21,045,000	\$2,104,500	\$23,149,500
Sewer Reticulation	\$2,715,100	\$0	\$2,715,100	\$271,510	\$2,986,600
Water Supply Reticulation	\$2,527,100	\$0	\$2,527,100	\$252,710	\$2,779,800
Sub Total	\$26,287,200	\$0	\$26,287,200	\$2,628,720	\$28,915,920
<b>AUTHORITY CHARGES</b>					
Application & Acceptance Fee	\$1,000		\$1,000	\$100	\$1,100
Sewer Reticulation					
New connection contributions :-\$1,800x1.50 / Lot	\$4,320,000		\$4,320,000		\$4,320,000
Water Reticulation					
Shutdown fee	\$1,000		\$1,000	\$100	\$1,100
New connection contributions: \$600x1.50 /Lot	\$1,440,000		\$1,440,000		\$1,440,000
South West Water Contribution fees (\$1000 / lot)	\$1,600,000		\$1,600,000		\$1,600,000
	\$5,761,000	\$0	\$5,761,000		\$7,361,100
<b>ELECTRICITY SUPPLY</b>					
Design and Construc\$3,000 / Lot, plus public lighting.	\$4,800,000		\$4,800,000	\$480,000	\$5,280,000
Sub Total	\$4,800,000	\$0	\$4,800,000	\$480,000	\$5,280,000
<b>COUNCIL CHARGES</b>					
Eng. & Admin. Fee ( 2% of road & drainage)	\$420,900		\$420,900	\$42,090	\$463,000
Sub Total	\$420,900	\$0	\$10,020,900	\$42,090	\$463,000
<b>CONSULTANTS FEES (BALANCE FEES)</b>					
Engineering Design and Construction Monitoring (10%)	\$2,628,720		\$2,628,720	\$262,900	\$2,891,600
Feature Survey	\$30,000		\$30,000	\$3,000	\$33,000
Geotechnical Investigation & Pavement Design	\$20,000		\$20,000	\$2,000	\$22,000
Sub Total	\$2,678,720	\$0	\$13,120,520	\$267,900	\$2,946,600
TOTAL	\$39,947,800			\$3,418,700	\$44,966,600
<b>DEVELOPMENT COST PER ALLOTMENT</b>					
					\$28,100

**NOTES:**

- 1 The estimate is prepared from preliminary information obtained from other Service Authorities and Council.
- 2 Actual costs may vary on receipt of detailed requirements and development conditions.
- 2 No allowance has been made for Public Open Space payments.
- 3 No allowance has been made for land costs, legal, finance or selling costs.
- 4 No allowance has been made for non-engineering fees such as planning and landscaping.
- 5 Engineering fees allow for design of roads, drainage, sewer and water connection and construction supervision.
- 6 GST has been applied to all items except service authority charges.
- 7 Construction estimates have general rates for work carried out for similar subdivisions.
- 8 The estimate does NOT include the cost of tree removal within properties.

Any opinion or estimate of costs by Connell Wagner will be made on the basis of Connell Wagner's experience and qualifications and will represent Connell Wagner's judgment as an experienced and qualified professional engineer, familiar with the construction industry. However, Connell Wagner has no control over the cost of labour, materials, equipment or services furnished by others or over Contractors' methods of determining prices or over competitive bidding or market conditions. Therefore, Connell Wagner cannot and does not guarantee that proposals, bids or actual construction costs will not vary from Connell Wagner's estimates.

# ***Appendix F***

***Example Design Guidelines***

## **North East Warrnambool Example Design Guidelines**

### Dwellings

#### *Siting and Design*

- Any development abutting public open space is to have a setback of 6-8 metres from, and be designed to address, that public open space. Dwellings fronting esplanades are to be constructed using materials and finishes that complement the adjoining open space network.
- All buildings should be a maximum height of no more than 7.0m above ground level.
- Garages and carports are to be setback behind the frontage of existing and new dwellings.
- Dwellings fronting esplanades are to be constructed using materials and finishes that complement the adjoining open space network.
- Front landscaping of dwellings fronting esplanades is to utilise indigenous species only, and include species used in adjacent open space.

#### *Fencing*

- No front fences will to be constructed on allotments fronting esplanades to enhance design and visibility of these areas. In the remainder of the North East Warrnambool area, front fences are to be a maximum height of 1.2m (except on Aberline Road and Mortlake Road where fences are to be a maximum height of 1.8m).
- Side fences are to have a maximum height of no more than 1.8 metres, and be tapered from front building setbacks to front fences.
- If no front fence is provided, side fences are to end at the front building line.
- All fencing fronting public open space is to be constructed using consistent materials and colours to integrate with the surrounding natural environment. A minimum of 60% of fence frontage is to be transparent and 40% may be closed fencing.

#### *Landscaping*

- Landscaping of dwellings setback areas facing public open space is to incorporate indigenous species used in that open space.

#### *Subdivision layout*

- Design of new conventional density developments should ensure that buildings can be sited to front both sides of new roads.

### Roads

#### *Road design and layout*

- A series of boulevards are to be developed adjoining the public open space network, and dwellings must be sited on the non-open space side only to promote visibility and enhance aesthetic appearance of the open space and therefore enhance the safety for users of these areas.
- All internal roads must incorporate footpaths to facilitate safe pedestrian movement, and a pedestrian footpath is to be provided on the open space side of boulevards. Footpaths must be provided on either side of major roads.
- Visual interest on minor roads within developments is to be created using street planting of deciduous and evergreen vegetation.
- A gateway entrance to the North East Warrnambool area is to be created along Aberline Road using plant species traditionally used in wind rows around Warrnambool.
- Roll over kerbs are to be provided on all roads throughout North East Warrnambool.
- Subdivision layouts should provide for the access requirements of public transport services.
- Water sensitive urban design materials must be implemented in road design to enhance the quality of stormwater at the point of discharge.

#### *Landscaping*

- A consistent planting theme is to be incorporated into the treatment of boulevards.
- All roads should incorporate street planting, with all east-west links to be indigenous evergreen species and all north-south routes to be themed indigenous or exotic species.

### Open space

#### *Open Space Network*

- A linear open space network is to be developed throughout the North East Warrnambool area to provide accessible and attractive active and passive recreation areas for residents, and enable public open space links to be made to any additional development north of the Structure Plan area. Paths are also to be developed within the open space network to link Conheadys Road, Wangoom Road, Mortlake Road and Aberline Road.

#### *Shared Pathways*

- Shared curvilinear paths with a minimum width of 3m will be provided throughout the open space network for pedestrians and cyclists.

#### *Landscaping*

- A consistent indigenous landscape theme is to be provided for the public open space. Occasional references to Warrnambool's historic windrows should be included in the planting theme of public open space, however these should not obstruct visibility of pathways and open space.

#### *Park Furniture and amenities*

- Street furniture and amenities must utilise a consistent theme.

#### *Environmental Management*

- A series of 'bio-filter' wetlands are to be used to retard and treat water in open space areas and add to the environmental quality of the open space.
- Erosion management measures including the use of riparian planting are to be incorporated into overland flow paths to slow overland flow.

### Community facilities

- A community centre/facility to be located south of Wangoom Road, and integrated with surrounding wetland bio-filters and open space.