NORTH OF THE MERRI RIVER
STRUCTURE PLAN

Prepared for
WARRNAMBOOL CITY COUNCIL

By
MESH PTY LTD

SEPTEMBER 2011 - Approved Version

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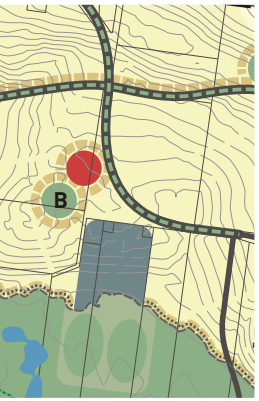



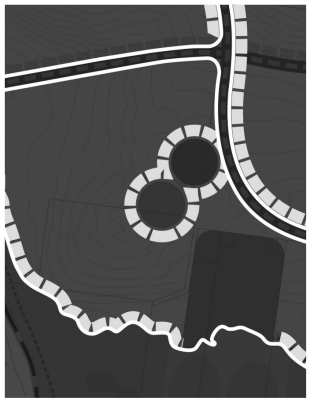

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INTRODUCTION

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1.1 Purpose

This Structure Plan outlines the planning and development framework for approximately 250ha of land referred to as the North of the Merri River Growth Area, which is one of Warrnambool's four identified growth areas.

The North of the Merri River Structure Plan (NMRSP) defines a vision and broad structure for the movement network and land uses within the Structure Plan area to guide preparation of more detailed Development Plans and Planning Permit Applications that will be prepared for individual landholdings or groups of landholdings.

The NMRSP also forms the strategic basis for the associated North of the Merri River Development Contributions Plan (NMRDCP), which will enable equitable and efficient delivery of infrastructure to service the planned growth. Both these documents are intended to assume the status of Incorporated Documents in the Planning Scheme.

The NMR Structure Plan and Development Contributions Plan have been informed by the North of the Merri River Structure Plan Report (prepared by SMEC Urban, dated October 2009). This document should be referred to for additional background information.

1.2 Land to which the Structure Plan applies

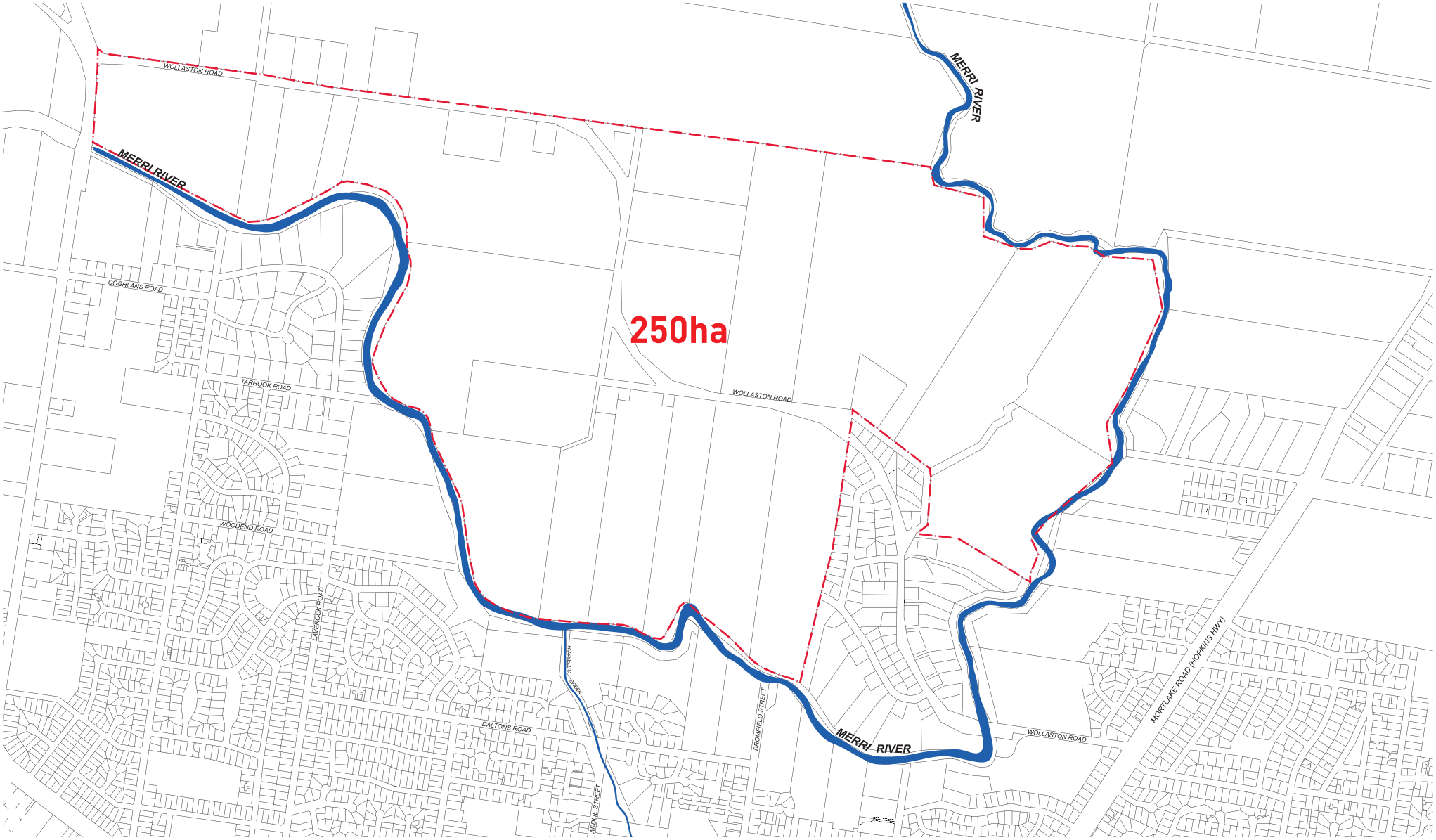
The Structure Plan applies to land shown in Figure 1

1.3 Implementation

The Structure Plan is implemented by:

- Development proponents who develop land generally in accordance with this NMRSP.
- The Victorian Government and the Warrnambool City Council by funding, delivering and managing a range of infrastructure and services to support the development of the precinct.
- Non-government service providers and individuals such as volunteers who manage and deliver services.
- The Warrnambool Planning Scheme including:
  - The North of the Merri River Development Contributions Plan Overlay under Clause 45.06;
  - The open space requirements under Clause 52.01;
  - The Development Plan Overlay under Clause 43.04;
  - Other requirements of the planning scheme.

Figure 1 **North of Merri River Structure Plan**



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2.1

Regional Context

The City of Warrnambool is the major regional centre within south-western Victoria and is located on Lady Bay, approximately 330km southwest of Melbourne. Warrnambool's population, as noted in the Municipal Strategic Statement at Clause 21.05, at 2006 was 31,510 and is predicted to be approximately 40,000 by 2026[1].

The shape of the city has been influenced by a number of factors, including:

- The Princes Highway which forms the main east-west route through the city,
- Mortlake Road/Hopkins Highway and Warrnambool-Caramut Road which form the main north-south connections through Warrnambool and to surrounding townships and rural areas,
- The Merri River, which 'wraps' around western and northern areas of the City, and
- The coastline/foreshore, which provides an extensive open space setting for the City.

Warrnambool, with a large, diverse population acts as a base for housing, employment and education services for the broader area, including the surrounding rural hinterlands. Warrnambool is serviced by three key 'activity centres', including a traditional central business district (CBD), and two 'shopping mall' style centres; Centro on Mortlake Road and the Gateway Plaza on Princes Highway in the east.

Warrnambool has been identified in the Regional Mapping Project undertaken by Regional Development Victoria (November 2009) as a 'higher growth centre' and as such, provision of adequate land supply to support Warrnambool's role as a regional centre and to accommodate anticipated growth is essential.

The North of the Merri River Structure Plan (NMRSP) area was identified in the Warrnambool Land Use Strategy (2004) as one of four key growth areas suitable for accommodating residential growth to ensure sufficient land supply is available.

While the NMR growth area was originally identified in 2004 as appropriate for 'environmental residential', land supply shortages and State policy directions that seeks to maximise efficient use of land mean that this growth area is now more appropriate for standard residential development, incorporating a range of lot sizes including some larger lots and small lot housing.

[1] Victoria in Future 2008- first release

Figure 2 **Regional Context Plan**

2.2

Site Analysis

2.2.1 Site Description

The NMRSP area occupies a location that is somewhat separated from the nearby urban areas of Warrnambool by the Merri River. The NMRSP area comprises approximately 250 hectares of land, located to the north of a distinctive bend of the Merri River.

The NMRSP area is generally bounded by Wollaston Road and a ridge line to the north, Caramut Road to the west, and the Merri River to the south and east (see Figure 3). Surrounding the area is rural land to the north, and wrapping from the west through to the east on the opposite side of the Merri River

Wollaston Road is an existing collector road constructed to a rural standard, which extends from Caramut Road, through the NMRSP area, to connect with the Hopkins Highway to the east (via the Ponting Estate, which is external to the NMRSP area). This road currently provides access to land within the plan area and it also services existing through traffic demand without need for any additional upgrades to the current unconstructed road standard.

2.2.2 Properties, Ownership and Land Use

The Structure plan area comprises a total of 22 individual landholdings of varying sizes ranging from 0.11ha to 41ha (see Figure 3). While landholdings are quite fragmented to the east and west, the area is well contained within clearly identifiable boundaries, and it is understood that a development group controls a significant portion of land (approximately 83ha) in the central part of the Structure Plan area.

The majority of the NMRSP area has been used predominantly for cropping and grazing; land uses that are not likely to impact significantly on the environment. Notwithstanding, preliminary environmental site assessments will be required for all landholdings that review and examine the history of land uses within the area and the potential for soil and groundwater contamination will be required as part of preparation of a Development Plan. The recommendations of these assessments, including any recommendation for further detailed assessments or management, will then need to be taken into account as part of planning permit applications/ conditions.

2.2.3 Planning Context

As noted above, the NMRSP area was identified in the Warrnambool Land Use Strategy, 2004, as an appropriate location to accommodate future growth. The recommendations of this Strategy were incorporated into the Municipal Strategic Statement (MSS), and the NMRSP area was identified as one of four key growth areas within the municipality at Clause 21.03.

The NMRSP area is currently predominantly zoned Farming Zone (FZ), with a strip of approximately 30-50m zoned Public Parks and Recreation Zone along the Merri River (see Figure 4). The Environmental Significance Overlays applies to land generally affected by flooding of the river, and measures approximately 150m wide. Road Zone 1 applies to Caramut Road along the areas north- west boundary.

In order to facilitate growth in the NMRSP area a new suite of planning tools is required to be implemented, including:

- Incorporation into the Planning Scheme of the North of the Merri River Structure Plan to ensure that the land is developed in accordance with a clear and holistic vision for the growth area.
- Incorporation into the Planning Scheme of the North of the Merri River Development Contributions Plan to define necessary infrastructure to support the new community and to provide a fair and equitable funding tool to deliver this infrastructure.
- Rezoning of the land to the Residential 1 Zone (developable areas), Urban Floodway Zone (Merri River floodplain) and Road Zone Category 2 (RDZ2) (Wollaston Road).
- Application of the Development Plan Overlay, which will require that any future subdivision or development of the land to be generally in accordance with an approved Development Plan and to ensure that more detailed design of the precinct is coordinated across property boundaries.
- Application of the Development Contributions Plan Overlay to implement the North of the Merri River Development Contributions Plan.
- Utilisation of Clause 52.01 to implement and equalise passive open space contributions across the plan area.

2.2.4 Landform and Topography

The landform and topography of the NMRSP area is diverse and distinct, incorporating low-lying areas along the broad floodplain of the Merri River, before ascending to a prominent ridgeline that runs generally east-west across the site, and a secondary ridgeline that extends north-south into the site.

This topography provides a variety of experiences throughout the Structure Plan area, including spectacular views from the crest of the ridgelines across the city to the south, and to arable farm land to the north. In addition, this ridgeline is visible from other parts of Warrnambool. The low lying areas along the floodplain afford opportunities for 'hidden' places that are not revealed until one is within the valley.

Cardno has been engaged by Warrnambool City Council and the Glenelg Hopkins Catchment Management Authority (CMA) to prepare a drainage study of the area, to define the 1 in 100 year flood extent, which is shown in Figure 5. This land is considered encumbered land and required for drainage purposes, although there are opportunities for other uses of the land, including for passive and active open space purposes, and some privately owned land.

2.2.5 Drainage

The Drainage Authority for the area is Warrnambool City Council, in consultation with the Glenelg Hopkins Catchment Management Authority (CMA). Council and the CMA have engaged Cardno to prepare detailed flood mapping of the area, to define the 1 in 100 year flood extent. Figure 5 shows the extent of land that is encumbered by the floodplain. At present this land is privately owned in multiple ownerships, but will serve a key drainage function as part of development of the NMRSP area. However, it is noted that this area will also serve additional functions in terms of its environmental importance, and presents significant passive and active open space opportunities.

Discharge of urban stormwater into the Merri River will need to be treated through Water Sensitive Urban Design (WSUD) measures to protect the water quality of the river.

Figure 3 **Land Ownership Plan**

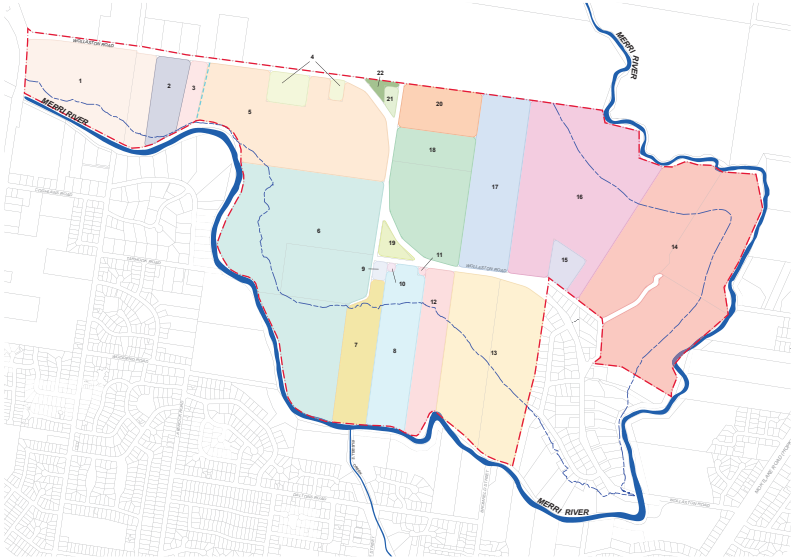


Figure 4 **Zoning and Overlays**

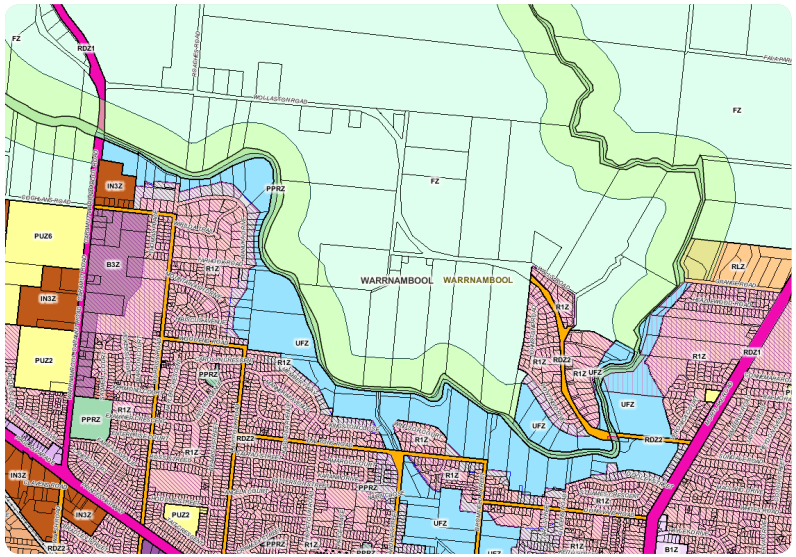


Figure 5 **Landform and Topography**

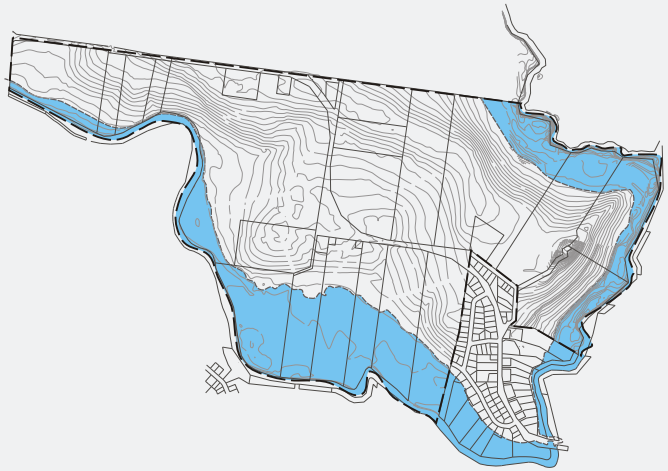
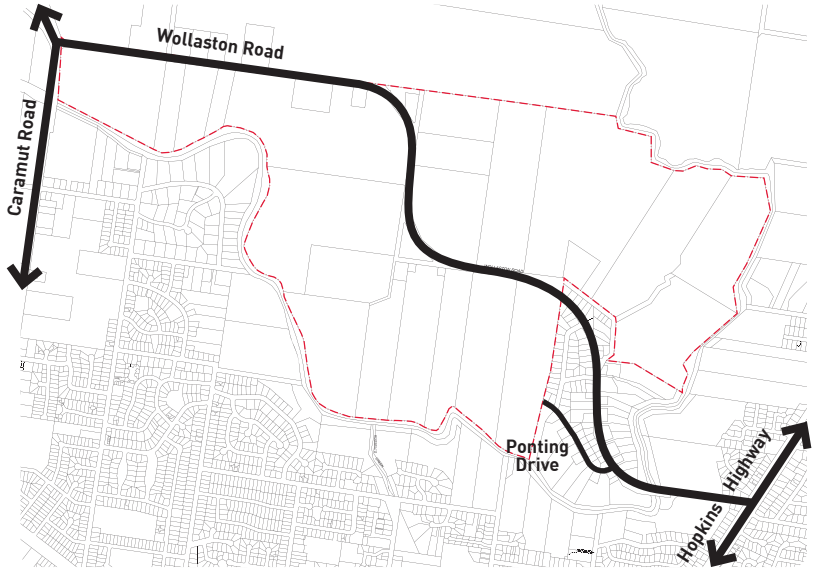


Figure 6 **Flora and Fauna**

Figure 7 **Heritage**

Figure 8 **Movement Network**



2.2.6. Flora and Fauna

An assessment of the Flora and Fauna values of the site has been undertaken by EarthTech in 2006, and an updated report (following legislative changes) was prepared by SMEC (formerly EarthTech) in 2009 (see Figure 6).

The NMRSP is defined as being within the Victorian Volcanic Plain Bioregion. Two 'endangered' Ecological Vegetation Classes (EVC) have been identified in the study area including the 'Plains Grassy Woodland' and 'Swamp Scrub'. However, during site assessment, it was noted that the understorey species (i.e. several native grasses) characteristic of the Plains Grassy Woodland were not present, most likely due to historic vegetation clearance as well as past and present land uses.

The study area is highly disturbed with little native vegetation remaining. A Habitat Hectare Assessment was not required for the site as native vegetation recorded provided less than 25% native under storey cover. 12 noxious weeds, as defined by the Catchment and Land Protection (CaLP) Act 1994 were identified as occurring in the study area.

The SMEC assessment undertaken in 2009 validated the findings of the 2006 study, and also included an assessment of an additional 34.6ha of land in the north-west (Properties 1, 2 and 3) that were not assessed in the original study. The SMEC report found that the additional parcels contained no remnant patches of native vegetation, nor any scattered indigenous trees. The parcels were also considered to have little habitat value for native fauna species.

However, the assessment noted that there was native vegetation and other aquatic habitat values associated with the riparian zone along the Merri River, which may provide habitat for native amphibians and wetland bird species. SMEC noted that incorporating the floodplain into open space will mean that development is unlikely to have any significant impact on nationally or state listed species or communities. The report identified that there is substantial scope to improve the environmental condition of the study area, in particular along the Merri River through revegetation works. The transfer of substantial areas of land along the river from private to public ownership, and the associated change in land management practices, will further assist in improving the condition of flora and fauna along this corridor.

Notwithstanding the above, it is noted that the EarthTech/SMEC assessments were very high level assessments, and access wasn't provided to all parts of the NMRSP area. As such, more detailed site specific flora and fauna assessments will be required at time of preparation of a Development Plan to confirm the extent of native vegetation, and the likely impacts of development. In addition, the flora and fauna report should make recommendations regarding management of noxious weeds as identified by the CaLP Act 1994.

2.2.7 Heritage

Archaeological assessments of the site have been undertaken by Heritage Insight in 2005 and 2009 (the 2009 report included Properties 1, 2 and 3 which were not originally surveyed in 2005).

These reports identified considerable evidence of land disturbance, and as such, noted that any aboriginal cultural material found within the study area is likely to be in a disturbed context, and any cultural materials are likely to have been dispersed across a wider area due to the soil type and repeated ploughing of the land.

Notwithstanding, the survey of the land found the following archaeological/historical sites within the study area (see Figure 7 and Table 1).

The majority of these sites are associated with the Merri River, and as such, there is an opportunity to incorporate them into the open space. Sites outside the Merri River environs will need to be considered in the design of the Structure Plan, and the future Development Plans. In particular, the heritage report recommends preservation and conservation of the Wollaston Road quarries. However, since the report was prepared Heritage Victoria have confirmed that the quarries are not considered to have archaeological significance and can be removed.

While results of the reports indicate that any future development of the land is unlikely to have a significant impact on any aboriginal cultural heritage, a Cultural Heritage Management Plan (CHMP) should be prepared as part of preparation of a Development Plan, and will be required to be approved by Aboriginal Affairs Victoria (and/or any other Registered Aboriginal Party) prior to issue of a permit, in accordance with the Aboriginal Heritage Act 2006.

Table 1 **Recorded archaeological/historical sites**

Site Type	Site Name	Location
Artefact Scatter	**Wollaston Road 1 &2**	**Along Merri River bank**
Rural huts	**Merri River Huts**	**Southern section of study area, adjacent to Merri River**
Bluestone Weir	**Bromfield Street Weir**	**Crossing the Merri River at Bromfield Street**
Industrial Quarries	**Wollaston Road Quarries**	**North West corner of study area adjacent to Wollaston Road**
Rural field boundaries	**Dry stone walls**	**Multiple locations**

2.2.8 Movement Network

Wollaston Road currently extends through the NMRSP area, connecting from Caramut Road, through the Ponting Estate, to the Hopkins Highway (see Figure 8). This road is considered a collector road, constructed to a rural standard, and has a road reserve of approximately 20m. This road currently provides access for existing dwellings in the Structure Plan area (approximately 40 lots have direct access to Wollaston Road), and provides a through function for traffic travelling to/from Caramut Road and Hopkins Highway. Vehicle volumes on Wollaston Road are currently estimated at approximately 3,000 vehicles per day, which is considered to be well within the capacity of this road in its current form. Vehicle volumes are anticipated to reach approximately 14,580 upon full development of the area.

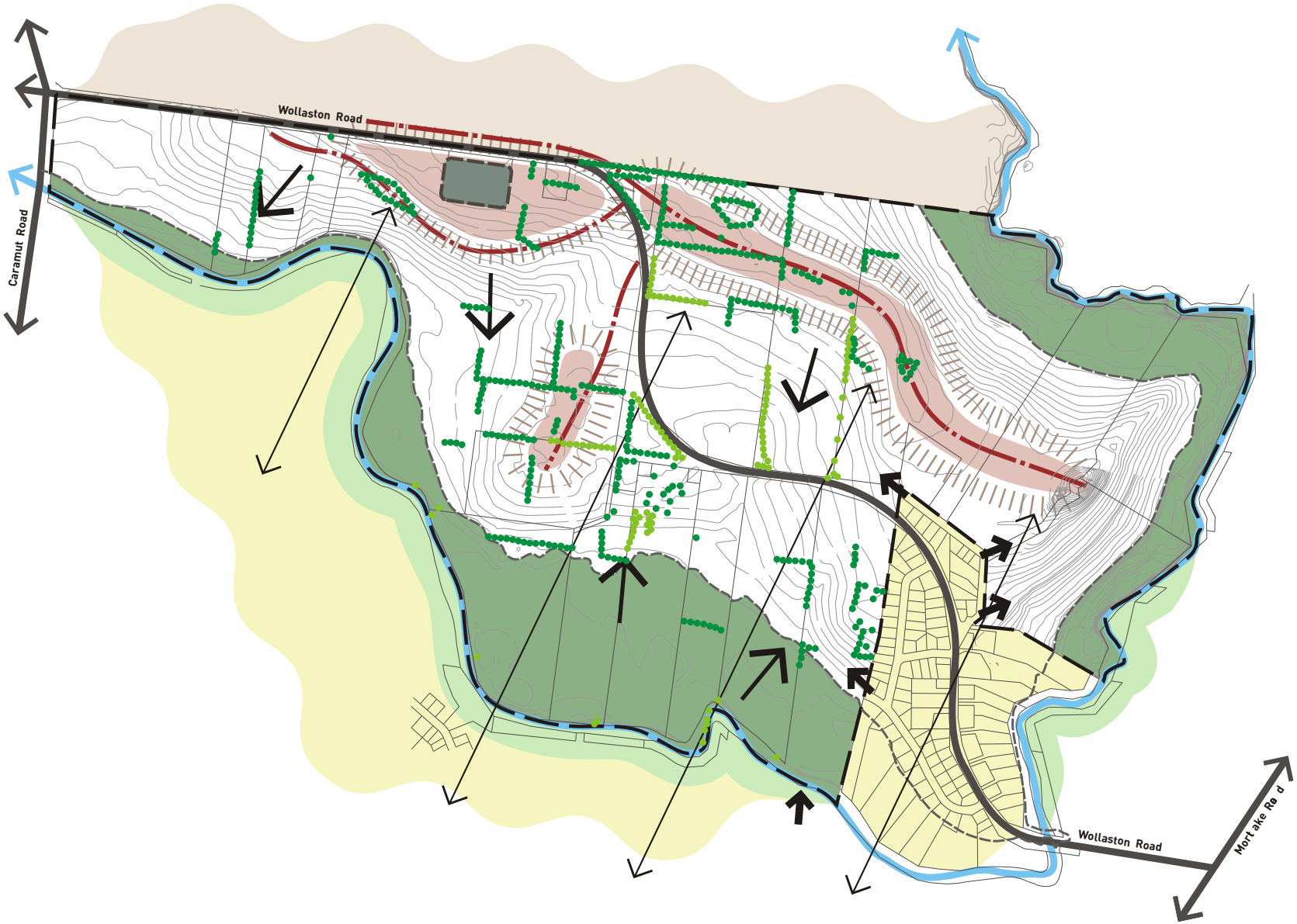
The intersection of Wollaston Road/Caramut road consists of an unsignalised cross-intersection, which is currently operating appropriately under existing conditions, however, will require minor upgrades to operate safely upon development within the Structure Plan area. The intersection of Wollaston Road/Hopkins Highway consists of an unsignalised T intersection. This intersection is currently operating at capacity, and needs to be signalised upon development of the NMSP area. Surrounding roads that have potential to connect with the NMRSP area are Bromfield Street, which currently terminates south of the Merri River (and as such, would require a bridge to connect it with the NMRSP area) and Ponting Drive, which terminates at the eastern boundary of the NMSP area. Both these streets are currently operating as local streets. Public transport within proximity to the NMRSP area includes buses along Caramut Road, and within the Ponting Estate (connecting to Hopkins Highway). There are no existing bus routes that access the NMRSP area. Access to public transport will need to be provided within 400m (walking distance) of the majority of new dwellings within the NMRSP area.

2.2.9 Site Analysis Summary

Figure 9 provides a summary of the site analysis features of the land and identifies key opportunities and constraints for development.

- Varied topography, offering exposed areas and hidden areas
- Highly scenic, with views across Warrnambool to the ocean and views to the Structure Plan area from surrounding parts of Warrnambool – opportunity for high quality architecture and housing types.
- Broad floodplain presents opportunity for wide green open spaces to be utilised for a variety of activities however also segregates the NMR community from urban land to south. Design to provide public access to the river through edge roads. Connections (pedestrian/ cycle and vehicle) will be required to connect communities.
- Separated from other urban parts of Warrnambool. As such, connections across river and to adjoining areas should be maximised. Opportunities for vehicle connections are at Bromfield St (via a bridge over the Merri River) and pedestrain and bicycle connection via the interface with Ponting Drive.
- Existing wide road reserve of Wollaston Road presents opportunity to create a strong boulevard character through the plan area.

Figure 9 **North of Merri River Site Analysis Plan**



3 FORECAST POPULATION AND NEEDS

3.1 Introduction

The purpose of this chapter is to examine and describe the population forecast for the NMRSP area, drawing on previous work undertaken, including the Warrnambool Land Use Strategy and the NMRSP Structure Plan Report. Understanding the forecast population and approximate number of dwellings will enable an understanding to be gained of the needs of the future population.

3.2 Land Budget and housing yield

The gross land area of the NMRSP area is 249.4ha. However, approximately 67ha of land is not available for development as it is encumbered by the flood plain and wetlands.

Taking into account developable land that will be set aside for other purposes, including open space, schools and for road widening, there is capacity to develop approximately 2200 lots based on an average density of 12 lots per net developable ha. A more detailed lot yield for individual land holdings will be determined during preparation of Development Plans.

Table 2 **Summary Land Budget**

Land Budget (ha)	
Total Precinct Area	**249.36**
Encumbered land	
Floodplain and wetlands	**65.33**
Open Space	
Passive Open Space	**2.95**
Active Open Space (located within floodplain)	**0.00**
Other Uses	
Road widening	**1.1**
School	**3.43**
Net Developable Area	**176.55**

3.3

Demographic projections

The demographic profile of Warrnambool, as with other parts of Australia, is aging, with a significant decline in the size of households due to a trend towards a reduction in family size, an increase in the number of 'one parent' households, and an increase in the number of one and two person households.

The average household size in Warrnambool in 2006 was estimated at 2.5 persons, however, this household size is anticipated to decline to approximately 2.07 persons per household by 2031. As such, the NMRSP area is anticipated to accommodate a population of between 4,500 and 5,500.

While initially the NMRSP area is likely to cater for families, and as such create demand for traditional detached housing, over time, it is anticipated that smaller household types will create demand for smaller lot housing. Accordingly, a variety of densities and housing typologies will need to be provided within the NMRSP.

3.4

Needs analysis

Noting the quantum of projected population, and the anticipated characteristics of the population, the types of future infrastructure required by the community can be anticipated.

The NMRSP structure plan report (SMEC, 2009) provides detail of the demographic profile of Warrnambool and typical benchmarks for provision of infrastructure, including schools, sporting and recreation facilities and retail and services. Based on these findings, it is anticipated that the NMRSP area will create demand for the following facilities:

- State Primary school;
- Local activity centre for convenience shopping and services;
- Active playing fields (two football/ cricket ovals or soccer pitches);
- Tennis courts;
- Public transport (bus route);
- Walking and cycling trails.

VISION 4

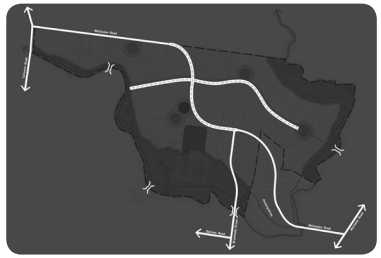
Figure 10 **North of Merri River Structure Plan**

The vision for the North of the Merri Structure Plan area is to create a well-connected and well serviced community that has a positive sense of place.

To give this vision a specific, place-based expression, four key features of the area have been identified (based on the site analysis in Chapter 2), which when combined, set the broad building blocks upon which to establish a clear place-based vision for the Structure Plan (see Figure 10 North of the Merri River Structure Plan).

- Diverse topography and landscape setting;
- Location contained by Merri River, but separated from surrounding urban area;
- Existing access provided by Wollaston Road;
- Extent of flood prone land.

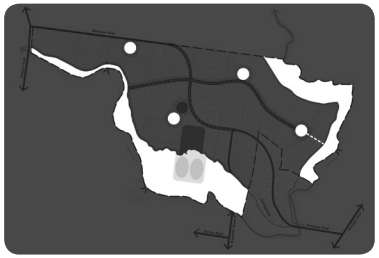
Five Key elements comprise the detailed, place based vision for the North of the Merri Structure Plan:



Movement Network

A key connector road network that:

- Responds to the topography and existing road reserves (internal and external);
- Provides the framework for a modified grid-based local road network with a high level of streetscape diversity;
- Provides internal connections between neighbourhoods and externally to surrounding neighbourhoods;
- Incorporates a positive landscape character (boulevard treatment) in key locations;
- Incorporates an accessible public transport route and linked pedestrian/cycle network.



Open Space

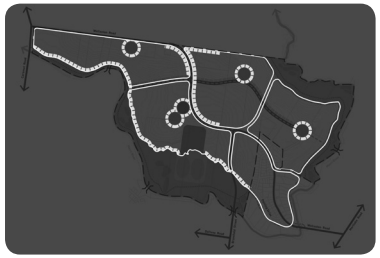
An interlinked open space network that:

- Focuses on the Merri River floodplain and key site features (ridge lines, existing vegetation, heritage features;
- Is visually and physically connected to surrounding land uses;
- Can accommodate a range of functions, including drainage, active and passive recreation, walking/cycling trails and to preserve key site features;
- Provides a high amenity setting for diverse housing outcomes, including medium density housing.

Activity Centre and Community Facilities

A centralised activity and community centre that:

- Provides a local focus for the community;
- Provides opportunities to co-locate community facilities, including a school and active open space, adjacent to the retail/service heart;
- Provides opportunities for shared use of facilities where possible;
- Takes a 'street-based' form;
- Provides a context for higher density housing;
- Supports the retail hierarchy as noted in the Warrnambool Retail Strategy and Clause 21.07.



Neighbourhood and Density

A series of internal neighbourhoods that:

- Are diverse in landscape, streetscape and built form character;
- Are clearly defined;
- Contain an identifiable neighbourhood 'core' (open space, activity centre, key topographic feature) to establish a sense of place;
- Provide opportunities for diverse housing outcomes, from smaller lots to larger lots, to achieve an average density of 12 lots per net developable ha.

Utilities and Drainage

Physical services and infrastructure that:

- Meets the needs of the community and the development;
- Is equitably funded and efficiently delivered
- Represents 'best practice' provision and design.

Details of how the Structure Plan intends each aspect of this vision to be delivered is explored in more detailed in the following chapter.

5 STRUCTURE PLAN ELEMENTS

5.1 Introduction

Each of the key structure plan elements are described in turn in this Chapter. A set of design objectives have been outlined for each element, which seeks to describe in words the intent and aspirations for each element of the plan.

While each element is described separately, it is noted that they are interlinked, and as such, one component influences the other. As such, any alterations to one component must be considered more broadly in terms of the impact on the plan and the vision as a whole.

These objectives of the Structure Plan must be responded to during preparation of Development Plans and subsequent Planning Permit applications for subdivision. Specific direction for Development Plans and planning permit applications are provided following the set of objectives to provide guidance on more detailed matters.

5.2 Movement Network Vision

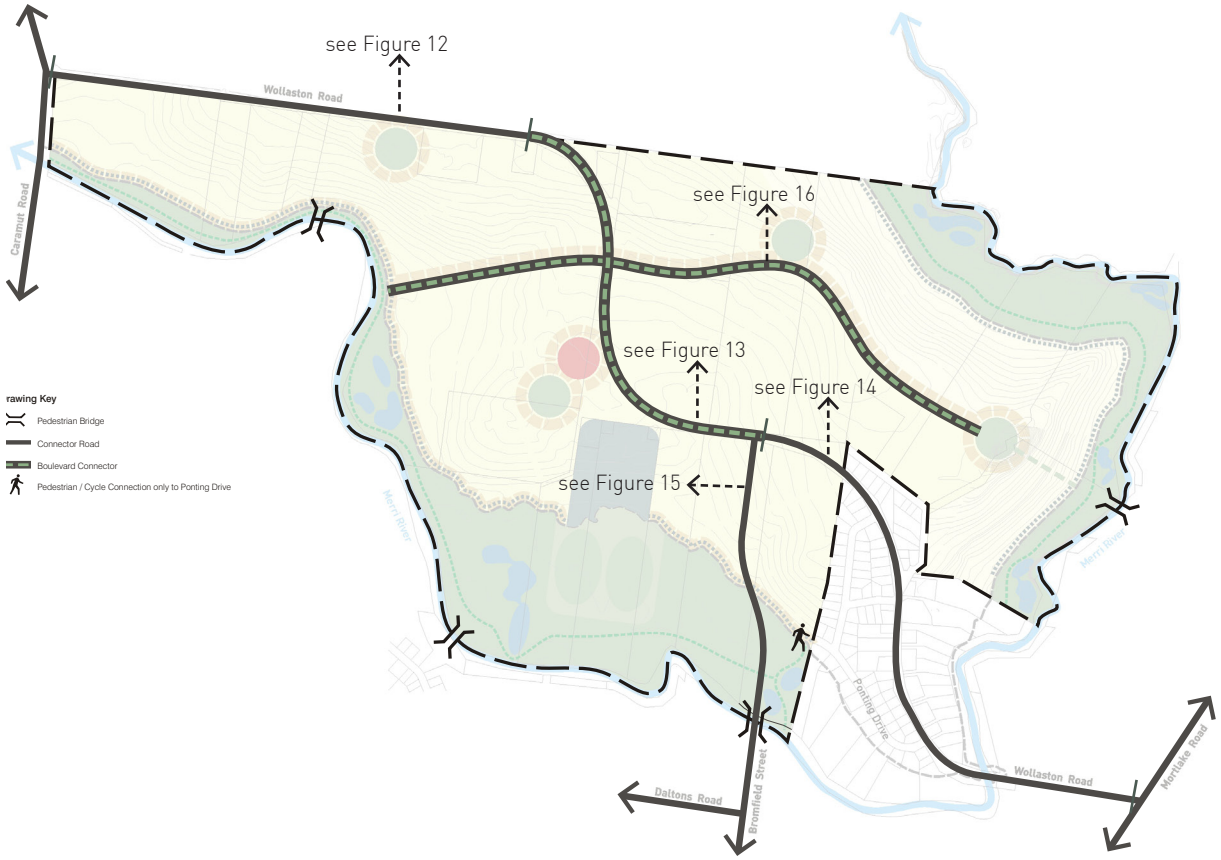
A key connector road network that:

- **Responds to the topography and existing road reserves (internal and external);**
- **Provides the framework for a modified grid-based local road network;**
- **Provides internal connections between neighbourhoods and externally to surrounding neighbourhoods;**
- **Incorporates a positive landscape character (boulevard treatment) in key locations; and**
- **Incorporates an accessible public transport route and linked pedestrian/ cycle network.**

The proposed movement network uses the existing Wollaston Road reservation, as well as an external connection point provided by Bromfield Street to create a connector road network that provides a high degree of connectivity internally and externally. Combined with a secondary connector road extending east-west along a ridge line (east) and along a valley (west), these roads are intended to link and define neighbourhoods, to provide the framework for a modified grid based road network, and to enable provision of a bus route through the area.

Shared paths are to be provided within open space, including the floodplain, and on-road bicycle lanes to be provided along connector roads to establish a high-quality and connected network for pedestrian and cycle movements.

Figure 11 **Movement Network**



Structure Plan Objectives:

- To utilise the existing Wollaston Road reserve as the key spine road through the plan area to connect externally to the east and the west, and to define and connect internal neighbourhoods.
- To provide a north-south connection over the Merri River at Bromfield Street to connect the NMRSP area with urban areas to the south.
- To align a secondary east-west connector road taking into account topographic features (along a ridge line to the east of Wollaston Road, and along the valley to the west of Wollaston Road)
- To incorporate a central median into the cross-section of Wollaston Road through the central part of the plan area to create a strong landscape character/boulevard effect, and to manage traffic movements at intersections with local roads.
- To incorporate a central median within the east-west connector to create a grand-tree lined boulevard in a visually prominent location, and to connect the Merri River in a 'green loop' to be utilised by pedestrians/cyclists.
- To provide a connector road network that will enable provision of a modified grid-based local road network, that is highly permeable and connected, and comprises a variety of local road cross-sections to add interest to the neighbourhoods.
- To utilise Wollaston Road as a bus route that is accessible to the majority of residents within a five minute walk (400m).
- To provide a connected on and off road pedestrian/cycle network that utilises the Merri River, local open space links and boulevard connector roads.
- To provide an active edge to all open space areas, including the floodplain, via edge roads
- To provide a 'one-sided' cross-section for Wollaston Road where it interfaces with rural land to the north.
- To provide 'direct' property access to all roads, including Wollaston Road.
- To provide for a pedestrian/cycle only link between the adjacent, existing Ponting Estate and the NMRSP area in the location of Ponting Drive. The link is not to facilitiate through vehicle movements.

Direction for Development Plans:

Cross-sections

Typical cross-sections have been prepared for roads shown in the Structure Plan. These cross-sections reflect the access and design objectives set out above.

Wollaston Road provides a pavement width suitable for accommodating buses, and indented parking bays (with landscaped kerb outstands) to form an attractive and functional connector road. On-road cycle lanes are also accommodated. Where Wollaston Road interfaces with rural land to the north, it is intended that only the pavement and southern verge be constructed as part of NMRSP development (see Figure 12 Wollaston Road Cross-section A).

Through the central part of the plan area, Wollaston Road is intended to take on a boulevard character, incorporating a landscaped central median. While primarily incorporated for urban design reasons (i.e. to assist in establishment of a positive sense of place), the median is intended to also perform a traffic calming function, minimising traffic conflicts at intersections between local roads and Wollaston Road, and providing a refuge for pedestrians crossing to access the activity centre.

The Bromfield Street Cross-section has been design to match in with the existing cross-section to the south, and comprises a single carriageway with cycle lanes.

The east-west connector incorporates a central median to take on a boulevard character along a visually prominent ridgeline and within a valley which is visible from the western parts of Wollaston Road. In addition, a shared path has been incorporated into this cross-section as the road forms a key link in the pedestrian/cycle 'loop' through the plan area.

Figure 12 **Wollaston Road cross section A**

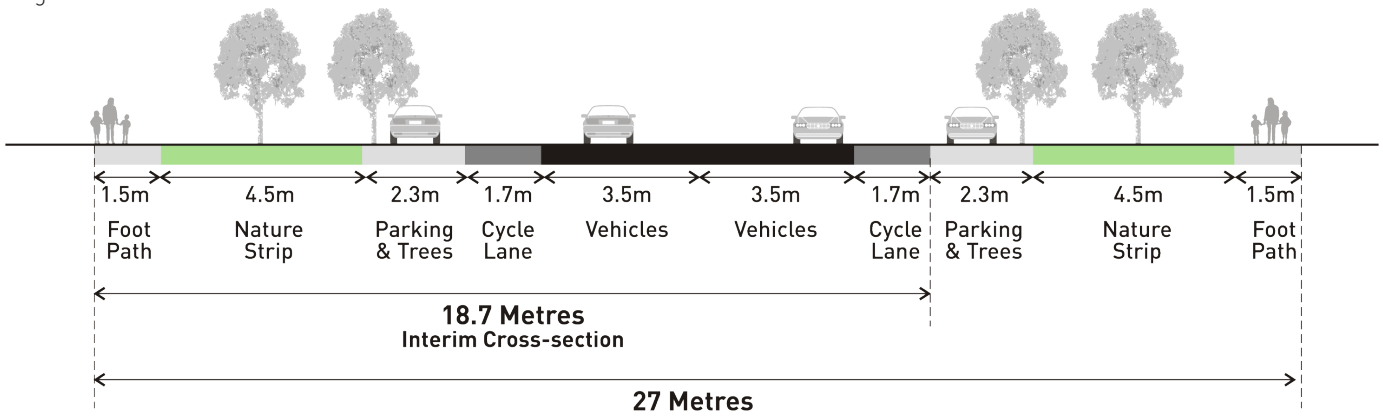


Figure 13 **Wollaston Road cross section B**

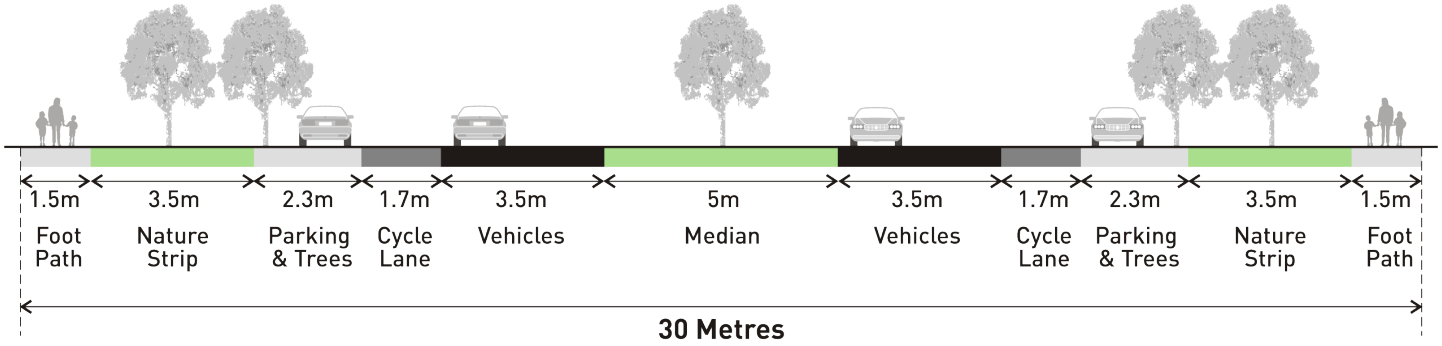
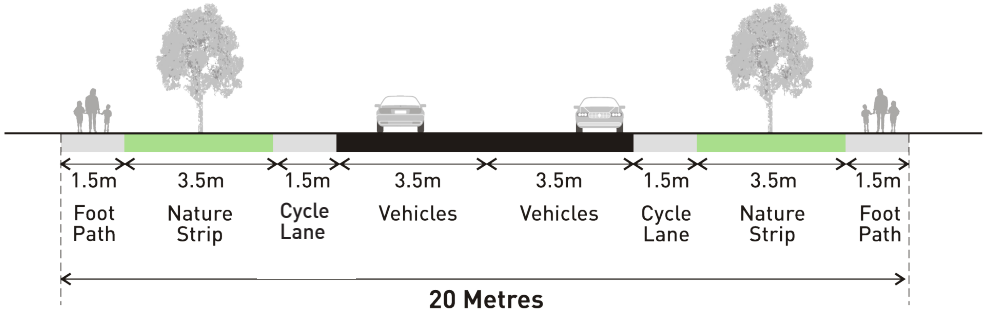


Figure 14 **Wollaston Road cross section C**



Local Roads are not shown on the Structure Plan; however, they will need to be designed through the Development Plan process. Figure 17 illustrates a standard cross-section for local roads, however, it is emphasised that the vision for NMRSP is to create neighbourhoods that are distinct and diverse. As such, a design objective of this Structure Plan that must be responded to at the Development Plan stage is to deliver diverse streetscapes through modifications to the local street cross-section. These modifications should respond specifically to the site, and may comprise alternative parking arrangements (for example angled), widened naturestrips, central medians etc. However it is noted that narrowing of the road pavement will not generally be supported.

Intersections

Intersection works are proposed with Wollaston Road in the following locations:

- Caramut Road (T-intersection upgrade))
- East-west connector (roundabout)
- Bromfield Street (T-intersection)
- Johnstone Street (T-intersection upgrade)
- Cecil Street (T-intersection upgrade)
- Ponting Drive (either a roundabout with full vehicle movements or an alternative treatment to provide 'entry only' off Wollaston Road subject to future assessment and consultation with the local community)
- Hopkins Highway/Mortlake Road (signals).

Road Construction Timing

Development Plans must set out proposed road works and timing of construction of these works in accordance with the NMRDCP.

Please refer to the NMRDCP for project details and indicative provision triggers.

Figure 15 **Bromfield Street cross-section**

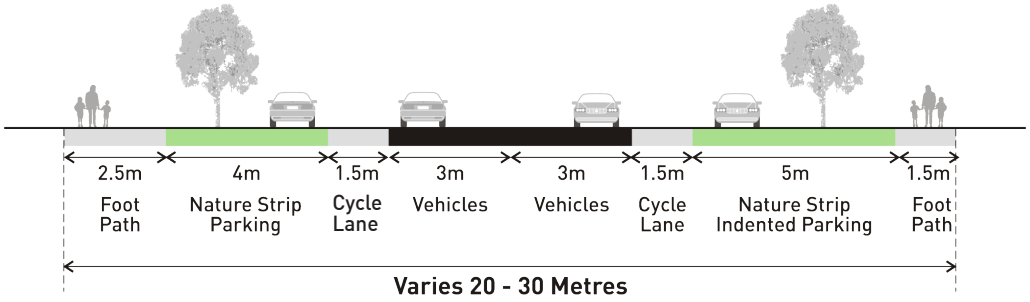


Figure 16 **East-West Connector cross section**

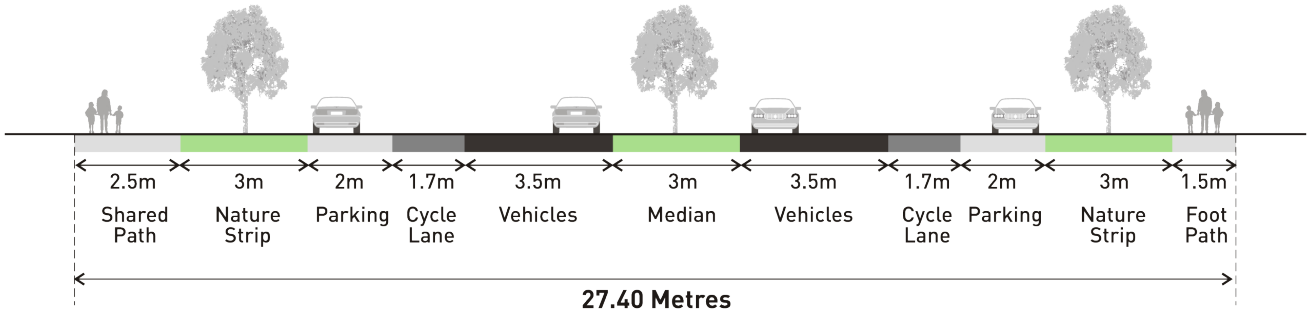
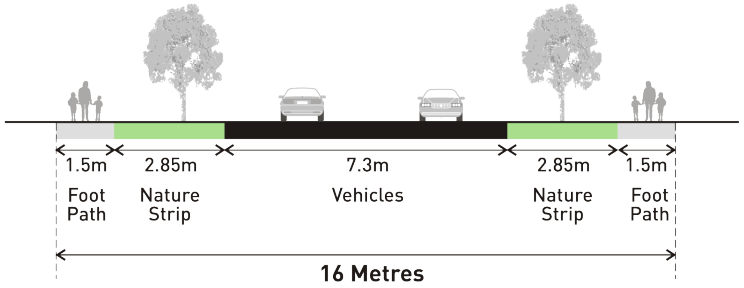


Figure 17 **Standard Local Road cross section**



5.3

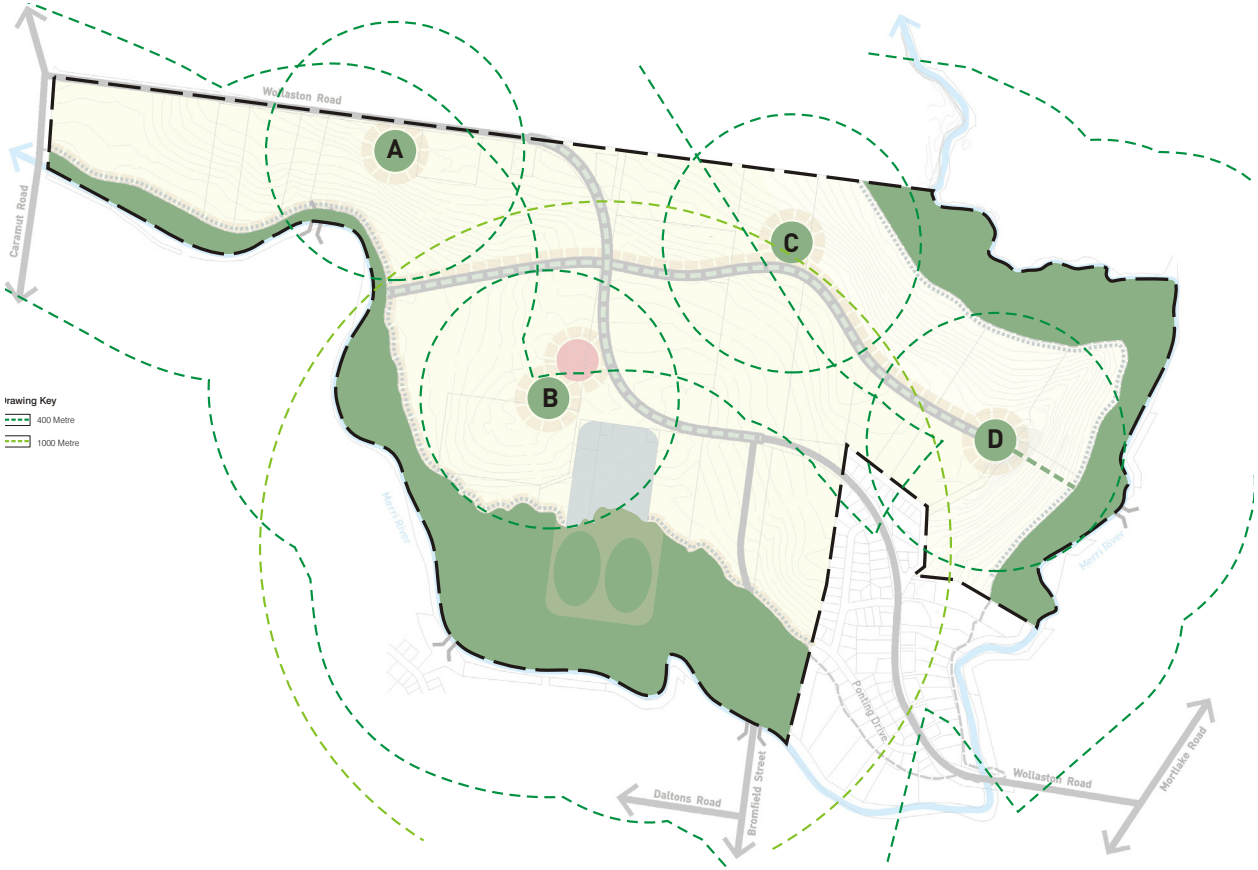
Open Space

An interlinked open space network that:

- Focuses on the Merri River floodplain and key site features (ridge lines, existing vegetation);
- Is visually and physically connected to surrounding land uses;
- Can accommodate a range of functions, including drainage, active and passive recreation, walking/cycling trails and to preserve key site features; and
- Provides a high amenity setting for diverse housing outcomes, including medium density housing.

The NMRSP incorporates an open space network that makes efficient use of developable land and is focused primarily around the Merri River floodplain and a series of passive open space areas. A 'green loop' comprising open space and boulevard roads forms a open space/green experience around the plan area that links neighbourhoods and provides pedestrian/cycle access to the range of spaces available, and will form an identifiable feature within the Structure Plan area. Each open space area will have a distinct character that reflects its context and its intended function.

Figure 18 **Open Space**



Structure Plan Objectives

- To maximise use of the floodplain for active open space and passive recreation where possible to minimise the need to set aside developable land for open space
- To locate active open space land within the floodplain. Sufficient land has been identified to accommodate two ovals, car parking, tennis courts and a shared pavilion within the floodplain, adjacent to the proposed primary school.
- To create a 'green loop' system of open space and green boulevards, comprising the floodplain, east-west boulevard connector and local open space which provides a high amenity landscape setting for diverse housing outcomes, and provides a connected off-road pedestrian/ cycle movement network.
- To locate passive open space to coincide with landscape/ site features where appropriate to protect these features and to provide each space with its own distinct character.
- To visually and physically link open space to neighbourhoods through use of edge road treatments, including edge roads along the length of the floodplain.
- To incorporate small urban 'green' spaces within the detailed design of subdivisions, including small pockets parks, widened naturestrips, central medians etc to provide a point of difference within neighbourhoods that can be utilised as a context for higher density housing.

Direction for Development Plans:

Encumbered Open Space

While the primary purpose of the floodplain is for drainage purposes, it is recognised that the area can accommodate multiple functions, and is a valuable open space resource. As such the area is intended to accommodate active and passive recreation uses, including a series of shared paths, and will contribute to the 'green loop' of open space/ boulevard streets throughout the plan area.

The floodplain also contains the highest flora and fauna values across the site, and should be revegetated and remediated to conserve and enhance these values.

During preparation of Development Plans, a Landscape Masterplan should be prepared for the floodplain area (or part there of), which clearly defines which part of the floodplain will be used for active, passive and conservation functions, with a distinct landscape design for each. However, the ongoing maintenance of the floodplain will be the responsibility of Council.

The 30m biodiversity corridor along the river should be responded to when considering locations for shared paths and other embellishments.

Active Open Space

The NMR Structure Plan Report (SMEC‹ 2009) identified that a community of 4000-5000 people meets the benchmark for provision of active open space incorporating active playing fields (football/cricket ovals and soccer pitches) and tennis courts. A shared pavilion and car park will be required to be located within these facilities

Flood modelling as part of the Structure Planning work has identified the 1 in 100 year flood line, however, within this boundary, the CMA have confirmed that there is scope to utilise some land for active open space purposes. As such, provision for an active open space area has been nominated as being located within the floodplain, and as such, no developable land will need to be set aside for active open space purposes within the developable area. In addition, Warrnambool City Council will take responsibility for the funding of construction of these active open space facilities (excluding works required to ensure the flood prone land is fit for active open space purposes) at a time when required by the population of the NMRSP community.

Given that the active open space facilities will be constructed on flood prone land by Council at a later date, the actual facilities will be determined as that time.

Passive Open Space

Given the floodplain area is available to accommodate a range of active and passive recreation opportunities for the community, only small scale, local parks are required to be provided within the main development area. These small local parks are located to form the heart of neighbourhoods, and where possible, have been located to take advantage of and to protect key site features, such as hill tops, ridgelines, existing vegetation and heritage features, and to link in with the 'green loop' created by the floodplain/ east-west boulevard connector. Each open space area should be designed to have a distinct character that reflects its context and intended use. By taking into account the presence of the floodplain, the internal passive open space requirements can be reduced to those set out below, which meet the appropriate statutory benchmarks.

A – Located on the plateau along Wollaston Road. View lines across Warrnambool should be responded to when determining a landscape character for the area. Size: 1.1ha

B – Located to form an urban heart to the neighbourhood, co-located with the local activity centre. This open space area should take on an urban/plaza character, and be incorporated into the design of the activity centre. 0.6ha

C – Located along the east-west connector along the ridgeline, part of the 'green loop'. The landscape character of this space should take on a character consistent with the landscaping within the east-west boulevard. Size: 0.5ha

D – This space is visually prominent as it is located on the ridgeline, at the terminating vista of the east-west connector. As the space forms part of the 'green loop', it must connect to the floodplain via a linear open space link, or alternative treatment such as a boulevard street. This space should take on a formal landscape character that is consistent with the east-west boulevard road, providing a high quality and formalised 'book-end' to the eastern extent of the east-west boulevard. Size: 0.75ha.

5.4

Activity Centre and community facilities

A centralised activity and community centre that:

- Provides a local focus for the community;
- Provides opportunities to co-locate community facilities, including a school and active open space, adjacent to the retail/service heart;
- Provides opportunities for shared use of facilities where possible;
- Takes a 'street-based' form;
- Provides a context for higher density housing;
- Supports the retail hierarchy as noted in the Warrnambool Retail Strategy and Clause 21.07.

A local level activity centre, co-located with a primary school and open space, is to be located centrally within the NMRSP area, along Wollaston Road to serve as an active heart or focus for the NMRSP community and to meet the convenience retail and service needs of the community. While the NMRSP does not define the exact footprint of this centre, the key objectives are to ensure that it is centrally located, of a local scale and accessible via Wollaston Road.

Figure 19 **Activity Centre and Community Facilities**

Structure Plan Objectives

- To locate a small-scale activity centre centrally within the NMRSP area, on the west side of Wollaston Road that will form an accessible and vibrant 'heart' to the NMR community.
- To provide local convenience centre retail and services, possibly including a small convenience/general store, small service businesses, a café and community services such as childcare and a medical centre.
- To provide opportunities for higher density housing and mixed uses, such as home offices surrounding the activity centre.
- To incorporate public space as a central part of the activity centre by co-locating the activity centre with a passive open space reserve.
- To integrate the activity centre with surrounding community uses such as the primary school.
- To provide opportunities for shared use of community facilities, for example, shared use of the primary school site as a Council operated community centre.
- To ensure the activity centre is accessible via public transport by locating it on a bus route.

Direction for Development Plans:

Activity centre Design

At the Development Stage it will be necessary to develop a design for the structure of the activity centre, that integrates with the local road network and other land uses and comprises a high quality built form. Specific objectives include:

- Scale of activity centre (i.e. retail floor space) must reflect its local status in the retail hierarchy noted in Clause 21.07 (i.e. as a Convenience Centre, providing daily goods and services.
- Mixed uses, incorporating higher density residential, community uses and home/ office style uses are encouraged in the area immediately surrounding the activity centre.
- The activity centre and surrounding local street network should be designed to 'talk to' the proposed primary school, even if they are not immediately adjacent to each other.
- Activity centre must be designed to be visible and accessible from Wollaston Road.
- The activity centre and school should comprise high quality built form that positively address the surrounding streets, corners and public spaces, including open space.
- Adequate parking must be provided in a location that does not feature prominently from key locations, such as Wollaston Road
- Buildings and uses should be of a scale sympathetic to the surrounding residential context
- Future bus stop locations must include a bus stop at the activity centre.

5.5

Neighbourhoods and density

A series of internal neighbourhoods that:

- Are diverse in landscape, streetscape and built form character;
- Are clearly defined;
- Contain an identifiable neighbourhood 'core' (open space, activity centre, key topographic feature) to establish a sense of place;
- Provide opportunities for diverse housing outcomes, from smaller lots to larger lots, to achieve an average density of 12 lots per net developable ha.

The NMRSP area comprises five general neighbourhoods of approximately 400m in radius (i.e. a five minute walk in each direction) which are each focused around a centralised features, such as a passive open space reserve or activity centre which serves to provide a local point of difference, to give the neighbourhood a distinct character and identity and as a context for diverse housing outcomes.

A density target of 12 lots per net developable ha is to be adopted as the general density target for the area. It is considered that this target is appropriate taking into consideration the landform characteristics of the area and the likely market conditions. Notwithstanding, the structure of the plan seeks to ensure that higher densities will be able to be achieved over time, as the area matures. To this end, the Structure Plan directs that Development Plans will need to be designed with a robust yet flexible structure of subdivision, based on the modified grid-based local road system, a high degree of streetscape amenity and diversity, and well-considered siting of housing that will, combined, support opportunities for re-subdivision of lots in the future.

Figure 20 **Neighbourhoods and Density**

Structure Plan Objectives:

- To create five distinct neighbourhoods defined by a neighbourhood 'core' (passive open space, the local activity centre).
- To link each neighbourhood by the key character roads (Wollaston Road and the east-west boulevard connector) and the 'green loop' comprising the floodplain and east-west boulevard connector.
- To provide a high amenity character to each neighbourhood through the use of diverse streetscape cross-sections (See Chapter 5.2) and distinct open spaces (See Chapter 5.3), that can be used as a context for diverse and higher density housing outcomes.
- To identity appropriate locations for smaller lots.
- To respect interfaces with adjoining land, including high value agricultural land to the north, and the existing residential estate to the east.

Direction for Development Plans:

Neighbourhood design, lot planning and housing design

The vision for the NMRSP is to deliver densities of approximately 12 lots per net developable ha across the entire site, via a diverse range of lot sizes. Indicative locations for smaller areas of housing diversity including smaller lot housing has been identified on the Structure Plan, which mainly respond to locations with higher amenity (along the River, adjacent to open space) and in proximity to the activity centre. Notwithstanding, diversity in lot size is encouraged throughout the Structure Plan area.

Development Plans must be designed to respond to the average density requirement in the following ways:

- Local road network must be designed to cater for a range of lot types within all streets, that incorporate variation in:
  - Lot depth and width;
  - Front, side and rear setbacks,
  - Access conditions.
- Incorporate streetscape diversity and character into the local street network via use of varied local cross-section designs to provide a high amenity context for smaller lot housing
- Nominate a range of lot sizes throughout the plan area, which respond to the existing and planned site conditions e.g. smaller lot product around open space, around the activity centre, larger lots on steeply sloping land and where nominated on the plan within the 1 in 100 year flood extent.

  Development Plans must also identify locations where larger lots may be suitable for future subdivision, such as along the key boulevard. The siting of housing on these lots will then need to be carefully considered through the use of building envelopes to preserve opportunities for infill subdivision/development to occur as the area matures.

  Development Plans must also identify types of interfaces and connections to adjoining land. In particular, Development Plans must specify what fencing and allotment treatment will be appropriate to interface with the rural to the north, taking into consideration that this is very productive farmland.

Lot planning and housing design on sloping land

Development plans for land with steeper slopes must identify means of:

- Protecting and minimising disturbance to natural landforms by designing roads and lots in a manner that minimises the need for cut and fill;
- Encouraging construction of buildings that are designed to respond sensitively to natural topography by:
- Minimising the visual bulk of the development, particularly when viewed from down slope.
- Minimising the need for cut and fill by designs which minimise the building footprint and allow the building mass to step down the slope
- Minimising the impact of development on the privacy of adjoining land.

5.6

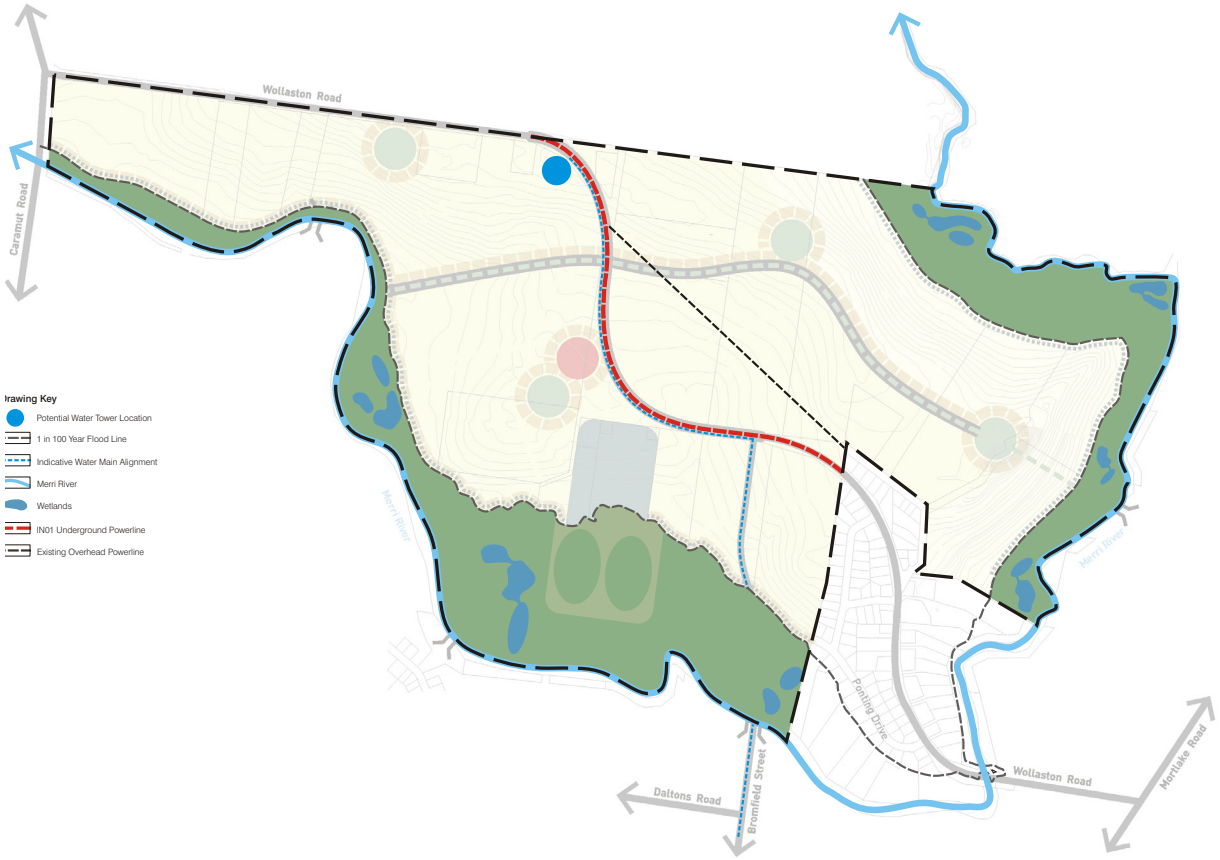
Utilities and Drainage

Physical services and Infrastructure that:

- Meets the needs of the community and the development;
- Is equitably funded and efficiently delivered;
- Represents 'best practice' provision and design.

The NMRSP area will be progressively provided with all necessary physical services (sewer, potable water and stormwater management) to support the ultimate population.

Figure 21 **Infrastructure**



Structure Plan Objectives:

- To identity key infrastructure that will serve the broader NMR community, and as such, funding of this infrastructure should be shared (see Figure 20 for list of infrastructure).
- To provide for the relocation underground of the existing high voltage power line and for the funding of these works to be shared.
- To identify a Water Sensitive Urban Design approach to stormwater management that meets the drainage requirements of the development and also protects the water quality of the Merri River. This approach provides for 8 sub-catchments that will drain to a series of wetlands to be located within the floodplain that will manage stormwater flows and quality, supported by main drainage infrastructure to be incorporated within the local street network.
- To utilise the NMRDCP to equitably distribute the costs associated with provision of drainage and road infrastructure.
- To identify indicative locations for major water supply infrastructure, including a water tower, tank and mains pipeline. The cost of these works will be borne by Wannon Regional Water Authority.

Direction for Development Plans

Servicing and Drainage

Current infrastructure providers to the NMR area are:

Water & Sewerage	**Wannon Regional Water Authority**
Electricity	**Powercor Australia**
Telecommunications	**Telstra**
Drainage	**Warrnambool City Council/Glenelg Hopkins CMA**
Gas	**Tennix**

All providers have advised that the land can be serviced. Details of servicing staging and delivery, including any easements which may be required, must be provided as part of future Development Plans.

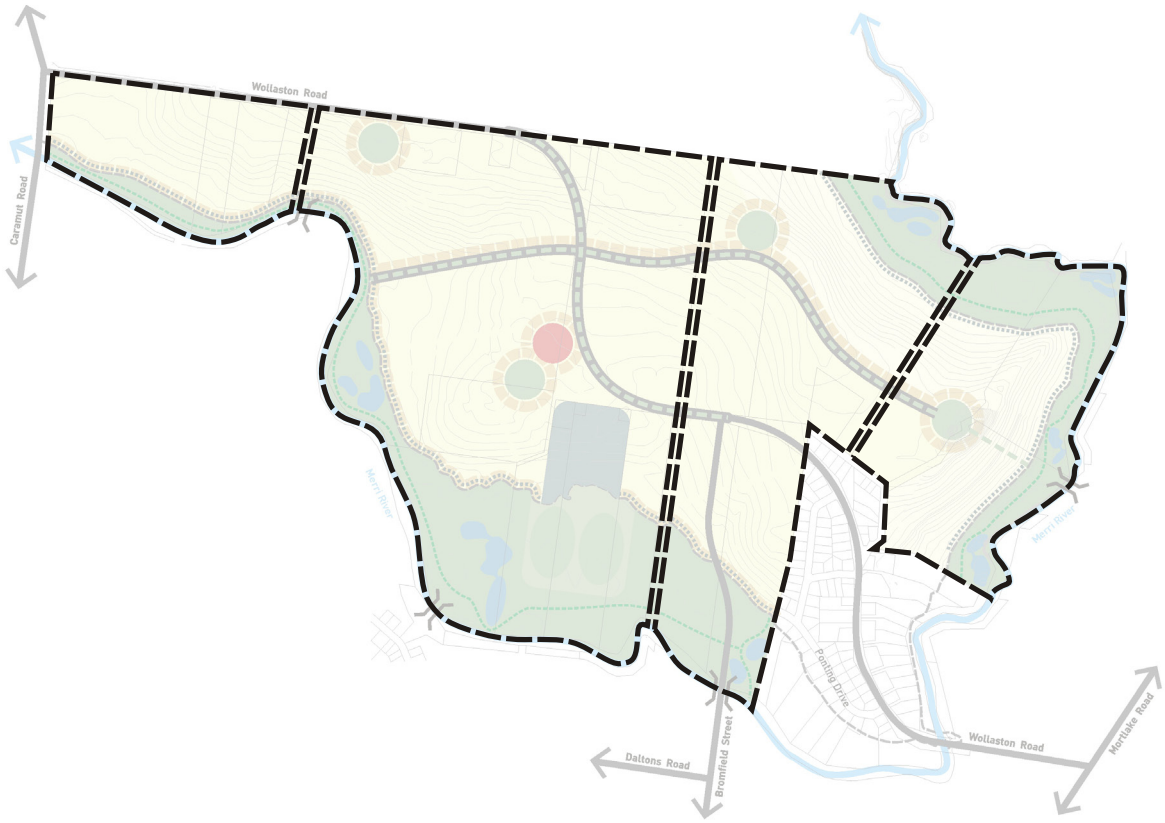
6

6.1

Development staging and Development Plan Areas

A Development Plan is required to be approved by the responsible authority before a planning permit can be issued (some exemptions apply). Development Plans must be prepared in accordance with the North of the Merri River Development Plan Overlay (Clause 43.04), and must be prepared for a group of landholdings that represent a logically defined precinct. Indicative Development Plan areas are provided in Figure 22.

Figure 22 **Development Plan precincts**



The key purpose of a Development Plan is to resolve:

- Layout issues at the local road network scale, including connections at property boundaries and local connections to adjoining land outside the Structure Plan area;
- Detailed location and configuration of the activity centre (where relevant);
- Design of open space;
- Typical cross-sections for a variety of local streets;
- Provision of servicing infrastructure;
- Native vegetation and heritage issues;
- Details of Development Contribution Plan items proposed to be undertaken as 'works in lieu' of cash contributions.

Development is likely to commence first from the central part of the Structure Plan area, where landholdings are owned by a group of developers.

6.2

Subdivision works by Developers

As part of subdivision construction works, new development is required to meet the cost of delivering the following infrastructure (where the infrastructure is not included in the development contributions plan for the land incorporated into the Warrnambool Planning Scheme):

- East-west connector and local streets;
- Landscaping of all existing and future roads and local streets (with reimbursement for those that are included in the NMR Development Contributions Plan incorporated in the scheme to the satisfaction of the collecting agency);
- Intersection works and traffic management measures along collector roads and local streets (with reimbursement for those that are included in NMR Development Contributions Plan incorporated in the scheme to the satisfaction of the collecting agency);
- Local pedestrian and bicycle paths along local arterial roads, collector roads and local streets and within local parks (with reimbursement for those that are included in the NMR Development Contributions Plan incorporated in the scheme to the satisfaction of the collecting agency);
- Basic improvements to local parks and passive open space including levelling, grassing, tree planting, local playgrounds and shared paths and footpaths;
- Local drainage systems;
- Infrastructure as required by utility services providers including water, sewerage, drainage (except where the item is funded through the DCP), electricity, gas, and telecommunications.

6.3

Development Contributions Plan

A Development Contributions Plan (DCP) has been prepared for the NMR area in conjunction with this Structure Plan, which also details open space contributions. The NMR Development Contributions Plan is an incorporated document of the Warrnambool Planning Scheme and implemented through the Development Contributions Plan Overlay. Open space contributions are to be provided in accordance with the DCP, with contributions implemented through the Schedule to Clause 52.01.

7 REFERENCES

Cardno Grogan Richards, 2010, Design of North Warrnambool Floodplain Management Plan: Implementation Works

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