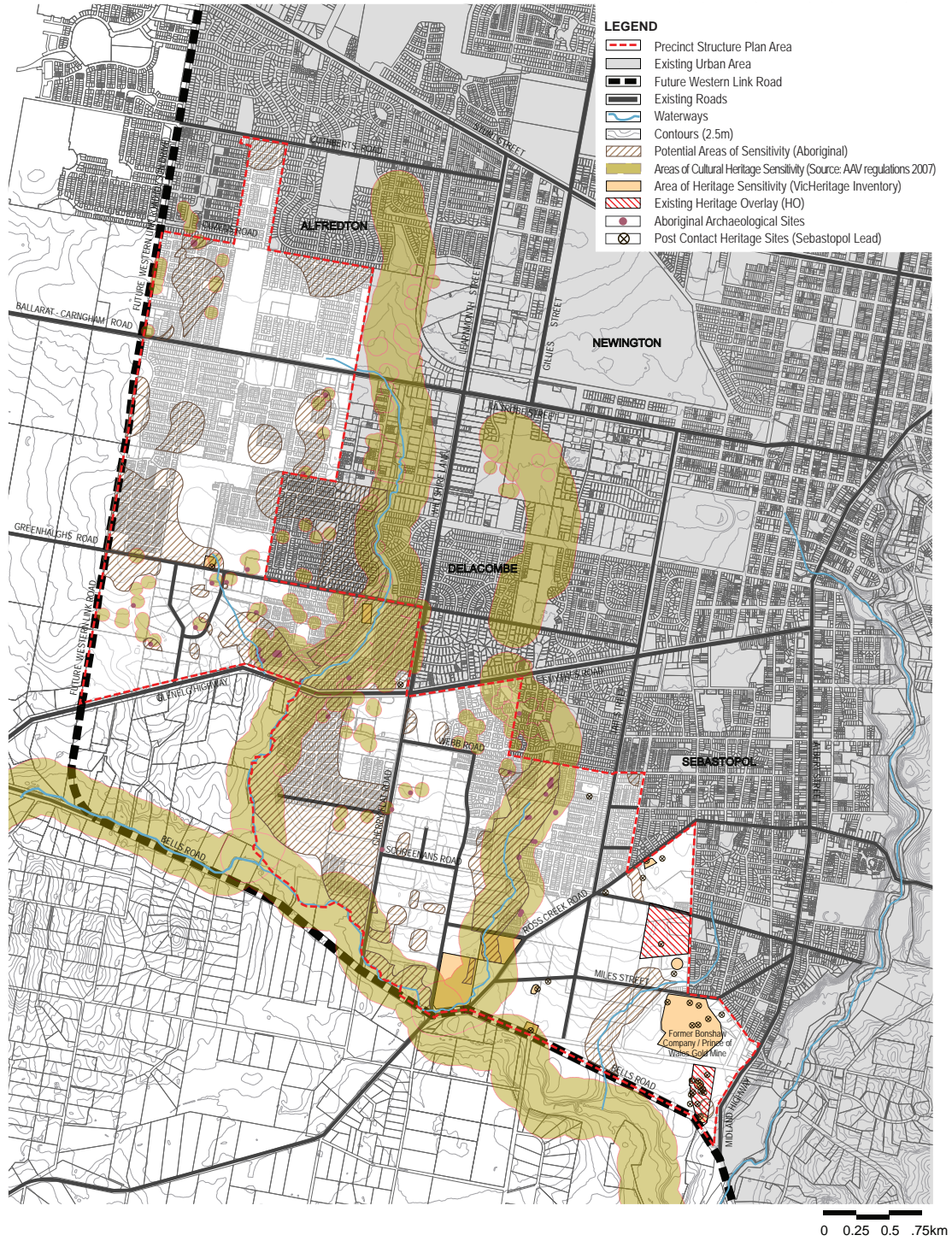


Plan 6 Heritage



### 3.3 Heritage

#### 3.3.1 Aboriginal Heritage

The Wathaurung are the traditional inhabitants of this region. The Wathaurung Aboriginal Corporation is the Registered Aboriginal Party (RAP) under the *Aboriginal Heritage Act 2006*.

The Aboriginal and Historical Heritage Assessment undertaken in 2010 found that the Ballarat West PSP area contains a number of areas of cultural sensitivity, as defined by the *Aboriginal Heritage Regulations 2007*. In total, 26 Aboriginal heritage sites were identified in the Ballarat West Growth Area; 11 in Sub-Precinct 1, 10 in Sub-Precinct 2 and 3 in Sub-Precinct 4 (Refer to Plan 6).

The majority of the identified sites were found along creek lines, typically contained 1 to 2 isolated artefact scatters and were considered of low significance from a scientific perspective (the Wathaurung people consider all artefacts to be of cultural significance). Two sites of moderate significance were identified in Sub-Precinct 1. Three sites of moderate significance were identified in Sub-Precinct 2. All sites of moderate significance were located along creek corridors.

The study that identified these artefact scatters also identified areas with potential to contain Aboriginal heritage material outside of the areas of cultural heritage sensitivity prescribed by the *Aboriginal Heritage Act 2006*.

The preparation of the Ballarat West PSP has incorporated the findings of the archaeological and heritage reports by creating linear open space corridors along creeks in order to protect these areas from development.

In accordance with the *Aboriginal Heritage Act 2006* and the *Aboriginal Heritage Regulations 2018*, all areas of cultural heritage sensitivity require a Cultural Heritage Management Plan (CHMP) to be prepared and approved prior to development of the land. Voluntary Cultural Heritage Management Plans have been recommended for areas identified as possessing potential Aboriginal heritage material

#### 3.3.2 European Heritage

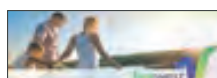
The Aboriginal and Historical Heritage Assessment undertaken in 2011 found 11 European heritage sites in Sub-Precincts 1 and 2. No European heritage sites were identified in Sub-Precinct 4.

The heritage sites recorded relate to historic gold mining activities and later rural settlement in the area. Of the 11 sites identified, none were identified as being of State or regional significance; all are listed on the Victorian Heritage Inventory.

One of the sites (the former Bonshaw Company/Prince of Wales gold mine in Sub-Precinct 1) has been identified as being of local significance and will be protected through the City of Ballarat Planning Scheme. In addition, a series of former gold mining sites along the Sebastopol Lead

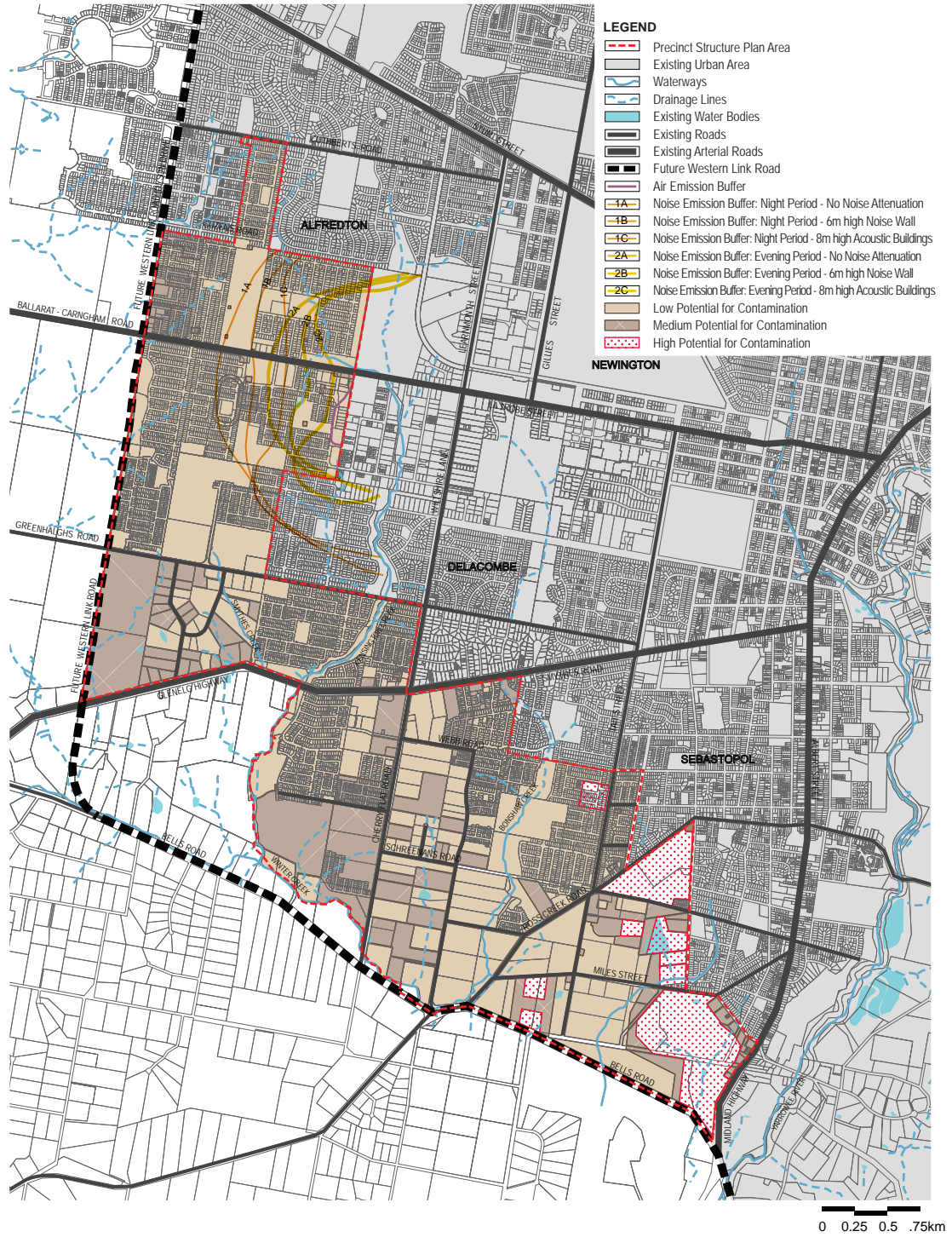
has been identified as having importance as a cultural landscape. Both of these items are addressed through the Ballarat West PSP.

Sub-Precinct 1 also contains an existing heritage site which is covered by Heritage Overlay Schedule 142 (HO142) - Former St Joseph's Home, which is to be retained. This site is also being considered for State listing





Plan 7 Environmental Issues



### 3.4 Catchments and Drainage

The Ballarat West PSP Area is mostly located within the Winter Creek Catchment, with a small area that flows more directly to the Yarrowee River via minor creeks. The management of the quantity and quality of water discharged from the Ballarat West PSP area is critical in ensuring there are no detrimental impacts to the existing watercourses within the catchment as a result of future development.

There are three existing named creeks within the Precinct: Kensington Creek, Winter Creek and Bonshaw Creek. This network forms a continuous creek corridor through Sub-Precincts 1 and 2. In existing urban areas adjacent to the Ballarat West PSP area, these creeks are supported by an existing drainage network consisting of open channels, underground pipes, pits, retarding basins and various hydraulic structures.

As part of the Ballarat West PSP, the Drainage Scheme for the study area has been reviewed. An integrated trunk drainage system is required to protect future properties and water quality. There are also opportunities for stormwater harvesting, for example for irrigation of sportsgrounds.

### 3.5 Site Contamination

In accordance with Ministerial Direction 1, studies have been carried out to identify areas within the Ballarat West PSP area that have Potential for Contamination (PFC) as a result of past land uses. Properties were classified into three categories; High, Medium and Low PFC. Areas identified as having a high PFC will have the Environmental Audit Overlay applied to them.

Areas identified as having a medium PFC will be required, where they are to be developed for sensitive uses, to provide evidence that the land is suitable for future use of the land prior to development commencing on any affected landholdings. Conditions to be met for medium PFC areas in relation to sensitive land uses, are detailed in the Urban Growth Zone Schedule that applies to the land.

Areas identified as having a low PFC will require a general duty of care pursuant to the Planning and Environment Act 1987.

### 3.6 Roads and Access

#### Ballarat Western Link Road

The Western Link Road will act as a key traffic route for Ballarat, linking the Western Freeway to the north of the airport and the Midland Highway to the south of Sebastopol. The proposed alignment of the Western Link Road will extend southward from Dyson Drive defining the western edge of Sub-Precincts 2 and 4 and the southern boundary of Sub-Precinct 1. The ultimate road design will be two lanes in each direction between the Western Freeway and Glenelg Highway, one lane in each direction between Glenelg Highway and Cherry Flat Road, and either one or two lanes from there to the Midland Highway, depending on future traffic volumes. Service lanes may also be provided by developers.

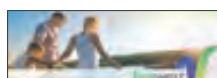
Access to the Western Link Road from the PSP area will be limited to Ballarat-Carngham Road, Greenhalghs Road, the Glenelg Highway, Cherry Flat Road, Ross Creek Road and the proposed Schreenans Lane extension. The Western Link Road will fulfil both a local and regional function in the PSP area as development occurs in the Ballarat West Growth Area. Land for part of the Western Link Road reservation will need to be reserved and acquired within the Ballarat West PSP area in Sub-Precincts

#### Opportunities for the Future Road Network

There are opportunities to provide an integrated, walking, cycling, public transport and vehicle network throughout the Ballarat West PSP area. Opportunity exists for an additional north-south link through Sub-Precincts 2 and 4 which will provide opportunity for public transport routes, walking and cycling paths.

Schreenans Road and Webb Road provide additional east-west connections in the southern parts of the Ballarat West PSP area. The new road cross section for these key roads will incorporate carriageways and verges that can accommodate public transport routes and bike and foot paths to support a range of transport nodes and provide walking and cycling connections throughout the precinct.

The Ballarat West PSP Road network, Public Transport and Walking plans provide for the extension of existing networks into the Ballarat West PSP Area and expansion of existing networks throughout the PSP area.





### 3.7 Land Use

#### 3.7.1 Existing Land Uses

Land in the original Ballarat West PSP comprised predominantly farming and rural-residential land. Since the Ballarat West PSP has been prepared, as land has been developed only a part of Ballarat West remains as farming land.

#### Existing Low Density Residential Zoned Land

There are two existing areas of Low Density Residential Zone (LDRZ) within the Precinct:

- LDRZ Area 1 in Sub-Precinct 1 to the east of Cherry Flat Road and south of Glenelg Highway; and
- LDRZ Area 2 in Sub-Precinct 2 to the south of Greenhalghs Road and north of Glenelg Highway (Masada Boulevard and Fay Drive precinct).

LDRZ Area 1 comprises 110ha hectares across 48 properties. Properties in this low density area vary in size and character. Some properties are of conventional residential character while others have a more rural character. Landholdings vary in size from 4,000 square metres to over 16ha. Land could be subdivided to conventional residential densities in the medium term once services are available, however there would be a requirement to provide for additional access roads and public open space should this occur.

LDRZ Area 2 comprises 66 hectares across 45 properties. Due to the configuration of the streets, landholdings in this area have irregular shapes and sizes. The fragmented nature of landholdings in this area and the irregular shape of lots place constraints on how this area could be further developed. There is potential to further subdivide this area in the long-term to accommodate more conventional residential density, once services are available. New east-west road connections to the development will be critical to ensuring integration with future development.

A concept plan (figure 2) has been included for the Masada Boulevard/Fay Drive precinct which was previously zoned Low Density Residential. This plan is required to give guidance to landowners on how the existing parcel configuration and road network may be incorporated into future subdivision layouts to ensure an orderly and rational integration of this fragmented land.

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#### Miscellaneous Uses

An existing regional park, MR Power Park, is located in the east of Sub-Precinct 1. This park is currently underutilised and offers excellent potential to improve the quality of the recreational provision and landscape character.

There is also a small Mixed Use Zone in the south-east corner of Sub-Precinct 1 which will be rezoned to the Urban Growth Zone.

#### 3.7.2 Interfaces

There are a number of sensitive interfaces which have been considered in the preparation of the Ballarat West PSP. The western edges of Sub-Precincts 2 and 4 are defined by farming areas and the future alignment of the Western Link Road.

The southern edge of the Ballarat West PSP area abuts the City of Ballarat municipal boundary with Golden Plains Shire. This land within the Golden Plains Shire is designated for rural-residential purposes.

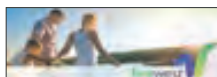
The northern and eastern boundaries of the Ballarat West PSP area abut the existing residential communities of Alfredton, Delacombe and Sebastopol which are predominantly suburban residential density, with the exception of the Delacombe Industrial Area (discussed below). The Ballarat West PSP will ensure that future development is integrated with the existing communities.

The Delacombe Industrial Area abuts the eastern edge of Sub-Precinct 4. Historically this area was the preferred location for heavy industry in Ballarat. As a consequence, the area has an Industrial 1 Zoning. There are a number of existing industrial uses that require substantial buffers from sensitive land uses to accord with Clause 52.10 of the Ballarat Planning Scheme.

There is also a section of undeveloped Industrial 3 Zoned land abutting the eastern boundary of Sub-Precinct 4 to the north of Ballarat-Carngham Road.

Studies have been undertaken to investigate the demand for further industrial land as well as identifying buffer requirements for existing industry to protect it from the encroachment of sensitive land uses. These studies concluded that:

- There was little current demand for new industrial uses in the eastern portion of Sub-Precinct 4, though population growth in the Ballarat West Growth Area will bring demand in the longer term;
- An air emissions buffer is required which incorporates part of Sub-Precinct 4. No sensitive land uses are permitted within the air emission buffer area;



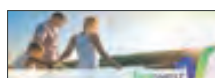
- The industrial area produces noise emissions that need to be mitigated before sensitive uses can be built in parts of Sub-Precinct 4; and
- There are a number of noise mitigation options available to achieve an acceptable noise environment at future sensitive uses within the PSP area having regard to the standards and amenity sought to be protected and achieved by SEPP N-1.

### 3.7.3 Land Ownership

The Ballarat West PSP has a total area of approximately 1,290 hectares which originally comprised of 230 properties. The review undertook an audit of the number parcel that have been consolidated and developed. The consolidation of parcel now means that there are 187 parcels. Of these, 115 properties have been developed and 72 properties remain undeveloped.

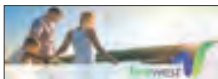
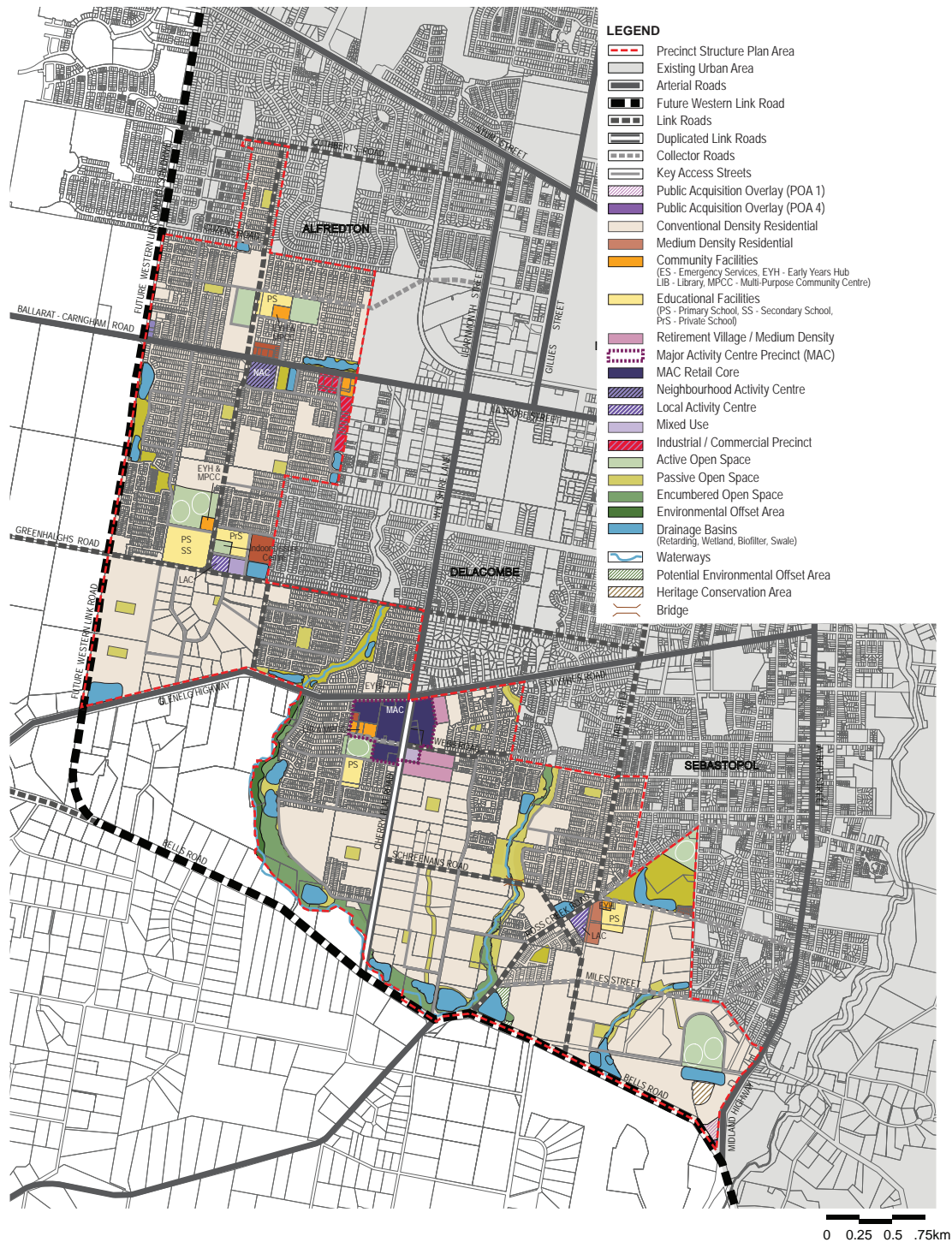
Many of the undeveloped properties are small landholdings of 4 hectares or less and result in a fragmented landownership. The fragmented land ownership of the Ballarat West PSP was originally seen as a significant challenge to the development of the area, specifically in Sub-Precincts 1 and 2.

The PSP provides a robust framework to manage these issues and support integrated development outcomes. Moreover in recent years development applications in Sub-Precincts 1 and 2 have been submitted which suggests the challenges of fragmentation are not insurmountable.





Plan 8 Future Urban Structure



## 4 Integrated Precinct Design

### 4.1 Vision

Ballarat West is the City's primary residential growth area and will be designed for the Ballarat context. It will draw on and continue Ballarat's excellent service provision, employment opportunities, recreation opportunities and accessibility. The built form will take cues from Ballarat's history, the form of its established areas and its landforms

and rural environment. While each neighbourhood will form its own community with its own character, it will also be integrated into the broader city and all that it offers.

Ballarat West will be a place where people can enjoy healthy, affordable and sustainable lifestyles.

The community will be a vibrant and prosperous series of neighbourhoods which offer housing choice and diversity supported by schools and community facilities and a network of passive and active open spaces which cater for a range of recreational pursuits. The neighbourhoods will be interconnected by a walkable street and trail network, with access to public transport to ensure that all residents have access to a range of community, retail and recreational uses within their community.

A network of accessible 'neighbourhood centres' with differing functions will provide a community focus for each neighbourhood and form part of the larger Ballarat community, encouraging integration between the existing

and new. These centres will accommodate a major activity centre, a neighbourhood activity centre and two local activity centres with co-located commercial, community, education and/or open space facilities. An Industrial/Commercial Precinct at Ballarat-Carngham Road will provide an appropriate interface with the existing Delacombe Industrial Area and opportunities for local employment.

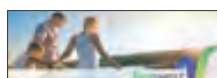
These centres will prioritise pedestrian access over vehicle movement to contribute to safer and more active shopping streets. This high accessibility to a range of facilities will reduce transport costs for households and businesses, reduce carbon emissions through reduced car travel and enhance the quality of life for local communities.

Ballarat West will provide a wide range of housing types to improve housing choice and cater for all sectors of the market. This choice will include affordable urban living; opportunities for retirement villages and conventional residential houses. Opportunities will be provided for higher density housing near the activity centres, the education and community hub and areas of open space.

The built environment will incorporate leading practice Environmentally Sustainable Design standards in order to achieve exceptional high quality urban design and amenity.

The Precinct will embrace sustainable urban development practices such as maintaining and restoring native vegetation where appropriate, providing treed streets and landscape trails, and incorporating water sensitive urban design solutions.

Ballarat West will be developed in a logical and orderly manner to ensure that residents are supported by community facilities and other essential infrastructure from the early stages of development.





## 4.2 Future Urban Structure

This section describes how the Ballarat West PSP delivers the Vision through the principles and objectives of integrated neighbourhood design. Plan 8 shows the Future Urban Structure Plan which has been updated from the original PSP to reflect on the ground changes that have occurred through development.

### 4.2.1 To establish a sense of place and community

The Ballarat West PSP establishes a framework for the development of environmentally, socially and economically sustainable communities. The key land uses are interlinked and combine to create an urban environment that promotes healthy lifestyles and strong, diverse communities.

Neighbourhoods are safe and efficiently designed, making it easy to walk or cycle to shops, local jobs, schools, community facilities and public transport stops.

A sense of place and community is fostered through careful planning of public spaces and community facilities such as schools and community hubs. This will ensure all facilities are central to their catchment and linked to other services directly via the key road, public transport and pedestrian and cycle networks. The plan seeks to respond to natural features by retaining them within the public realm in prominent locations and view lines. Winter, Bonshaw and Kensington Creeks will provide a central unifying landscape element that links the Sub-Precincts. Enhancing connection to past communities is also important. A sense of place will be achieved by recognising and incorporating the gold mining heritage areas of Sub-Precinct 1.

The environment for positive community interaction is further enhanced by the Major Activity Centre and smaller supporting activity centres. The provision of shops to meet regular shopping needs will promote interaction through the associated creation of formal and informal meeting spaces. This is further enhanced by the specific desire to see the Major Activity Centre develop over time as a place that offers more than retail services. The centre will provide opportunities to establish non-retail related businesses which service both the immediate community and the broader catchment. The non-retail component will provide local employment opportunities over time.

### 4.2.2 To create greater housing choice

The Ballarat West PSP encourages the development of a range of housing densities that will lead to the creation of a variety of lot sizes and housing types across various levels of affordability. This diversity will provide opportunities to cater for people in different stages of their lives and to age in place, contributing to the creation of a strong community. The Ballarat West PSP promotes affordable housing through a mix of alternatives, such as private and social housing in and around the activity centres.

The mix of housing typologies in the Precinct will include:

- Medium to higher density housing within and around the activity centres and around high amenity areas such as the Education and Community hub;
- Conventional density housing with a broad design diversity across the range of lot sizes.

The Ballarat West PSP is to achieve a minimum average net density of 16 dwellings per developable hectare.

### 4.2.3 To create highly accessible and vibrant activity centres

The network of activity centres in the Ballarat West PSP area will provide local employment opportunities and community based services within walkable catchments. All of the centres will offer a mix of retail, non-retail, community services and other employment opportunities serviced by safe cycling, pedestrian and public transport networks.

A major activity centre has been nominated on Cherry Flat Road and is supported by a neighbourhood activity centre at Carngham Road and two smaller local activity centres at Greenhalghs Road and Ross Creek Road.

The activity centres are accessible to their residential catchments, being located within a reasonable walking distance for the majority of residents. This creates opportunity to reduce the dependency on private vehicles.

While initially providing local retail services, the planning for each centre is flexible enough to enable an appropriately scaled response to retail and non-retail demand over time.

Each activity centre is co-located with community facilities and higher density residential development to ensure that these centres are well used throughout the day and evening, creating safe and vibrant streets.



#### 4.2.4 Deliver integrated, accessible and adaptable community facilities

The Ballarat West PSP seeks to service the changing needs of the community through the provision of accessible, integrated and adaptable community facilities. The Ballarat West PSP makes provision for a range of community infrastructure to serve the diverse needs of the local community. Community facilities will be delivered as early as possible to foster a sense of community in the new neighbourhoods.

##### Community & Early Years Hubs

A network of community and early years hubs are provided within Ballarat West. These hubs are co-located with schools and where appropriate, activity centres, to create focal points for community activity and interaction within each neighbourhood.

The Precinct offers a wide range of education facilities; government primary and secondary and non government primary schools. Early Years Hubs are co-located with schools and provide opportunities for the provision of kindergarten, childcare, child and maternal health and flexible community spaces. All schools and Early Years Hubs within the Precinct are located on the connector street network to maximise community access by walking, cycling and public transport.

##### Open Space

The open space network within the Precinct will cater for the diverse ages and interests within the local community. The open spaces range from neighbourhood to regional parks and will provide for a variety of active and passive recreational pursuits.

The Winter, Kensington and Bonshaw Creek linear parks will provide a green link with a shared path network through the heart of the development. This linear park network will provide connections to open spaces and other key community uses.

Other components of the open space network include neighbourhood parks, passive open space (conservation areas and linear open space) as well as active open space (including district and regional sport reserves).

#### 4.2.5 Provide for Local Employment and Business Activity

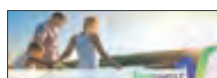
The Ballarat West PSP area will support a variety of local economic development opportunities which will generate local employment in a number of sectors including retail, business and service industries. The Major Activity Centre, the Neighbourhood Activity Centre and Industrial/Commercial Precinct will provide a range of employment opportunities for the community. Employment opportunities will also be provided by schools, early years hubs, public and private community facilities and other uses such as retirement and aged care facilities that establish within the Precinct.

The employment areas are co-located with supporting uses and are planned to be easily accessible via the public transport and walking and cycling networks, as well as the proposed road network.

The Ballarat West PSP also promotes:

- The establishment of home based businesses;
- The development of serviced and small offices located within and at the edge of the major and neighbourhood activity centres; and
- The development of flexible buildings in mixed use areas to ensure they can adapt over time to meet changing market needs.

Local employment opportunities will also be provided outside the Ballarat West PSP, in close proximity to the Ballarat West Employment Zone to the north.





#### 4.2.6 Provide better transport choices

##### Access to Local Employment

A key element in creating a more ecologically, socially and economically sustainable urban structure is to design the Precinct in a manner that reduces travel distances, increases travel time efficiency and reduces carbon emissions generated by journey to work trips.

The future urban structure reduces travel distances to work by providing local employment opportunities that reduce travel times and out commuting

##### Efficient Road and Public Transport Network

The arterial road and connector street network facilitates efficient road and public transport movement on a grid network within the Ballarat West Growth Area. It will provide strong connections with neighbouring precincts and existing development areas in all directions.

Existing rural standard roads will be upgraded to an urban standard, with several upgrades to be funded through the Ballarat West DCP.

The future urban structure provides the basis for the provision of efficient public transport by locating at least 95 per cent of dwellings within 400 metres walking distance of an existing or proposed bus stop.

The bus network will link residents and employees to the activity centres, Industrial/Commercial Precinct and education facilities within the Precinct and the wider Ballarat area. It will also provide access to the rail network and other employment uses and community infrastructure external to the Ballarat West PSP area.

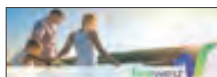
##### Safe and Walkable Local Street Network

The proposed grid based road patterns will promote the creation of a local street network with high levels of permeability, walkability and passive solar orientation throughout the Precinct.

The Ballarat West PSP provides for a safe pedestrian and bicycle network via the:

- On and off road paths within the road network; and
- The provision of a walking and cycling trail network along creek corridors and linear links throughout the Precinct. This network will include pedestrian bridges over the creek network, where required.

Activity centres, community facilities and sporting and recreational activities will be clustered along the pedestrian and cycle network to support walking access to these key destinations. The co-location of activity centres, community hubs and open space promotes a road, pedestrian and bicycle network that facilitates permeability and safe walking and cycling for all residents



#### 4.2.7 Deliver Environmentally Sustainable Communities

The framework provided by Ballarat West PSP promotes an integrated land use and transport planning solution to optimise the number of people who have access to a safe and efficient walking, cycling and public transport network.

The Ballarat West PSP makes provision for a range of retail, employment and community facilities to service the daily and weekly needs of the residents. This supports a reduction in the extent of car use by minimising travel distances and also optimises the viability of alternative modes of transport.

Access to local jobs within and in close proximity to the Precinct will reduce journey-to-work travel distances.

A greater range of choice in travel modes will be provided through implementation of the Ballarat West PSP, with the road network designed to accommodate buses, cyclists and pedestrians.

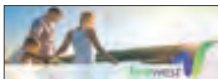
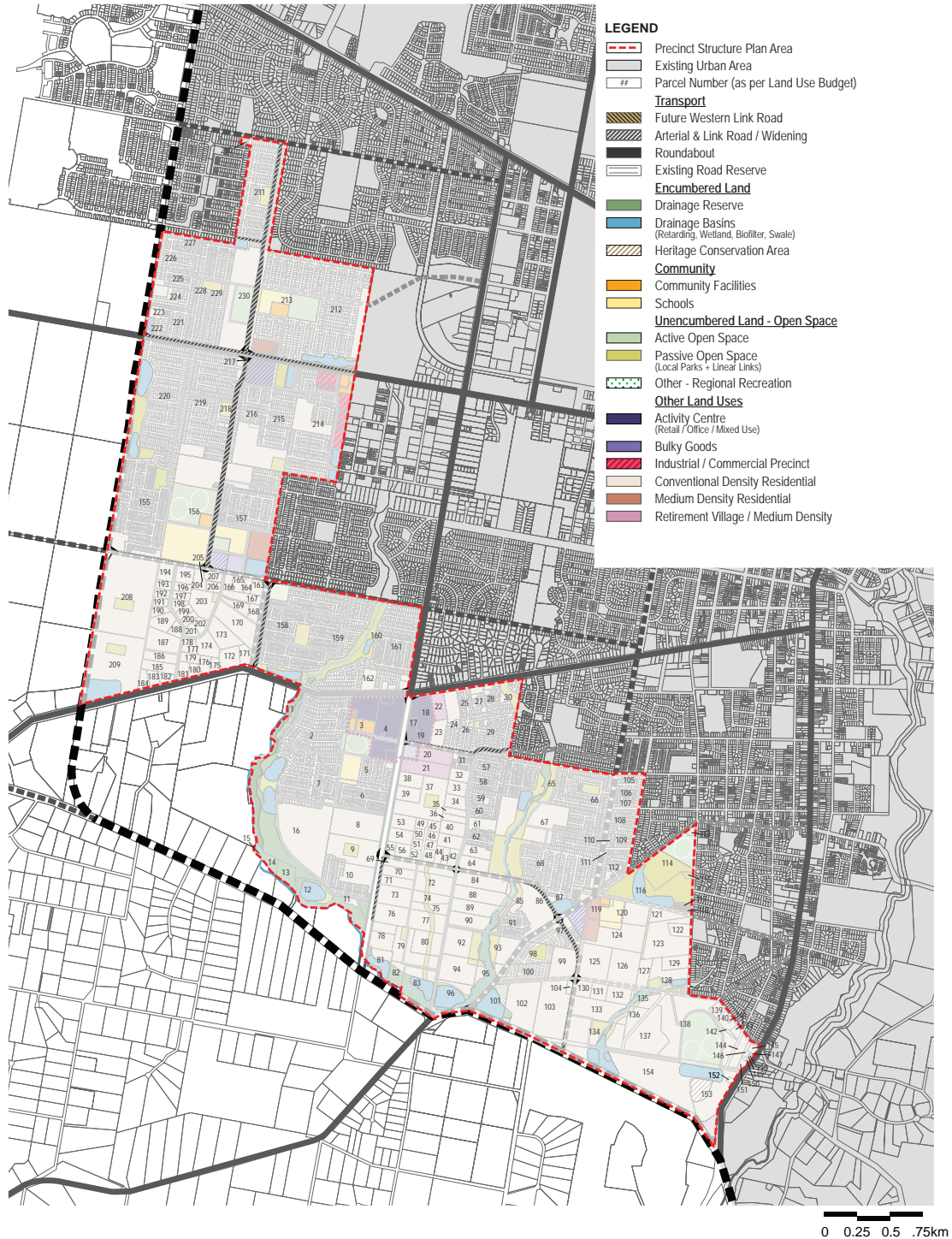
The Ballarat West PSP provides a framework for subdivision design that promotes solar access, to minimise the energy use of dwellings, community infrastructure and buildings in the activity centres.

Water Sensitive Urban Design (WSUD) aims to reduce the quantity of stormwater and improve the quality of water that is either discharged or re-used on site. WSUD techniques are to be incorporated through measures such as a network of retarding basins and wetlands that are integrated with the existing drainage lines and creeks. Utilising the existing drainage systems on the site reduces the requirement for piping and channelling of water and maintenance costs.

Remnant native vegetation has been retained as shown in the Ballarat West NVPP. The NVPP was used as a way to assist in creating a distinctive landscape character for the area and enhance biodiversity values to contribute to improved local biodiversity.



Plan 9 Land Use Budget



### 4.3 Land Use Budget

Table 1: Summary Land Use Budget provides an overview of the land use components of the overall Ballarat West PSP area and for each Sub-Precinct. A more detailed land use budget by property is provided in Table 3 and contained in Attachment 1. Plan 9: Land Use Budget provides a key for this table.

Amended by C234ball

The original Land Use Budget has been reviewed and updated to reflect development changes that have occurred through subdivision design, adopted Urban Design Frameworks, changes to infrastructure projects including a major drainage scheme review and adjustments to other land features such as environmental offset areas.

#### 4.3.1 Land Use Budget Summary

The Ballarat West PSP covers a total area of approximately 1,297 hectares across three Sub-Precincts (see Plan 1 and section 1.1):

- Sub-Precinct 1: Bonshaw Creek comprising approximately 707 hectares;
- Sub-Precinct 2: Greenhalghs Road comprising approximately 296 hectares; and
- Sub-Precinct 4: Carngham Road comprising approximately 287 hectares.

The original overall Net Developable Area ('NDA') for the Precincts was 951 hectares which equated to approximately 74% of the Ballarat West PSP area. The amended NDA is 972.04 hectares. The NDA is established by deducting the land required for community facilities, education facilities and passive and active open space (unencumbered), from the Gross Development Area ('GDA'). The GDA is established by deducting any arterial roads, existing road reserves and encumbered land such as waterways and drainage reserves from the total Precinct area.

Table 2: Distribution of Housing Densities, demonstrates that the urban structure plan established by the amended Ballarat West PSP achieves a lot density of 16.66 dwellings per Net Developable Hectare ('NDHa'). Based on this density, the Ballarat West PSP area is estimated to provide for a yield of approximately 15,518 dwellings. This compares with an original estimate lot density of 15.19 dwellings per NDA and yield of 14,442 dwellings.

Table 4 provides details of housing yields by property and is contained in Attachment 2.

The areas identified for activity centres, mixed use and other employment uses have been included as part of the NDA but excluded for the purposes of calculating projected lot

yields. Note that the Major Activity Centre is also likely to provide some dwellings. However, dwelling numbers in this area will not be known until an Urban Design Framework is completed by the landowners.

The future urban structure plan encourages the development of medium density development around activity centres and community facilities which may result in the estimated housing yields being exceeded over time if higher density housing is developed at these locations.

### 4.4 Population and Demographic Projections

Ballarat's estimated resident population (ERP) in 2010 was around 96,000 people, an increase of around 13,000 people since 2001. Between 2011 and 2021, the population of Ballarat increased by 18,297 people (an increase of 19%) or an average of 1.8% per year (ABS, 2021).

Based on the population projections for Ballarat within Victoria In Future (2023), the population is expected to grow to almost 144,730 by 2036, an increase of around 1,550 persons per year.

Figure 1 Population projections 2010 – 2036

Population	2021	2026	2031	2036
Victoria in Future Projections	96,000	103,249	111,119	118,784

The Ballarat West PSP area is projected to accommodate almost 80 per cent of the population growth identified for the wider Ballarat West Growth Area. The Ballarat West PSP is forecast to accommodate approximately 15,518 lots and a population of around 39,150 people based on an eventual average household size of 2.5 persons per household

The projected demographic profile for the area was originally summarized as below:

- 33% couples with children;
- 23% couples without children;
- 16% other families;
- 25% lone person households; and
- 3% group person households.

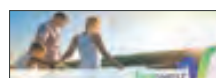




Table 1 Summary Land Use Budget

DESCRIPTION % of Total	Precinct 1			Precinct 2			Precinct 4			Precincts 1, 2 & 4		
	Area			Area			Area			Area		
	Hectares	% of Total Precinct	% of Gross Developable Area	Hectares	% of Total Precinct	% of Gross Developable Area	Hectares	% of Total Precinct	% of Gross Developable Area	Hectares	% of Total Precinct	% of Gross Developable Area
<b>TOTAL PRECINCT AREA (ha)</b>	<b>705.95</b>			<b>295.64</b>			<b>285.18</b>			<b>1286.77</b>		
<b>Transport</b>												
Future Ballarat Western Link Road (reservation)	0.00	0.00%		4.68	1.58%		0.53	0.19%		5.20	0.40%	
Arterial / Widening	4.84	0.697%		4.09	1.38%		7.24	2.54%		16.17	1.26%	
Intersections	0.71	0.10%		0.45	0.15%		0.41	0.14%		1.57	0.12%	
Road Reserves	51.39	7.28%		7.42	2.51%		3.16	1.11%		61.97	4.82%	
<b>SUB-TOTAL</b>	<b>56.93</b>	<b>8.06%</b>		<b>16.64</b>	<b>5.63%</b>		<b>11.34</b>	<b>3.98%</b>		<b>84.91</b>	<b>6.60%</b>	
<b>OPEN SPACE</b>												
<b>Encumbered Land</b>												
Waterway / Drainage Line	35.24	4.99%		6.56	2.22%		0.58	0.20%		42.37	3.29%	
Drainage Basins	31.96	4.53%		9.02	2.41%		7.69	2.70%		48.67	3.78%	
Environmental Conservation Area (potential vegetation offset area)	0.00	0.00%		0.00	4.55%		4.86	1.70%		4.86	0.38%	
Heritage Conservation Area	3.34	0.47%		0.00	0.00%		0.07	0.02%		3.41	0.27%	
<b>SUB-TOTAL</b>	<b>70.54</b>	<b>9.99%</b>		<b>15.58</b>	<b>5.27%</b>		<b>13.20</b>	<b>4.63%</b>		<b>99.31</b>	<b>7.72%</b>	
<b>GROSS DEVELOPABLE AREA (ha)</b>	<b>578.48</b>			<b>263.42</b>			<b>260.64</b>			<b>1102.55</b>		
<b>Unencumbered Land Available for Recreation</b>												
Active Open Space	18.63	2.64%	3.22%	10.33	3.49%	3.92%	7.98	2.80%	3.06%	36.94	2.87%	3.35%
Passive Open Space	47.92	6.79%	8.28%	9.48	3.21%	3.60%	7.72	2.71%	2.96%	65.11	5.06%	5.91%
<b>SUB-TOTAL</b>	<b>66.55</b>	<b>9.43%</b>	<b>11.50%</b>	<b>19.81</b>	<b>6.70%</b>	<b>7.52%</b>	<b>15.70</b>	<b>5.51%</b>	<b>6.02%</b>	<b>102.05</b>	<b>7.93%</b>	<b>9.26%</b>
<b>TOTAL OPEN SPACE</b>	<b>137.09</b>	<b>19.42%</b>		<b>35.39</b>	<b>11.97%</b>		<b>28.90</b>	<b>10.13%</b>		<b>201.36</b>	<b>15.65%</b>	
<b>Community Facilities</b>												
Community Services Facilities	2.40	0.34%	0.41%	1.00	0.34%	0.38%	1.30	0.46%	0.50%	4.70	0.37%	0.43%
<b>SUB-TOTAL</b>	<b>2.40</b>	<b>0.34%</b>	<b>0.41%</b>	<b>1.00</b>	<b>0.34%</b>	<b>0.38%</b>	<b>1.30</b>	<b>0.46%</b>	<b>0.50%</b>	<b>4.70</b>	<b>0.37%</b>	<b>0.43%</b>
<b>Education</b>												
Government Schools	6.79	0.96%	1.17%	10.00	3.38%	3.80%	3.47	1.22%	1.33%	20.26	1.85%	1.84%
Private Schools	0.00	0.00%	0.00%	3.50	1.18%	1.33%	0.00	0.00%	0.00%	3.50	0.27%	0.32%
<b>SUB-TOTAL</b>	<b>6.79</b>	<b>0.96%</b>	<b>1.17%</b>	<b>13.50</b>	<b>4.57%</b>	<b>5.12%</b>	<b>3.47</b>	<b>1.22%</b>	<b>1.33%</b>	<b>23.76</b>	<b>1.86%</b>	<b>2.16%</b>
<b>NET DEVELOPABLE AREA (NDA) (ha)</b>	<b>502.74</b>	<b>71.21%</b>	<b>86.91%</b>	<b>229.12</b>	<b>77.50%</b>	<b>86.98%</b>	<b>240.18</b>	<b>84.22%</b>	<b>92.15%</b>	<b>972.04</b>	<b>75.54%</b>	<b>88.16%</b>

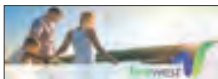
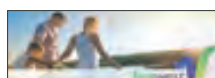
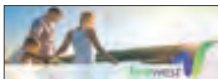
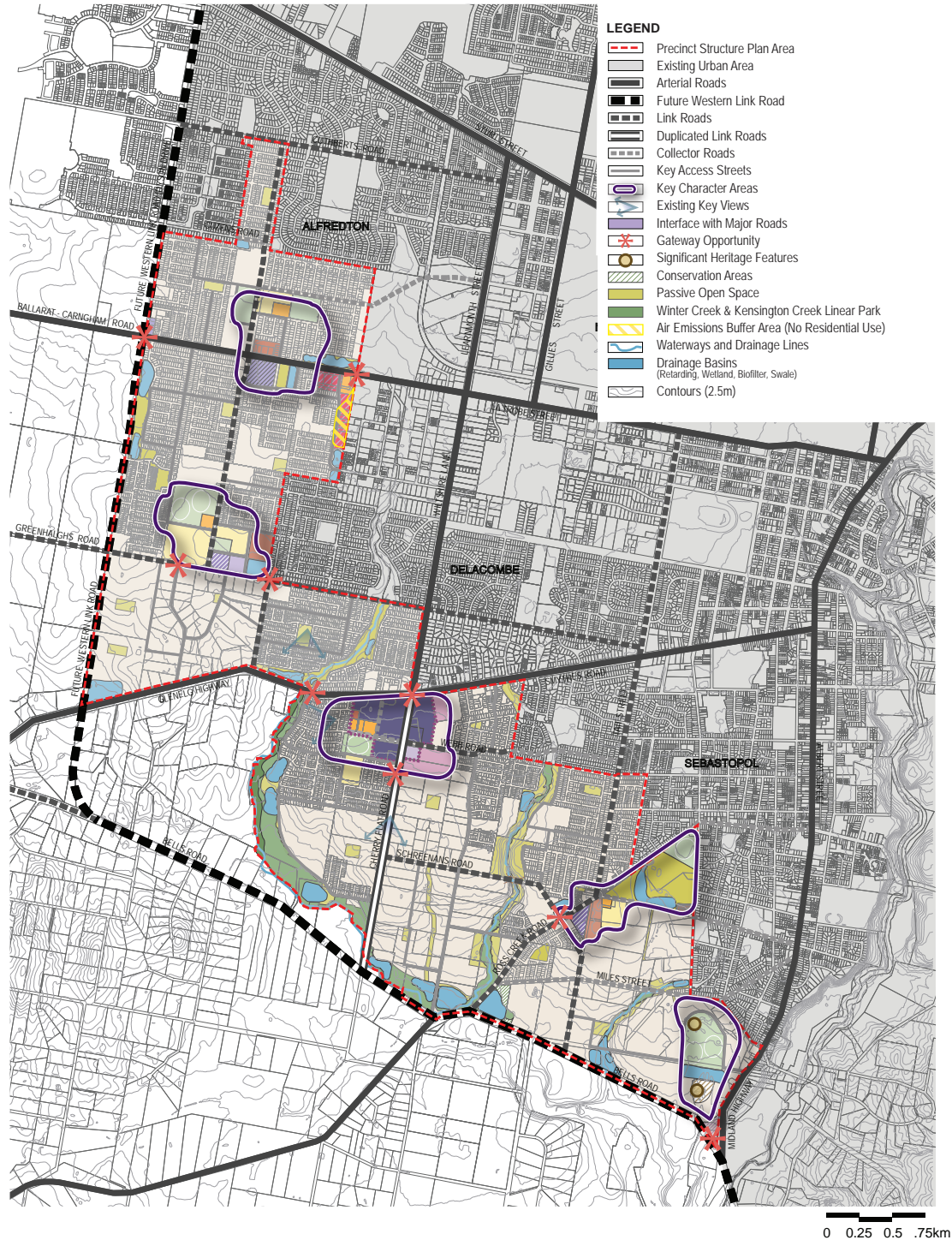


Table 2 Distribution of Housing Densities

DESCRIPTION	Precinct 1			Precinct 2			Precinct 4			Precincts 1, 2 & 4		
<b>NET DEVELOPABLE AREA (NDA) ha</b>	<b>502.74</b>			<b>295.64</b>			<b>240.18</b>			<b>972.04</b>		
Retail / Employment & Other	Ha			Ha			Ha			Ha		
Activity Centre (Retail / Office / Mixed Use)	16.43			3.26			7.11			26.80		
Bulky Goods	4.86			0.00			0.00			4.86		
Industrial / Commercial	2.55			1.71			4.86			9.12		
<b>SUB-TOTAL</b>	<b>23.84</b>			<b>4.97</b>			<b>11.97</b>			<b>40.78</b>		
<b>NET RESIDENTIAL AREA (NRA) ha</b>	<b>478.91</b>			<b>224.15</b>			<b>228.20</b>			<b>931.26</b>		
<b>RESIDENTIAL</b>	<b>NRA (Ha)</b>	<b>Dwell / NRHa</b>	<b>Dwellings</b>	<b>NRA (Ha)</b>	<b>Dwell / NRHa</b>	<b>Dwellings</b>	<b>NRA (Ha)</b>	<b>Dwell / NRHa</b>	<b>Dwellings</b>	<b>NRA (Ha)</b>	<b>Dwell / NRHa</b>	<b>Dwellings</b>
Residential - Conventional Density	468.36	20	8001	217.95	20	3673	225.82	20	3195	912.13	20	14870
Residential - Medium Density	10.55	25	407	6.20	25	163	2.38	25	78	19.13	25	648
<b>Subtotal Against Net Residential Area (NRA)</b>	<b>478.91</b>	<b>17.56</b>	<b>8408</b>	<b>224.15</b>	<b>17.12</b>	<b>3836</b>	<b>228.20</b>	<b>14.35</b>	<b>3274</b>	<b>931.26</b>	<b>16.66</b>	<b>15518</b>
<b>Combined Residential / Retail / Employment / Other</b>	<b>NDA (Ha)</b>	<b>Dwell / NDHa</b>	<b>Dwellings</b>	<b>NDA (Ha)</b>	<b>Dwell / NDHa</b>	<b>Dwellings</b>	<b>NDA (Ha)</b>	<b>Dwell / NDHa</b>	<b>Dwellings</b>	<b>NDA (Ha)</b>	<b>Dwell / NDHa</b>	<b>Dwellings</b>
<b>Totals Residential Yield Against NDA</b>	<b>502.74</b>	<b>16.72</b>	<b>8408</b>	<b>295.64</b>	<b>12.98</b>	<b>3836</b>	<b>240.18</b>	<b>13.63</b>	<b>3274</b>	<b>972.04</b>	<b>15.96</b>	<b>15518</b>



Plan 10 Image and Character



## 5 Elements

This chapter sets out objectives and planning and design guidelines for the following elements:

- Image and character;
- Housing;
- Employment and Activity Centres;
- Community Facilities;
- Open Space and Natural Systems;
- Biodiversity Assets;
- Integrated Water Management;
- Heritage;
- Transport and Movement; and
- Utilities and Staging.

Each element includes:

- **Objectives:** An objective describes the desired outcome to be achieved in the completed development;
- **Plans:** A plan sets out a spatial expression of objectives;
- **Planning and Design Guidelines:** Planning and design guidelines including figures and tables that:
  - must be met; or
  - should be met.

Any planning and design guideline that must be met is a requirement that must be reflected in planning permit applications. Any planning and design guideline that should be met is a preferred outcome for developments that should be reflected in planning permit applications. To meet the objective, an alternative may be proposed.

If the Responsible Authority is satisfied that the alternative meets the objective, then the alternative may be considered provided it is to the satisfaction of the Responsible Authority.

### 5.1 Image and Character

#### 5.1.1 Image and Character Objectives

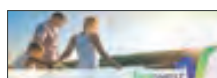
The image and character objectives are:

- To create distinctive neighbourhoods, vibrant streets and attractive spaces that reflect the character and traditions of development in Ballarat;
- To achieve environmentally responsive development that makes use of the existing natural features of the Precinct by incorporating remnant trees and natural watercourses;
- To establish a strong sense of place through the creation of a series of 'centres', which provide opportunities for interaction within the neighbourhoods;
- To create a network of tree lined streets that create an attractive safe road network;
- To create a legible and integrated road and path network that connects with the linear trail networks;
- To enhance creek and drainage corridors and transform them into significant landscape features that enhance visual amenity and contribute to a sense of place;
- To encourage development that is flexible and adaptable to the changing needs of the community; and
- To protect and enhance valuable heritage features in the area and incorporate them into future developments through the open space network.

#### 5.1.2 Implementation

The objectives for image and character are met by implementation of all of the following:

- Plan 8: Future Urban Structure Plan;
- Plan 10: Image and Character Plan;
- Plan 11: Housing Plan;
- Plan 14: Open Space Plan;
- Plan 16: Gold Mining Heritage Plan;
- Plan 19: Walking and Trails Plan; and
- Planning and Design Guidelines set out in Section 5.1.3





### 5.1.3 Planning and Design Guidelines

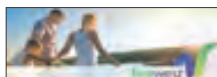
#### General

The following planning and design guidelines must be met:

- Community Hubs and Activity Centres will define the character of each neighbourhood and must be designed to create pedestrian focussed street networks, active frontages and opportunities for social interaction within a high quality built environment;
- Development is to address roads to create a network of safe and permeable streets;
- Design development with an interface to Winter, Bonshaw and Kensington Creeks and drainage lines to promote public use and passive surveillance;
- Design development to provide a strong urban frontage to the future Ballarat Western Link Road, Glenelg Highway, Ballarat-Carngham Road, Wiltshire Lane and Cherry Flat Road, and promote passive surveillance of these roads;
- Development along arterial roads must consider the future amenity (visual and noise) for future dwellings;
- Development must consider the orientation of buildings and maximise opportunities to reduce energy consumption and water use;
- As shown on Plan 11, a linear landscape buffer of at least 20m depth must be provided separating:
  - sensitive uses and the Industrial/Commercial Precinct (see Section 5.3.4); and
  - sensitive uses and any land in an Industrial Zone;
- Open spaces including linear parks must provide for active and passive recreation and accommodate a range of facilities including playgrounds, shelters and seating;
- Bonshaw, Winter and Kensington Creeks must create a high quality open space link which is connected to activity centres, open spaces and community facilities through a safe shared path trail; and
- Incorporate Water Sensitive Urban Design features such as retarding basins and wetlands to manage stormwater flows and create habitat for native plants and animals along the creeks and drainage lines.

The following planning and design guidelines should be met:

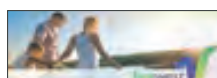
- The design of the Emergency Services facility should be sympathetic to the residential character of the surrounding areas and protect homes from negative amenity issues such as night-time noise and visual impact;
- Locate medium density development adjacent to activity centres, schools and where appropriate, active open space to reflect the higher amenity values associated with those areas;
- Development should minimise impacts on existing topography;
- Open spaces should be designed to incorporate existing vegetation, habitat or heritage features wherever possible;
- Define key entries to the Precinct and important character areas through the use of landscape treatments or built form;
- Provide opportunities for landmark buildings, public spaces and public art within the activity centres;
- Design and arrange lots to maximise solar efficiency through orientation; and
- Road frontage should be provided along creek corridors and public spaces unless it can be demonstrated that abutting development will provide passive surveillance and activation of abutting public spaces.



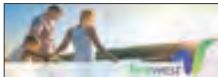
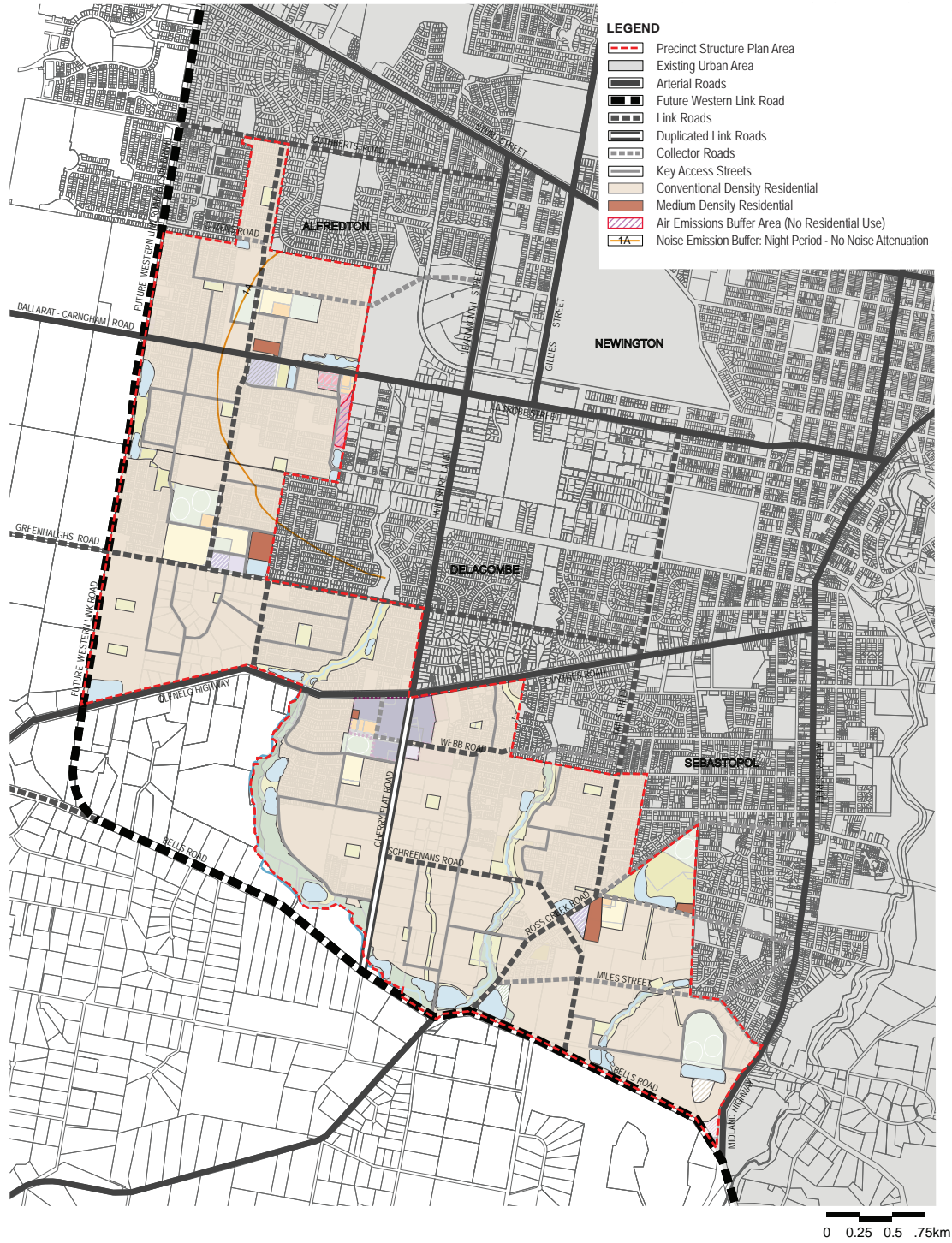
### Landscape Design

The following planning and design guidelines should be met:

- Street trees along access streets should encourage pedestrian movement and promote low speed traffic environments;
- Ensure landscaping of public spaces creates safe public spaces that have ample passive surveillance;
- Landscape design within activity centres, neighbourhood parks and streets should:
  - Contribute to the creation of visually interesting public spaces that create a sense of place and identity;
  - Consider the impacts of landscaping on the microclimate, including the need for wind protection and summer shade;
  - Provide for the retention of existing vegetation that contributes to the character of the area, where possible;
  - Ensure the size of the street tree species relates to the scale of the street and is suitable for pedestrian environments;
- Landscaping along creek lines and within encumbered land should:
  - Be planted with species indigenous to Ballarat where possible, enhance and improve biodiversity along creek corridors and provide potential habitat;
  - Allow opportunities for passive recreation;
- Landscaping should be in accordance with the City of Ballarat's Landscape Character Areas Policy and any applicable street furniture guidelines; and
- Vegetation selection should be suitable for Ballarat's climate, minimise the need for ongoing irrigation and have regard to ease of maintenance.



Plan 11 Housing



## 5.2 Housing

### 5.2.1 Housing Objectives

The objectives for housing are:

- To create walkable residential neighbourhoods that have accessibility to local services, community facilities, a range of open spaces and offer a high standard of living;
- To ensure a range of lot sizes and housing types are provided to meet the needs and aspirations of the new community and to provide for the changing needs of the community over time;
- To achieve a minimum density of 16 dwellings per Net Developable Hectare (NDHa) throughout the Ballarat West PSP area and encourage a minimum density of 20 dwellings for subdivisions to reflect the updated targets in the PSP Guidelines 2.0;
- To encourage medium density housing within walking distance of key amenities such as activity centres, community hubs and open space;
- To support specialised housing forms such as retirement villages close to activity centres, community facilities and the public transport network to ensure that future residents have good access to a range of services;
- To support the opportunity for larger lots to be provided at the south east of Sub-Precinct 1 at Winter Creek to provide a transition between the existing rural areas and urban development and accommodate sloping topography;
- Affordable housing should be located in areas that have convenient access to commercial and community facilities, services and public transport.
- To ensure integration of the existing low density residential areas within Sub-Precincts 1 and 2 with development of surrounding properties;
- To encourage flexibility in subdivision design and planning/building approvals to enable better adaptation of housing to changing needs and create interesting and diverse living environments throughout the Precinct;
- To ensure subdivision and lot layouts provide creative and innovative design solutions for fragmented land ownership;
- To ensure subdivision and lot layouts maximise solar efficiency through the orientation of lots;
- To protect industrial businesses in the Delacombe Industrial Area from the possible negative impacts of residential encroachment;
- To protect homes and other sensitive uses from the

possible negative impacts created by the Delacombe Industrial Area; and

- To encourage home based businesses within residential areas that do not detract from the primary use or amenity of the area.

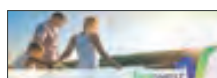
Since the Ballarat West PSP was prepared, some of the larger lots at the south-east of Sub-Precinct 1 at Winter Creek have been further subdivided into small lots on the rural and residential interface.

Amended by  
C234ball

### 5.2.2 Implementation

The objectives for housing are met by implementation of all of the following:

- Plan 8: Future Urban Structure Plan;
- Plan 11: Housing Plan;
- Plan 14: Open Space Plan;
- Table 2: Distribution of Housing Densities; and
- Planning and design guidelines set out in Section 5.2.3 and 5.2.4.





### 5.2.3 Planning and Design Guidelines

#### General

The following planning and design guidelines must be met:

- Residential development across the Ballarat West PSP must include a range of dwelling densities including conventional and medium density residential lots, and specialised housing (terms defined in glossary);
- Development must address drainage, visual amenity and privacy issues caused by developing new homes along the interface with existing homes in Alfredton Drive, Alfredton. Management options may include raising the height of fences, landscaping/vegetation requirements and controlling the height of new dwellings;
- Eliminate the need for a planning permit for small lot housing (less than 300m<sup>2</sup>) in appropriate locations where the requirements of the Small Lot Housing Code (Attachment 3) are met;
- Eliminate the need for a planning permit for small lot housing (less than 300m<sup>2</sup>) in appropriate locations where the requirements of the Small Lot Housing Code (Attachment 3) are met;
- Taking into account the density of development that has already occurred, future development must achieve a minimum average of 16 dwellings per Net Residential Hectare (NHRa) across the PSP area;
- Development of conventional density housing must:
  - Achieve an overall average of 16 dwellings per Net Residential Hectare (NHRa);
  - Provide a mix of lot sizes and dwelling types throughout the Precinct; and
  - Ensure dwellings address streets and public spaces and maximise passive surveillance.
- Development of medium density housing must:
  - Achieve an overall average of 25 dwellings per Net Residential Hectare (NHRa);

- Be overlooking, abutting or within close proximity to activity centres, community hubs, public transport stops or open space; and

- Be provided in a variety of forms including terrace/ townhouse development, integrated development sites and/or retirement villages;

- Housing abutting open spaces and linear links must:

- Enhance passive surveillance of the open space through design features such as having dual frontage to the road and open space; and

- Have low or semi-transparent fencing along boundaries to public space;

The following general planning and design guidelines should be met:

- Medium density developments or lots less than 250 square metres should avoid garages fronting parks and linear links;

- Housing abutting open spaces and linear links should:

- Integrate open spaces into the design of subdivisions;

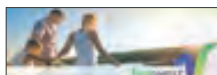
- Have a strong built form along the park edges to provide a backdrop and interface to the open spaces;

- Provide a secondary entry to dwellings from the park to give them a sense of address;

- Provide a clear transition between public and private spaces; and

- Provide opportunities for passive surveillance and pedestrian activities along laneways;

- Higher density housing (in excess of 25 dwellings per hectare) is encouraged in close proximity to the Major Activity Centre, Neighbourhood Activity Centre and Local Activity Centres.



#### Subdivision of existing rural-residential areas to conventional density

The following planning and design guidelines must be met:

- Create an integrated road network within the existing rural-residential area and provide opportunities for road connections to abutting landholdings where possible;
- Avoid the creation of cul-de-sacs; and
- Provide through-connections (road, walking and cycling) between the existing rural-residential area and surrounding parcels to integrate the rural-residential area with the broader community.

The following planning and design guidelines should be met:

- Consider the character of existing residences to be retained within future developments; and
- Respect and enhance the existing streetscapes and landscape character, for example through street tree selection and setbacks.

Amended by  
C234ball

A concept plan (figure 2) has been included for the Masada Boulevard/Fay Drive precinct which was previously zoned Low Density Residential.

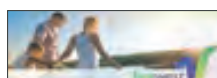
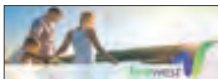
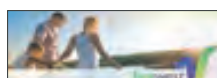




Figure 2 Masada Boulevard - Indicative Concept Plan



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### 5.2.4 Sensitive uses in Sub-Precinct 4

#### Air Emissions Buffer Area

The following planning and design guidelines must be met:

- Sensitive uses must not locate within the Air Emissions Buffer Area shown in Figure 3.



Figure 3 Industrial / Air Emissions Buffer

**LEGEND**

- Precinct Structure Plan Area
- Existing Urban Area
- Arterial Roads
- Collector Roads
- Key Access Streets
- Drainage Basins (Boarding, Wetland, Bottle, Swale)
- Commercial / Industrial Precinct
- Air Emissions Buffer Area (No Residential Use)
- Passive Open Space

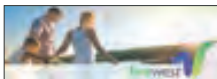
#### Sensitive uses within the noise-affected area

The following planning and design guidelines must be met:

- Subdivision or use of land for sensitive uses within the noise-affected area shown on Plan 11 must achieve an acceptable noise environment having regard to the standards and amenity sought to be protected and achieved by SEPP N-1. The noise levels to be achieved at a sensitive land use within the affected area are listed in the table below;

Period	Noise Limits (dB(A)) having regard to SEPP N-1
Day	50
Evening	44
Night	39

- Sensitive land uses include dwellings, residential buildings, private open space of a dwelling/residential buildings, caretaker's house, hospital, hotel, institutional home, motel, reformatory institution, tourist establishment or work release hostel;
- The noise mitigation measures may include, but are not limited to:
  - The attenuation of noise at the source of emission;
  - The attenuation of noise at the receptor (eg residential dwelling);
  - The construction of a noise wall between the source of emissions and receptors;
  - The construction of new buildings between the source of emissions and receptors that have the effect of reducing noise-sensitive uses.



- Noise mitigation measures must:
  - Allow the creation of an integrated neighbourhood in Sub-Precinct 4 and not create isolated developments that cannot be integrated with abutting developments;
  - Not prevent activation and passive surveillance of public spaces;
  - Be of a scale and form that will not detract from the future character of the area;
  - Not have substantial adverse impacts on abutting landholdings;
  - Be designed to have a life of no less than 30 years; and
  - Consider the maintenance and ongoing management obligation of any attenuation measure. Any noise mitigation measure selected must be cost effective and easily maintainable;
- If deemed necessary by the Responsible Authority, an agreement under Section 173 of the Act will be placed on any lot created which will contain a sensitive land use to ensure that future buildings are designed having regard to the standards and amenity sought to be protected and achieved by SEPP N-1; and
- A permit cannot be granted for development within the noise buffer unless the Responsible Authority is satisfied the noise levels specified can be achieved.

#### Visual amenity

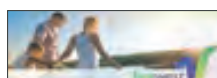
The following planning and design guidelines must be met:

- As shown in Figure 2, a linear landscape buffer of at least 20m depth must be provided separating:
  - sensitive uses and the Industrial/Commercial Precinct (see Section 5.3.4); and
  - sensitive uses and any land in an Industrial Zone.
- The linear landscape buffer is to be landscaped and integrated within abutting development. Landscaping in this area must include canopy tree plantings that will help screen and soften views to the Industrial/Commercial Precinct; and
- New development abutting the linear landscape buffer is to provide passive surveillance and activation of the buffer.

#### Protection of industrial land

The following planning and design guidelines must be met:

- The minimum separation between a sensitive use and land in an Industrial 1 Zone shall be 100m.



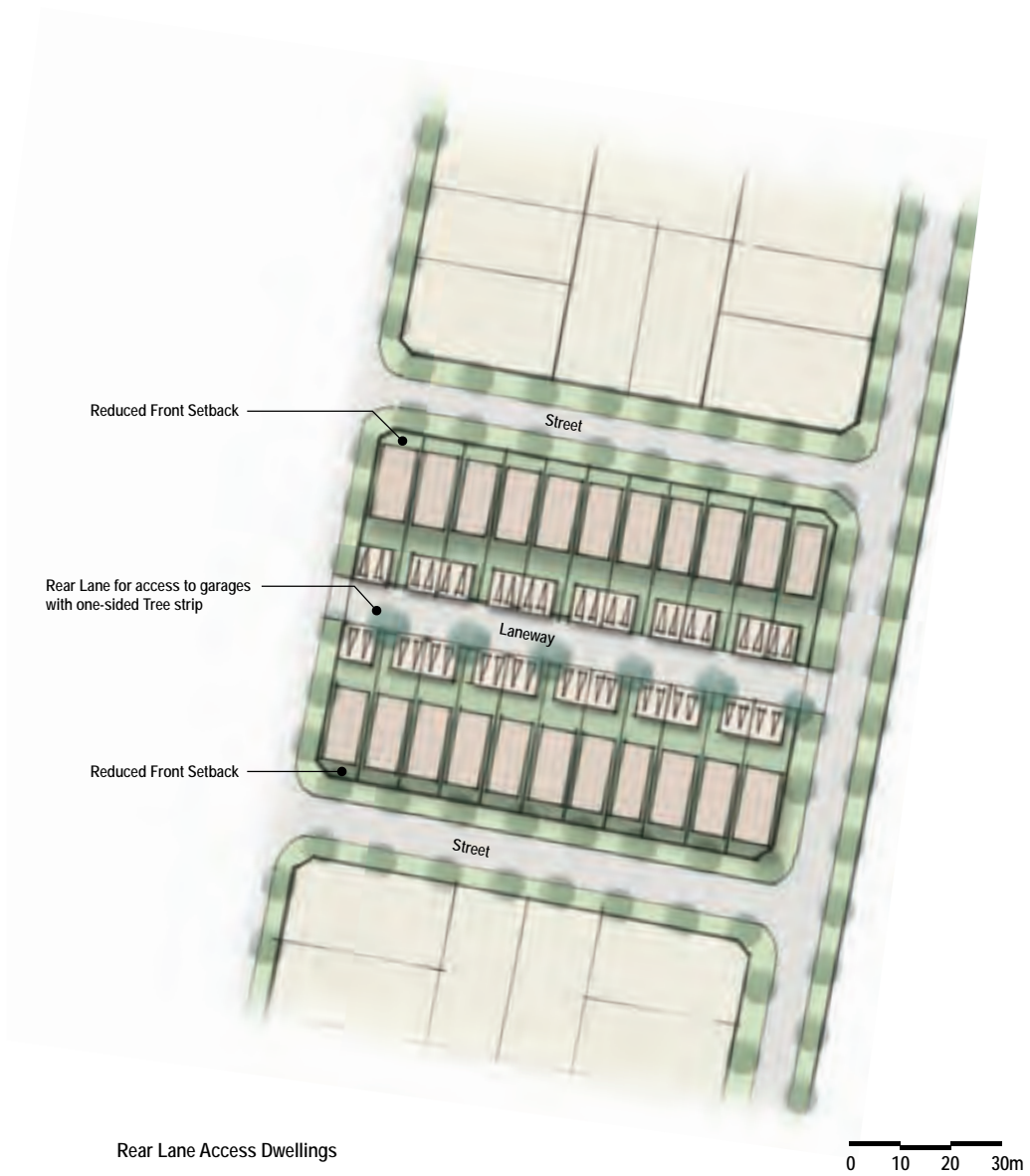
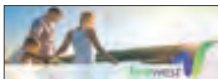


Figure 4 Example Layout: Medium Density Lots



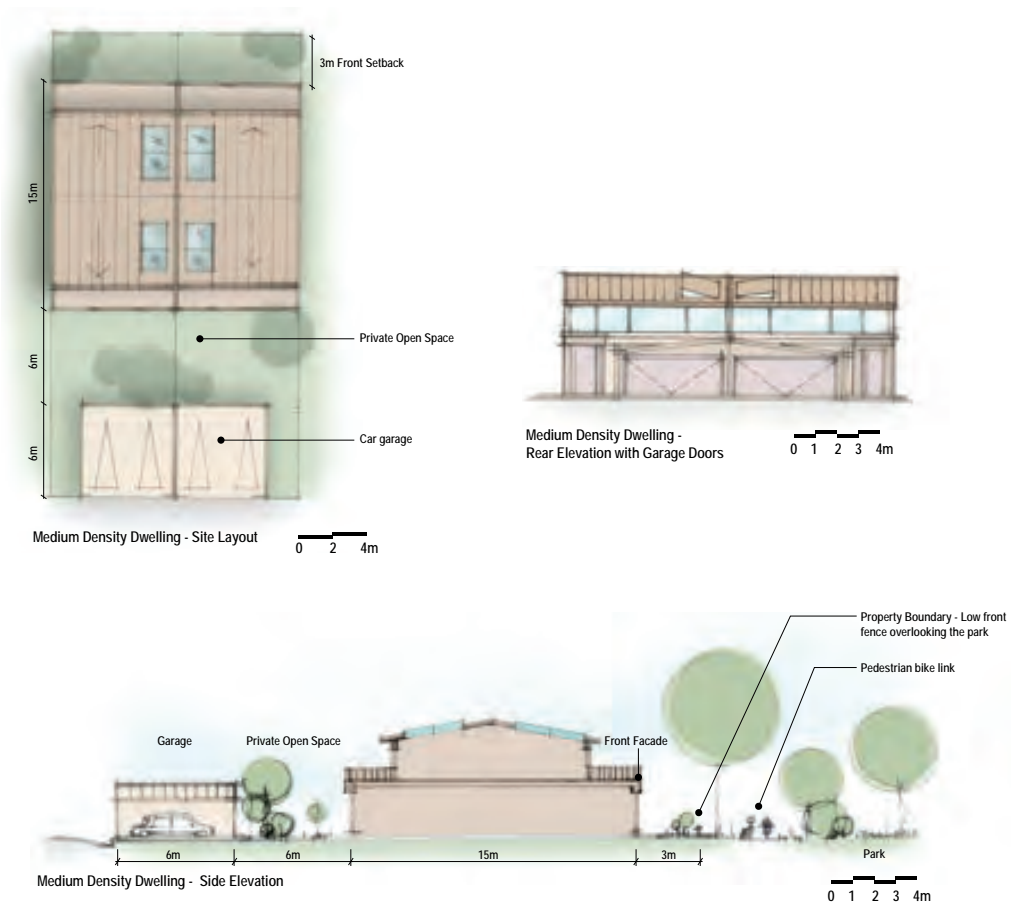


Figure 5 Example Layout: Medium Density Housing fronting Open Space

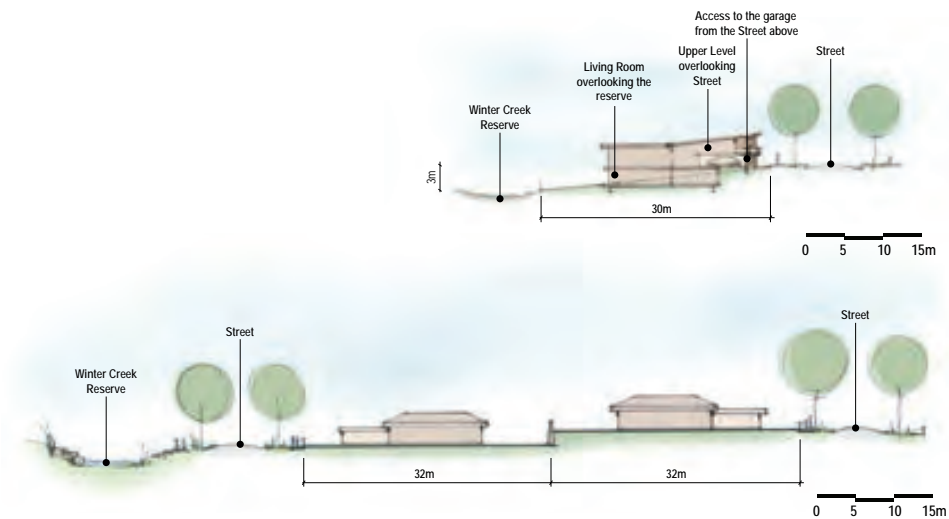
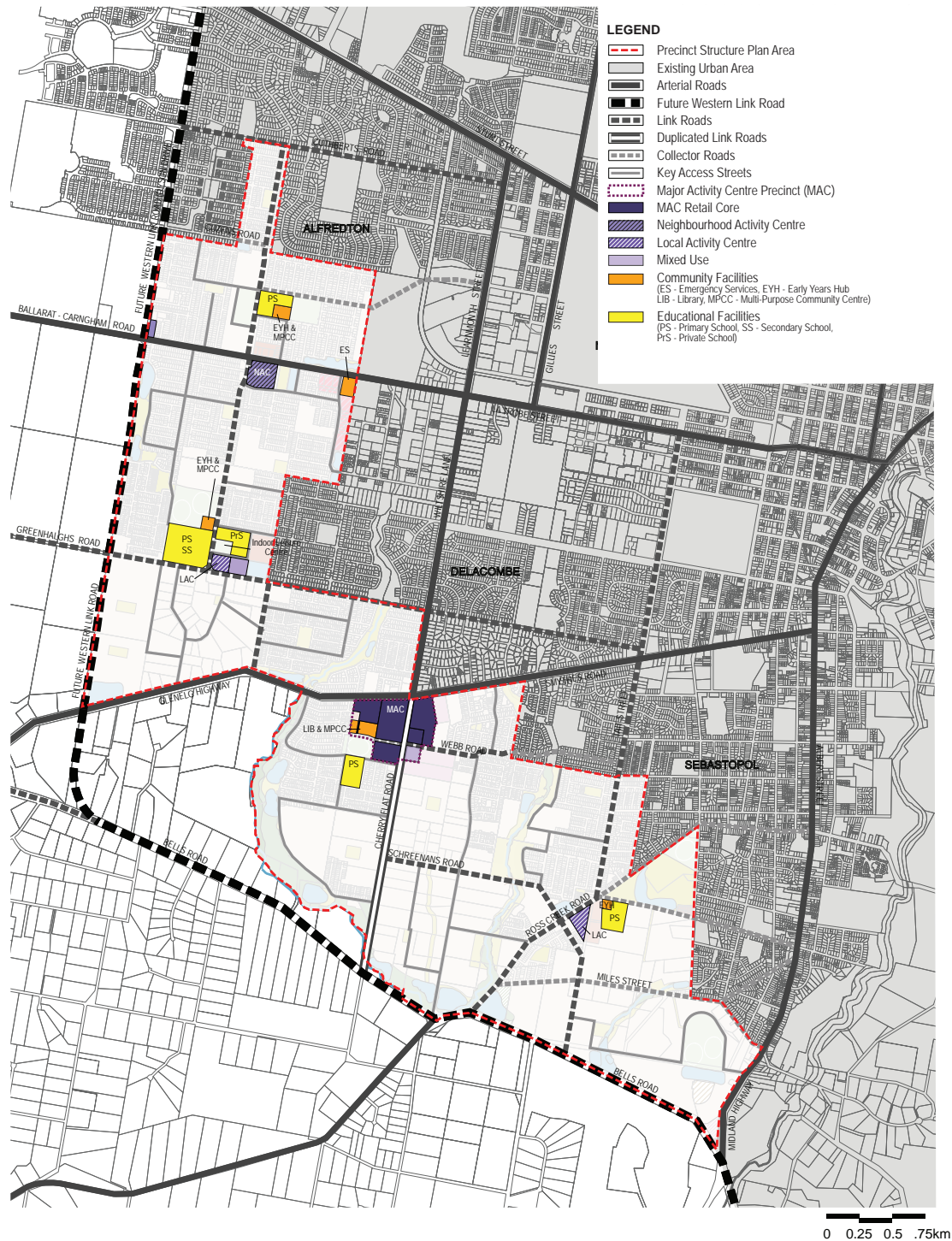


Figure 6 Example Layouts: Lots adjacent to Winter Creek





Plan 12 Employment and Activity Centres



## 5.3 Employment and Activity Centres

### 5.3.1 Employment and Activity Centre Objectives

#### Activity Centres

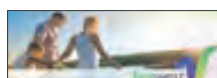
The objectives for Activity Centres are:

- To establish a hierarchy of vibrant 'Main Street' based activity centres that service the Ballarat West PSP area and parts of the surrounding community. These activity centres will provide a mix of retail, commercial and community uses to increase opportunities for employment in the Precinct and avoid the creation of 'dormitory suburbs';
- To ensure that new activity centres do not detract from the function and catchment of existing retail centres;
- To ensure that the Major Activity Centre provides opportunity for a mixture of retail, commercial, residential and service uses, and caters to the needs of the wider area;
- To ensure that the Neighbourhood Activity Centre serves a local function and acts as a weekly shopping destination for local residents;
- To create Local Activity Centres that cater for the day to day needs of residents and become a central focus for their communities;
- To ensure that Activity Centres are integrated with adjacent residential neighbourhoods;
- To ensure that the Major Activity Centre and Neighbourhood Activity Centre have the capacity to accommodate growth and adapt to changing market trends over time;
- To connect all activity centres with an integrated and accessible transport network which caters for a range of transport modes; and
- To acknowledge and appropriately address the interface with Ballarat-Carngham Road and Glenelg Highway when designing the Neighbourhood Activity Centre and the Major Activity Centre respectively.

### 5.3.2 Implementation

The objectives for activity centres are met by the implementation of all of the following:

- Plan 8: Future Urban Structure Plan;
- Plan 12: Employment and Activity Centres Plan;
- Plan 13: Community Facilities Plan;
- Table 5: Activity Centre and Employment Hierarchy;
- Planning and Design Guidelines set out in Section 5.3.3;
- Figure 6: Urban Design Framework for the Major Activity Centre;and
- Figure 7: Indicative Concept \_ for the Neighbourhood Activity Centre.



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### 5.3.3 Activity Centre Planning and Design Guidelines

#### General

##### Built form and the public realm

The following planning and design guidelines must be met:

- Developments must achieve a high degree of integration and connectivity between all uses within the activity centre;
- Active street frontages must be provided to primary street frontages within activity centres; and
- A main street through each activity centre must be created. The main street must encourage pedestrian movement and support a mixture of street based activities;

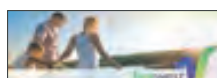
The following planning and design guidelines should be met:

- Build retail and commercial frontages to the edge of footpaths with clearly defined principal entrances addressing streets or public spaces;
- Place large retail formats (such as supermarkets and discount department stores) behind street-front retail tenancies;
- Provide high quality pedestrian spaces throughout activity centres to allow for connection, congregation and informal activity;
- Provide active uses at street level along 'main streets' to ensure a high level of activation of streets and pedestrian spaces;
- Establish pedestrian oriented environments that are permeable, visually interesting, accessible, well connected, safe and prioritise pedestrian movement over vehicle movement;
- Street facades must be well articulated, visually interesting and contribute to local character.
- Extensive blank facades to the street should be avoided;
- Corner sites should not be anchored by petrol stations or fast food outlets;
- Active frontages should be provided with continuous awnings or similar shelter to encourage pedestrian movement in all weather conditions;
- Advertising signage should be co-ordinated for each premises to avoid unnecessary visual clutter; and
- Activity Centres should incorporate Water Sensitive Urban Design measures.

##### Parking and movement

The following planning and design guidelines should be met:

- Locate car parking areas behind buildings to screen these areas from shopping streets and provide access from side-streets or rear laneways;
- Car parking areas should be designed to ensure passive surveillance and public safety through adequate positioning and lighting;
- Bicycle parking should be provided in a number of prominent and easily accessible locations and must be clearly visible, well lit, and preferably under cover;
- Bus stops should be centrally located to both community and retail facilities, in an area of high amenity and located in areas with a high level of passive surveillance; and
- Service areas should be screened from the public realm.



### Major Activity Centre

The following planning and design guidelines must be met:

- Proposals are to be consistent with the role and function of the centre as described in Table 5.

The following planning and design guidelines should be met:

- The first stage of development within the MAC Retail Core should create a main street with activity on both sides, provide legible, high-quality pedestrian connections to residential areas and be integrated with the community facility and primary school sites;
- Locate a landmark frontage on each side of the intersection of Glenelg Highway and Cherry Flat Road, as well as at the entry to the MAC Retail Core at Webb Road, to signal the entry point to the major activity centre to passing traffic;
- Create a main street in the MAC Retail Core that provides protection from prevailing winds, rain and takes advantage of morning or afternoon solar access;
- Provide high-quality on-street pedestrian connections linking the MAC Retail Core to other parts of the Major Activity Centre. Footpaths should be broad; enabling outdoor dining and encouraging informal social interaction;
- Provide tree lined streets, street furniture and urban art to give the centre a unique sense of place;
- Encourage visually interesting buildings and streetscapes;
- Major retail anchors, entrances to enclosed centres, and street parking should be designed to generate passing trade for street-based shopfronts;
- Create a nexus between the district park and the activity centre by locating community facilities between retail and open space;
- Create a nexus between the district park and the activity centre by locating community facilities between retail and open space;
- Use built form to the north and east of the district park to form a well defined edge to park land and maximise passive surveillance opportunities;
- Configure the district park to reach the ridgeline to the west to maximise views from the activity centre to the south-west;

- Encourage medium density residential development around the periphery of the town centre over time;
- Consider provision of shop top housing and other residential mixed-use built forms to help activate the town centre throughout the day and evening;
- Provide a variety of employment and business opportunities through the provision of community, retail and non-retail commercial activities;
- Limit access to Cherry Flat Road between Webb Road and Glenelg Highway. Any access proposed should be from a service lane or allow left-in, left-out movements only; and
- Create a town square or similar public space within the MAC Retail Core. This space should be:
  - Edged with active frontages;
  - Located in an area with high pedestrian activity and accessible from multiple places;
  - Located adjacent to or directly addressed by community facilities;
  - Located to have good solar orientation; and
  - Accessible to both shade and rain sheltered areas.

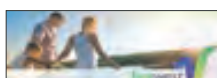
### Major Activity Centre – Bulky Goods Precinct

The following planning and design guidelines must be met:

- Proposals are to be consistent with the role and function of the centre as described in Table 5.

The following planning and design guidelines should be met:

- Create an appropriate interface between the bulky goods precinct and abutting residential development;
- Ensure development addresses Glenelg Highway, Cherry Flat Road and Webb Road;
- Landmark frontages should be provided at the intersection of Glenelg Highway and Cherry Flat Road and Cherry Flat Road and Webb Road, unarticulated facades to these intersections will not be supported; and
- The scale of development in this precinct must have regard to the scale of development in surrounding residential areas.





### Neighbourhood Activity Centre

The following planning and design guidelines should be met:

- Provide a landmark frontage at the intersection of Ballarat-Carngham Road and the future north-south collector road and at prominent corner sites within the activity centre;
- Orientate buildings to address Ballarat-Carngham Road, the proposed collector road and the future residential development to the south and east;
- Create a tree lined 'main street' feel through the activity centre by providing active street frontages to all proposed internal roads and the north-south collector.
- Future development should not present blank facades to Ballarat-Carngham Road, the north-south collector road or the proposed 'main street';
- Locate car parking areas behind retail buildings to screen these areas from key shopping areas;
- Integrate the activity centre with future residential development; and
- Locate medium density residential adjacent to the Neighbourhood Activity Centre.

### Urban Design Frameworks – Major Activity Centre and Neighbourhood Activity Centre

A permit should not be granted to use or subdivide land, or to construct a building or construct and carry out works within the Major Activity Centre or the Neighbourhood

Activity Centre until an Urban Design Framework has been prepared, or where one has already been approved, amended, if required, to the satisfaction of the Responsible Authority

The Urban Design Framework should:

- Address the whole of the activity centre unless a staged Urban Design Framework is agreed to by the Responsible Authority;
- Address any relevant design guidelines prepared by the Victorian Government or Responsible Authority;
- Demonstrate an appropriate design response that addresses the relevant Activity Centre Planning and Design Guidelines and the indicative concept plans illustrated in Figures 6 & 7;
- Explain how the Framework responds to feedback received following consultation with infrastructure agencies including VicRoads and the Department of Transport and landowners within the activity centre;
- Show how the activity centre relates to existing or approved development in the area;
- Include an overall landscape concept for the activity centre;
- Demonstrate how the activity centre will positively address environmental sustainability including integrated water management and energy conservation;
- Show the proposed location and design of car parking areas, and detail car parking rates for proposed uses within the activity centre;
- Show proposed staging of development;
- Set out design principles for the provision of advertising Signs; and
- Set out arrangements for the provision of service areas for deliveries and waste disposal including access for larger vehicles and measures to minimise the impact on the amenity of the activity centre and adjoining neighbourhoods.

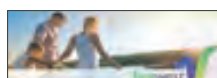




Figure 7 Sub-Precinct 1 Major Activity Centre - Existing Approved Urban Design Framework

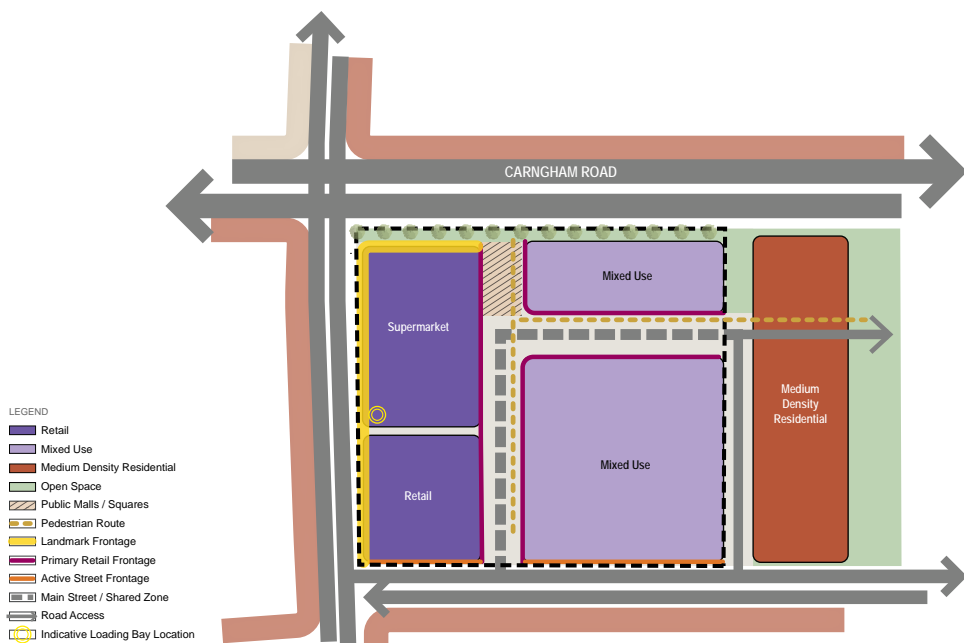
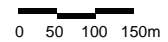
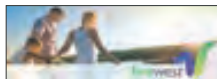
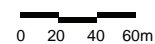


Figure 8 Sub-Precinct 4 Neighbourhood Activity Centre - Indicative Concept Plan



#### 5.3.4 Industrial / Commercial Precinct Objectives

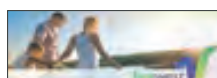
The objectives for the Industrial/Commercial precinct are:

- To provide an air emissions buffer between the existing Delacombe Industrial Area and residential neighbourhoods in the Ballarat West PSP;
- To protect heavy industries in the Delacombe Industrial Area from residential encroachment;
- To create a unique industrial/commercial precinct that accommodates a mixture of non-sensitive land uses that provide employment opportunities supporting the Precinct;
- To provide passive surveillance of the linear landscape buffer;
- To support high quality built forms and uses such as office and small business workshops to provide an attractive interface between the Delacombe Industrial Area and residential land uses to the west; and
- Provide built forms within the Industrial/Commercial precinct that serve a noise attenuation function and assist to reduce noise impacts on the surrounding residential area.

#### 5.3.5 Implementation

The objectives for the Industrial/Commercial Precinct are met by the implementation of all of the following:

- Plan 8: Future Urban Structure Plan;
- Plan 12: Employment and Activity Centres Plan;
- Table 5: Activity Centre and Employment Hierarchy; and
- Industrial/Commercial Precinct Planning and Design Guidelines set out in Section 5.3.6.



### 5.3.6 Industrial / Commercial Precinct Planning and Design Guidelines

The following planning and design guidelines must be met:

- Proposals must be consistent with and enhance the Activity Centre and Employment Hierarchy described in Table 5;
- Development facing the Linear Landscape Buffer must address the buffer area, be well landscaped and ensure passive surveillance;
- Buildings fronting the Linear Landscape Buffer and Ballarat-Carngham Road must be designed to a high standard and provide a well-articulated front facade;
- Building designs must consider their presentation to residential areas and provide an appropriate transition between residential and non-residential uses;
- Uses within the precinct must not create new amenity buffer requirements for air, noise or light emissions that would extend the existing buffers or levels identified in this PSP;
- No sensitive land uses are permitted within the Industrial/ Commercial Precinct;
- Office uses must be commensurate in scale with an out-of-centre, suburban location and must not undermine the function of the Central Business District and the proposed Major Activity Centre;
- Restricted retail (bulky goods) uses must be appropriate in scale with an out-of-centre location, not undermine the retail hierarchy defined by the *Ballarat Activity Centres Strategy (2011)* and not undermine the function of the bulky goods precinct within the Major Activity Centre; and
- Other non-sensitive, non-industrial uses such as an indoor sports centre may be acceptable.

The following planning and design guidelines should be met:

- To minimise dumping of rubbish, lots in the Industrial/ Commercial Precinct should not directly abut the Linear Landscape Buffer.

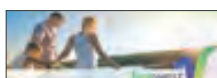
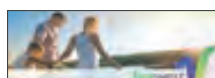


Table 5 Activity Centre and Employment Hierarchy

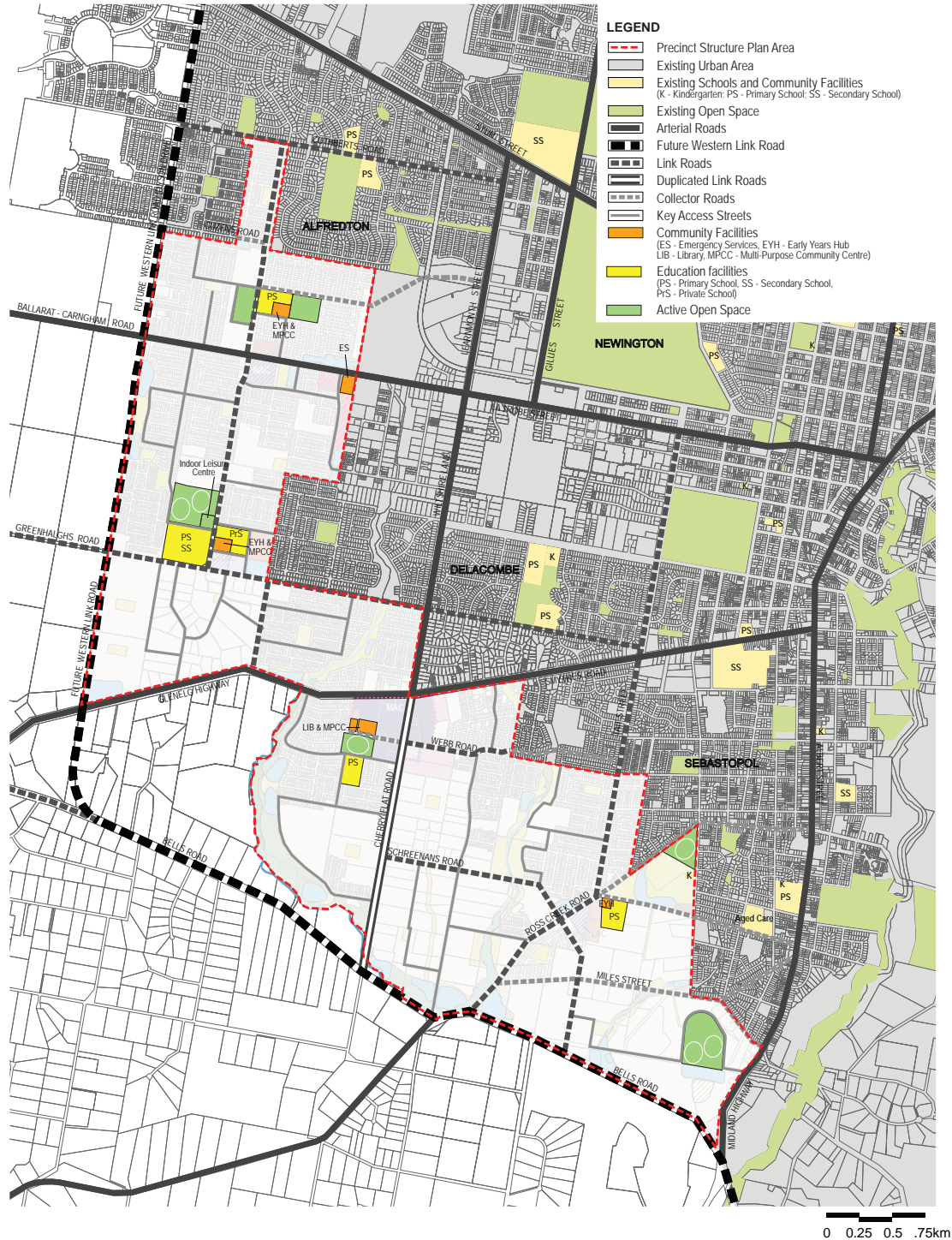
Activity Centre	Role and Function
Glenelg Highway Major Activity Centre	<ul style="list-style-type: none"> <li>• Act as the main shopping precinct for Ballarat West;</li> <li>• Primarily serve the population of the Ballarat West Growth Area;</li> <li>• Provide for up to 29,500 m<sup>2</sup> of retail floor space, up to 23,000 m<sup>2</sup> of floor space for restricted retail premises and up to 21,500 m<sup>2</sup> of office space. Provision of this floor space will be staged in line with demand growth in the catchment (the Ballarat West Growth Area);</li> <li>• At full development of the catchment (the Ballarat West Growth Area), accommodate two full-line supermarkets, discount department stores and specialty shops and services;</li> <li>• Have a civic function and include a library and multi-purpose community centre; and</li> <li>• Allow residential uses and encourage the introduction of office/ home developments around the periphery of the centre.</li> </ul>
Ballarat-Carngham Road Neighbourhood Activity Centre	<ul style="list-style-type: none"> <li>• Medium sized neighbourhood activity centre;</li> <li>• Provide for up to 6,000 m<sup>2</sup> of retail floor space, with opportunities to provide up to 3000 m<sup>2</sup> office uses;</li> <li>• Provision for one supermarket and a variety of specialty shops and services; and</li> <li>• Development should be anchored along a main street which runs through the centre.</li> </ul>
Local Activity Centres	<ul style="list-style-type: none"> <li>• Provide for up to 1500 m<sup>2</sup> of retail floor space and 500 m<sup>2</sup> of office space;</li> <li>• Provide opportunity for a small supermarket supported by convenience shops and services; and</li> <li>• Serve daily shopping needs.</li> </ul>
Industrial / Commercial Precinct	<ul style="list-style-type: none"> <li>• Employment precinct that provides for manufacturing and service industries, offices, associated commercial and industrial uses, and other non-sensitive land uses, which are compatible with sensitive land uses;</li> <li>• Provides flexibility for integrated office/industry developments that is not readily accommodated in the Central Business District and Glenelg Highway Major Activity Centre;</li> <li>• Provides an air emissions buffer between existing industry and sensitive uses. This area is not to include sensitive uses;</li> <li>• Provides manufacturing and service industries to meet the needs of the future Ballarat West community, allowing flexibility for development of a range of associated commercial uses including offices;</li> <li>• Provide some capacity for Restricted Retail Premises up to a total of 8,500 m<sup>2</sup> across the Industrial/ Commercial Precinct. Restricted Retailing in this area should form part of a balanced mixture of land uses which do not undermine the role of the retail hierarchy or the Major Activity Centre. The primary focus for Restricted Retailing is to be the Major Activity Centre; and</li> <li>• This employment area is not intended to become an activity centre or be integrated with the Ballarat-Carngham Road Neighbourhood Activity Centre. Land use proposals in this area should not detract from the function and role of planned and existing activity centres, considering Ballarat's wider activity centre hierarchy. This may need to be demonstrated to the satisfaction of the Responsible Authority.</li> </ul>

The floor areas are indicative of the size of the centre based on the retail assessment undertaken by Macroplan as part of the preparation of the PSP. Variations to the indicative floor area may be permitted provided it does not change the role of the Activity Centre. A retail or economic assessment will be required.





Plan 13 Community Facilities



## 5.4 Community Facilities

### 5.4.1 Community Facilities Objectives

The objectives for community facilities are:

- To provide a well-connected network of community hubs across the Precinct;
- To foster community activity and interaction within each neighbourhood by co-locating community uses, activity centres, play space, open space, and transport facilities;
- To provide community facilities in line with future population growth;
- To provide opportunities for adaptable, shared, co-located and/or integrated community facilities (land and buildings);
- To plan for a range of community facilities, cultural venues and services to meet the varying needs of local residents;
- To plan for community facilities of a high standard that have flexible designs which can accommodate a range of uses, meet the changing needs of the community and allow for both indoor and outdoor activities;
- To locate community facilities with active and passive open space and, where appropriate, education facilities;
- To plan for community facilities which have safe and convenient access by public transport, walking, cycling, the mobility aided and car;
- To plan for physical connections that integrate future adjoining land uses for community use;
- To provide sporting facilities and supporting infrastructure identified in the plan;
- To allow for the timely delivery of community facilities such as schools, health and children's services and formal recreation facilities as population thresholds are reached and funding becomes available; and
- To provide for an emergency services facility (CFA, Ambulance and possibly Police and SES) to cater for growth outside of their existing service areas.

### 5.4.2 Implementation

The objectives for community facilities are met by implementation of all of the following:

- Plan 8: Future Urban Structure Plan;
- Table 6: Community Facilities;
- Plan 13: Community Facilities Plan;

- Figure 9: Delacombe Community Hub;
- Figure 10: Winterfield North Community Hub;
- Community Facilities Planning and Design Guidelines set out in Section 5.4.3; and
- Community Facilities Delivery Statement set out in Section 5.4.4.

### 5.4.3 Community Facilities planning and design guidelines

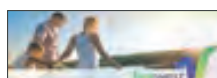
#### General

The following planning and design guidelines must be met:

- Community facilities must be integrated with other community facilities, activity centres and/or open space, and be co-located with proposed children's playgrounds, recreation infrastructure and kindergartens; and
- Education and community services (public and private) and other activities (such as childcare centres) must:
  - Be within or nearby community hubs or activity centres;
  - Be located so they are easily accessible by walking, cycling and public transport; and
  - Provide safe drop-off and pick up locations on access streets and collector roads, not arterial roads.

The planning and development of community facilities should:

- Accommodate a diverse range of users;
- Promote social interaction and foster a sense of place;
- Ensure that built form is of a high standard and of a proportion, scale and character appropriate to their urban context;
- Ensure principal entrances of buildings to streets and/or public spaces are clearly visible from the street and are not isolated from view;
- Be designed with adaptable spaces that can be modified to respond to changing community demands and needs;
- Capitalise on any natural features that currently exist, and emphasise any unique characteristics that may be present; and
- Schools may be designed to incorporate uses such as places of worship or other welfare/community facilities if required.



#### 5.4.4 Community Facilities Delivery Statement

It is important that community facilities are delivered in-line with population growth in the Ballarat West PSP area and provided when demand arises.

##### Integrated, efficient and timely provision

Sources of funding for community facilities include:

- The Ballarat West DCP;
- City of Ballarat's Capital Works Program;
- Developer funded delivery of an item in the Ballarat West DCP through a works-in-kind agreement. Works-in-kind agreements require approval from the City of Ballarat who is the collecting agency for Development Contributions;
- Non-government organisations. Some community infrastructure may be able to be delivered by the Council working in partnership with non-Government organisations; and
- State and Federal Government Programs. The State and Federal Government have a range of grant programs that could potentially provide funding for a range of community facilities.

##### Community Facilities Concept Planning

Delivery of integrated and timely community facilities is a complex and evolving task. It requires involvement from many stakeholders with shifting priorities. Models for the delivery of infrastructure also evolve and change over time. This PSP has been designed to be flexible enough to accommodate change over time.

Co-ordination and delivery of community facilities will be assisted by:

- Establishing a governance model for the concept and master planning of 'hubs' that co-locate a number of facilities (for example schools and City of Ballarat services); this may be facilitated by the City of Ballarat through a steering committee;
- The preparation of community hub concept plans; and
- The preparation of master plans that provide details of the delivery of the concept plans.

Governance arrangements and engagement are important parts of identifying, discussing and resolving issues around facility design, ownership, leasing, capital works funding, service delivery funding, management, maintenance and upgrade over time.

The opportunities for integrated facility delivery apply equally to sporting facilities as they do to items such as community centres and schools. Opportunities for shared use of clubhouse and pavilion buildings should be investigated and, if appropriate, accommodated through flexible facility design and integration through hub master planning.

Where facilities are associated with schools, they should be designed concurrently to ensure integrated facility delivery and to maximise sharing opportunities.

The design of education and community hubs should be undertaken in consultation with the local community and the service providers who are likely to operate it.

One of the complexities of planning for community hubs is the need to take into account previous decisions and consider how this may impact the eventual delivery of the facilities required. For example at Delacombe Major Activity Centre, at the time of writing there is live planning permit for a private childcare centre which conflicts with Council's preferred location for an early years hub. Council recognizes that the landowner has an accrued right to act on the permit prior to its expiry condition. However Council needs to reserve the right to implement the PSP vision in the event that the permit is not acted upon. Therefore the future urban structure plan shows the land as community facilities.

##### Private Schools

The PSP makes provision for one site for a private school (3.5ha). The layout of the education and community hub in Sub-Precinct 2 allows several other site options, for example on the northern side of the Indoor Leisure Centre. Options in other Sub-Precincts include land adjacent to the education and community hub in Sub-Precinct 4.

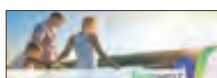
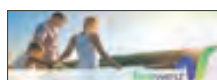


Table 6 Community Facilities

Community Facilities and Services	Location	Area (ha)	Responsibility
State Government School (P-12)	Education and Community Hub in Sub-Precinct 2	10ha	Department of Education (DET)
State Primary School	Sub-Precinct 1:Major Activity Centre	3.42ha	Department of Education (DET)
	Sub-Precinct 1: co-locate with LAC and MR Power Park	3.8ha	Department of Education (DET)
	Sub-Precinct 4: north of Carngham Road co-located with District Park	3.42ha	Department of Education (DET)
Private Primary School	Education and Community Hub in Sub-Precinct 2	3.5ha	Private provider
Early Years Hubs	Sub-Precinct 1:Major Activity Centre	0.5ha	City of Ballarat
	Sub-Precinct 1: Co-locate with school in south east	0.5ha	City of Ballarat
	Sub-Precinct 2: Education and Community Hub	1ha	City of Ballarat
	Sub-Precinct 4: Co-locate with Primary School	0.5ha	City of Ballarat
Multi Purpose Community Centres	Level 3 Centre: Sub-Precinct 1: Major Activity Centre co-located with branch library	1ha	City of Ballarat
	Level 1 Centre: Sub-Precinct 2: Co-located with the Education and Community Hub	0.8ha	City of Ballarat
	Level 1 Centre: Sub-Precinct 4: Co-located with Primary school and Early Years Hub	1.3ha	City of Ballarat
Library – 1800m <sup>2</sup> branch library	Sub-Precinct 1: Major Activity Centre co-located with community centre	0.9ha	City of Ballarat
Indoor Recreation Facility	Sub-Precinct 2: Education and Community Hub	1.3ha	City of Ballarat
District Parks (active open space)	Sub-Precinct 1: South Eastern section	11.13ha	City of Ballarat
	Sub-Precinct 1: Major Activity Centre	3.5ha	City of Ballarat
	Sub-Precinct 1: M R Power Park	4.00ha	City of Ballarat
	Sub-Precinct 2: Education and Community Hub	10.33ha	City of Ballarat
	Sub-Precinct 4: co-located with the School	7.98ha	City of Ballarat
Neighbourhood Parks	Throughout the Precinct and within 400m of almost all residents.	Total: 36.19ha	City of Ballarat - constructed by development proponents
	Sub-Precinct 1:5 parks	approx 5 x <0.5ha parks	
	Sub-Precinct 2: 4 parks	approx 14 x 0.5-5ha parks	
	Sub-Precinct 4: 10 parks (including M R Power Park)	1 x approx. 14ha park	
Linear Open Space Network including off road paths, furniture and landscaping but excluding open space area encumbered by drainage requirements	Along Creeks and Drainage Lines	Total: 28.92ha	City of Ballarat - constructed by development proponents
		Sub-Precinct 1: 0ha	
		Sub-Precinct 2: 2.70ha	
		Sub-Precinct 4: 26.22ha	



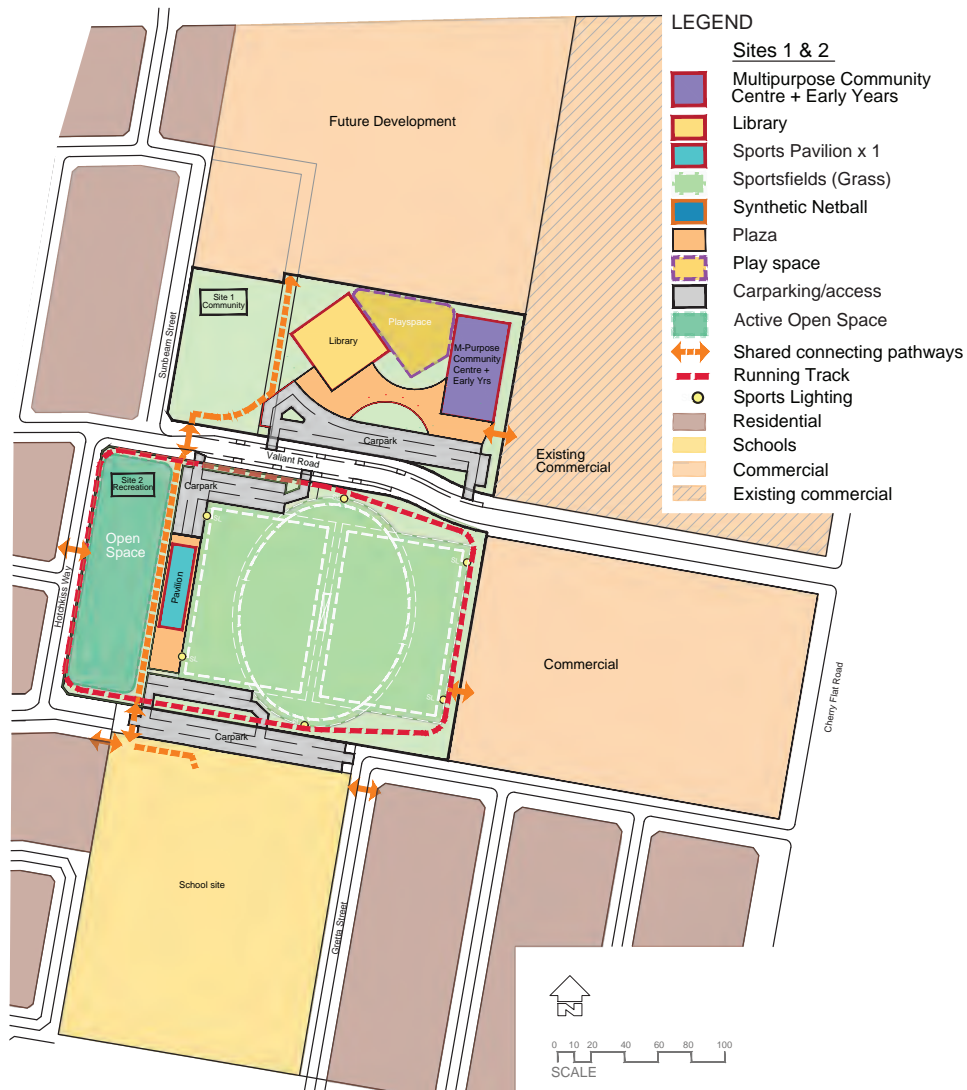


Figure 9 Delacombe Community Hub - Indicative Concept Plan





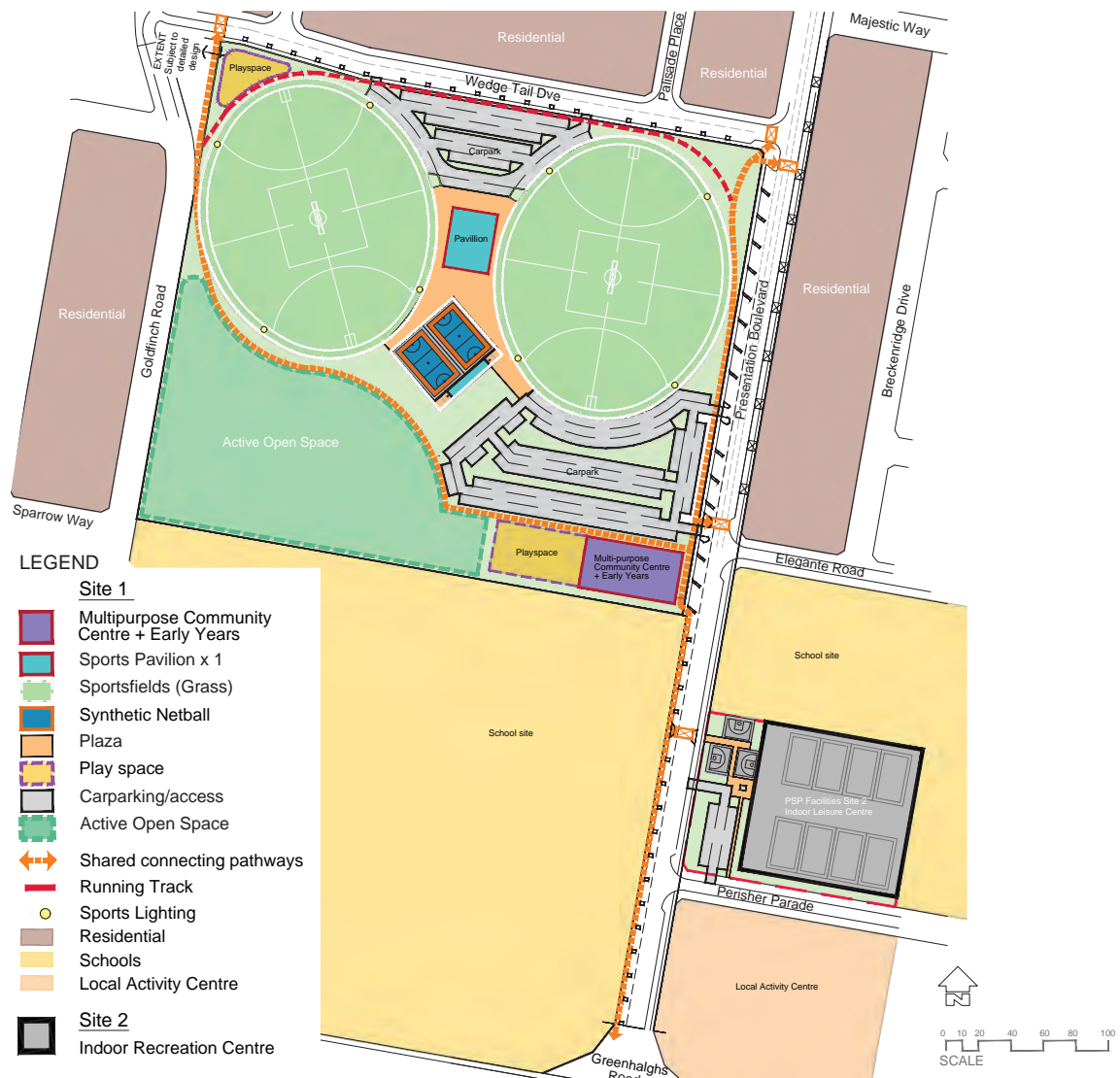
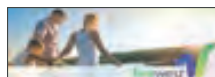
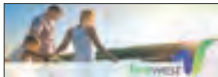
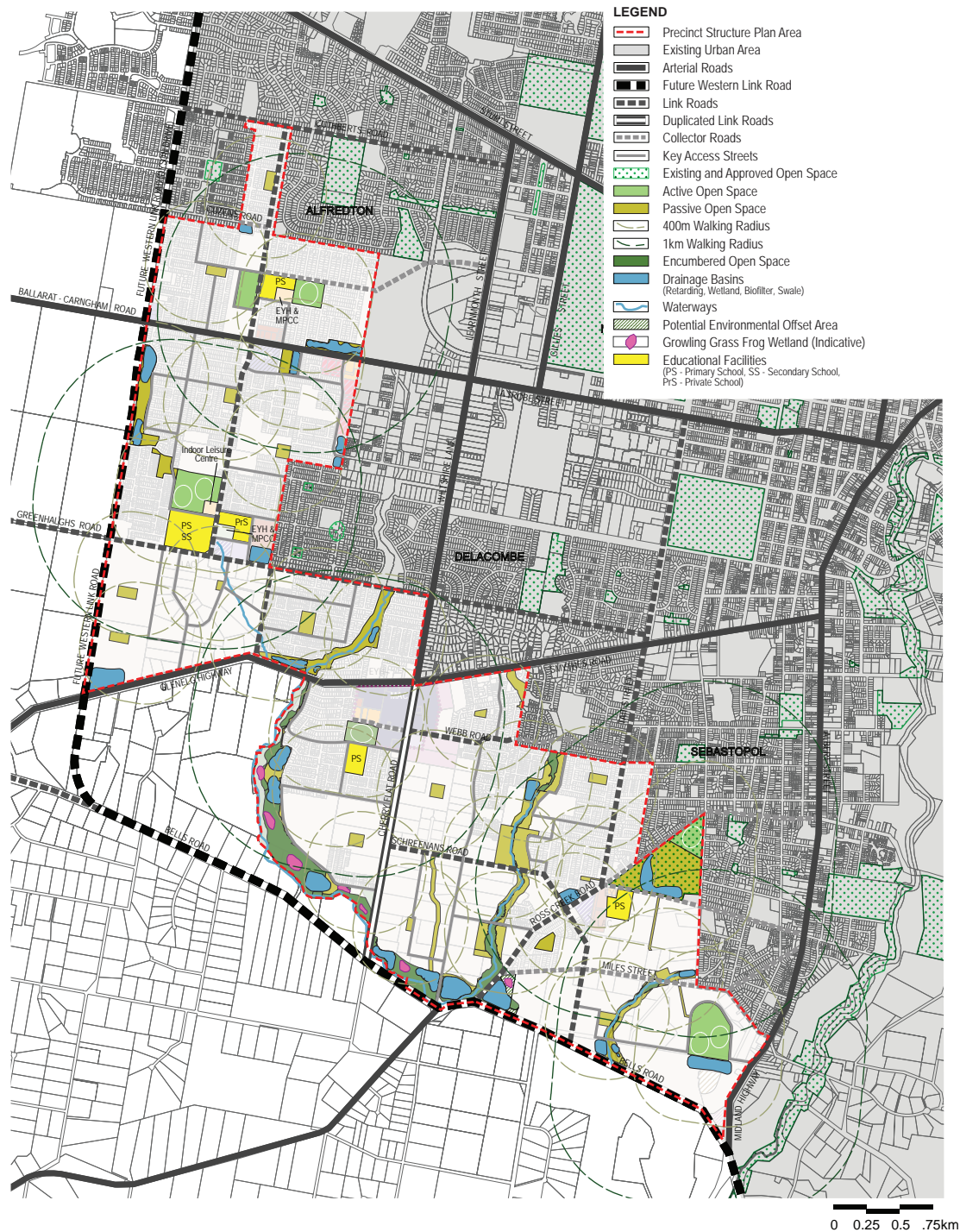


Figure 10 Winterfield North Community Hub - Indicative Concept Plan



Plan 14 Open Space



## 5.5 Open Space and Natural Systems

### 5.5.1 Open Space Objectives

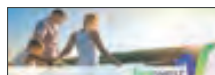
The objectives for open space are:

- To provide an accessible and connected network of open spaces suitable for a broad range of civic, passive and active recreation uses;
- To provide a variety of open spaces to meet the active and passive recreation needs of the community;
- To maintain and enhance environmental, landscape and heritage features within open space, where possible;
- To protect and enhance areas of significant native vegetation and fauna habitat and integrate these areas with open spaces;
- To restore and enhance existing natural creek lines and establish an attractive urban environment with a strong sense of place; and
- To protect Growling Grass Frogs in line with obligations under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*.

### 5.5.2 Implementation

The objectives for open space are met by implementation of all of the following:

- Plan 8: Future Urban Structure Plan;
- Plan 14: Open Space Network Plan;
- Plan 19: Walking and Trails Plan;
- Figure 11: Ballarat-Carngham Road Concept Plan;
- Figure 12: MR Power Park Concept Plan;
- Figure 13: Winter Creek Master Plan;
- Open Space Planning and Design Guidelines at Section 5.5.3;
- Ballarat West Native Vegetation Precinct Plan;
- Ballarat West Development Contributions Plan; and
- Ballarat West Conservation Management Plan.



### 5.5.3 Open space planning and design guidelines

#### General

The following planning and design guidelines must be met:

- Open spaces must be designed to address Crime Prevention through Environmental Design principles (refer *Urban Design Guidelines for Victoria, Department of Environment, Land, Water and Planning 2017*);
- Streetscape planting and paths must complement and integrate with the adjoining parkland design;
- Residential, commercial and/or community facilities adjacent to open space must be designed to enhance the open space area; and
- Open space must be designed and constructed to meet its designated purpose, to the satisfaction of the Responsible Authority.

The following planning and design guidelines should be met:

- Neighbourhood parks should be central to their catchment, in a prominent location such as on the intersection of two key local streets and be in a location where streets provide a high degree of connectivity;
- Car parking areas should be designed and located to maximise safety and security;
- Open spaces should be connected through an integrated network of pedestrian and cycle paths;
- The design and construction of open spaces should consider and reflect any natural or heritage elements in the area;
- All edges of open spaces should have either a road frontage or a direct frontage that is activated and provides passive surveillance of the open space;
- Passive parks should cater for a broad range of users by providing a mix of spaces and planting to support both structured and informal recreational activities;
- Active recreation reserves should be designed to allow co-location and sharing opportunities between complementary sports and school facilities;
- Parks should contain both open areas for unstructured activities, as well as areas for shade and shelter;
- The design and layout of open spaces should implement Water Sensitive Urban Design (WSUD) principles;
- Parks should be designed to make efficient use of water and implement best practice storm water quality standards; and
- Paths for pedestrian and cyclist movement should be provided along all creek corridors.

#### Bonshaw, Kensington and Winter Creek

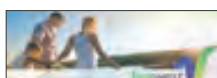
The following planning and design guidelines must be met:

- Provide a minimum width of 35 metres of open space on each side of the named creeks (measured from centre line of creek) to provide habitat for significant flora and fauna species, as well as catering for drainage requirements;
- Create significantly wider nodes for passive recreation by locating unencumbered local open space abutting the encumbered open space along the creek lines;
- Ensure habitat is created for Growling Grass Frogs along the creek line in accordance with the Ballarat West Growling Grass Frog Conservation Management Plan; and
- Where the creek forms the boundary between the Ballarat West PSP area and rural areas, the landscape design of the creek corridor must minimise the risk of bushfire transmission into developed areas, in accordance with the requirements of the Country Fire Authority and any applicable standards.

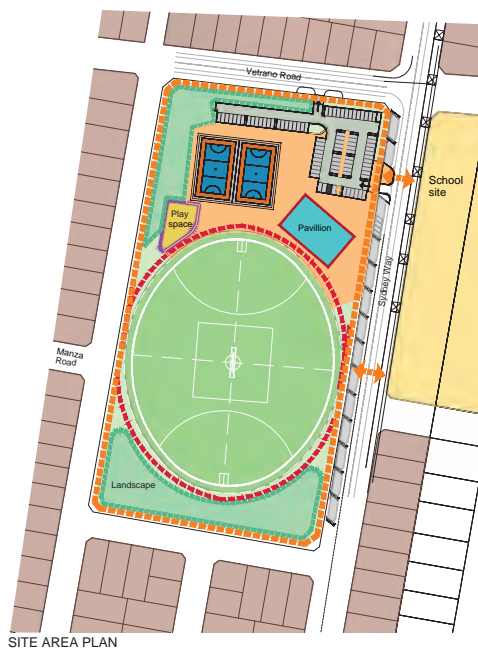
#### Open Space Improvements

Individual development proponents are required to provide basic improvements to local parks and passive open space including earthworks, fencing, water tapping, grassing, tree planting, local playgrounds, shared paths and footpaths, furniture and paving.

The City of Ballarat may add to these basic improvements over time with the provision of additional facilities through its Capital Works Program.







**SITE AREA SCHEDULE**  
Total area = 4ha.

**Legend**

- Modified grass sportsfield
- Pavilion
- Netball courts (synthetic)
- Plaza
- Play space
- Carparking (on site)
- Carparking (on road)
- Landscaping
- Shared connecting pathways
- Running Track
- Residential
- School site

**Areas**

Modified grass sportsfield	17000m <sup>2</sup>
1no. AFL (modified to fit site)	1000m <sup>2</sup>
Netball courts (synthetic)	2100m <sup>2</sup>
2no. n/hall courts	1750m <sup>2</sup>
Play space	850m <sup>2</sup>
Carparking (on site)	2700m <sup>2</sup>
Carparking (on road)	83 spaces
Landscaping	75 parks
Shared connecting pathways	6500m <sup>2</sup>
Running Track	1200 lin. m 2400m <sup>2</sup>

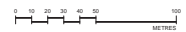


Figure 11 Ballarat Carngham Road Site Area - Indicative Concept Plan

- LEGEND**
- Sports Pavilion x 1
  - Proposed carparking/access
  - Sportsfields (Grass)
  - Open Space
  - Shared connecting pathways
  - Running Track (750 metres)
  - Sports Lighting
  - Existing Early Years Centre
  - Existing play spaces
  - Existing off-leash dog park
  - Existing mullock heap
  - Existing vegetation / plantings
  - Proposed urban forest planting
  - Residential
  - Schools
  - Commercial
  - Existing commercial



Figure 12 MR Power Park - Indicative Concept Plan





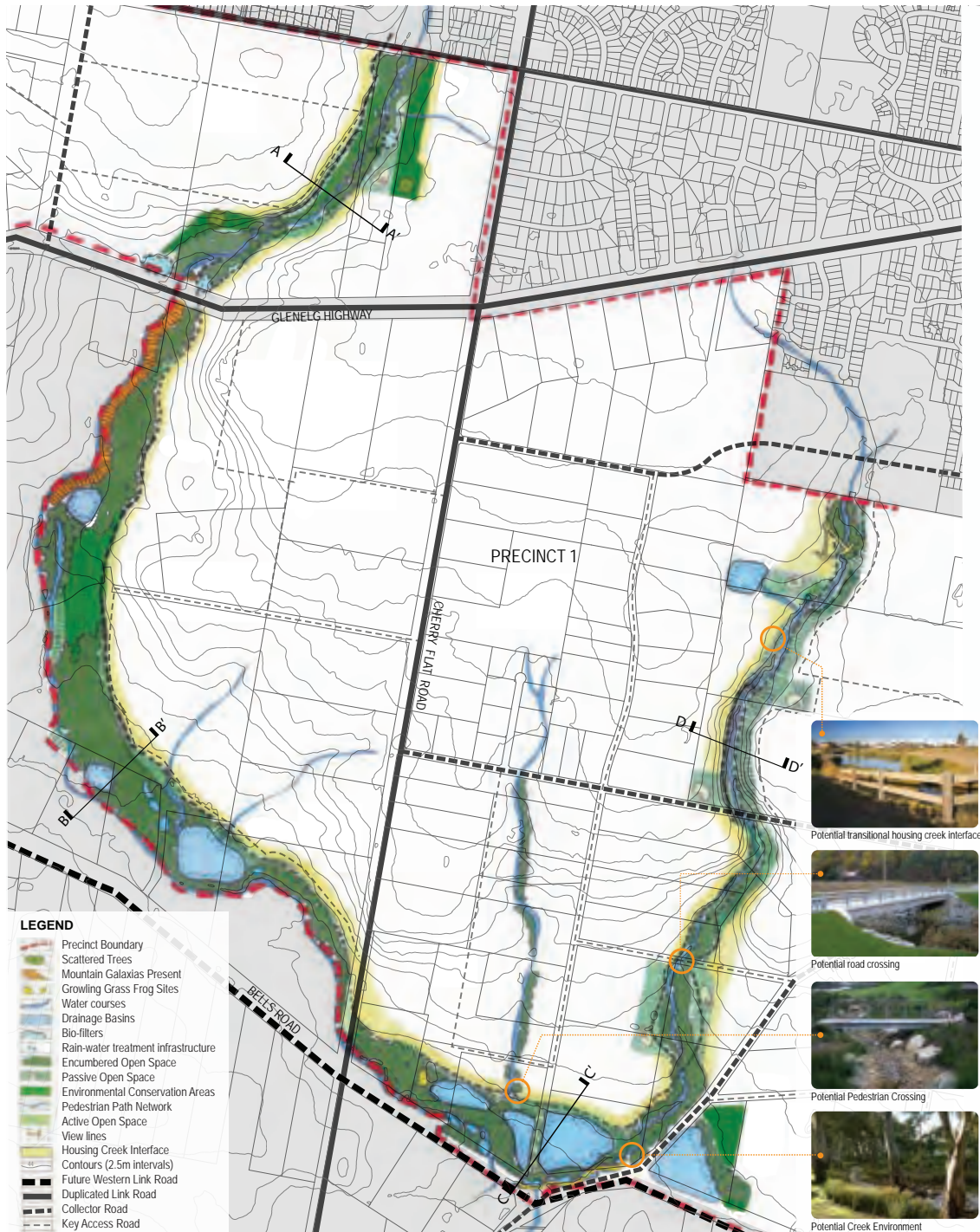
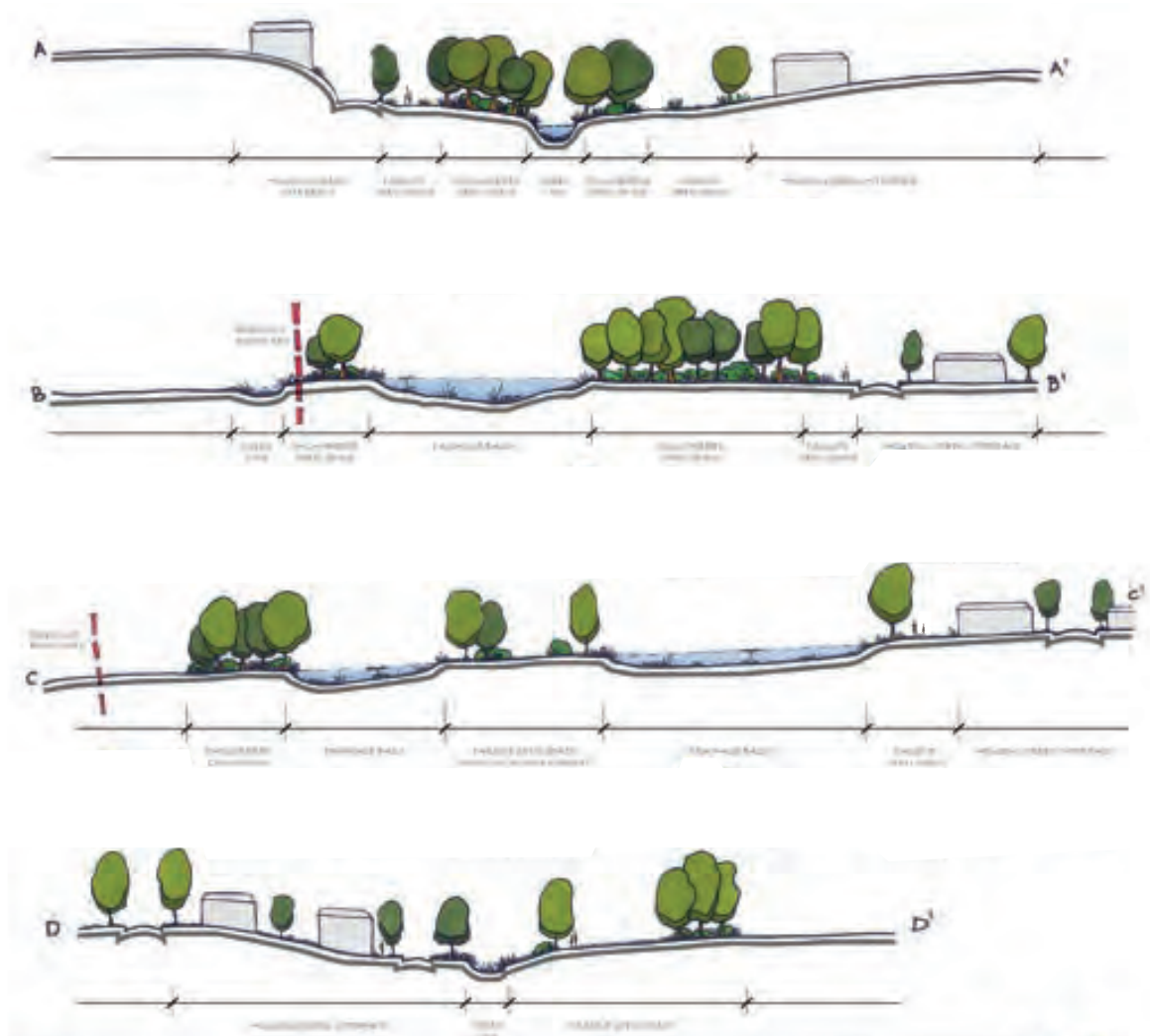


Figure 13 Winter Creek Master Plan





Cross Sections - Winter Creek Master Plan



#### 5.5.4 How to make a passive open space contribution

Clause 53.01 of the Ballarat Planning Scheme specifies a public open space contribution which must be made upon the subdivision of the land. This requirement is only in respect of passive public open space. Active open space is addressed through the Ballarat West Development Contributions Plan (June 2012 amended 2024).

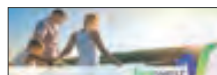
Because the Ballarat West PSP identifies a desired distribution of passive open space across the area of the PSP (land shown as Passive Open Space in Plan 14), all landowners must make a passive open space contribution equivalent to the amount set out in the schedule to clause 53.01 either in land or in cash or a combination of both as advised by Council. Landowners who contribute more land than the specified open space contribution required by clause 53.01 will be entitled to a payment. This process is referred to as equalisation and is explained further below.

All land within the Ballarat West Precinct Structure Plan area must make a passive open space contribution specified at 5.31% Gross Developable Area (GDA).

Where land is required by Council for unencumbered passive public open space purposes and that area of land is less than or equal to 5.31% of the Gross Developable Area of that land, that land is to be transferred to Council at no cost.

Where no land or less than 5.31% of the GDA of any land is provided to Council for unencumbered passive public open space purposes, a cash contribution is to be made to Council to bring each property's total passive public open space contribution up to an amount equivalent to 5.31% of the value of the Gross Developable Area.

Where the land required by Council for unencumbered passive public open space purposes is more than 5.31% of the GDA of any land, Council will pay an amount equivalent to the value of the additional land being provided by that property over the 5.31% of the area required as a passive public open space contribution but Council will not pay an amount for land provided as public open space which is in excess of the land required by Council to be set aside as passive public open space.



## 5.6 Biodiversity Assets

The following flora and fauna are present within the Precinct:

- Growling Grass Frog species and suitable habitat (listed under the *Environmental Protection and Biodiversity Act 1999*);
- Mountain Galaxias (listed under the *Flora and Fauna Guarantee Act 1986*); and
- A number of scattered remnant trees.

### 5.6.1 Biodiversity Objectives

The objectives for biodiversity are:

- To provide for the long term conservation and management of areas of significant vegetation in accordance with the Ballarat West NVPP ;
- To plan for the enhancement of creek corridors and drainage lines and integration of these spaces into the open space network;
- To protect and create suitable habitat for the Growling Grass Frog along Kensington, Winter and Bonshaw Creeks in accordance with the Ballarat West Conservation Management Plan; and
- To provide native vegetation offsets within the conservation areas identified in the Ballarat West Native Vegetation Precinct Plan .

### 5.6.2 Implementation

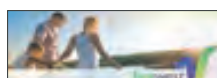
The objectives for biodiversity are met by implementation of all of the following:

- Plan 8: Future Urban Structure Plan;
- Figure 13: Winter Creek Master Plan;
- Plan 15: Integrated Water Management Plan;
- Ballarat West Conservation Management Plan;
- Ballarat West Native Vegetation Precinct Plan; and
- Biodiversity Planning and design guidelines set out in Section 5.6.3.

### 5.6.3 Biodiversity Planning and Design Guidelines

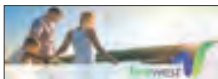
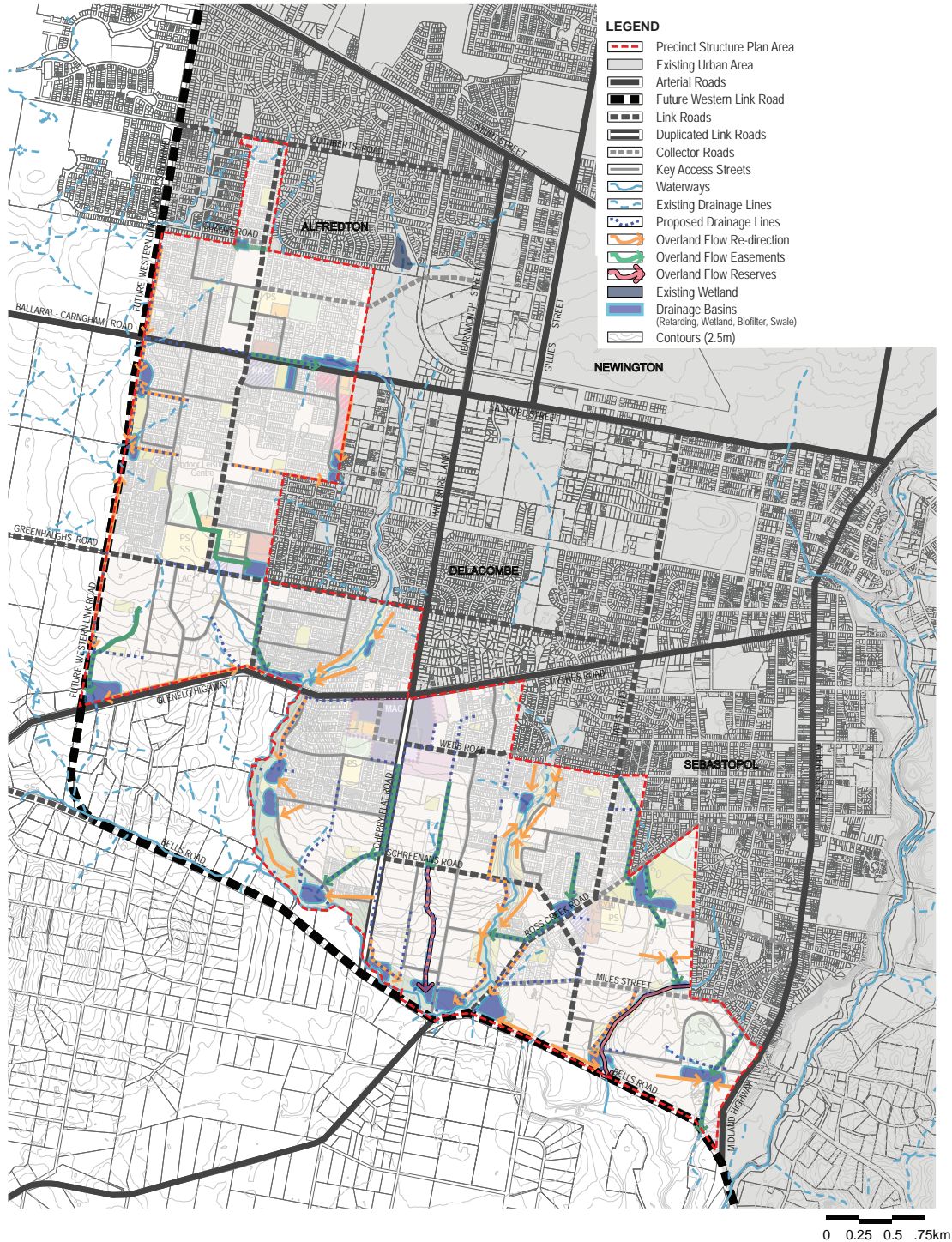
The following planning and design guidelines must be met:

- Green links, drainage corridors and linear parks are to be re-vegetated with indigenous flora species to provide habitat for local fauna, including Growling Grass Frogs where appropriate;
- Indigenous vegetation will be retained as shown on the Ballarat West NVPP;
- In accordance with the Ballarat West NVPP, native vegetation offsets are to be provided within the conservation areas. If offsets cannot be provided in these areas, offsets are to be secured off-site; and
- Development on any site identified in the Ballarat West Conservation Management Plan as being a site where Growling Grass Frogs have been found or as being within the Growling Grass Frog Offset Trigger Area must be in accordance with the Ballarat West Conservation Management Plan and any approvals pursuant to the *Environmental Protection and Biodiversity (EPBC) Act 1999*.





Plan 15 Integrated Water Management





## 5.7 Integrated Water Management

Integrated Water Management is an approach which considers the whole of the water cycle with an aim to make the most of water resources. This is achieved through integrating the various water systems such as water supply, stormwater and wastewater in ways which achieve improved social, economic and environmental outcomes.

Engeny Water Management was originally engaged by SMEC Urban to prepare a drainage report to assist with drainage and water sensitive urban design (WSUD) for the precinct

area. This report formed the basis for the original Integrated Water Management Plan. Engeny have been re-engaged by the City of Ballarat to undertake an updated stormwater management strategy to align with the most recent guidelines and standards. Updated RORB modelling was applied to the study area to calculate the peak 100 year ARI flow rates, to understand the impact on retarding basins and waterways. Retarding basins are used to maintain the pre-development 100 year ARI event peak flow rate, as required by the Corangamite CMA.

Water discharging into existing waterways is required to meet the Best Practice Environmental Guideline Targets for Stormwater Treatment. This is achieved through the use of water sensitive urban design techniques such as wetlands and biofilters or rain gardens.

The amended drainage functions shown in Plan 15 are integrated with other land uses in a way which will maximise both development and environmental potential.

The updated Integrated Water Management Plan has been designed in a way which will lead to complimentary open space, recreation and ecological benefit. This is achieved through the co-location of retarding basins and open space where possible, and by retaining natural drainage and creek lines. This not only provides for the drainage needs of the urban area but creates focal points for communities and adjacent development and attractive recreation areas.

The biodiversity value of encumbered land is maximised through providing for the protection of vegetation and fauna habitat. Further WSUD elements can be incorporated into individual developments which will enhance the integrated water management objectives and amenity of the public realm.

### 5.7.1 Integrated Water Management Objectives

The objectives for Integrated Water Management are:

- To meet the drainage needs of the planned future urban environment:

- Protect the urban areas from flooding through managing the flows of stormwater run-off.

To manage the flows of stormwater runoff and improve the quality of water entering downstream systems:

- Provide stormwater detention to the satisfaction of the Responsible Authority;
- Maintain pre-development stormwater flows to receiving waterways;
- Reduce and filter sediment and nitrogen levels through an integrated water sensitive urban design system; and
- Design developments to meet the current best practice performance objectives for stormwater quality as contained in the *Urban Stormwater – Best Practice Environmental Management Guidelines (Victorian Stormwater Committee 1999)* as amended.

Design leads to maximising the habitat values and management of wetlands, waterways and open space functions:

- Protect downstream waterways from adverse impacts from urban stormwater run-off.

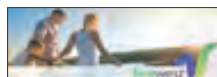
Water use and savings meet any policy targets for the Ballarat and District Water Supply System set by the Water Authority:

- Reduce potable water consumption through the use of alternative fit-for-purpose water sources;
- Encourage the use of recycled and harvested storm water within the Precinct;
- Encourage consultation with Central Highlands Water, the Corangamite Catchment Management Authority and City of Ballarat regarding the efficiency and sustainability of providing recycled water through harvesting storm water and/or third pipe systems, roof capture and use of water within properties; and
- Encourage consultation with Central Highlands Water, the Corangamite Catchment Management Authority and City of Ballarat regarding the treatment and storage of water within local aquifers.

### 5.7.2 Implementation

The objectives for Integrated Water Management are met by implementing all of the following:

- Plan 8: Future Urban Structure Plan;
- Plan 15: Integrated Water Management Plan; and
- Integrated Water Management Planning and Design guidelines set out in Section 5.7.3.



### 5.7.3 Integrated Water Management planning and design guidelines

Each planning permit application submitted must include an Integrated Water Management Statement which addresses how the objectives and guidelines of the Integrated Water Management Plan are achieved.

Water management solutions may deviate from the centralised drainage scheme yet must meet the technical engineering and water quality requirements needed to protect urban areas from flooding. Proposed solutions must be consistent with the financial management and staging principles contained within this Precinct Structure Plan.

The following planning and design guidelines must be met:

- All developments must achieve the provisions and standards in Clause 56-07 and other relevant provisions of the Ballarat Planning Scheme which promote Integrated Water Management;
- All drainage and waterway reserves must be designed to cater for 1:100 year flow events and the requirements of the Responsible Authority at the time of submission. Final sizes of drainage and waterway reserves will be subject to detailed design and approval by the Responsible Authority;
- Proposed water management arrangements must not hinder future development downstream and must consider the ultimate depth and location of piping further downstream; and
- All development must be in accordance with the City of Ballarat Water Sensitive Urban Design Guidelines, Stormwater Management Policy and related policies adopted by Council, as amended.

The following planning and design guidelines should be met:

- If new development brings forward the need for new drainage infrastructure or works, the developer should ensure that drainage requirements are managed without adversely affecting the financial capacity of the drainage authority to fund infrastructure using development contributions levies. Out of sequence development should be avoided unless infrastructure requirements can be funded or financed by developers;
- Drainage systems should be designed to ensure that stormwater quality is enhanced to best practice standards prior to discharge to the drainage lines;
- Design of drainage infrastructure should provide a high degree of visual amenity to adjacent residential areas and allow for recreational use where possible;

- Where retarding of storm flows is required in or adjacent to open space, the area used for retarding should be integrated into the open space. The area available for recreation use outside of flood periods should be maximised. Dual use of land for retarding and active open space (for example ovals) is encouraged;
- Maximise the potential for the collection, retention and re-use of stormwater by using site topography;
- Provide opportunities for stormwater harvesting and re-use in public open spaces, where possible;
- Ensure a net-gain of flora and fauna habitat in the construction of wetlands, water courses and associated constructed features;
- All development should demonstrate a 40% reduction on potable water demand from business as usual;
- Encourage the use of rainwater tanks for uses within domestic, commercial and community facility buildings, and for external irrigation; and
- Consider and explore opportunities to implement innovative solutions including the installation of:
  - Stormwater harvesting and capture systems;
  - Aquifer recharge and retrieval systems;
  - A third pipe recycled water system either using decentralised treatment or linked to the Ballarat South Wastewater Treatment Plant; and
  - Other to be determined based on best practice, new technologies or Government Policy.

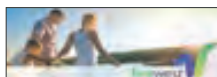
The City of Ballarat, in consultation with Central Highlands Water and Corangamite CMA, is willing to explore the cost and feasibility of implementing innovations within the Precinct.

#### Drainage Network Delivery Statement

The drainage scheme has been designed to service the development with infrastructure that is optimal in terms of cost and performance while protecting properties, existing waterways and the environment.

Construction works for the drainage scheme will be completed in stages over the 30-plus year development of the Ballarat West PSP area. An annual capital works program will be prepared by City of Ballarat and works will be undertaken on a priority basis. Prioritisation of the scheme's works will include:

- allocation of funding over the life of the PSP, the flow of funding from the Ballarat West DCP and any medium term capital works plan developed by City of Ballarat;



- the rate of development within each sub-catchment;
- the estimated total cost of the downstream works required to provide trunk drainage for an individual parcel; and
- the likely timing of other civil infrastructure including sewerage and roads.

The City of Ballarat will generally undertake drainage scheme works from the downstream end first as it ensures that all properties in the sub-catchment receive the benefit of these works and are not adversely impacted by additional flows. Alternatively, where works are not 'out-of-sequence', these works may be constructed in conjunction with development as an in-kind contribution.

If finances are not available to deliver drainage infrastructure landowners may:

- submit proposals for works in kind which defray or avoid costs for drainage infrastructure accounted for in the DCP which enhance the financial position of the DCP;
- fund the required drainage works themselves, and seek reimbursement when funds become available to the Collecting Agency.

For sub-catchments with larger landholdings, developers will be encouraged to pool resources to fund permanent drainage works, rather than constructing temporary drainage works for individual development sites.

Where landholdings are more fragmented, this may affect the rate at which development can be expected to occur and in turn, the timing of new public works.

#### **Out-of-sequence development**

Developments may be required to provide temporary works where development is 'out-of-sequence' for drainage provision. If a developer provides an interim solution to service its development that benefits the scheme and results in significant savings to the scheme finances, development contributions may be reduced. This will be assessed on a case-by-case basis.

Where an out-of-sequence development brings forward works as an in-kind contribution, City of Ballarat may delay financial recognition of these works for the purposes of the Ballarat West DCP.

#### **Non-scheme works and innovative solutions**

City of Ballarat may compensate a developer or reduce the scheme contribution for non-scheme works or design innovations that financially benefit the scheme. The level of compensation will be based on the particular circumstances relating to each solution. The compensation or reduction in the scheme contribution will be based on the saving to the scheme and overall benefit of the solution.

Developers should note the following:

- Early development of the Major Activity Centre and the area north of Webb Road is within long-term drainage catchments and alternative solutions are likely to be required in consultation with the Responsible Authority.
- The stormwater treatment areas proposed in the drainage scheme have been sized assuming there are no rainwater tanks in the catchment as a conservative approach for preliminary sizing. Modelling assumptions such as this can be revisited when more information becomes available on the design of individual developments.

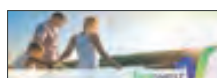
#### **Design standards for drainage**

Non-scheme works will generally be required to meet relevant design standards. Key design standards for the DCP area are as follows:

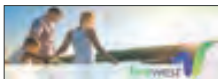
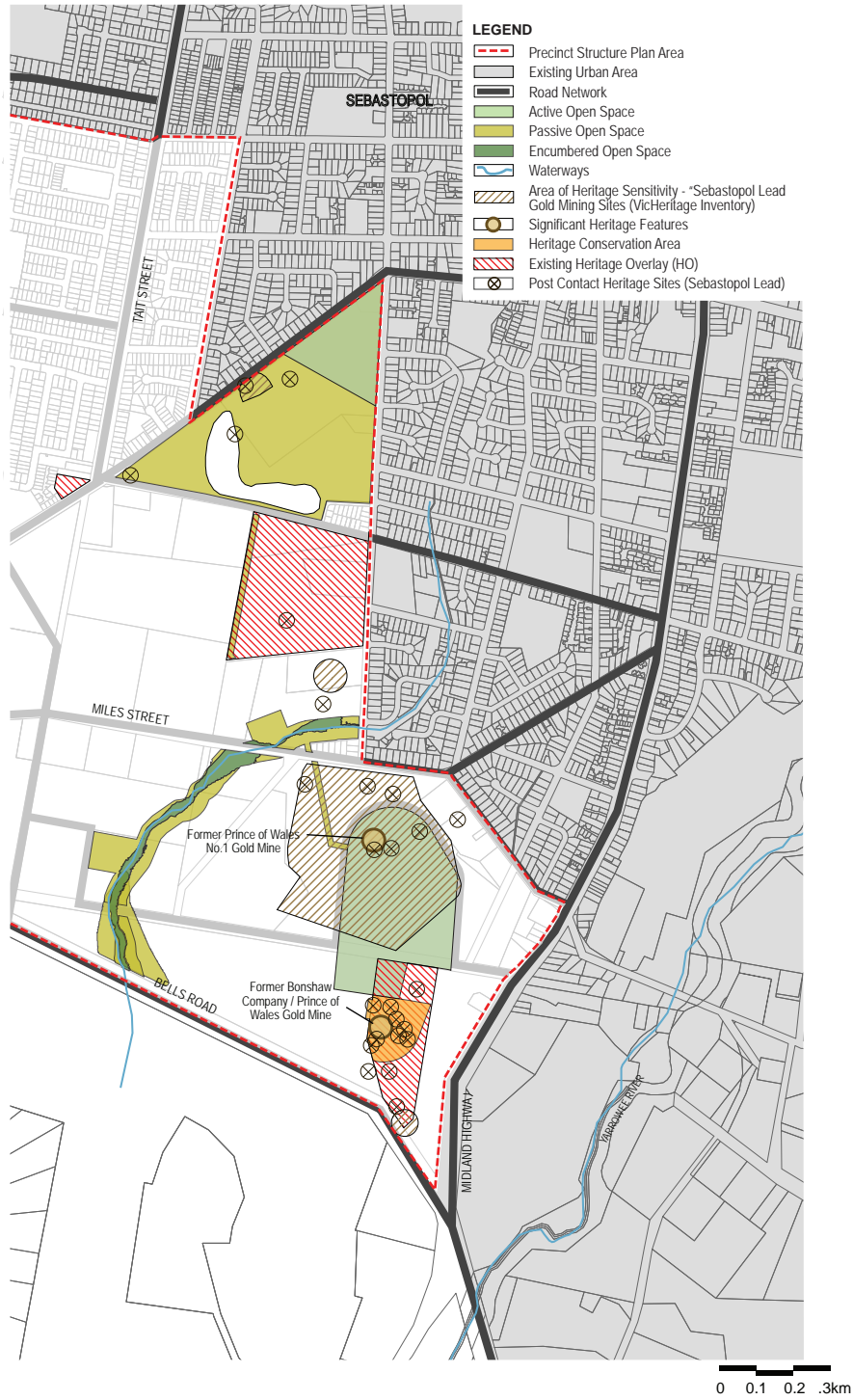
- downstream flows must be no greater than pre-development levels
- stormwater management should promote conservation and re-use of stormwater for non-potable purposes;
- all new development is to be protected from the 1:100 year flood;
- the local drainage system will have capacity to process a 1 in 5 year storm event;
- water quality is to be treated to best standard practice (currently 45% reduction in total nitrogen and phosphorus and 80% reduction in total suspended solids);
- development should protect and enhance the environmental, social (including heritage) and economic values of waterway.

#### **Reviews**

The scheme requires financial, engineering and environmental reviews on a regular basis to ensure costs are neither over nor under recovered and up-to-date requirements are met. Financial reviews will occur on an annual basis as part of setting the capital works program. Engineering reviews of the drainage scheme will be undertaken as part of regular reviews of the Ballarat West PSP and the Ballarat West DCP (approximately five-yearly). These will address the changing circumstances of the scheme, changes to engineering and environmental standards, revisions to climate change forecasts and so forth.



Plan 16 Gold Mining Heritage



## 5.8 Heritage

### 5.8.1 Heritage objectives

The objectives for heritage are:

- To protect and enhance the heritage values of the Ballarat West PSP area;
- To build sense of place through enhancing connection to past communities; and
- To incorporate significant heritage features into the public open space network.

### 5.8.2 Implementation

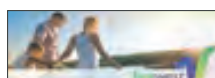
The objectives for heritage are met by implementing all of the following:

- Plan 8: Future Urban Structure Plan;
- Plan 14: Open Space Plan;
- Plan 16: Gold Mining Heritage Plan; and
- Heritage Planning and Design guidelines set out in Section 5.8.3.

### 5.8.3 Heritage planning and design guidelines

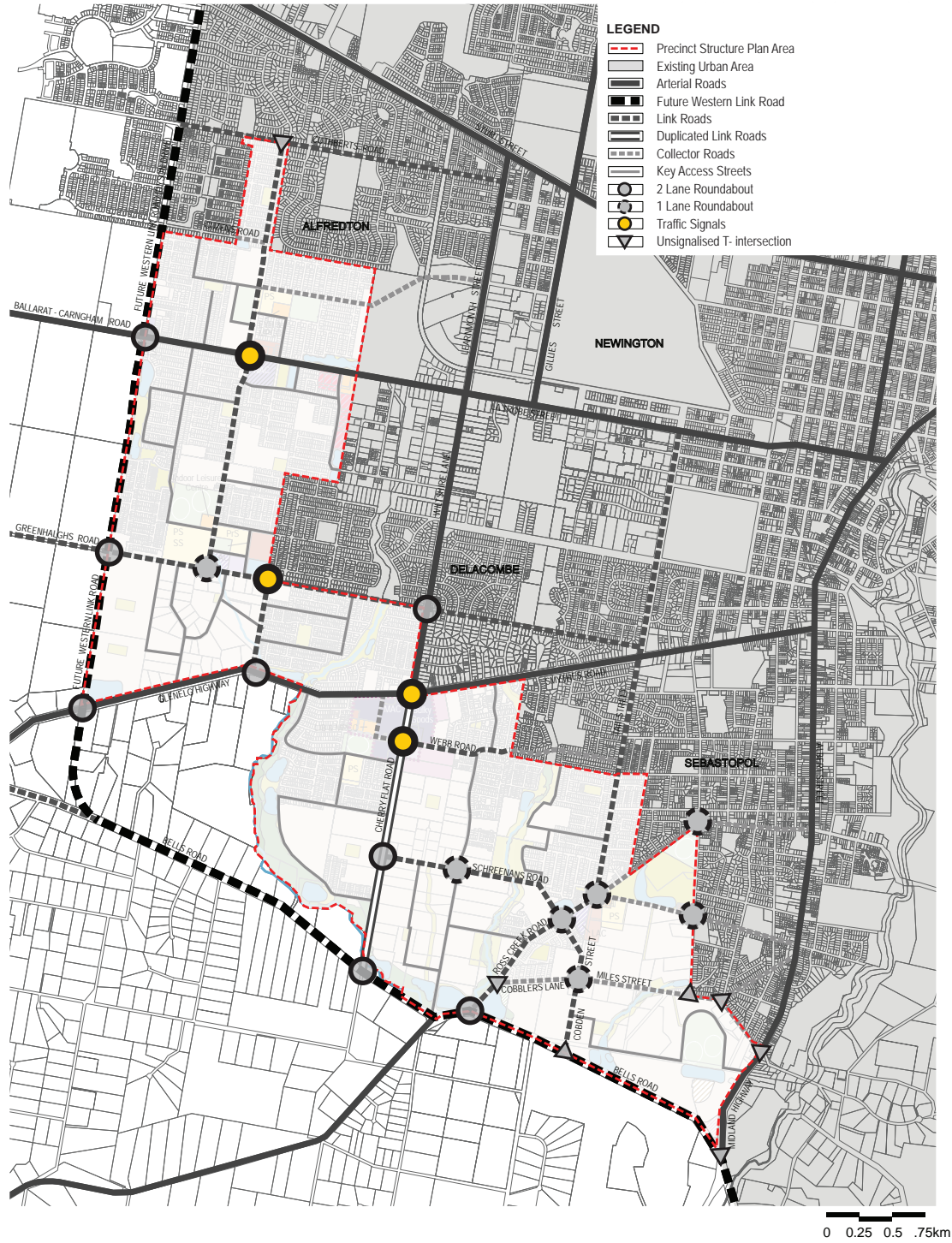
The following planning and design guidelines must be met:

- Developments along the Sebastopol Lead historic gold mining area must respond to the following design principles:
  - The Prince of Wales / Bonshaw Company former gold mining site (H7622-0217 and H7622-0137 – Heritage Overlay under development) is to be incorporated into the south-eastern District Open Space. The site is to be managed to allow public access and provide heritage interpretation;
  - The key features of the Prince of Wales No. 1 former gold mining site (H7622-0136) are to be incorporated into the south-eastern District Open Space. This area will have a recreation function, and will be managed in a way that maintains key landscape features and provides heritage interpretation of the site;
  - Development will acknowledge the key features of the former gold mining use through heritage interpretation of the former mining camp, mine shaft and mullock heap sites;
  - Development will provide an urban design and/or heritage interpretation response to the path of the underground Sebastopol Lead;
  - Landscape treatments within the vicinity of the Sebastopol Lead and former gold mining sites heritage areas must take cues from the gold mining history of the area; and
  - Vistas should be maintained from the intersection of Miles and Grants Streets and the intersection of Queen, Miles and Prince Streets to the Prince of Wales No. 1 and the Prince of Wales / Bonshaw Company former gold mining sites. Appropriate heritage interpretation should be included at these view points.





Plan 17 Road Network



## 5.9 Transport and Movement

### 5.9.1 Transport and movement objectives

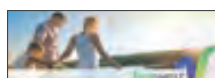
The objectives for transport and movement are:

- To encourage walking and cycling and reduce the dependency on cars by providing a sustainable transport and movement network;
- To design a safe and efficient pedestrian and bicycle network that connects to the activity centres, education and community hubs, and the open space network;
- To create quality on and off road pedestrian and cycle links that allow for safe and efficient movement between residential areas and key community infrastructure;
- To ensure roads can meet traffic demands and accommodate services;
- To balance the competing demands of encouraging direct and safe access to shops, schools and services and minimising traffic congestion within activity centres;
- To provide safe and efficient bus routes, with stops that promote passive surveillance and passenger safety;
- To ensure that 95% of dwellings are located within 400 metres of a bus route;
- To meet the access management requirements of Department of Transport and Planning (DTP) for arterial roads;
- To design a legible, permeable and interconnected street and links network;
- To integrate the Ballarat West PSP with the proposed Ballarat Western Link Road and to reserve land for it where required;
- To design streetscapes including landscaping and other urban design treatments to reinforce the identity of each place, legibility and safety of routes; and
- To create landscaped roads and streets which reflect the character of established boulevards in Ballarat.

### 5.9.2 Implementation

The objectives for transport and movement are met by implementation of all of the following:

- Plan 17: Road Network Plan;
- Plan 18: Public Transport Network Plan;
- Plan 19: Walking and Trails Plan;
- Table 7: Road Network;
- Figures 17-19: Road cross sections; and
- Transport Planning and design guidelines set out in Section 5.9.3.



### 5.9.3 Transport planning and design guidelines

The following planning and design guidelines must be met:

- All intersections with existing or proposed arterial and link roads as shown on Plan 17 must be designed, constructed and controlled to the satisfaction of the Responsible Authority;
- Staging of subdivision must provide for the timely connections of road links between properties to the arterial and link road network to support timely transport connections (walking, bus and cycle) to the satisfaction of the Responsible Authority; and
- Development must provide a permeable street network with a clear road hierarchy generally in accordance with the road cross sections in Figures 9-11.

#### Arterial and Duplicated Link Roads

The following planning and design guidelines must be met:

- Allow for the widening of Ballarat-Carngham Road to an ultimate road reserve of 40m wide in accordance with the existing Public Acquisition Overlay;
- Allow for the eventual widening of the southern section of Cherry Flat Road to a duplicated link road with an ultimate 40m road reserve in accordance with the existing Public Acquisition Overlay;
- Residential lots fronting arterial roads or duplicated link roads (including the Western Link Road) must be accessed from service roads or local roads and lanes only. No direct lot access is permitted to arterial roads or duplicated link roads;
- Intersection design must provide for the safe and efficient operation of the arterial road and the side road to the satisfaction of the relevant authority (Department of Transport and Planning (DTP) VicRoads for Arterial Roads, City of Ballarat for Duplicated Link Roads), with consideration to vehicle speeds, vehicle queues and conflicting movements on approach to and departure from the intersection; and
- Access points (temporary and permanent) to the existing or proposed arterial roads or duplicated link roads beyond those shown on Plan 17, will be considered on a case by case basis in accordance with VicRoads access management policies.

#### Link and Collector Roads

The following planning and design guidelines must be met:

- Allow for the widening of the following roads to an ultimate 24m road reserve:
  - Greenhalghs Road within the PSP boundary;
  - Webb Road (east-west section);
  - Cobden Street; and
  - Schreenans Road.

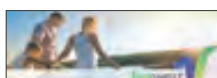
The following planning and design guidelines should be met:

- Where it is expected that higher than average bicycle traffic volumes may occur on a Link Road, consideration should be given to providing an alternative road cross section with Copenhagen bicycle lanes.

#### Bus Network

The following planning and design guidelines must be met:

- Ensure bus routes link the activity centres, education and community hubs and the Industrial/Commercial Precinct;
- Design roads designated as potential bus routes to accommodate bus movements to the satisfaction of the Responsible Authority in consultation with the Department of Transport and in accordance with the Public Transport Guidelines for Land Use and Development;
- Where a bus route is shown on a local street, the local street cross-section must be in accordance with Figure 11 Cross-Section 'CS1 - Collector Street: Constrained'; and
- Where a requirement for a bus route or bus stop has been nominated:
  - Bus stop facilities must be constructed by development proponents as part of the subdivision works (prior to the issue of a statement of compliance for the relevant stage) in accordance with the requirements of the Public Transport Guidelines for Land Use and Development to the satisfaction of the Director of Transport;
  - The facilities must be provided with DDA compliant direct and safe pedestrian access connected to an existing pedestrian/shared path; and
  - The facilities must be designed as an integral part of activity centres and activity-generating land uses, such as schools, sports fields and employment areas.



### Walking and Cycling Network

The following planning and design guidelines must be met:

- Walking and cycling networks must be constructed by development proponents as part of subdivision works (prior to the issue of a statement of compliance for the relevant stage);
- Footpaths and cycle paths must be provided with increased width in areas expecting high foot traffic such as near schools, community centres, activity centres and bus stops;
- Pedestrian and cycle crossings must be provided at all relevant street intersections and along key desire lines, particularly along the interface between residential and employment areas and in the vicinity of bus stops;
- Bicycle lane connections must be designed to allow for the smooth transition between on-road and off-road facilities;
- Pedestrian and cycle paths must be designed and located to maximise passive surveillance and provided in wide road verges with safe crossing points at key locations;
- The local street network must be designed to provide permeable, direct and safe routes for walking and cycling to activity centres, community facilities, parks and open space, major trail networks and public transport;
- The local street network must provide connection between adjoining developments where possible, including future development sites; and
- Regular walking and cycling connections are to be provided across creeks, where residential development is expected on both sides.

The following planning and design guidelines should be met:

- The 'Sebastopol Lead' linear trail from the former gold mining sites within M R Power Park to the Prince of Wales / Bonshaw Company former gold mining site (see Plan 16) should follow the Sebastopol Lead and/or connect key mining features such as the former mining camp, mine shaft and mullock heap sites where possible. Heritage interpretation should be provided at key points;
- Paths and trails should be sealed rather than unsealed;
- The local street network should not create long barriers to walking and cycling; and
- On Link Roads with high bicycle traffic volumes, consideration should be given to providing an alternative road cross section with Copenhagen bicycle lanes.

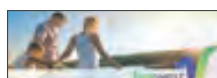
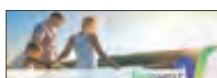


Table 7 Road Network

Future Road Names	Road Hierarchy <sup>^</sup>	Road Cross Section Number	Indicative VPD	Existing road reservation	Proposed road reservation	Traffic Lanes	Designed Speed	Suitable for Buses	Cycle Facility	Shared Path	Ultimate Responsibility
Cuthberts Road	Link	N/A	10250	25	25	2	60	Yes	On-road	TBC	Council
Cuzens Road*	Collector	CS1	10750	18.5	18.5	2	60	No	No	No	Council
Ballarat-Carngham Road	Arterial 2	N/A	15250	20	40	4	70	Yes	On-road	Yes	VicRoads
Greenhalghs Road	Link	LR2	13000	20	24	2	60	Yes	On-road	Yes	Council
Gleneilg Highway	Arterial 1	N/A	29000	60	60	4	70	Yes	On-road	Yes	VicRoads
Dyson Drive (future Western Link Road) <sub>1</sub>	Interim: Link Ultimate: Duplicated Link	LR1 DLR2	20500	20	60	2/4	80	Yes	On-road	Yes	Council
North-South Road 1 (Sub-Precincts 2 & 4)	Link	LR2	16000	0	24	2	60	Yes	On-road	Yes	Council
North-South Road 2 (Sub-Precinct 2)	Link	LR2	9500	0	24	2	60	Yes	On-road	Yes	Council
Wiltshire Lane	Arterial 2	N/A	22500	40	40	4	70	Yes	On-road	Yes	VicRoads
Cherry Flat Road <sub>2</sub>	Interim: Link Duplicated Link	LR2 DLR1/ DLR2	13750	40	40	2/4	70	Yes	On-road	Yes	Council
Tait Street <sub>3</sub>	Link	LR3	13250	40	40	2	60	Yes	On-road	Yes	Council
Cobden Street	Link	LR2	8000	20	24	2	60	Yes	On-road	Yes	Council
Webb Road (east-west section)	Link	LR2	15500	20	24	2	60	Yes	On-road	Yes	Council
Schreenans Road	Link	LR2	7000	20	24	2	60	Yes	On-road	Yes	Council
Ross Creek Road <sub>4</sub>	Link	LR2	5750	30	30	2	60	Yes	On-road	Yes	Council
Crown Street*	Collector	CS1	8250	20	20	2	60	Yes	Wider traffic lanes	Yes <sup>®</sup>	Council
Morgan Street*	Collector	CS1	7500	20	20	2	60	Yes	Wider traffic lanes	Yes <sup>®</sup>	Council





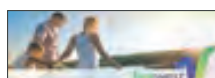
Future Road Names	Road Hierarchy <sup>^</sup>	Road Cross Section Number	Indicative VPD	Existing road reservation	Proposed road reservation	Traffic Lanes	Designed Speed	Suitable for Buses	Cycle Facility	Shared Path	Ultimate Responsibility
Cobblers Lane	Collector	CS2	6250	20	24	2	60	Yes	On-road	Yes	Council
Miles Street*	Collector	CS1	7500	20	20	2	60	Yes	Wider traffic lanes	No	Council
Prince Street*	Collector	CS1	4250	20	20	2	60	Yes	Wider traffic lanes	No	Council
Bells Road east of Cherry Flat Road and Three Chain Road <sup>1</sup> (future Western Link Road)	Interim: Link Ultimate: Duplicated Link	LR1 DLR2	16000	40	40	2/4	80	Yes	On-road	Yes	Council
Major Activity Centre western collector	Collector	CS2	Varies	N/A	24	2	60	Yes	On-road	Yes	Council
Sub-Precinct 4 East-West Collector	Collector	CS2	Varies	N/A	24	2	60	Yes	On-road	Yes	Council
Ascot Gardens Drive	Link	LR2	Varies	N/A	24	2	60	Yes	On-road	Yes	Council

\* Existing road reserves which cannot be widened. Constrained road cross-section required.

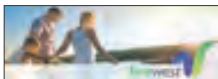
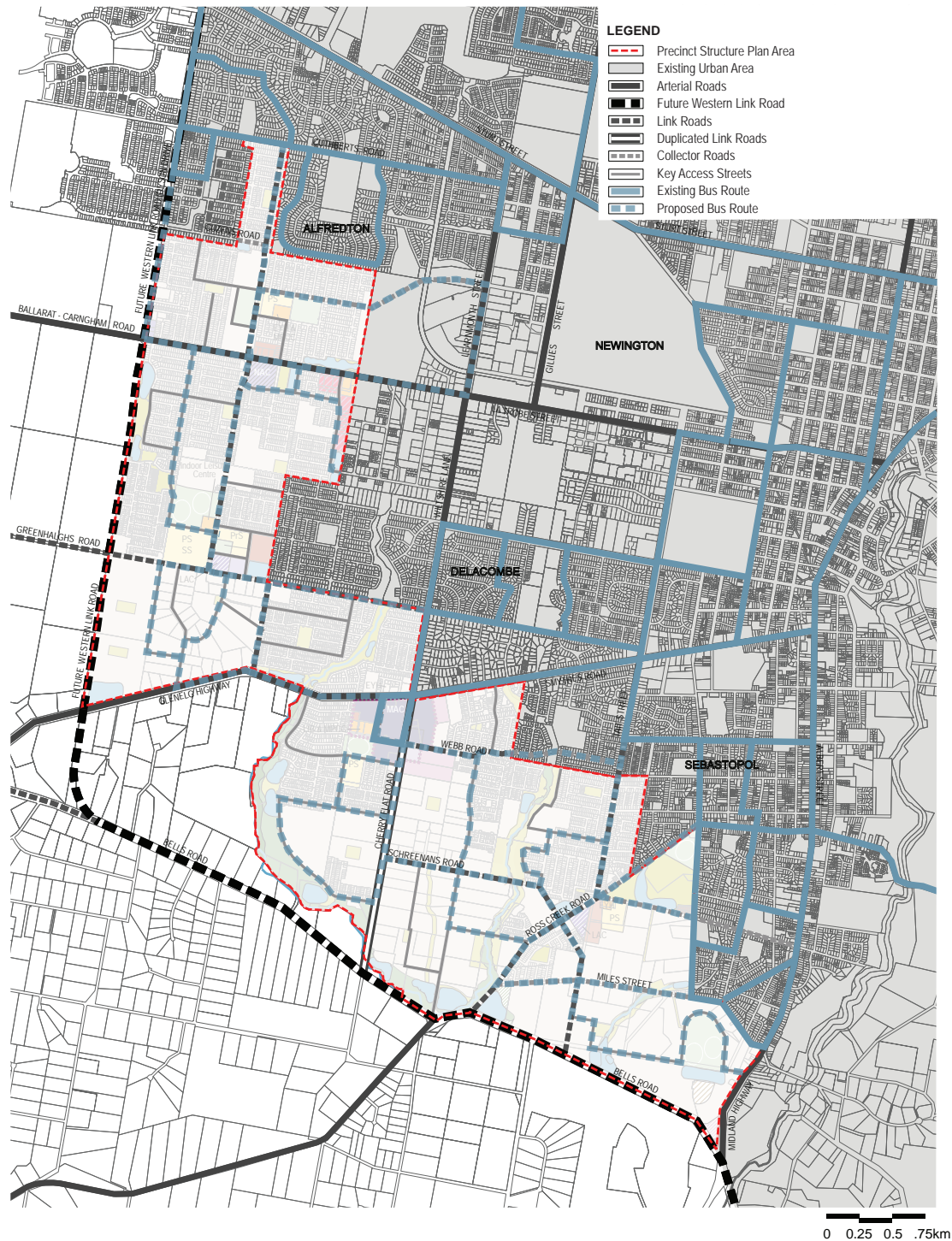
@ Where road reservation is too narrow, may be provided within the adjacent Active Open Space.

<sup>^</sup> The terms Link and Collector relate to the City of Ballarat road hierarchy. State Government road hierarchies refer to these levels collectively as Connector roads.

- 1 - Service Roads should be provided and are outside the road reservation (developer land);
  - Driveways and low-volume streets are not to be accessed directly from the Western Link Road traffic lanes.
  - Once the ultimate (duplicated) alignment is installed, full intersections will be limited to the locations shown in the Ballarat West Precinct Structure Plan. Other locations will be left-in / left-out only. This is to be reflected in the design of interim arrangements and the local street network.
- 2 - Driveways are not to be accessed directly from Cherry Flat Road (i.e. are to be access from the rear, local streets or service roads).
  - Service roads are optional and would be outside the road reservation (developer land) if a developer chooses to provide them.
  - Once the ultimate (duplicated) alignment is installed, full intersections will be limited to key streets - other locations will be left-in / left-out only. This is to be reflected in the design of interim arrangements and the local street network.
- 3 - Service roads are to be provided within the road reservation (City of Ballarat land).
  - Driveways and low-volume streets are not to be accessed directly from Tait Street traffic lanes (i.e. accessed via the service road).
  - Full intersections should be limited to key streets, other locations (e.g. entrances to service roads) are to be left-in / left-out only.
- 4 - Cross-section LR2 is to be used, with wider verges. The location of the current road seal within the Ross Creek Road Reserve varies and therefore the width of verges & the location of the centreline of the road will vary.

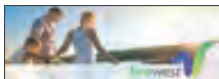
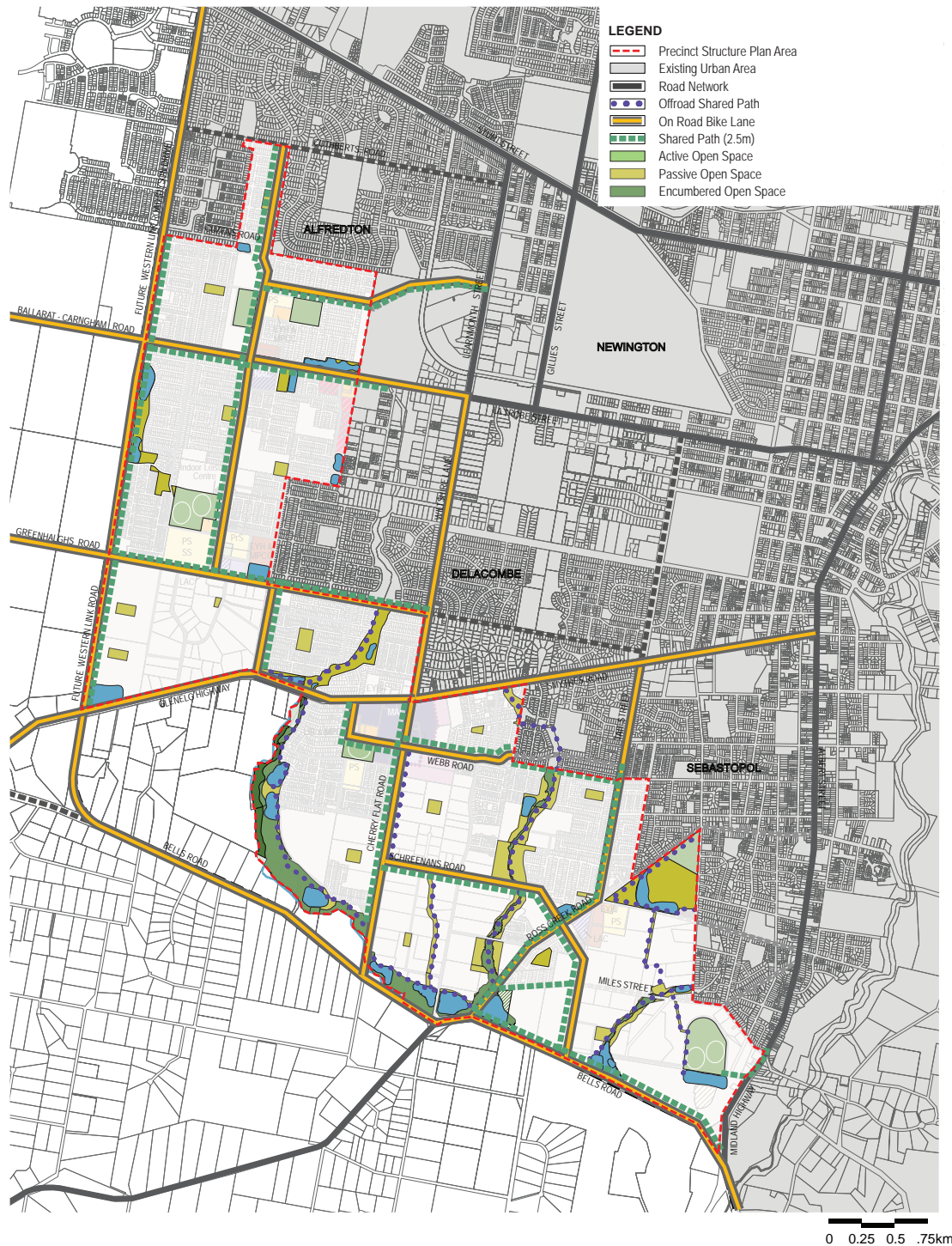


Plan 18 Public Transport





Plan 19 Walking and Trails



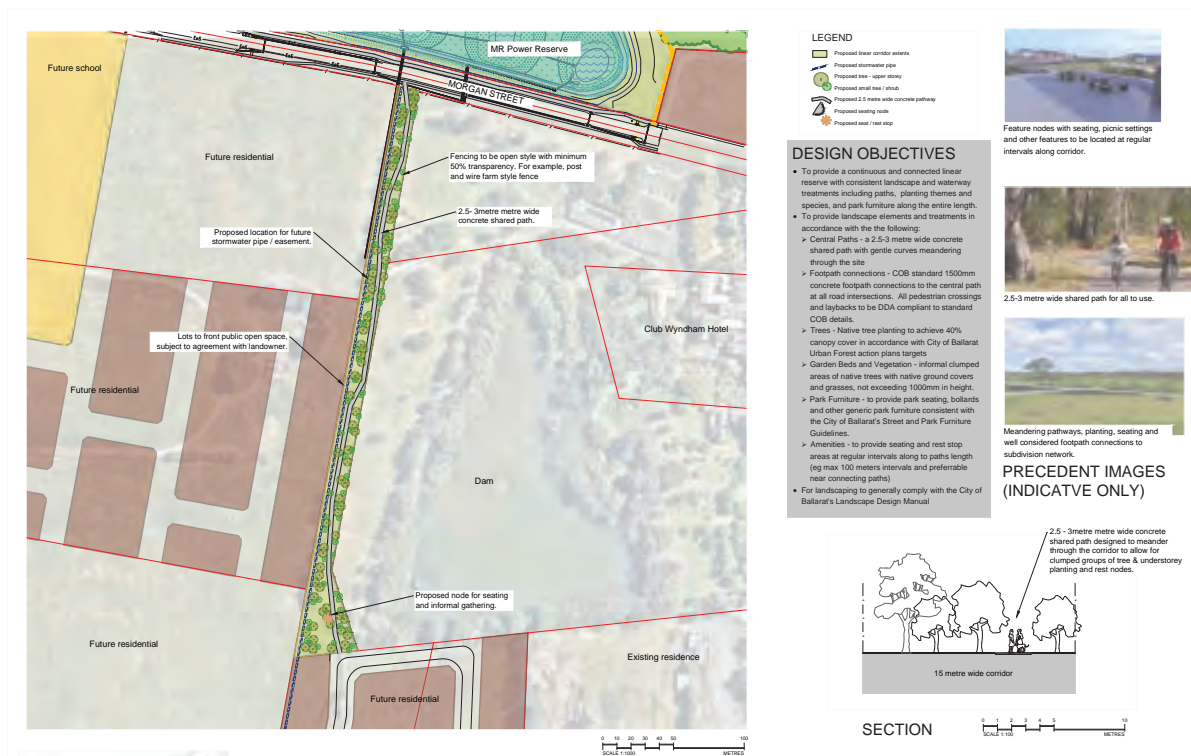
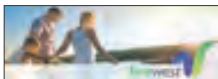


Figure 14: MR Power Park Southern Connection - Indicative Concept Plan



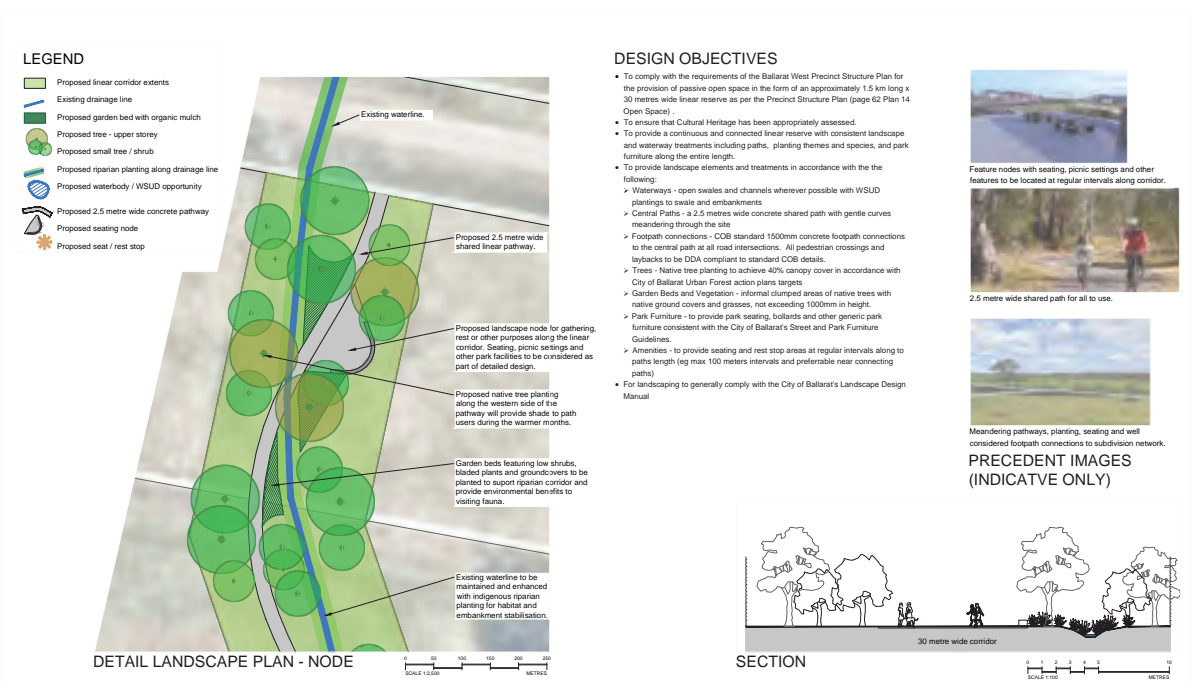
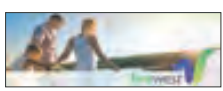


Figure 15: Bonshaw Linear Corridor - Indicative Concept Plan





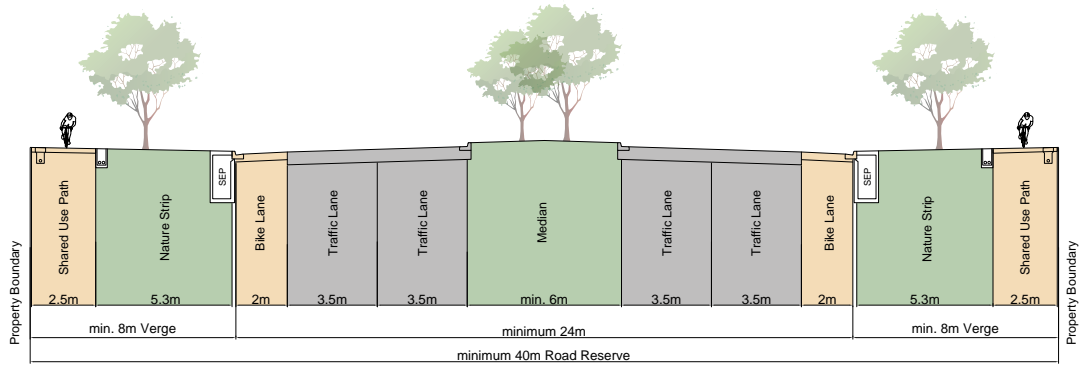
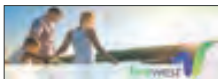
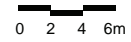


Figure 16: DLR1 - Duplicated Link Road with Verge on both sides



Figure 17: DLR2 - Duplicated Link Road with Service Road on both sides



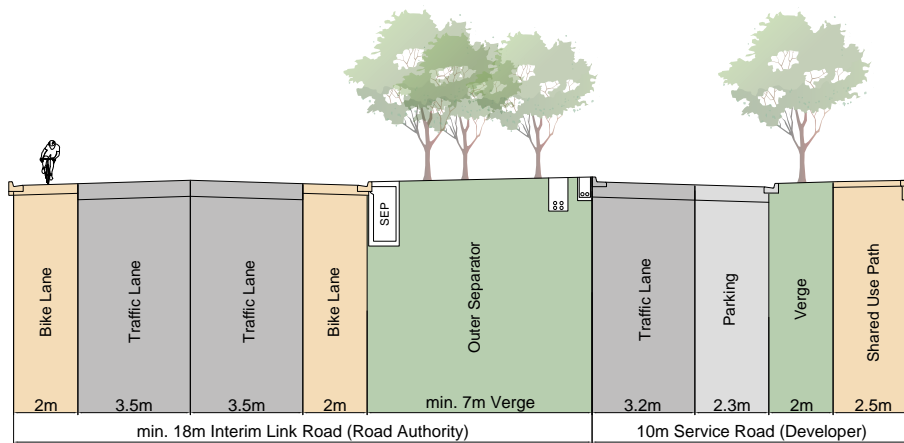


Figure 18: LR1 - Interim Link Road with Service Road on One Side

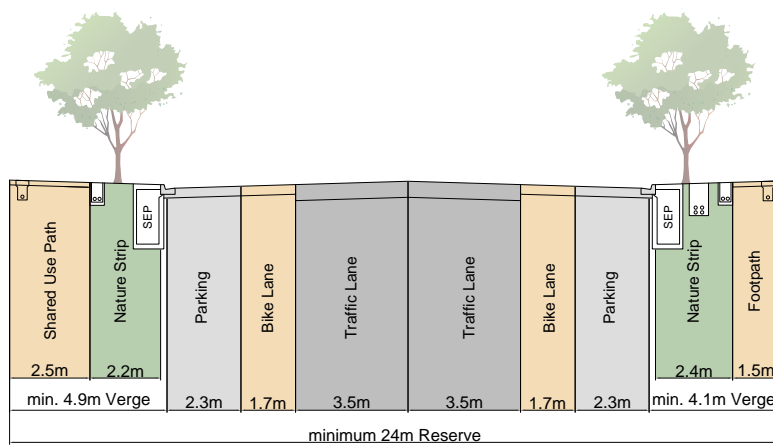
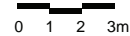


Figure 19: LR2 - Link Road with On-Road Bike Lane

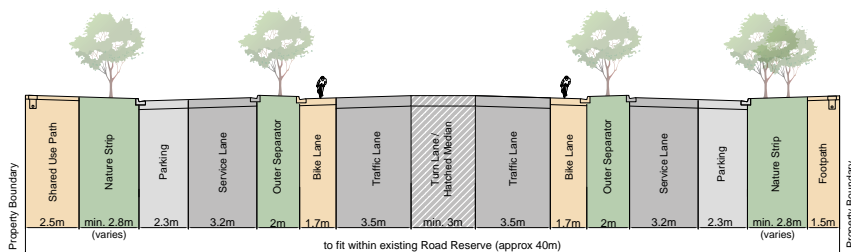
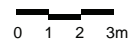
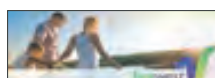
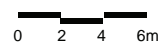


Figure 20: LR3 - Duplicated Link Road with Service Road on both sides



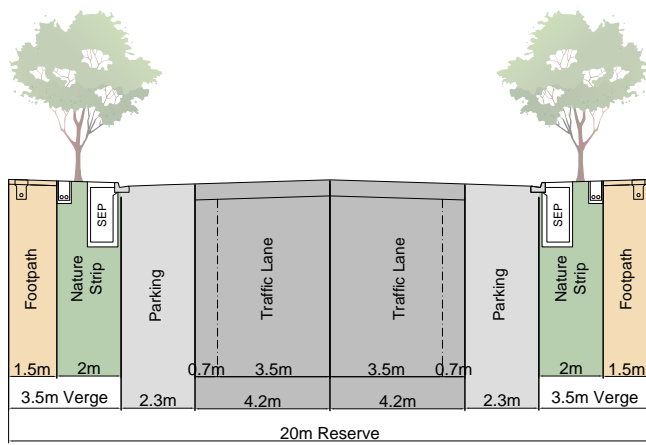


Figure 21: CS1 - Collector Street: Constrained

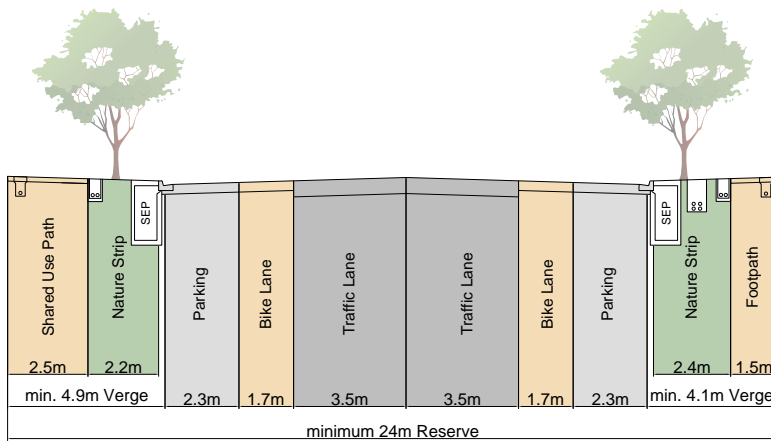
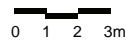


Figure 22: CS2 - Collector Street: Unconstrained

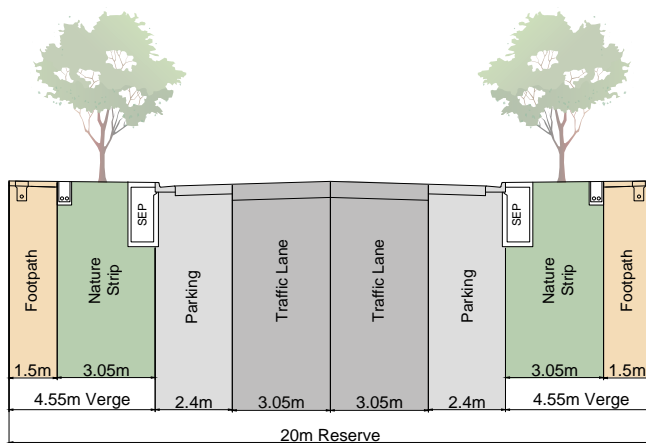
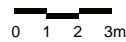
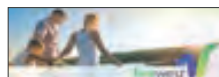
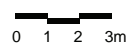


Figure 23: KA1 - Key Access Street



## 5.10 Utilities and Staging

### 5.10.1 Utilities and Staging objectives

The utilities and staging objectives are:

- To ensure development occurs in an orderly and sustainable manner, is integrated with existing development and makes best use of existing infrastructure;
- To promote a sequence of development which aligns with the delivery of required infrastructure; and
- To provide all developed lots, to the satisfaction of the Relevant Authority, with:
  - Potable water services;
  - Electricity;
  - Reticulated sewerage;
  - Drainage;
  - Telecommunications.

### 5.10.2 Implementation

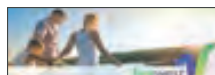
The objectives for utilities and staging are met by implementing all of the following:

- Plan 15: Integrated Water Management;
- Plan 20 Water Supply Network;
- Plan 21 Sewerage Network;
- Plan 23 Power Supply;
- Planning and design guidelines set out in Section 5.10.3; and
- Meeting requirements of the relevant service authorities.

Amended by  
C234ball

Servicing requirements for gas has been removed to be consistent with VC250. This includes the removal of references to gas and Plan 23 (Natural Gas Network).

Central Highlands Water has requested that Plan 22 (Central Highlands Water Ease of Servicing) to be removed



### 5.10.3 Utilities and Staging planning and design guidelines

#### Development Staging

Staging will be determined by the staging principles (described below), availability of infrastructure services and the development program of developers. Development will generally occur on land abutting or in close proximity to existing development and trunk infrastructure to ensure the timely and efficient provision of roads, services, walking and cycle paths and community services. Short to medium term development will generally proceed outwards from existing development and move towards the MAC, NAC and Industrial / Commercial Precinct.

The following staging principles must be met:

- Development staging must not create circumstances in which new residents are unreasonably isolated from commercial and community facilities or public transport;
- Development must, to the extent practicable, be integrated with adjoining development;
- Development staging must have regard to the availability of services, including the timely provision of connecting roads and walking/cycling paths;
- All relevant service authorities must be consulted to ensure services are provided in a logical and efficient manner;
- Each new lot must be serviced and accessible from a sealed road;
- Staging of lot development and road construction, including any temporary road access, must not cause traffic volumes to exceed the preferred volumes of roads as specified in the road hierarchy; and
- Developers, in meeting the above:
  - May still be out of sequence in terms of infrastructure such as sewer or transport provision. In these circumstances they may be liable for costs associated with extending and/or bringing forward infrastructure or provision of temporary facilities in advance of the sequential roll out of the providers' services; and
  - May still be out of sequence for drainage provision (i.e. may not have a permanent outfall). In these circumstances, developers will be required to negotiate adequate outfall arrangements with affected landowners and Responsible Authority. They may also be liable for costs associated with the construction of any temporary works to achieve adequate outfall.

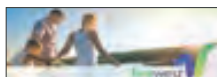
If the above staging principles are not met, the development proponent will be required to bring forward infrastructure (i.e. fund up front) to the extent necessary to meet the principles outlined above. This may include temporary water, sewer and drainage connections, pump stations and similar infrastructure. Out of sequence developers will be encouraged to support innovative means of delivering permanent drainage infrastructure, in preference to temporary drainage infrastructure, by agreement with the City of Ballarat as drainage authority.

Where development is not in accordance with the staging requirements listed above, developers must demonstrate to the satisfaction of the Responsible Authority and relevant referral authorities how their development achieves orderly planning and will not unreasonably disadvantage residents or prejudice the delivery of infrastructure to be funded by public authorities.

#### Utilities

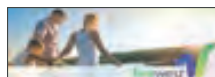
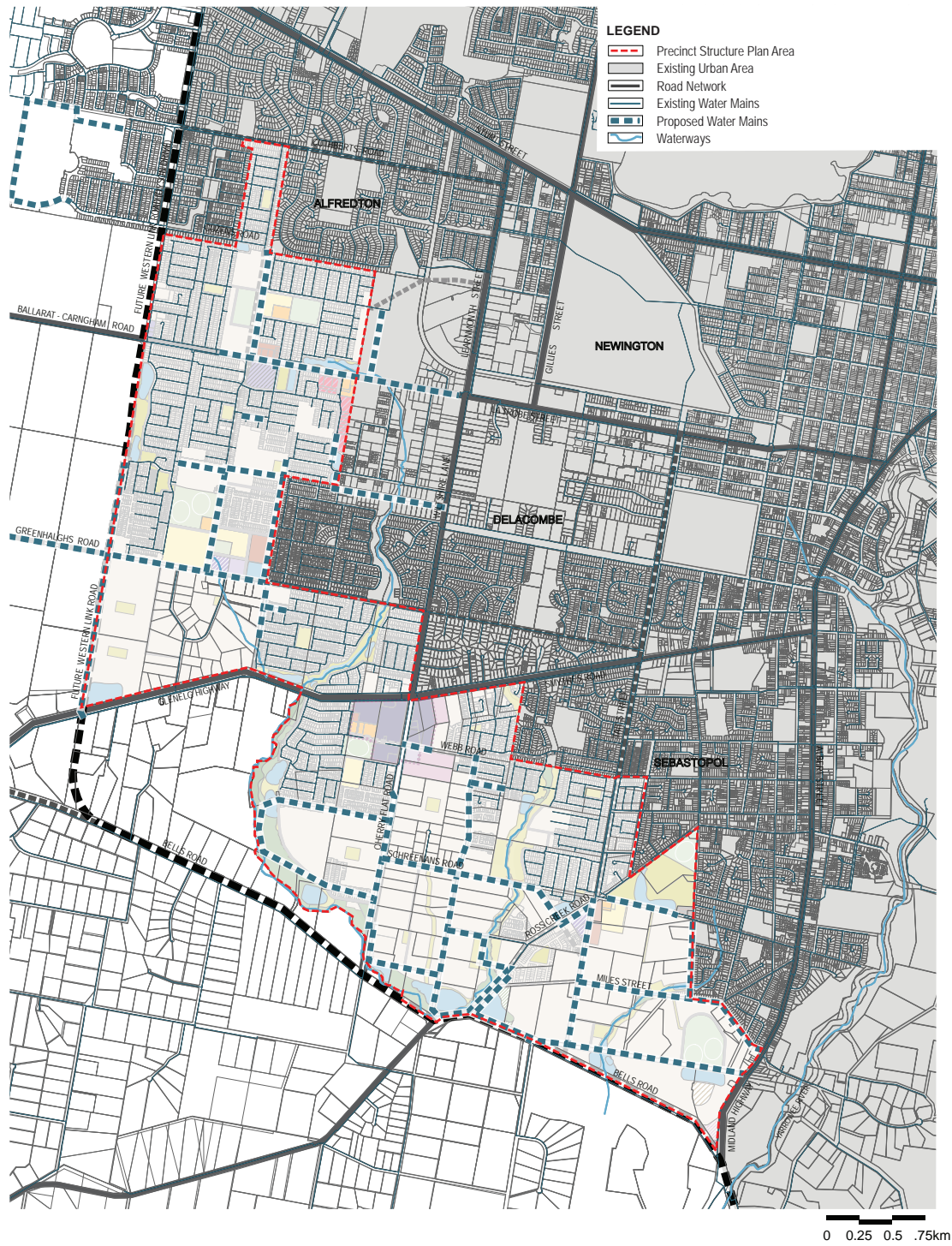
The installation of underground utilities and services should be coordinated to maximise the use of common trenching.

Where creek lines are to be used for utilities infrastructure, the easement should avoid heritage sites (e.g Aboriginal artefact scatters) and biodiversity constraints.



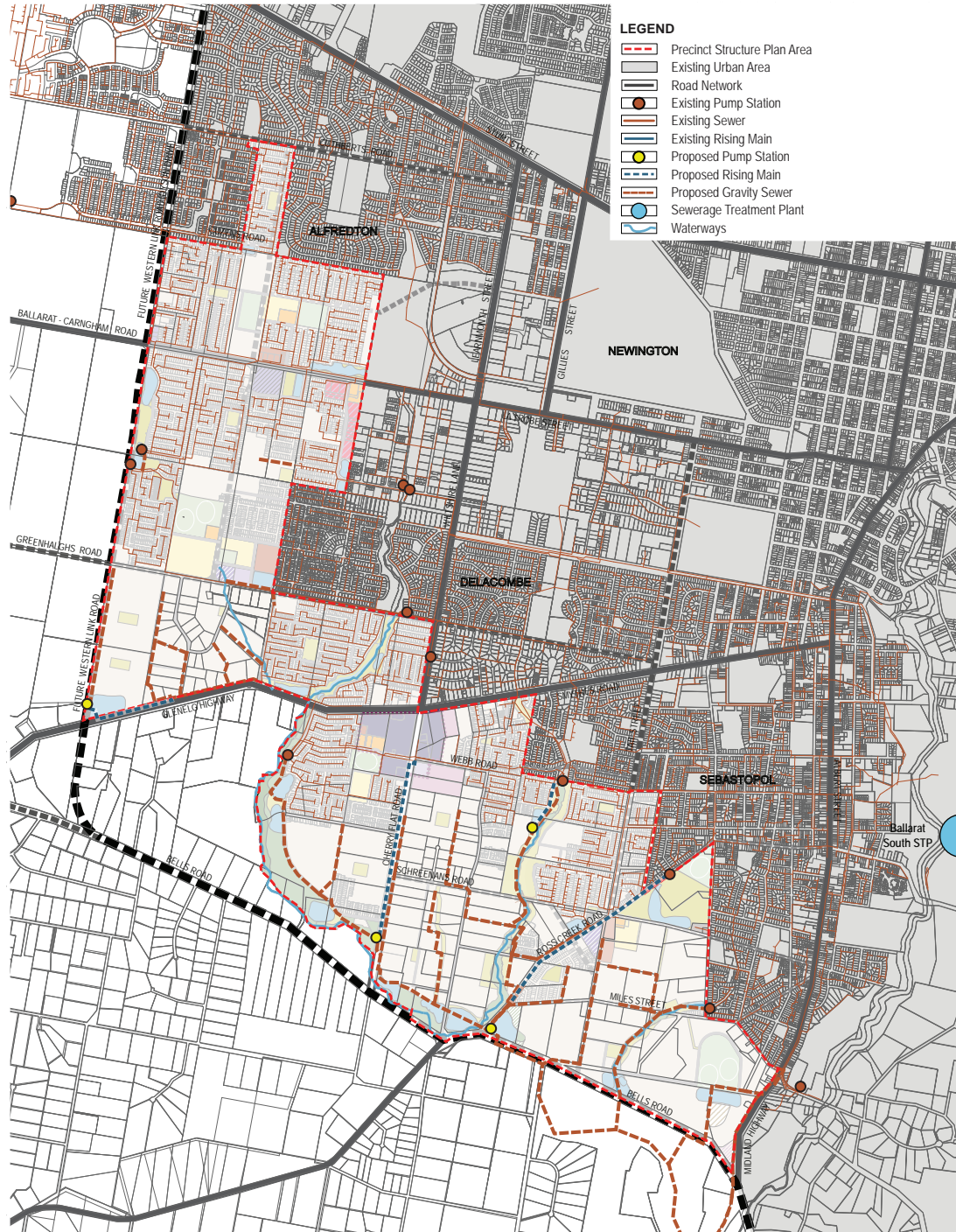


### Plan 20 Water Supply Network

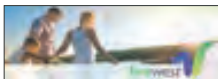




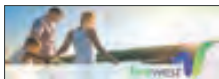
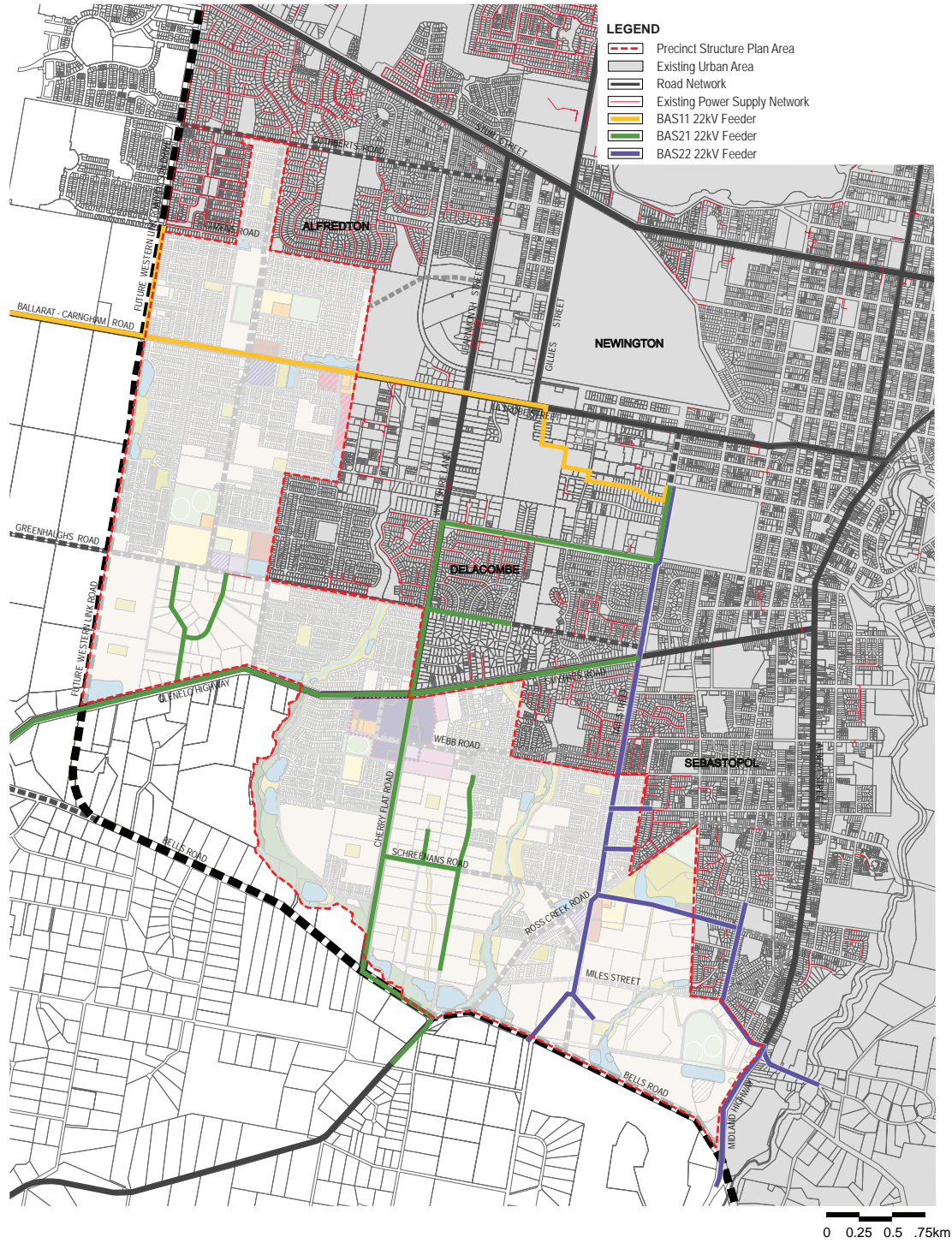
Plan 21 Sewerage Network



Note: The locations of proposed sewer infrastructure are indicative only and subject to change. 0 0.25 0.5 .75km



Plan 22 Power Supply





## 6 Other Information

### 6.1 Glossary of Terms

The following glossary explains a number of the key terms used in this PSP. It is intended to assist with reading and understanding of the PSP, rather than provide a legal definition of terms used. Legal definitions for many of these terms can be found in the Ballarat Planning Scheme and/or relevant Ministerial Directions.

**Active Open Space:** Land set aside for the specific purpose of formal and informal outdoor sports by the community.

**Activity Centre:** Provide the focus for services, commercial and retail based employment and social interaction. They are where people shop, work, meet, relax and live. They are well-served by public transport, they range in size and intensity of use. In the growth areas, these are referred to as principal activity centres, major activity centres, neighbourhood activity centres and local centres.

**Arterial Road:** A higher order road providing for moderate to high volumes at relatively high speeds typically used for inter-suburban journeys and linking to freeways, and identified under the Road Management Act 2004. All arterials are managed by the State Government roads authority.

**Co-location:** Adjoining land uses to enable complementary programs, activities and services and shared use of resources and facilities. For example, the co-location of schools and active open space.

**Community Facilities:** Infrastructure provided by government or non-government organisations for accommodating a range of community support services, programs and activities. This includes facilities for education and learning (e.g. government and non-government schools, universities, adult learning centres); early years (e.g. preschool, maternal and child health, childcare); health and community services (e.g. hospitals, aged care, doctors, dentists, family and youth services, specialist health services); community (e.g. civic centres, libraries, neighbourhood houses); arts and culture (e.g. galleries, museums, performance space); sport, recreation and leisure (e.g. swimming pools); justice (e.g. law courts); voluntary and faith (e.g. places of worship) and emergency services (e.g. police, fire and ambulance stations).

**Conventional Density Housing:** Housing with an average density of 15-20 dwellings per net developable hectare.

**Development Contributions Plan:** Document that sets out the contributions expected from each individual landowner to fund infrastructure and services. Refer to Part 3B of the Planning and Environment Act 1987.

**District Park:** An area of open space that incorporates a large area for active recreation such as field sports.

**Early Years Hub:** Located within or alongside other community or education facilities. Early Years Hubs provide early years services such as maternal and child health, kindergarten and childcare.

**Encumbered Land:** Land that is constrained for development purposes; including land to be set aside for easements for power/transmission lines, sewers, gas, waterways/ drainage; retarding basins/wetlands; landfill; conservation and heritage areas. This land is not provided as a credit against public open space requirements.

**Frontage:** The road alignment at the front of a lot. If a lot abuts two or more roads, the one to which the building or proposed building faces.

**Gross Developable Area:** Total precinct area excluding encumbered land, arterial roads and other roads with four or more lanes.

**Housing Density (Net):** The number of houses divided by net developable area.

**Linear Open Space Network:** Corridors of open space, mainly along waterways that link together, forming a network.

**Land Budget Table:** A table setting out the total precinct area, net developable area and constituent land uses proposed within the precinct.

**Local Activity Centre:** An activity centre smaller than a neighbourhood activity centre with a catchment radius of about 400 metres and may include a small supermarket or convenience store of 500 square metres to 1,500 square metres.

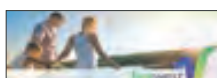
**Major Activity Centre:** An activity centre that has similar characteristics to a Principal Activity Centre but serves a smaller catchment areas and is complementary to the Principal Activity Centre.

**Main Street:** A function of an activity centre, where vitality and activity are created by orienting uses towards the street, and ensuring that the primary address of all retail stores is the street. This would normally not be a high-traffic street.

**Medium Density Housing:** Housing with an average density of 16 to 30 dwellings per net developable hectare.

**Multi-purpose Community centre:** Centres providing multiple spaces clustered together on one site servicing the neighbourhood / district / sub-region / region. They may include some or all of features such as libraries, hall or performance space, meeting spaces, kindergarten, family support, maternal and child health, senior citizen, youth or cultural clubs, outreach support services, consulting services, community garden, customer service, IT facilities, before or after school classes.

**Native Vegetation:** Plants that are indigenous to Victoria, including trees, shrubs, herbs, and grasses.



**Native Vegetation Precinct Plan:** A plan relating to native vegetation within a defined area that forms part of the precinct structure plan. Native vegetation precinct plans are incorporated into local planning schemes and listed in the schedule to Clause 52.16.

**Neighbourhood Activity Centre:** Activity centres that are an important community focal point and have a mix of uses to meet local needs. Accessible to a viable user population by walking, cycling and by local bus services and public transport links to one or more principal or major activity centres.

**Net Developable Area:** Total amount of land within the precinct that is made available for development of housing and employment buildings, including lots, local and connector streets. Total precinct area minus community facilities, schools and educational facilities and open space, arterial roads and encumbered land. Small local parks defined at subdivision stage are included in net developable area. Net Developable Area may be expressed in terms of hectare units (i.e. Net Developable Hectare ("NDHa")).

**Net Residential Area:** As per Net Developable Area but excludes neighbourhood activity centres, non-government schools and other existing or permitted non-residential land uses (e.g. golf course sites). Net Residential Area may be expressed in terms of hectare units (i.e. Net Residential Hectare ("NRHa")).

**Passive Open Space:** Open space that is set aside for parks, gardens, linear corridors, conservation bushlands, nature reserves, public squares and community gardens that are made available for passive recreation, play and unstructured physical activity including walking, cycling, hiking, revitalisation, contemplation and enjoying nature.

**Precinct:** An area of land within the Urban Growth Zone for which a precinct structure plan is to be produced. Their extent will be determined based on a need to create reasonably self-contained communities and on an understanding of the strategic level land use and topographical features. They will normally be between 200 hectares and 2000 hectares, but larger or smaller precincts may be defined in specific circumstances.

**Precinct Infrastructure Plan:** Section within the precinct structure plan that defines the priority regional and local infrastructure requirements for future planning and investment by council and government agencies.

**Precinct Structure Plan:** A statutory document that describes how a precinct or series of sites within a growth area will be developed over time. A precinct structure plan sets out the broad environmental, social and economic parameters for the use and development of land within the precinct.

**Principal Activity Centre:** Activity centres that accommodate a mix of activities that generate higher

numbers of trips, including business, retail, services and entertainment. Generally well served by multiple public transport routes. Has a very large catchment covering several suburbs and attract activities that meet metropolitan needs.

**Public Open Space:** Land that is set aside in the precinct structure plan for public recreation; or as parklands; or for similar purposes. Incorporates active and passive open space.

**Shared or Joint Use:** When councils, schools and community service organisations come together to plan, build and in some cases jointly manage a single facility to be used by multiple service providers. E.g. Using a school as a facility for wider community utilisation.

**Small Lot Housing Code:** Planning and Design Guidelines setting out the requirements for building envelopes on plans of subdivision on lots with an area less than 300 square metres.

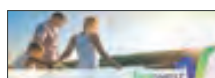
**Urban Growth Zone:** Statutory zone that applies to land that has been identified for future urban development. The UGZ has four purposes: (1) to manage transition of non-urban land into urban land; (2) to encourage development of well-planned and well-serviced new urban communities in accordance with an overall plan; (3) to reduce the number of development approvals needed in areas where an agreed plan is in place; and (4) to safeguard non-urban land from use and development that could prejudice its future urban development.

**Water Sensitive Urban Design:** A sustainable water management approach that aims to provide water-quality treatment, flood management to reduce the pollution carried to our waterways and more sustainable urban landscapes. Key principles include minimising water resistant areas; recharging natural groundwater aquifers (where appropriate) by increasing the amount of rain absorbed into the ground; encouraging onsite reuse of rain; encouraging onsite treatment to improve water quality and remove pollution, and using temporary rainfall storage (retarding basins/wetlands) to reduce the load on drains and improve landscape viability.

**Wathaurang:** Traditional land owners. Also known as the Wadda Wurrung people.

## 6.2 Other Information

The following documents may assist in understanding the background to the vision, objectives and other requirements of this Precinct Structure Plan.





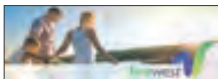
6.2.1 Background technical reports

AECOM: Rainwater Tank Modelling, 2011
AECOM: Carngham Road Industrial Buffer Study –Stage 1, 2011
AECOM: Carngham Road Industrial Buffer Study – Stage 2, 2011
AECOM: Ballarat Western Link Road – Alignment Options Assessment Report, 2010
AECOM: Carngham Road Industrial Interface Study, 11 January 2012
ASR Research: Ballarat West Precinct Structure Plan Review – Community and Recreation Infrastructure, 29 May 2024
City of Ballarat: Precinct Structure Plans: Precincts 1, 2 and 4: Strategic Issues Paper, 2011
City of Ballarat: Landscape Character Policy, 2011
City of Ballarat: Ballarat Open Space Strategy, 2009
City of Ballarat: Alfredton West Precinct Structure Plan, 2011
City of Ballarat: Ballarat West Growth Area Plan, March 2009
Coffey: Detailed Environmental Contamination Assessment, 2011
Context: Ballarat West Growth Area – Bonshaw Creek and Greenhalghs Road Precincts Historical Archaeological Assessments, 2011
CPG: Social and Community Infrastructure Needs Assessment for the Ballarat West Growth Area, 2010
Ecology Partners: Flora and Fauna Assessment and Aquatic Fauna Review for the Ballarat West Growth Area, 2010
Ecology Partners: Targeted Threatened Fauna Surveys, 2011
Ecology Partners: Ballarat West Growth Area, Precinct 1, Bonshaw and Sebastopol, Victoria: Aboriginal and Historical Heritage Assessment, 2011
Ecology Partners: Ballarat West Growth Area, Precinct 2, Smythes Creek and Delacombe, Victoria: Aboriginal and Historical Heritage Assessment, 2011
Ecology Partners: Ballarat West Growth Area, Precinct 4, Alfredton and Delacombe, Victoria: Aboriginal and Historical Heritage Assessment, 2011
Engeny: Ballarat West PSP Review Drainage Strategy Update, 11 April 2024
Environmental Research Management (Australia) Pty Ltd: Ballarat West Precinct Structure Plan Review – Contaminated Land Review, July 2016
Environmental Research Management (Australia) Pty Ltd: Ballarat West Precinct Structure Plan Review of the 'Industrial/Commercial Precinct' – Air and Noise Assessment, July 2016
Environmental Research Management (Australia) Pty Ltd: Ballarat West Precinct Structure Plan (2012) Review- Planning Summary Report, July 2016
GHD: Stage 2 Preliminary Environmental Contamination Assessment, 2010
Halcrow: Pre-development flood mapping, 2010
Renaissance Planning: Ballarat Interim Activity Centre Policy Nov 2009
MacroPlan: Economic Assessment for Ballarat West Growth Area, 2010
Milward Engineering Management: Ballarat West Precinct Plan Transport Projects Review, February 2024

Practical Ecology: Ballarat West Precinct Targeted Growing Grass Frog Surveys, 2023
Renaissance Planning: Ballarat Interim Activity Centre Policy Nov 2009
SMEC: Ballarat West Conservation Management Plan, December 2011
SMEC: Ballarat West Native Vegetation Plan, June 1012
SGS: City of Ballarat Economic Strategy 2010-2014

General reference documents

- A Strategic Framework for Creating Liveable New Communities, Growth Areas Authority, March 2008.*
- Today Tomorrow Together: The Ballarat Strategy 2040, City of Ballarat, 2015*
- Housing Strategy 2023-2041, City of Ballarat, 2024*
- Ballarat Long Term Growth Options Investigation, Hansen Partnership, Arup & Tim Nott, 2018*
- Development Contributions Guidelines, Department of Planning and Community Development, March 2007.*
- Flora and Fauna Guarantee Strategy: Victoria's Biodiversity, Department of Natural Resources and Environment, 1997.*
- Guidelines for Conducting Historical Archaeological Surveys, 2008, Heritage Council of Victoria and Heritage Victoria.*
- Healthy by Design: A planners' guide to environments for active living, National Heart Foundation of Australia, 2004.*
- Plan Melbourne 2017-2050, Victorian Government, 2017*
- Precinct Structure Planning Guidelines: New Communities in Victoria, Victorian Planning Authority, 2021*
- Central Highlands Regional Growth Plan, Victorian Government, 2014*
- Victoria in Future 2019, Department of Environment, Land, Water and Planning, July 2019.*
- Our Environment, Our Future, Department of Sustainability and Environment, 2006.*
- Planning for Community Infrastructure in Growth Areas, Australian Social and Recreation, 2008.*
- Public Transport Guidelines for Land Use Development, Department of Transport, 2008.*
- Safer Design Guidelines for Victoria, Department of Sustainability and Environment, June 2005.*
- Urban Design Guidelines for Victoria (Department of Environment, Land, Water and Planning, 2017)*
- Urban Development Program, Department of Planning and Community Development, annual.*
- Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO, 1999.*

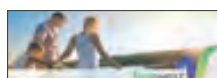


## 7 Attachments

Attachment 1: Property Specific Land Use Budget

Attachment 2: Property Specific Land Use Budget - Housing Yield

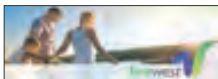
Attachment 3: Small Lot Housing Code



Attachment 1: Property Specific Land Use Budget

Table 3 Property Specific Land Use Budget

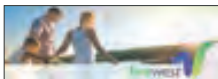
Property Number	Total Area (Hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (ha)	
		Future Western Link Road Not Included in NDA	Arterial Road / Widening Not Included in NDA	Roundabout Not Included in NDA	Road Reserve Not Included in NDA	Drainage Reserve Not Included in OS%	Drainage Basins Not Included in OS%	Environmental Conservation Area Not Included in OS%	Heritage Conservation Area Not Included in OS%	Community Facilities Not Included in NDA	Schools Not Included in NDA	Active Open Space Included in OS%	Passive Open Space (Local parks & Linear reserves) Included in OS%	Other - Regional Recreation Included in OS%		
Property 1	2012292	0.82	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Property 2 & 7 & 16	72.46	0.00	0.00	0.00	0.00	0.00	13.05	4.13	0.00	0.00	0.00	0.00	0.50	1.93	0.00	52.85
Property 3	2012291	8.70	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	1.90	0.00	3.00	0.00	0.00	3.35
Property 4	2035436	9.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.43
Property 5	2035447	8.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95	0.00	0.00	0.00	5.15
Property 6	2035446	8.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	7.62
Properties 8 to 11	30.89	0.00	0.00	0.18	0.00	0.00	3.43	0.45	0.00	0.00	0.00	0.00	0.00	1.60	0.00	25.23
Property 12	2002746	3.33	0.00	0.00	0.00	0.00	1.24	1.92	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00
Property 13	2002747	2.08	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Property 14	2002751	1.17	0.00	0.00	0.00	0.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Property 15	2002749	0.33	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Property 17 to 19	6.25	0.00	0.08	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.06
Property 20 to 21	8.13	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.92
Property 22	2029914	2.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06
Property 23	2029915	2.09	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04
Property 25	2029912	2.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04
Property 24 & 26	7.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	7.00
Property 27	2029911	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.02
Property 28 & 29 & 30	2029909	15.33	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	12.80
Property 31	2034414	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Property 32 to 33	2.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.91
Property 34	2034417	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61
Property 35	2051664	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91
Property 36	2051665	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Property 37	2035439	8.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	7.27
Property 38	2035437	2.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04
Property 39	2035438	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.02
Property 40	2034419	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.93
Property 41	2034420	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87
Property 42	2034421	1.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Property 43	2028681	0.68	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
Property 44	2028681	0.69	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
Property 45	2049703	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77



Property Number	Total Area (Hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (ha)
		Future Western Link Road Not Included in NDA	Arterial Road / Widening Not Included in NDA	Roundabout Not Included in NDA	Road Reserve Not Included in NDA	Drainage Reserve Not Included in OS%	Drainage Basins Not Included in OS%	Environmental Conservation Area Not Included in OS%	Heritage Conservation Area Not Included in OS%	Community Facilities Not Included in NDA	Schools Not Included in NDA	Active Open Space Included in OS%	Passive Open Space (Local parks & Linear reserves) Included in OS%	Other - Regional Recreation Included in OS%	
Property 46	2049704	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Property 47	2049705	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Property 48	2049706	0.92	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
Property 49	2049702	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70
Property 50	2049701	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65
Property 51	2049700	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65
Property 52	2049699	0.65	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Property 53	2035440	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
Property 54	2035441	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
Property 55	2051432	0.79	0.00	0.03	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
Property 56	2051433	1.19	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14
Property 57	2034430	3.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Property 58	2034429	2.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.53
Property 59	2034428	2.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.83
Property 60 to 64	10.94	0.00	0.09	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.83
Property 65 to 66	24.58	0.00	0.00	0.00	0.00	1.75	0.40	0.00	0.00	0.00	0.00	0.00	3.50	0.00	18.93
Property 67	2042495	24.42	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00	0.00	3.21	0.00	20.57
Property 69	2035443	3.25	0.00	0.12	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	2.85
Property 70	2039204	2.04	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Property 71	2035444	2.04	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Property 72	2035448	4.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	3.62
Property 73	2035445	4.03	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76
Property 74	2051046	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	1.92
Property 75	2051047	1.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	1.67
Property 76	2047568	4.06	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.80
Property 77	2028691	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	3.59
Property 78 to 81	16.84	0.00	0.00	0.00	0.00	0.34	1.70	0.00	0.00	0.00	0.00	0.00	1.31	0.00	13.49
Property 82	2002742	2.36	0.00	0.00	0.00	0.00	1.43	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.89
Property 83	2002741	6.17	0.00	0.00	0.00	0.00	1.92	2.25	0.00	0.00	0.00	0.00	0.40	0.00	1.60
Property 84 & 88	8.35	0.00	0.00	0.03	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	7.87
Property 68 & 87	28.27	0.00	0.11	0.01	0.00	2.23	1.43	0.00	1.06	0.00	0.00	0.00	3.96	0.00	19.47
Property 89	2028688	4.02	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.41	0.00	3.32
Property 90	2028689	3.95	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.28	0.00	3.17
Property 85 & 86 & 91	12.78	0.00	0.62	0.07	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	0.00	10.20



Property Number		Total Area (Hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (ha)
			Future Western Link Road Not Included in NDA	Arterial Road / Widening Not Included in NDA	Roundabout Not Included in NDA	Road Reserve Not Included in NDA	Drainage Reserve Not Included in OS%	Drainage Basins Not Included in OS%	Environmental Conservation Area Not Included in OS%	Heritage Conservation Area Not Included in OS%	Community Facilities Not Included in NDA	Schools Not Included in NDA	Active Open Space Included in OS%	Passive Open Space (Local parks & Linear reserves) Included in OS%	Other - Regional Recreation Included in OS%	
Property 92	2028690	5.70	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	1.47	0.00	4.14
Property 93	2027855	5.26	0.00	0.00	0.00	0.00	1.44	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	2.57
Property 94	2039846	5.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	5.06
Property 95	2041312	3.91	0.00	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	1.17
Property 96	2031574	5.36	0.00	0.00	0.02	0.00	0.59	3.56	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.77
Property 97 & 98 & 100	2027853	15.62	0.00	0.62	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	0.00	13.65
Property 99	2005747	4.42	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	4.19
Property 101	2000321	4.21	0.00	0.00	0.00	0.00	0.00	3.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
Property 102	2000321	8.22	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.02
Property 103	2000321	9.92	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.79
Property 104	2031578	0.50	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45
Property 105 & 106 & 107		4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43
Property 108	2031571	3.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
Property 109 & 110		1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77
Property 111 & 112	2006617	4.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.14
Property 113	2041363	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00
Property 114	2012845	9.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.64	6.32	0.00	0.00
Property 115	2012845	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00
Property 116	2012844	11.41	0.00	0.00	0.00	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	6.98	0.00	0.00
Property 117 & 118		0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Property 119 & 120		7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	2.52	0.00	0.00	0.00	4.37
Property 121	2012842	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	1.90
Property 122	2012842	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48
Property 123	2012842	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	7.76
Property 124	2005750	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	7.78
Property 125	2023250	5.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.86
Property 126	2001990	5.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.85
Property 127 & 128	2045173	7.66	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	1.96	0.00	5.11
Property 129	2012840	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
Property 130	2000321	1.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Property 131	2000321	1.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Property 132	2000321	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	2.23
Property 133	2000321	6.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	5.84

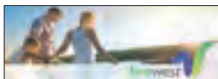




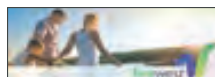
Property Number	Total Area (Hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (ha)	
		Future Western Link Road Not Included in NDA	Arterial Road / Widening Not Included in NDA	Roundabout Not Included in NDA	Road Reserve Not Included in NDA	Drainage Reserve Not Included in OS%	Drainage Basins Not Included in OS%	Environmental Conservation Area Not Included in OS%	Heritage Conservation Area Not Included in OS%	Community Facilities Not Included in NDA	Schools Not Included in NDA	Active Open Space Included in OS%	Passive Open Space (Local parks & Linear reserves) Included in OS%	Other - Regional Recreation Included in OS%		
Property 134	2000321	8.11	0.00	0.00	0.00	0.00	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.87	0.00	6.11
Property 135	2000321	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	1.94
Property 136	2000321	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	1.93
Property 137	2000321	7.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.10
Property 138	2049676	22.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.19	0.44	0.00	11.83
Property 139 & 140 & 141	2026429	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98
Property 142 & 143		0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70
Property 144	2026428	1.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54
Property 145	2000330	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Property 146	2000328	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
Property 147	2000328	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Property 148	2000327	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Property 149	2000326	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Property 150	2000325	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Property 151	2000324	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Property 152	2000322	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Property 153	2000323	10.69	0.00	0.79	0.00	0.00	0.00	2.34	0.00	2.28	0.00	0.00	0.00	0.00	0.00	5.28
Property 154	2000321	19.51	0.00	0.08	0.00	0.00	0.00	3.35	0.00	0.00	0.00	0.00	0.00	0.58	0.00	15.50
Property 155	2012306	32.90	1.60	0.14	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00	0.00	2.61	0.00	27.69
Properties 156 to 157	2012998	65.44	0.00	2.15	0.22	0.00	0.00	2.00	0.00	0.00	1.00	13.50	10.33	0.00	0.00	36.24
Property 158 & 159 & 160 & 161	2012289	82.32	0.00	1.80	0.15	0.00	6.56	2.31	0.00	0.00	0.00	0.00	0.00	4.44	0.00	67.07
Property 162	2012289	1.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.64
Property 163	2039201	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09
Property 164	2039199	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
Property 165	2039200	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09
Property 166	2013004	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73
Property 167	2010410	1.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Property 168	2040644	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30
Property 169	2040447	1.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44
Property 170	2010408	5.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.46
Property 171	2040200	1.26	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25
Property 172	2012288	2.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.33
Property 173	2010411	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.46
Property 174	2040444	2.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47
Property 175	2012287	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
Property 176	2012286	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99



Property Number		Total Area (Hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (ha)
			Future Western Link Road Not Included in NDA	Arterial Road / Widening Not Included in NDA	Roundabout Not Included in NDA	Road Reserve Not Included in NDA	Drainage Reserve Not Included in OS%	Drainage Basins Not Included in OS%	Environmental Conservation Area Not Included in OS%	Heritage Conservation Area Not Included in OS%	Community Facilities Not Included in NDA	Schools Not Included in NDA	Active Open Space Included in OS%	Passive Open Space (Local parks & Linear reserves) Included in OS%	Other - Regional Recreation Included in OS%	
Property 177	2042211	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Property 178	2022615	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
Property 179	2022633	1.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05
Property 180	2012285	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79
Property 181	2022616	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03
Property 182	2012284	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78
Property 183	2012283	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
Property 184	2012307	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95
Property 185	2046230	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01
Property 186	2046231	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01
Property 187	2022619	3.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.87
Property 188	2022620	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
Property 189	2022621	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07
Property 190	2022622	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
Property 191	2022623	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Property 192	2022624	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Property 193	2022625	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Property 194	2022626	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60
Property 195	2022627	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72
Property 196	2022628	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Property 197	2022629	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85
Property 198	2022630	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Property 199	2022631	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Property 200	2022632	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Property 201	2010409	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
Property 202	2022614	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Property 203	2010407	3.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	3.35
Property 204	2013003	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
Property 205	2047864	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Property 206	2045820	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Property 207	2045819	1.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Property 208 & 209	2012306	43.92	3.07	0.00	0.00	0.00	0.00	3.86	0.00	0.00	0.00	0.00	0.00	2.18	0.00	34.80
Property 210	2036739	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
Property 211	2036738	21.77	0.00	1.94	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	1.02	0.00	0.00	18.31
Property 212 & 213	2036752	65.40	0.00	0.00	0.00	0.00	0.00	2.76	3.27	0.00	1.30	2.86	3.98	0.00	0.00	51.23
Property 214	2001989	32.03	0.00	0.00	0.00	0.00	0.58	1.09	0.00	0.07	0.00	0.00	0.00	0.00	0.00	30.29



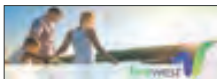
Property Number	Total Area (Hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (ha)
		Future Western Link Road Not Included in NDA	Arterial Road / Widening Not Included in NDA	Roundabout Not Included in NDA	Road Reserve Not Included in NDA	Drainage Reserve Not Included in OS%	Drainage Basins Not Included in OS%	Environmental Conservation Area Not Included in OS%	Heritage Conservation Area Not Included in OS%	Community Facilities Not Included in NDA	Schools Not Included in NDA	Active Open Space Included in OS%	Passive Open Space (Local parks & Linear reserves) Included in OS%	Other - Regional Recreation Included in OS%	
<b>Properties 215 to 216</b>	<b>33.23</b>	0.00	0.93	0.08	0.00	0.00	1.10	0.00	0.00	0.00	0.00	0.00	2.37	0.00	<b>28.75</b>
Property 217	2001991	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Property 218	2001992	16.39	0.00	1.89	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	13.37
Property 219	2001993	15.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.83
Property 220	2001994	32.73	0.53	0.00	0.00	0.00	1.84	1.59	0.00	0.00	0.00	0.00	2.33	0.00	26.44
Property 221	2036749	4.05	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.74
Property 222	2036748	2.14	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83
Property 223	2042384	1.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Property 224	2036747	3.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42
Property 225	2036746	4.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.34
Property 226 & 227	2036744	8.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.30
Property 228 & 229	2036750	20.28	0.00	0.05	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	1.00	0.00	19.16
Property 230	2036751	19.74	0.00	1.81	0.20	0.00	0.00	0.33	0.00	0.00	0.61	4.00	0.00	0.00	12.79
<b>Sub-Total</b>	<b>1223.01</b>	<b>5.20</b>	<b>16.17</b>	<b>1.57</b>	<b>0.59</b>	<b>42.37</b>	<b>48.67</b>	<b>4.86</b>	<b>3.41</b>	<b>4.70</b>	<b>23.76</b>	<b>36.00</b>	<b>65.11</b>	<b>0.00</b>	<b>970.60</b>
Existing Road Reserves	63.76	0.00	0.00	0.00	61.38	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.00	0.00	1.44
<b>Total</b>	<b>1286.77</b>	<b>5.20</b>	<b>16.17</b>	<b>1.57</b>	<b>61.97</b>	<b>42.37</b>	<b>48.67</b>	<b>4.86</b>	<b>3.41</b>	<b>4.70</b>	<b>23.76</b>	<b>36.94</b>	<b>65.11</b>	<b>0.00</b>	<b>972.04</b>



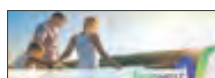
Attachment 2: Property Specific Land Use Budget - Housing Yield

Table 4 Property Specific Land Use Budget - Housing Yields

Property Number		Total Area (Hectares)	Total net Developable Area (Hectares)	OTHER LAND USES			Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (15 Dwellings/NRHa)		MEDIUM DENSITY (25 Dwellings/NRHa)		TOTAL COMBINED		
				Activity Centre (Retail / Office / Mixed Use)	Bulky Goods	Industrial / Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings / NRHa	Indicative Dwellings
Property 1	2012292	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 2 & 7 & 16		72.46	52.85	0.00	0.00	0.00	52.85	52.85	735	0.00	0	52.85	14	735
Property 3	2012291	8.70	3.35	2.99	0.00	0.00	0.37	0.01	0	0.36	54	0.37	148	54
Property 4	2035436	9.43	9.43	9.43	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 5	2035447	8.10	5.15	0.00	0.00	0.29	4.86	4.86	64	0.00	0	4.86	13	64
Property 6	2035446	8.09	7.62	0.00	0.00	0.00	7.62	7.62	133	0.00	0	7.62	17	133
Properties 8 to 11		30.89	25.23	0.00	0.00	0.00	25.23	25.23	439	0.00	0	25.23	17	439
Property 12	2002746	3.33	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 13	2002747	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 14	2002751	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 15	2002749	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 17 to 19		6.25	6.06	1.20	4.86	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 20 to 21		8.13	7.92	1.00	0.00	0.00	6.92	4.01	59	2.91	145	6.92	29	204
Property 22	2029914	2.06	2.06	0.00	0.00	2.06	0.00	0.00	0	0.00	0	0.00	-	0
Property 23	2029915	2.09	2.04	0.00	0.00	0.00	2.04	0.00	0	2.04	56	2.04	27	56
Property 25	2029912	2.04	2.04	0.00	0.00	0.00	2.04	2.04	33	0.00	0	2.04	16	33
Property 24 & 26		7.17	7.00	0.00	0.00	0.00	7.00	7.00	85	0.00	0	7.00	12	85
Property 27	2029911	2.02	2.02	0.00	0.00	0.00	2.02	2.02	34	0.00	0	2.02	17	34
Property 28 & 29 & 30	2029909	15.33	12.80	0.00	0.00	0.00	12.80	12.80	180	0.00	0	12.80	14	180
Property 31	2034414	1.74	1.74	0.00	0.00	0.20	1.54	1.54	31	0.00	0	1.54	20	31
Property 32 to 33		2.91	2.91	0.00	0.00	0.00	2.91	2.91	50	0.00	0	2.91	17	50
Property 34	2034417	1.61	1.61	0.00	0.00	0.00	1.61	1.61	32	0.00	0	1.61	20	32
Property 35	2051664	0.91	0.91	0.00	0.00	0.00	0.91	0.91	18	0.00	0	0.91	20	18
Property 36	2051665	0.93	0.93	0.00	0.00	0.00	0.93	0.93	19	0.00	0	0.93	20	19
Property 37	2035439	8.27	7.27	0.00	0.00	0.00	7.27	7.27	145	0.00	0	7.27	20	145
Property 38	2035437	2.04	2.04	0.00	0.00	0.00	2.04	2.04	41	0.00	0	2.04	20	41
Property 39	2035438	2.02	2.02	0.00	0.00	0.00	2.02	2.02	33	0.00	0	2.02	16	33
Property 40	2034419	1.93	1.93	0.00	0.00	0.00	1.93	1.93	34	0.00	0	1.93	18	34
Property 41	2034420	1.87	1.87	0.00	0.00	0.00	1.87	1.87	37	0.00	0	1.87	20	37
Property 42	2034421	1.00	0.94	0.00	0.00	0.00	0.94	0.94	19	0.00	0	0.94	20	19
Property 43	2028681	0.68	0.66	0.00	0.00	0.00	0.66	0.66	13	0.00	0	0.66	20	13
Property 44	2028681	0.69	0.67	0.00	0.00	0.00	0.67	0.67	13	0.00	0	0.67	20	13
Property 45	2049703	0.77	0.77	0.00	0.00	0.00	0.77	0.77	15	0.00	0	0.77	20	15

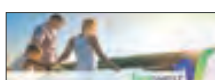


Property Number		Total Area (Hectares)	Total net Developable Area (Hectares)	OTHER LAND USES			Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (15 Dwellings/NRHa)		MEDIUM DENSITY (25 Dwellings/NRHa)		TOTAL COMBINED		
				Activity Centre (Retail / Office / Mixed Use)	Bulky Goods	Industrial / Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings / NRHa	Indicative Dwellings
Property 46	2049704	0.64	0.64	0.00	0.00	0.00	0.64	0.64	13	0.00	0	0.64	20	13
Property 47	2049705	0.64	0.64	0.00	0.00	0.00	0.64	0.64	13	0.00	0	0.64	20	13
Property 48	2049706	0.92	0.88	0.00	0.00	0.00	0.88	0.88	18	0.00	0	0.88	20	18
Property 49	2049702	0.70	0.70	0.00	0.00	0.00	0.70	0.70	14	0.00	0	0.70	20	14
Property 50	2049701	0.65	0.65	0.00	0.00	0.00	0.65	0.65	13	0.00	0	0.65	20	13
Property 51	2049700	0.65	0.65	0.00	0.00	0.00	0.65	0.65	13	0.00	0	0.65	20	13
Property 52	2049699	0.65	0.62	0.00	0.00	0.00	0.62	0.62	12	0.00	0	0.62	20	12
Property 53	2035440	2.03	2.03	0.00	0.00	0.00	2.03	2.03	41	0.00	0	2.03	20	41
Property 54	2035441	2.03	2.03	0.00	0.00	0.00	2.03	2.03	41	0.00	0	2.03	20	41
Property 55	2051432	0.79	0.68	0.00	0.00	0.00	0.68	0.68	14	0.00	0	0.68	20	14
Property 56	2051433	1.19	1.14	0.00	0.00	0.00	1.14	1.14	23	0.00	0	1.14	20	23
Property 57	2034430	3.92	3.92	0.00	0.00	0.00	3.92	3.92	60	0.00	0	3.92	15	60
Property 58	2034429	2.53	2.53	0.00	0.00	0.00	2.53	2.53	39	0.00	0	2.53	15	39
Property 59	2034428	2.83	2.83	0.00	0.00	0.00	2.83	2.83	43	0.00	0	2.83	15	43
Property 60 to 64		10.94	10.83	0.00	0.00	0.00	10.83	10.83	183	0.00	0	10.83	17	183
Property 65 to 66		24.58	18.93	0.00	0.00	0.00	18.93	18.93	276	0.00	0	18.93	15	276
Property 67	2042495	24.42	20.57	0.00	0.00	0.00	20.57	20.57	345	0.00	0	20.57	17	345
Property 69	2035443	3.25	2.85	0.00	0.00	0.00	2.85	2.85	57	0.00	0	2.85	20	57
Property 70	2039204	2.04	1.90	0.00	0.00	0.00	1.90	1.90	38	0.00	0	1.90	20	38
Property 71	2035444	2.04	1.90	0.00	0.00	0.00	1.90	1.90	38	0.00	0	1.90	20	38
Property 72	2035448	4.07	3.62	0.00	0.00	0.00	3.62	3.62	72	0.00	0	3.62	20	72
Property 73	2035445	4.03	3.76	0.00	0.00	0.00	3.76	3.76	75	0.00	0	3.76	20	75
Property 74	2051046	2.18	1.92	0.00	0.00	0.00	1.92	1.92	38	0.00	0	1.92	20	38
Property 75	2051047	1.91	1.67	0.00	0.00	0.00	1.67	1.67	33	0.00	0	1.67	20	33
Property 76	2047568	4.06	3.80	0.00	0.00	0.00	3.80	3.80	76	0.00	0	3.80	20	76
Property 77	2028691	4.05	3.59	0.00	0.00	0.00	3.59	3.59	72	0.00	0	3.59	20	72
Property 78 to 81		16.84	13.49	0.00	0.00	0.00	13.49	13.49	235	0.00	0	13.49	17	235
Property 82	2002742	2.36	0.89	0.00	0.00	0.00	0.89	0.89	18	0.00	0	0.89	20	18
Property 83	2002741	6.17	1.60	0.00	0.00	0.00	1.60	1.60	32	0.00	0	1.60	20	32
Property 84 & 88		8.35	7.87	0.00	0.00	0.00	7.87	7.87	157	0.00	0	7.87	20	157
Property 68 & 87		28.27	19.47	0.00	0.00	0.00	19.47	19.47	297	0.00	0	19.47	15	297
Property 89	2028688	4.02	3.32	0.00	0.00	0.00	3.32	3.32	66	0.00	0	3.32	20	66
Property 90	2028689	3.95	3.17	0.00	0.00	0.00	3.17	3.17	63	0.00	0	3.17	20	63
Property 85 & 86 & 91		12.78	10.20	0.00	0.00	0.00	10.20	10.20	184	0.00	0	10.20	18	184





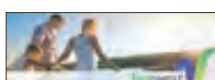
Property Number		Total Area (Hectares)	Total net Developable Area (Hectares)	OTHER LAND USES			Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (15 Dwellings/NRHa)		MEDIUM DENSITY (25 Dwellings/NRHa)		TOTAL COMBINED		
				Activity Centre (Retail / Office / Mixed Use)	Bulky Goods	Industrial / Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings / NRHa	Indicative Dwellings
Property 92	2028690	5.70	4.14	0.00	0.00	0.00	4.14	4.14	83	0.00	0	4.14	20	83
Property 93	2027855	5.26	2.57	0.00	0.00	0.00	2.57	2.57	51	0.00	0	2.57	20	51
Property 94	2039846	5.39	5.06	0.00	0.00	0.00	5.06	5.06	101	0.00	0	5.06	20	101
Property 95	2041312	3.91	1.17	0.00	0.00	0.00	1.17	1.17	23	0.00	0	1.17	20	23
Property 96	2031574	5.36	0.77	0.00	0.00	0.00	0.77	0.77	15	0.00	0	0.77	20	15
Property 97 & 98 & 100	2027853	15.62	13.65	1.81	0.00	0.00	11.84	9.97	157	1.87	64	11.84	19	221
Property 99	2005747	4.42	4.19	0.00	0.00	0.00	4.19	4.19	84	0.00	0	4.19	20	84
Property 101	2000321	4.21	0.81	0.00	0.00	0.00	0.81	0.81	16	0.00	0	0.81	20	16
Property 102	2000321	8.22	8.02	0.00	0.00	0.00	8.02	8.02	160	0.00	0	8.02	20	160
Property 103	2000321	9.92	9.79	0.00	0.00	0.00	9.79	9.79	196	0.00	0	9.79	20	196
Property 104	2031578	0.50	0.45	0.00	0.00	0.00	0.45	0.45	9	0.00	0	0.45	20	9
Property 105 & 106 & 107		4.43	4.43	0.00	0.00	0.00	4.43	4.43	89	0.00	0	4.43	20	89
Property 108	2031571	3.67	3.67	0.00	0.00	0.00	3.67	3.67	64	0.00	0	3.67	17	64
Property 109 & 110		1.77	1.77	0.00	0.00	0.00	1.77	1.77	34	0.00	0	1.77	19	34
Property 111 & 112	2006617	4.14	4.14	0.00	0.00	0.00	4.14	4.14	84	0.00	0	4.14	20	84
Property 113	2041363	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 114	2012845	9.96	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 115	2012845	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 116	2012844	11.41	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 117 & 118		0.80	0.80	0.00	0.00	0.00	0.80	0.00	0	0.80	20	0.80	25	20
Property 119 & 120		7.39	4.37	0.00	0.00	0.00	4.37	3.12	61	1.25	31	4.37	21	92
Property 121	2012842	2.05	1.90	0.00	0.00	0.00	1.90	1.90	29	0.00	0	1.90	15	29
Property 122	2012842	1.48	1.48	0.00	0.00	0.00	1.48	1.48	22	0.00	0	1.48	15	22
Property 123	2012842	8.21	7.76	0.00	0.00	0.00	7.76	7.76	116	0.00	0	7.76	15	116
Property 124	2005750	8.63	7.78	0.00	0.00	0.00	7.78	7.05	135	0.73	22	7.78	20	157
Property 125	2023250	5.86	5.86	0.00	0.00	0.00	5.86	5.86	117	0.00	0	5.86	20	117
Property 126	2001990	5.85	5.85	0.00	0.00	0.00	5.85	5.85	117	0.00	0	5.85	20	117
Property 127 & 128	2045173	7.66	5.11	0.00	0.00	0.00	5.11	5.11	82	0.00	0	5.11	16	82
Property 129	2012840	2.03	2.03	0.00	0.00	0.00	2.03	2.03	41	0.00	0	2.03	20	41
Property 130	2000321	1.47	1.47	0.00	0.00	0.00	1.47	1.47	29	0.00	0	1.47	20	29
Property 131	2000321	1.47	1.47	0.00	0.00	0.00	1.47	1.47	29	0.00	0	1.47	20	29
Property 132	2000321	2.25	2.23	0.00	0.00	0.00	2.23	2.23	45	0.00	0	2.23	20	45
Property 133	2000321	6.46	5.84	0.00	0.00	0.00	5.84	5.84	117	0.00	0	5.84	20	117



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				Activity Centre (Retail / Office / Mixed Use)	Bulky Goods	Industrial / Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings / NRHa	Indicative Dwellings
Property 134	2000321	8.11	6.11	0.00	0.00	0.00	6.11	6.11	122	0.00	0	6.11	20	122
Property 135	2000321	2.25	1.94	0.00	0.00	0.00	1.94	1.94	39	0.00	0	1.94	20	39
Property 136	2000321	2.20	1.93	0.00	0.00	0.00	1.93	1.93	39	0.00	0	1.93	20	39
Property 137	2000321	7.10	7.10	0.00	0.00	0.00	7.10	7.10	142	0.00	0	7.10	20	142
Property 138	2049676	22.46	11.83	0.00	0.00	0.00	11.83	11.83	237	0.00	0	11.83	20	237
Property 139 & 140 & 141	2026429	1.98	1.98	0.00	0.00	0.00	1.98	1.98	33	0.00	0	1.98	17	33
Property 142 & 143		0.70	0.70	0.00	0.00	0.00	0.70	0.70	14	0.00	0	0.70	20	14
Property 144	2026428	1.54	1.54	0.00	0.00	0.00	1.54	1.54	31	0.00	0	1.54	20	31
Property 145	2000330	0.41	0.41	0.00	0.00	0.00	0.41	0.41	8	0.00	0	0.41	20	8
Property 146	2000328	0.36	0.36	0.00	0.00	0.00	0.36	0.36	7	0.00	0	0.36	20	7
Property 147	2000328	0.06	0.06	0.00	0.00	0.00	0.06	0.06	1	0.00	0	0.06	20	1
Property 148	2000327	0.06	0.06	0.00	0.00	0.00	0.06	0.06	1	0.00	0	0.06	20	1
Property 149	2000326	0.06	0.06	0.00	0.00	0.00	0.06	0.06	1	0.00	0	0.06	20	1
Property 150	2000325	0.18	0.18	0.00	0.00	0.00	0.18	0.18	4	0.00	0	0.18	20	4
Property 151	2000324	0.38	0.38	0.00	0.00	0.00	0.38	0.38	8	0.00	0	0.38	20	8
Property 152	2000322	0.20	0.20	0.00	0.00	0.00	0.20	0.20	4	0.00	0	0.20	20	4
Property 153	2000323	10.69	5.28	0.00	0.00	0.00	5.28	5.28	105	0.00	0	5.28	20	105
Property 154	2000321	19.51	15.50	0.00	0.00	0.00	15.50	15.50	105	0.00	0	15.50	7	105
Property 155	2012306	32.90	27.69	0.00	0.00	0.00	27.69	27.09	429	0.60	15	27.69	16	444
Properties 156 to 157	2012998	65.44	36.24	3.26	0.00	0.00	32.98	28.67	483	4.31	108	32.98	18	591
Property 158 & 159 & 160 & 161	2012289	82.32	67.07	0.00	0.00	1.37	65.70	64.90	952	0.80	28	65.70	15	980
Property 162	2012289	1.64	1.64	0.00	0.00	0.00	1.64	1.64	33	0.00	0	1.64	20	33
Property 163	2039201	1.09	1.09	0.00	0.00	0.00	1.09	1.09	22	0.00	0	1.09	20	22
Property 164	2039199	0.68	0.68	0.00	0.00	0.00	0.68	0.68	14	0.00	0	0.68	20	14
Property 165	2039200	1.09	1.09	0.00	0.00	0.00	1.09	1.09	22	0.00	0	1.09	20	22
Property 166	2013004	0.73	0.73	0.00	0.00	0.00	0.73	0.73	15	0.00	0	0.73	20	15
Property 167	2010410	1.89	1.89	0.00	0.00	0.00	1.89	1.89	38	0.00	0	1.89	20	38
Property 168	2040644	1.30	1.30	0.00	0.00	0.00	1.30	1.30	26	0.00	0	1.30	20	26
Property 169	2040447	1.44	1.44	0.00	0.00	0.00	1.44	1.44	29	0.00	0	1.44	20	29
Property 170	2010408	5.46	5.46	0.00	0.00	0.00	5.46	5.46	109	0.00	0	5.46	20	109
Property 171	2040200	1.26	1.25	0.00	0.00	0.00	1.25	1.25	25	0.00	0	1.25	20	25
Property 172	2012288	2.33	2.33	0.00	0.00	0.00	2.33	2.33	47	0.00	0	2.33	20	47
Property 173	2010411	3.46	3.46	0.00	0.00	0.00	3.46	3.46	69	0.00	0	3.46	20	69
Property 174	2040444	2.47	2.47	0.00	0.00	0.00	2.47	2.47	49	0.00	0	2.47	20	49
Property 175	2012287	0.81	0.81	0.00	0.00	0.00	0.81	0.81	16	0.00	0	0.81	20	16



Property Number		Total Area (Hectares)	Total net Developable Area (Hectares)	OTHER LAND USES			Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (15 Dwellings/NRHa)		MEDIUM DENSITY (25 Dwellings/NRHa)		TOTAL COMBINED		
				Activity Centre (Retail / Office / Mixed Use)	Bulky Goods	Industrial / Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings / NRHa	Indicative Dwellings
Property 176	2012286	0.99	0.99	0.00	0.00	0.00	0.99	0.99	20	0.00	0	0.99	20	20
Property 177	2042211	0.60	0.60	0.00	0.00	0.00	0.60	0.60	12	0.00	0	0.60	20	12
Property 178	2022615	0.56	0.56	0.00	0.00	0.00	0.56	0.56	11	0.00	0	0.56	20	11
Property 179	2022633	1.05	1.05	0.00	0.00	0.00	1.05	1.05	21	0.00	0	1.05	20	21
Property 180	2012285	0.79	0.79	0.00	0.00	0.00	0.79	0.79	16	0.00	0	0.79	20	16
Property 181	2022616	1.03	1.03	0.00	0.00	0.00	1.03	1.03	21	0.00	0	1.03	20	21
Property 182	2012284	0.78	0.78	0.00	0.00	0.00	0.78	0.78	16	0.00	0	0.78	20	16
Property 183	2012283	0.89	0.89	0.00	0.00	0.00	0.89	0.89	18	0.00	0	0.89	20	18
Property 184	2012307	0.95	0.95	0.00	0.00	0.00	0.95	0.95	19	0.00	0	0.95	20	19
Property 185	2046230	2.01	2.01	0.00	0.00	0.00	2.01	2.01	40	0.00	0	2.01	20	40
Property 186	2046231	2.01	2.01	0.00	0.00	0.00	2.01	2.01	40	0.00	0	2.01	20	40
Property 187	2022619	3.87	3.87	0.00	0.00	0.00	3.87	3.87	77	0.00	0	3.87	20	77
Property 188	2022620	0.88	0.88	0.00	0.00	0.00	0.88	0.88	18	0.00	0	0.88	20	18
Property 189	2022621	2.07	2.07	0.00	0.00	0.00	2.07	2.07	41	0.00	0	2.07	20	41
Property 190	2022622	0.90	0.90	0.00	0.00	0.00	0.90	0.90	18	0.00	0	0.90	20	18
Property 191	2022623	0.80	0.80	0.00	0.00	0.00	0.80	0.80	16	0.00	0	0.80	20	16
Property 192	2022624	0.80	0.80	0.00	0.00	0.00	0.80	0.80	16	0.00	0	0.80	20	16
Property 193	2022625	0.80	0.80	0.00	0.00	0.00	0.80	0.80	16	0.00	0	0.80	20	16
Property 194	2022626	1.60	1.60	0.00	0.00	0.00	1.60	1.60	32	0.00	0	1.60	20	32
Property 195	2022627	1.72	1.72	0.00	0.00	0.00	1.72	1.72	34	0.00	0	1.72	20	34
Property 196	2022628	0.86	0.86	0.00	0.00	0.00	0.86	0.86	17	0.00	0	0.86	20	17
Property 197	2022629	0.85	0.85	0.00	0.00	0.00	0.85	0.85	17	0.00	0	0.85	20	17
Property 198	2022630	0.83	0.83	0.00	0.00	0.00	0.83	0.83	17	0.00	0	0.83	20	17
Property 199	2022631	0.83	0.83	0.00	0.00	0.00	0.83	0.83	17	0.00	0	0.83	20	17
Property 200	2022632	0.83	0.83	0.00	0.00	0.00	0.83	0.83	17	0.00	0	0.83	20	17
Property 201	2010409	0.81	0.81	0.00	0.00	0.00	0.81	0.81	16	0.00	0	0.81	20	16
Property 202	2022614	0.94	0.94	0.00	0.00	0.00	0.94	0.94	19	0.00	0	0.94	20	19
Property 203	2010407	3.60	3.35	0.00	0.00	0.00	3.35	3.35	67	0.00	0	3.35	20	67
Property 204	2013003	1.24	1.24	0.00	0.00	0.00	1.24	1.24	25	0.00	0	1.24	20	25
Property 205	2047864	0.27	0.27	0.00	0.00	0.00	0.27	0.27	5	0.00	0	0.27	20	5
Property 206	2045820	0.83	0.83	0.00	0.00	0.00	0.83	0.83	17	0.00	0	0.83	20	17
Property 207	2045819	1.00	0.93	0.00	0.00	0.34	0.59	0.59	12	0.00	0	0.59	20	12
Property 208 & 209	2012306	43.92	34.80	0.00	0.00	0.00	34.80	34.31	550	0.49	12	34.80	16	562
Property 210	2036739	0.40	0.40	0.00	0.00	0.10	0.30	0.30	5	0.00	0	0.30	17	5
Property 211	2036738	21.77	18.31	0.00	0.00	0.00	18.31	18.31	265	0.00	0	18.31	14	265
Property 212 & 213	2036752	65.40	51.23	0.00	0.00	0.00	51.23	51.23	608	0.00	0	51.23	12	608
Property 214	2001989	32.03	30.29	3.12	0.00	3.54	23.63	23.63	345	0.00	0	23.63	15	345



Property Number		Total Area (Hectares)	Total net Developable Area (Hectares)	OTHER LAND USES			Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (15 Dwellings/NRHa)		MEDIUM DENSITY (25 Dwellings/NRHa)		TOTAL COMBINED		
				Activity Centre (Retail / Office / Mixed Use)	Bulky Goods	Industrial / Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings / NRHa	Indicative Dwellings
<b>Properties 215 to 216</b>		<b>33.23</b>	<b>28.75</b>	3.99	0.00	0.00	<b>24.76</b>	23.63	356	1.13	47	24.76	16	403
Property 217	2001991	0.09	0.09	0.00	0.00	0.00	0.09	0.09	1	0.00	0	0.09	16	1
Property 218	2001992	16.39	13.37	0.00	0.00	0.30	13.07	11.82	180	1.25	31	13.07	16	211
Property 219	2001993	15.83	15.83	0.00	0.00	0.00	15.83	15.83	229	0.00	0	15.83	14	229
Property 220	2001994	32.73	26.44	0.00	0.00	0.00	26.44	26.44	350	0.00	0	26.44	13	350
Property 221	2036749	4.05	3.74	0.00	0.00	0.00	3.74	3.74	65	0.00	0	3.74	17	65
Property 222	2036748	2.14	1.83	0.00	0.00	0.58	1.25	1.25	18	0.00	0	1.25	14	18
Property 223	2042384	1.89	1.89	0.00	0.00	0.34	1.55	1.55	31	0.00	0	1.55	20	31
Property 224	2036747	3.42	3.42	0.00	0.00	0.00	3.42	3.42	69	0.00	0	3.42	20	69
Property 225	2036746	4.34	4.34	0.00	0.00	0.00	4.34	4.34	85	0.00	0	4.34	20	85
Property 226 & 227	2036744	8.30	8.30	0.00	0.00	0.00	8.30	8.30	117	0.00	0	8.30	14	117
Property 228 & 229	2036750	20.28	19.16	0.00	0.00	0.00	19.16	19.16	277	0.00	0	19.16	14	277
Property 230	2036751	19.74	12.79	0.00	0.00	0.00	12.79	12.79	194	0.00	0	12.79	15	194
<b>Sub-Total</b>		<b>1223.01</b>	<b>970.60</b>	<b>26.80</b>	<b>4.86</b>	<b>9.12</b>	<b>929.82</b>	<b>911.27</b>	<b>14853</b>	<b>18.55</b>	<b>634</b>	<b>929.82</b>	<b>17</b>	<b>15486</b>
Existing Road Reserves		63.76	1.44	0.00	0.00	0.00	1.44	0.86	17	0.58	15	1.44	22	32
<b>Total</b>		<b>1286.77</b>	<b>972.04</b>	<b>26.80</b>	<b>4.86</b>	<b>9.12</b>	<b>931.26</b>	<b>912.13</b>	<b>14870</b>	<b>19.13</b>	<b>648</b>	<b>931.26</b>	<b>16.66</b>	<b>15518</b>



### Attachment 3: Small Lot Housing Code

#### Small Lot Housing Code

Standards that establishes a building envelope for a single Class 1a building and associated Class 10 buildings on an allotment.

#### Part 1 – Single Class 1a Building and Associated Class 10a Buildings

##### 1. Maximum street setback

1. The front wall of a new Class 1a building must not be set back from the front street alignment more than the street setback specified in Table 2 plus 1.5m.

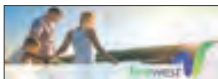
##### 2. Minimum street setbacks

1. The front and side walls of a building must be set back from front and side streets not less than the distance specified in Table 2;

**Table 2: Street Setbacks**

Designation of the allotment in the subdivision permit	Minimum setback from front street	Minimum setback from a side street
Type A	4m for a building facing a declared road and no less than 25% of the area of the front façade of a building must be setback a minimum additional 300mm  1.5m for a building facing a street that is adjoined by a recreation reserve and no less than 25% of the area of the front façade of a building must be setback a minimum additional 300mm  3m in any other case and no less than 25% of the area of the front façade of a building must be setback a minimum additional 300mm	1.5m and if a wall is more than 10m in length, for each 10m length of wall no less than 10% of the area of the wall must be set back a minimum additional 300mm
Type B	4m for a building for a declared road and no less than 25% of the area of the front façade of a building must be setback a minimum additional 300mm  1.5m and no less than 25% of the area of the front façade of a building must be setback a minimum additional 300mm	1m and if the wall is more than 10m in length, for each 10m length of wall no less than 10% of the area of the wall must be set back a minimum additional 300mm

2. The front wall of a garage that is accessed from the front street must be setback from the front street alignment no less than 5.0m;
3. The following may encroach into the setback distance required by standard 2(1) by no more than 1.5m:
  - a) eaves, fascia and gutters;
  - b) decks, steps or landings less than 800mm in height.





4. The following must encroach into the front setback required by standard 2(1):
  - a) a porch, verandah or pergola that is open on at least 2 sides; and
    - (i) has a maximum height of less than 3.6m above natural ground level; and
    - (ii) has a width of no more than 80% of the frontage of the allotment or 4m whichever is the greater; and
    - (iii) must project at least 800mm and no more than 1.5m into the front setback;
  - or*
  - b) a balcony at the second storey or above that has a width of less than 80% of the width of the frontage of the allotment or 4m whichever is the greater; and
    - (i) must project at least 300mm no more than 1.0m into the front setback if the balcony is roofed; or
    - (ii) must project at least 800mm and no more than 1.5m into the front setback if the balcony is not roofed;
  - or*
  - c) fin or fins, sunhood or sunhoods, screen or screens that have a minimum aggregate dimension of 3.1m; *or*
  - d) a combination of encroachments under standard 4(a) or 4(b) or 4(c).
5. In this standard, street does not include lane, footway, alley or right of way.
6. In this standard the area of the façade of the building is measured from a two dimensional elevation and excludes any roof area and any area of garage door(s) and opening(s).

**3. Building height**

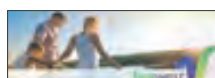
1. The height of a building must not exceed:
  - a) 11m if the slope of natural ground level at any cross section of the site of the building that is wider than 4m and is 2.5° or more; and
  - b) 10m in any other case.

**4. Site coverage**

1. Buildings must not occupy more of the allotment than the site coverage specified in Table 4.

**Table 4: Site Coverage**

Designation of the allotment in the subdivision permit	Site coverage
Type A	90% - The percentage may be calculated as the average of allotments that have simultaneously constructed attached dwellings.
Type B	No maximum site coverage specified



**5. Permeability**

1. The area of the allotment that can be covered by impermeable surfaces must not exceed the area specified in Table 5.

**Table 5: Permeability**

Designation of the allotment in the subdivision permit	Impermeable surfaces
Type A	90% - The percentage may be calculated as the average of allotments that have simultaneously constructed attached dwellings.
Type B	No maximum area of impermeable surfaces specified

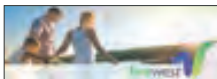
**6. Car parking**

1. Provision must be made for the number of car parking spaces specified in Table 6.

**Table 6: Car parking**

Designation of the allotment in the subdivision permit	Car parking spaces
Type A	1 car space if the building has two or less bedrooms 2 car spaces of which 1 must be covered if the building has 3 bedrooms or more
Type B	1 car space

2. The car space(s) required under standard 6(1) must be accessible from a public street or lane or right of way, however, if the allotment has a frontage width of less than 6.0m, access to the car space(s) must only be from the rear of the allotment.
3. If 1 car space is required under standard 6(1) it must be at least 6.0m long and 3.5m wide.
4. If 2 car parking spaces are required under standard 6(1) —
  - a) one space must be at least 6m long and 3.5m wide; and
  - b) the second space must be at least 4.9m long and 2.6m wide.
5. Part of a building may project into a car parking space if it is at least 2.1m above that space.
6. Despite standard 6(4), if the 2 required car parking spaces adjoin each other in a garage or carport or in a space constrained by walls, the double space must be at least 5.5m in width.
7. If the car space(s) required under standard 6(1) are in a garage or carport and the door(s) or opening(s) to the garage or carport faces the front street, the width of the door(s) or opening(s) must not exceed
  - a) 50% of the width of the frontage of the allotment; or
  - b) 30% of the area of the front façade of the building; whichever is the greater.
8. For the purpose of determining the width of the frontage of the allotment under standard 6(7)(a) if the allotment is irregular in shape, the frontage is to be taken as the average width of the front and rear boundaries of the allotment.
9. The area of the façade of the building under standard 6(8)(b) is measured from a two dimensional elevation and excludes any roof area.



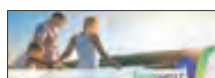
### 7. Side and rear setbacks

1. A building must be set back from a side or rear boundary not less than the distance specified in respect of that boundary in Table 7.

**Table 7 - Side and rear setbacks**

Building height at any point	Minimum setback from side or rear boundary at that point
3.6m or less	1m
More than 3.6m but not more than 6.9m	1m plus an additional distance calculated at the rate of 300mm for every metre of height over 3.6m
More than 6.9m	2m plus an additional distance calculated at the rate of 1m for every metre of height over 6.9m

2. The following may encroach into the setback distance required by Table 7 by not more than 500mm:
  - a) porches and verandahs;
  - b) masonry chimneys;
  - c) sunblinds;
  - d) flues and pipes;
  - e) domestic fuel tanks and water tanks;
  - f) heating and cooling equipment and other services;
  - g) screens.
3. The following may encroach into the setback distance required by Table 7 by not more than 600mm:
  - a) eaves, eaves fascias and gutters.
4. The following may encroach into the setback distance required by Table 7:
  - a) landings with an area of not more than 2m<sup>2</sup> and less than 1m high;
  - b) unroofed stairways and ramps;
  - c) pergolas;
  - d) shade sails.
5. This standard does not apply to a wall that complies with Standard 8.



**8. Walls on boundaries**

1. This standard applies to the construction of:
  - a) a wall of a building on a side or rear boundary of an allotment; or
  - b) a carport constructed on or within 1m of a side or rear boundary of an allotment and which is open on the side facing the boundary or boundaries.
2. The maximum height of the wall of a building or the carport must not exceed 3.6m.
3. Notwithstanding standard 8(2) the height of the wall may exceed 3.6m where:
  - a) an adjoining wall is simultaneously constructed on an adjoining allotment or a wall exists on the boundary; and
  - b) the height difference between the existing and new wall or simultaneously constructed walls does not exceed 3.6m; and
  - c) the length of a wall does not exceed the length of a simultaneously constructed wall by more than 2m.

**9. Daylight to existing habitable room windows**

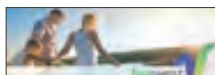
1. No standards specified.

**10. Solar access to existing north-facing windows**

1. No standards specified.

**11. Overshadowing of recreational private open space**

1. A building must not reduce the sunlight to the recreational private open space of an existing building on an adjoining allotment to less than the required minimum under standard 13(3).
2. In this standard recreational private open space means any part of private open space on an allotment:
  - a) which is:
    - (i) at the side or rear of an existing dwelling on the allotment; or
    - (ii) is a rooftop area; and
  - b) which is primarily intended for outdoor activities.

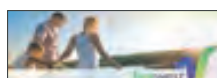


**12. Overlooking**

1. A habitable room window in the second storey or above, that faces a side or rear boundary must:
  - a) be set back from side and rear boundaries by at least 4.5m; or
  - b) have a sill height at least 1.7m above floor level; or
  - c) have obscure glazing in any part of the window below 1.7m above floor level.
2. If a habitable room window faces a lane, footway, alley or right of way the setback required in standard 12(1)(a) may be reduced to half of the width of the lane, footway, alley or right of way.
3. A raised open space must be:
  - a) set back 4.5m from a side or rear boundary; or
  - b) obscured to a height of at least 1.7m above floor level at any part of the perimeter of the raised open space that is within 4.5 metres of a side or rear boundary.
4. If a raised open space faces a lane, footway, alley or right of way the setback required in standard 12(3)(a) may be reduced to half of the width of the lane, footway, alley or right of way.
5. In this standard raised open space means a landing with an area of more than 2m<sup>2</sup>, a balcony, a terrace, a deck or a patio.

**13. Daylight to habitable room windows**

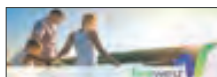
1. A habitable room window of a building on an allotment must face:
  - a) an outdoor space or light court with a minimum area of 3m<sup>2</sup> and a minimum dimension of 1m clear to the sky, not including land on an adjoining allotment; or
  - b) a verandah on the allotment if it is open for at least one third of its perimeter; or
  - c) a carport on the allotment if:
    - (i) it has 2 or more sides open; and
    - (ii) it is open for at least one third of its perimeter.
2. For the purposes of standard 13(1), a side of a carport or verandah may be taken to be open if the roof covering of the carport or verandah adjacent to that side is not less than 500mm from another building on the allotment or the adjoining allotment boundary.





**14. Private open space**

1. If a dwelling on an allotment has three or more bedrooms it must have
  - a) at least 24m<sup>2</sup> of private open space at the side or rear of the building with a minimum dimension of 3m; or
  - b) a balcony or roof-top area of least 12m<sup>2</sup> of private open space with a minimum dimension of 3m.
2. Private open space under standard 1(a) may be provided in more than 1 parcel provided that all parcels are at least 12m<sup>2</sup> and at least 1 parcel complies with standard 13(3)
3. If a building on an allotment has two or less bedrooms it must:
  - a) have at least 12m<sup>2</sup> of private open space at the side or rear of the building with a minimum dimension of 3m; or
  - b) a balcony or rooftop area that is at least;
    - (i) 10% of the total floor area of the building excluding garages and carports; or
    - (ii) 6m<sup>2</sup> with a minimum dimension of 2m; whichever is the greater.
4. If the private open space is provided at the side or rear of the dwelling or as a roof top area it must have a minimum of area of 6m<sup>2</sup>, with a minimum dimension of 2m, that has direct sunlight.
5. For the purposes of calculating the area of direct sunlight under standard 13(3), the length of the shadow cast by walls and fences shall be:
  - a) 0.9h when measured perpendicular to the fence or wall, where h is the height of the wall;  
and
  - b) the sun is true north.



## Part 2 – Class 10b Buildings

### 15. Front fence height

1. The height of a fence, or part of a fence, that is within 3m of the street alignment at the front of that allotment must not exceed the relevant maximum height specified in Table 15.

**Table 15 - Front fence height**

Street type	Maximum fence height
A declared road	2m
Any other street	1.2m.

2. A front fence other than a front fence to a declared road must be no more than 85% solid above 0.7m height.

### 16. Fence setbacks from side and rear boundaries

1. A fence that is setback from a side and rear boundaries must not exceed 2m in height.

### 17. Fences on or within 150mm of side or rear boundaries

1. A fence must not exceed 2m in height.
2. Any part of a fence that is constructed forward of the front wall of a dwelling must comply with standard 15(1) and 15(2).

### 18. Fences on street alignments

1. A fence within 3m of a point of intersection of street alignments must not exceed a height of 1m above the footpath.
2. A fence facing a side street alignment must not:
  - a) exceed 2m in height; and
  - b) be constructed with solid materials for more than 65% of the length of the side boundary and the remaining 35% of the length of the side boundary must not be constructed with materials that are more than 85% solid.
3. A fence adjacent to a street alignment or public open space must not contain barbed wire or other sharp protrusions.

### 19. Fences and daylight to windows in existing building

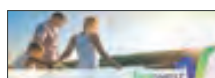
1. No standards specified.

### 20. Fences and solar access to existing north-facing habitable room windows

1. No standards specified.

### 21. Fences and overshadowing of recreational private open space

1. No standards specified.





# BALLARAT WEST

## DEVELOPMENT CONTRIBUTIONS PLAN

CITY OF BALLARAT | JULY 2024



[www.urbanenterprise.com.au](http://www.urbanenterprise.com.au)

## AUTHORS

Paul Shipp

Brett Hannah

## FILE

Ballarat West DCP.docx

## VERSION

1.2

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L1 302-304 Barkly St, Brunswick VIC 3056  
+61 3 9482 3888 [urbanenterprise.com.au](http://urbanenterprise.com.au)

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**ACRONYMS**

<b>DCP</b>	Development Contributions Plan
<b>PSP</b>	Precinct Structure Plan or Ballarat West Precinct Structure Plan
<b>DIL</b>	Development Infrastructure Levy
<b>CIL</b>	Community Infrastructure Levy
<b>NDA</b>	Net Developable Area
<b>MCA</b>	Main Catchment Area
<b>MAC</b>	Major Activity Centre
<b>NAC</b>	Neighbourhood Activity Centre
<b>LAC</b>	Local Activity Centre
<b>AOS</b>	Active Open Space
<b>POS</b>	Passive Open Space

## 1. INTRODUCTION

The original Ballarat West Development Contributions Plan (DCP) was approved by the Minister for Planning under Amendment C167 Development Contributions Plan on 30 October 2014.

The DCP was then revised in March 2017 in response to a change to the Community Infrastructure Levy cap introduced by a Governor in Council Order on 11 October 2016.

This document is an updated DCP prepared in 2024 in order to implement changes arising from the findings of a full DCP review undertaken by Council, which sought to revise the infrastructure needs, standards and costs to reflect the latest available information. This review included:

- Revised technical reports to review the need and scope of transport, drainage and community infrastructure;
- Consultation with the stakeholders involved with the delivery of the DCP; and
- Review and update the full infrastructure list, including scope and cost of items.

### 1.1. BALLARAT WEST DEVELOPMENT CONTRIBUTIONS PLAN

This Ballarat West Development Contributions Plan (DCP) has been developed to support the funding of infrastructure in the Ballarat West Precinct Structure Plan (PSP) area. This area is made up of three sub-precincts, Bonshaw Creek (sub-precinct 1), Greenhalghs Road (sub-precinct 2) and Carngnam Road (sub-precinct 4). A combined Precinct Structure Plan has been prepared for each of these sub-precincts. The Precinct Structure Plan has been prepared by SMEC Urban in conjunction with the City of Ballarat.

The Precinct Structure Plan guides future development and sets the long-term strategic framework for the development in relation to:

- Land use (such as residential development of varying densities, retail, commercial uses, open space, education facilities and community facilities);
- Transport (such as the arterial and link road network, collector roads & proposed public transport);
- Activity centres (Major Activity Centre, Neighbourhood Activity Centre and Local Activity Centres); and
- Open space (passive & active), waterways and environmentally sensitive areas.

This DCP applies to the 3 sub-precincts as a single area and requires contributions from all landowners/developers in the area, with the exception of Crown land in sub-precinct 1.. Public land is excluded from the Net Developable Area and therefore development contributions.

Improved social, economic, environmental and urban design outcomes are achieved through the provision of infrastructure early in the development of a new community. The delivery of key infrastructure in a timely and efficient manner is fundamental to sustainable outcomes in urban growth areas such as Ballarat West.

The Precinct Structure Plan requires a range of physical and social infrastructure as part of the development of the Ballarat West Growth Area. Not all of this infrastructure will be funded through this DCP.

This infrastructure is provided through a number of mechanisms including:

- Subdivision construction works by developers;
- Development contributions (community infrastructure levy and development infrastructure levy);
- Utility service provider; and
- Capital works projects by City of Ballarat, state government agencies and community groups.

Decisions have been made about the type of infrastructure most of which will be funded by this DCP, and these decisions are in line with the Ministerial Directions for Development Contributions.

This DCP has been developed in accordance with the provisions of Part 3B of the Planning and Environment Act and the Victorian State Government Development Contributions Guidelines (2003, updated 2007).

This DCP will require the payment of levies to ensure that the infrastructure specified in this plan is funded to enable City of Ballarat to provide the infrastructure.

It should be noted that the Development Infrastructure Levy in this DCP includes contributions towards drainage items as the City of Ballarat is the drainage authority. This should be taken into account when comparing levies with metropolitan Melbourne development infrastructure levies, which do not include a contribution towards drainage authority infrastructure.

## 2. STRATEGIC BASIS

### 2.1. LOCAL PLANNING POLICY CONTEXT

This DCP has been prepared to support the provision of infrastructure identified by the Ballarat West Precinct Structure Plan. Additionally, a number of strategic planning documents have been prepared by, or on behalf of City of Ballarat that identify the need, standard and costs for the infrastructure items that are included in this DCP.

This DCP has been prepared in close consultation with City of Ballarat officers. City of Ballarat officers have also provided strategic planning information and advice regarding costs for this DCP where appropriate.

Relevant supporting documents for the original DCP included:

- Precinct Structure Plan (SMEC Urban, 2012);
- Drainage Scheme (Engeny & SMEC, 2012);
- Traffic network and costings (SMEC, 2012);
- Community Infrastructure Assessment (CPG, 2010).
- Active Open Space and Community Facilities Infrastructure (COB, 2012); and
- Cost estimates provided by Prowse Quantity Surveyors (2012).

Additional supporting documents used to prepare this revised DCP include:

- Community and Recreation Infrastructure (ASR Research, 2024);
- Transport Projects Review (Milward, 2024);
- Drainage Strategy Update (Engeny, 2024); and
- Land Valuations for the Ballarat West Development Contributions Plan Review (Opteon 2024).

### 2.2. STATE PLANNING POLICY CONTEXT

The Ministerial Direction on the Preparation and Content of Development Contributions Plans (11 October 2016, amended 15 January 2024) outlines what may be funded with a development contributions levy, namely:

- Acquisition of land for roads, public transport corridors, drainage, public open space, community facilities;
- Construction of roads, including bicycle and foot paths, and traffic management and control devices;
- Construction of public transport infrastructure, including fixed rail infrastructure, railway stations, bus stops and tram stops;
- Basic improvements to public open space, including earthworks, landscaping, fencing, seating and playground equipment;
- Drainage works;
- Buildings and works for or associated with the construction of a maternal and child health centre, a child care centre, a kindergarten, or any centre which provides these facilities in combination.

The Direction also stipulates that a development contributions plan must not impose a development infrastructure levy or a community infrastructure levy in respect of the development of land for a non-government school or housing provided by or on behalf of the Department of Health and Human Services. Government schools are not subject to payment of development contributions.

The Victorian State Government published a set of documents which make up the Development Contributions Guidelines (2003, updated 2007). The Development Contributions Guidelines are available through the Department of Transport and Planning (DTP) website. These documents provide guidance as to how DCPs are to be prepared and administered including the matters that DCPs are to consider.



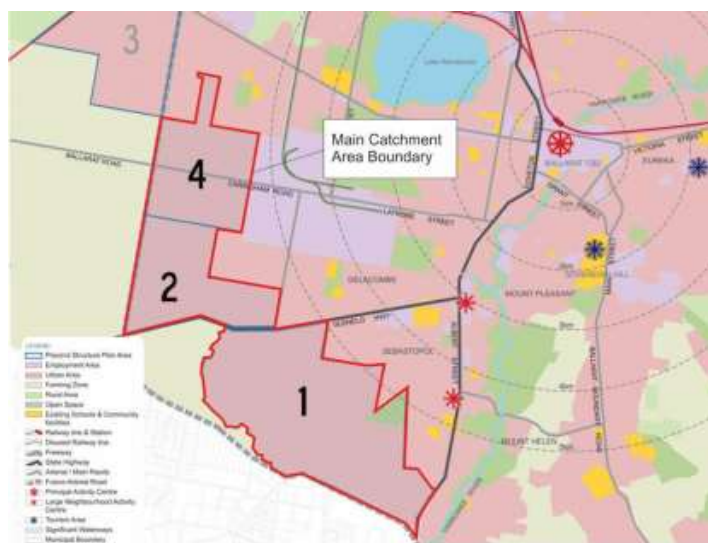
**2.2.1. PLANNING AND ENVIRONMENT ACT 1987**

Part 3B of the Planning and Environment Act 1987 outlines the statutory provisions relating to development contributions. In summary, Part 3B provides for, amongst other things:

- The inclusion of a DCP in the planning scheme, for the purpose of levying contributions for the provision of works, services and facilities (section 46I);
- The provision to impose a development infrastructure levy and/or a community infrastructure levy (section 46J);
- The contents required of a DCP (Section 46K);
- The setting of limits in respect of a community infrastructure levy (section 46L);
- The provision for the Minister to issue written directions relating to the preparation and content of a DCP (section 46M);
- The collection of a development infrastructure levy, by way of a condition on a planning permit either requiring the payment of a levy within a specified time, or entering into an agreement to pay the levy within a specified time (section 46N);
- The collecting agency may accept the provision of land, works, services or facilities by the applicant in part or full satisfaction of the amount of levy payable (Section 46P (2)).

**2.3. AREA TO WHICH THE DCP APPLIES**

F1. DCP AREA MAP



Source: City of Ballarat

The Ballarat West DCP applies to the Ballarat West Precinct Structure Plan area (sub-precincts 1, 2 and 4) as shown in Figure 1.

The Precinct Structure Plan originally applied to approximately 1,290 hectares of land including:

- 707 hectares in sub-precinct 1;
- 296 hectares in sub-precinct 2; and
- 287 hectares in sub-precinct 4.

An audit of the development and the land budget showed the area to now be 1287 hectares.

The DCP adopts the Ballarat West Precinct Structure Plan area as the Main Catchment Area (MCA). The MCA is the geographic area from which a given item of infrastructure will draw most of its use. The MCA forms the entire charge area for collection of DCP levy amounts.

The MCA is treated as a single cell or catchment for the purposes of calculating levies. This is due to the consistent levels of infrastructure requirements and costs across the MCA and the operation of the MCA as a single catchment for broader infrastructure such as drainage.

#### **2.4. TIMEFRAME TO WHICH THE DCP APPLIES**

The DCP has a life of 30 years from the date that the DCP is incorporated into the Ballarat Planning Scheme (Amendment C167, gazetted 30 October 2014).

The risks associated with a longer life DCP will be mitigated through the provision for regular review of the DCP. Review provisions are included in Section 5.

### 3. INFRASTRUCTURE PROJECT JUSTIFICATION

Planning and technical reports have identified a need for each of the community and development infrastructure projects that have been included in this DCP. City of Ballarat has identified that each item is needed in order to provide for the wellbeing, health and safety of the future community.

The cost apportionment methodology adopted in this DCP relies on the nexus principle. The Main Catchment Area (MCA) for this DCP is deemed to have a nexus with an infrastructure item if the occupants of the MCA are likely to make use of the infrastructure item.

Developers have the option to develop at various dwelling densities within the range specified in the Ballarat West Precinct Structure Plan. Therefore, in order to fairly levy developers achieving varying densities while maintaining financial certainty for City of Ballarat, a 'per hectare of net developable land' demand unit is used for the collection of the Development Infrastructure Levy.

A 'per dwelling' demand unit is used for the collection of the Community Infrastructure Levy.

#### 3.1. DISTINCTION BETWEEN COMMUNITY AND DEVELOPMENT INFRASTRUCTURE

This DCP makes a distinction between 'community' and 'development' infrastructure. As these terms are not clearly defined in the legislation, the Ministerial Direction and guidelines outline certain infrastructure which can be included as Development Infrastructure for the purposes of preparing a Development Contributions Plan.

The Community Infrastructure Levy is to be paid by the land owner at the time of building approval at a 'per-dwelling' rate. The Planning and Environment Act 1987 stipulates that the amount that may be contributed under a Community Infrastructure Levy is no more than \$1,150 for each dwelling for the 2018/19 financial year. This cap is \$1,450 per dwelling for the 2024-25 financial year.

The Development Infrastructure Levy is to be paid by developers at the time of development. Contributions relating to development infrastructure will be paid at a 'per- hectare of Net Developable Area' rate in respect of the development of land as specified in Table 14 of this document.

#### 3.2. ITEMS NOT INCLUDED IN THE DEVELOPMENT CONTRIBUTIONS PLAN

The following infrastructure items are not included in the DCP, as they are not considered to be higher order items. They are assumed to be provided by developers as a matter of course:

- Local streets and collector streets (see the City of Ballarat road hierarchy for definitions), and associated traffic management measures,
- Local drainage works and any other drainage works not specifically included in this DCP;
- Intersections (and associated land required) connecting the development to the existing road network, except where specified as DCP projects;
- Water, sewerage, underground power, gas and telecommunications services;
- Local pathways and connections to the regional and/or district pathway network;
- Linear trails, for example along creeks;
- Basic levelling, water tapping and landscaping of passive open space;
- Passive public open space reserve master plans and agreed associated works required by the Precinct Structure Plan;
- City of Ballarat's plan checking and supervision costs; and
- Bus stops, as a requirement of planning permits.

### 3.3. FUTURE WESTERN LINK ROAD

The DCP includes a contribution towards the future Western Link Road by way of land acquisition. The DCP includes acquisition for the future Western Link Road reservation but does not include land required for eventual duplication. The DCP does not include Western Link Road construction which is to be funded through external sources. The level of contributions required towards the Western Link Road are shown in Table 12 and Appendix B.

### 3.4. COMMUNITY INFRASTRUCTURE ITEMS

City of Ballarat has identified a requirement for 11 Community Infrastructure items. Community Infrastructure items are identified in Table 1.

#### T1. COMMUNITY INFRASTRUCTURE ITEMS

Project Number	Project Name
CLCF_1	<b>MAC Library (sub-precinct 1) co-located with Community Centre in MAC</b> Construction of one branch library of 1,800 sqm (excluding canopies, verandas, etc) to be co-located with the community centre in MAC.
CLCF_2	<b>Level 3 MAC Multi-Purpose Community Centre (sub-precinct 1)</b> Construction of a level 3 multi-purpose community centre, which includes community rooms and meeting space, administrative spaces for staff and community groups and carparking within a building area of approx. 4,400 sqm.
CLCF_3	<b>Level 1 MAC Early Years Hub (sub-precinct 1) (CI component)</b> Construction of community infrastructure component of early years hub, including community meeting rooms and associated facilities, outdoor areas and parking.
CLCF_4	<b>Level 1 Tait Street Early Years Hub (sub-precinct 1) (CI component)</b> Construction of community infrastructure component of early years hub, including community meeting rooms and associated facilities, outdoor areas and parking.
CLCF_5	<b>Level 1 LAC Multi-purpose Community Centre and Early Years Hub (sub-precinct 2) (CI component)</b> Construction of community infrastructure component of LAC multi-use centre and early years hub, including community meeting rooms and associated facilities, outdoor areas and parking.
CLCF_6	<b>Level 1 NAC Multi-purpose Community Centre (sub-precinct 2) (CI component)</b> Construction of community infrastructure component of NAC early years hub, including community meeting rooms and associated facilities, outdoor areas and parking.
CLOS_1	<b>MR Power Park - Pavilion</b> Construction of a medium community pavilion to serve regional AOS Reserve.
CLOS_2	<b>Mining Park - Pavilion</b> Construction of small pavilion to serve the AOS Reserve - Gold Mining Area.
CLOS_3	<b>Glenelg Highway reserve (MAC) - Pavilion</b> Construction of medium pavilion to serve the AOS Reserve – MAC.
CLOS_4	<b>Greenhalghs reserve (LAC) - Pavilion</b> Construction of medium pavilion to serve AOS Reserve – LAC.
CLOS_5	<b>Carngham reserve (NAC) - Pavilion</b> Construction of a medium pavilion to serve AOS Reserve – NAC.

Source: City of Ballarat based on ASR, 2024

### 3.5. DEVELOPMENT INFRASTRUCTURE ITEMS

City of Ballarat has identified a requirement for a range of Development Infrastructure items. These Development Infrastructure items can be divided into 6 infrastructure categories being:

- Community Facilities;
- Drainage;
- Active Open Space;
- Roads;
- Traffic management; and
- Other (including DCP preparation).

Appendix A includes a set of infrastructure maps showing the location of these Development Infrastructure Items.

#### 3.5.1. COMMUNITY FACILITIES

City of Ballarat has identified a requirement for 10 Community Facilities items.

Community Facilities items are identified in Table 2. This section includes land for community infrastructure items and community facilities.

#### T2. COMMUNITY FACILITY ITEMS

Project Number	Project Name
DL_C_F_1	<b>Level 1 MAC Early Years Hub (sub-precinct 1) (DI component)</b> Construction of development component of early years hub, including kindergarten, maternal and child health centre and associated facilities, outdoor areas and parking.
DL_C_F_2	<b>Level 1 Tait Street Early Years Hub (sub-precinct 1) (DI component)</b> Construction of development component of Early Years Hub, including kindergarten, associated facilities, outdoor areas and parking.
DL_C_F_3	<b>Level 1 LAC Multi-purpose Community Centre and Early Years Hub (sub-precinct 2) (DI component)</b> Construction of development component of LAC Multi-purpose Community Centre and Early Years Hub, including kindergarten and associated facilities, outdoor areas and parking.
DL_C_F_4	<b>NAC Early Years Hub (sub-precinct 4)</b> Construction of development component of NAC Early Years Hub, including kindergarten and associated facilities, outdoor areas and parking.
D_L_L_A_1	<b>MAC Library (sub-precinct 1) - Land</b> Land acquisition of 0.9 ha for the branch library.
D_L_L_A_3	<b>Level 3 MAC Multi-Purpose Community Centre (sub-precinct 1) - Land</b> Land acquisition of 1ha for integrated community facilities comprising multi-purpose community centre, with Early Years Hub comprising Kindergarten, Maternal and Child Health and flexible community space.
D_L_L_A_4	<b>Level 1 Tait Street Early Years Hub (sub-precinct 1) - Land</b> Land acquisition of 0.5 ha for Early Years Hub comprising kindergarten and flexible community space.
D_L_L_A_5	<b>LAC Early Years Hub - LAC (sub-precinct 2) - Land</b> Land acquisition of 1 ha of LAC Early Years Hub site co-located with Level 1 Multi-purpose Community Centre.
D_L_L_A_7	<b>NAC Early Years Hub (sub-precinct 4) - Land</b> Land acquisition of 0.5 ha for Early Years Hub collocated with the Primary School and NAC in sub-precinct 4.
D_L_L_A_8	<b>Level 1 MAC Multi-purpose Community Centre (sub-precinct 4) - Land</b> Land acquisition of 0.8ha for level 1 Multi-purpose Community Centre collocated with the NAC in sub-precinct 4. Collocated with Primary School and Early Years Hub.

Source: City of Ballarat based on ASR, 2024



### 3.5.2. DRAINAGE

A drainage scheme has been developed for the entire Ballarat West Precinct Structure Plan area including drainage pipes, wetland/retarding basins and biofilters.

Drainage items are identified in Table 3. This section includes both encumbered and developable land for retarding basins.

#### T3. DRAINAGE ITEMS

Project Number	Project Name
DLDR_A	<b>Drainage Scheme in sub-catchment A (sub-precinct 4)</b> Construction of a drainage scheme for sub-catchment A, including drainage pipes, retarding basins and bioretention areas.
DLDR_AA/AB	<b>Drainage Scheme in sub-catchment AA/AB (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment AA/AB, including drainage pipes, retarding basins and bioretention areas.
DLDR_AC/AT	<b>Drainage Scheme in sub-catchment AC/AT (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment AC/AT, including drainage pipes, retarding basins and bioretention areas.
DLDR_AK/AM	<b>Drainage Scheme in sub-catchment AK/AM (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment AK/AM, including drainage pipes, retarding basins and bioretention areas.
DLDR_AU/AY	<b>Drainage Scheme in sub-catchment AU/AY (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment AU/AY, including drainage pipes, retarding basins and bioretention areas.
DLDR_AZ/CA	<b>Drainage Scheme in sub-catchment AZ/CA (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment AZ/CA, including drainage pipes, retarding basins and bioretention areas.
DLDR_BA/BQ	<b>Drainage Scheme in sub-catchment BA/BQ (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment BA/BQ, including drainage pipes, retarding basins and bioretention areas.
DLDR_BK/BL	<b>Drainage Scheme in sub-catchment BK/BL (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment BK/BL, including drainage pipes, retarding basins and bioretention areas.
DLDR_BU/CP	<b>Drainage Scheme in sub-catchment BU/CP (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment BU/CP, including drainage pipes, retarding basins and bioretention areas.
DLDR_BY/BZ	<b>Drainage Scheme in sub-catchment BY/BZ (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment BY/BZ, including drainage pipes, retarding basins and bioretention areas.
DLDR_C/O	<b>Drainage Scheme in sub-catchment C/O (sub-precinct 4)</b> Construction of a drainage scheme for sub-catchment C/O, including drainage pipes, retarding basins and bioretention areas.
DLDR_CB/CF	<b>Drainage Scheme in sub-catchment CB/CF (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment CB/CF, including drainage pipes, retarding basins and bioretention areas.
DLDR_CD/CR	<b>Drainage Scheme in sub-catchment CD/CR (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment CD/CR, including drainage pipes, retarding basins and bioretention areas.
DLDR_CQ/CW	<b>Drainage Scheme in sub-catchment CQ/CW (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment CQ/CW, including drainage pipes, retarding basins and bioretention areas.
DLDR_CX/DC	<b>Drainage Scheme in sub-catchment CX/DC (sub-precinct 1)</b> Construction of a drainage scheme for sub-catchment CX/DC, including drainage pipes, retarding basins and bioretention areas.
DLDR_D/J	<b>Drainage Scheme in sub-catchment D/J (sub-precinct 4)</b> Construction of a drainage scheme for sub-catchment D/J, including drainage pipes, retarding basins and bioretention areas.
DLDR_KL	<b>Drainage Scheme in sub-catchment KL (sub-precinct 4)</b> Construction of a drainage scheme for sub-catchment KL, including drainage pipes, retarding basins and bioretention areas.

Project Number	Project Name
DLDR_M/Q	<b>Drainage Scheme in sub-catchment M/Q (sub-precinct 2)</b> Construction of a drainage scheme for sub-catchment M/Q, including drainage pipes, retarding basins and bioretention areas.
DLDR_P/T	<b>Drainage Scheme in sub-catchment P/T (sub-precinct 2)</b> Construction of a drainage scheme for sub-catchment P/T, including drainage pipes, retarding basins and bioretention areas.
DLDR_U/Z	<b>Drainage Scheme in sub-catchment U/Z (sub-precinct 2)</b> Construction of a drainage scheme for sub-catchment U/Z, including drainage pipes, retarding basins and bioretention areas.
DLLA_RB1	<b>Retarding Basin 1 – Land</b> Acquisition of land for Retarding Basin 1, total area: 0.9ha (developable).
DLLA_RB2	<b>Retarding Basin 2 – Land</b> Acquisition of land for Retarding Basin 2, total area: 3.86ha (developable - non-residential).
DLLA_RB3	<b>Retarding Basin 3 – Land</b> Acquisition of land for Retarding Basin 3, total area: 1.5ha (developable).
DLLA_RB4	<b>Retarding Basin 4 – Land</b> Acquisition of land for Retarding Basin 4, total area: 1.15ha (developable).
DLLA_RB5	<b>Retarding Basin 5 – Land</b> Acquisition of land for Retarding Basin 5, total area: 1.09ha (developable - non-residential).
DLLA_RB6	<b>Retarding Basin 6 – Land</b> Acquisition of land for Retarding Basin 6, total area: 2.61ha (developable).
DLLA_RB6a	<b>Retarding Basin 6 (part a) – Land</b> Acquisition of land for Retarding Basin 6A, total area: 1.6ha (developable).
DLLA_RB6b	<b>Retarding Basin 6 (part b) – Land</b> Acquisition of land for Retarding Basin 6B, total area: 0.57ha (developable).
DLLA_RB6c	<b>Retarding Basin 6 (part c) – Land</b> Acquisition of land for Retarding Basin 6C, total area: .14ha (developable).
DLLA_RB7	<b>Retarding Basin 7 – Land</b> Acquisition of land for Retarding Basin 7, total area: 3.86ha (developable).
DLLA_RB11	<b>Retarding Basin 11 – Land</b> Acquisition of land for Retarding Basin 11, total area: 1.9ha (both developable and encumbered).
DLLA_RB12	<b>Retarding Basin 12 – Land</b> Acquisition of land for Retarding Basin 12, total area: 2.23ha (both developable and encumbered).
DLLA_RB13	<b>Retarding Basin 13 – Land</b> Acquisition of land for Retarding Basin 13, total area: 2.37ha (both developable and encumbered).
DLLA_RB14	<b>Retarding Basin 14 – Land</b> Acquisition of land for Retarding Basin 14, total area: 1.74ha (encumbered).
DLLA_RB15	<b>Retarding Basin 15 – Land</b> Acquisition of land for Retarding Basin 15, total area: 2.25ha (encumbered)
DLLA_RB17	<b>Retarding Basin 17 – Land</b> Acquisition of land for Retarding Basin 17, total area: 3.56ha (both developable and encumbered)
DLLA_RB18	<b>Retarding Basin 18 – Land</b> Acquisition of land for Retarding Basin 18, total area: 1.04ha (developable)
DLLA_RB24	<b>Retarding Basin 24 – Land</b> Acquisition of land for Retarding Basin 24, total area: 3.6ha (both developable and encumbered)
DLLA_RB26	<b>Retarding Basin 26 – Land</b> Acquisition of land for Retarding Basin 26, total area: 1.43ha (developable)
DLLA_RB27	<b>Retarding Basin 27 – Land</b> Acquisition of land for Retarding Basin 27 (RB27, SB27B, WL27), total area: 4.48ha (both developable and encumbered)
DLLA_RB29	<b>Retarding Basin 29 – Land</b> Acquisition of land for Retarding Basin 29, total area: 3.43ha (developable)
DLLA_SB30	<b>Sediment Basin 30 – Land</b> Acquisition of land for Sediment Basin 30, total area: 0.59ha (both developable and encumbered).

Source: City of Ballarat based on Engeny, 2024

### 3.5.3. OPEN SPACE

Passive open space land and improvements are provided by developers under Clause 53.01 of the Planning Scheme.

Active Open Space land and improvements are funded under this DCP. Note: sports pavilions are classified as Community Infrastructure and are described in Section 3.4.

Active Open Space items are included in Table 4.

#### T4. OPEN SPACE ITEMS

Project Number	Project Name
DLA_10	<b>Active Open Space - (Crown Land) - Mining Park (sub-precinct 1) - Land</b> Acquisition of Crown Land for the Mining Park Active Open Space Reserve: area 10.19ha.
DLA_11	<b>Active Open Space - MAC (sub-precinct 1) - Land</b> Land acquisition (3.5ha) for the Glenelg Highway (MAC) Active Open Space Reserve.
DLA_12	<b>Active Open Space - LAC (sub-precinct 2) - Land</b> Land acquisition (9.03ha) for the Greenhalghs LAC Active Open Space Reserve.
DLA_12a	<b>Active Open Space - LAC (part a) (sub-precinct 2) - Land</b> Land acquisition of 1.3ha for Indoor Recreation Centre adjacent to LAC (sub-precinct 2).
DLA_13	<b>Active Open Space - NAC (sub-precinct 4) - Land</b> Land acquisition (8ha) for the Carngham Road Active Open Space Reserve co-located with the NAC.
DLOS_1	<b>AOS Reserve at MR Power Park (sub-precinct 1)</b> Construction of 4ha AOS Reserve at MR Power Park, including 1 football/cricket oval, regional play space, site establishment, water supply and car parking.
DLOS_2	<b>AOS Reserve - Mining Park (sub-precinct 1)</b> Construction of the Mining Park Active Open Space reserve (10.19ha), including 3 soccer fields, local play space, water retention and car parking.
DLOS_3	<b>AOS Reserve - MAC (sub-precinct 1)</b> Construction of Glenelg Highway AOS Reserve (3.5ha) adjacent to the MAC, including 2 football/cricket ovals and car parking.
DLOS_4	<b>AOS Reserve - LAC (sub-precinct 2)</b> Construction of 9.03ha Greenhalghs AOS reserve adjacent to the LAC, including 2 cricket/football ovals, 2 netball courts, local play space, water retention and car parking.
DLOS_5a	<b>AOS Reserve - NAC (sub-precinct 4) (part a)</b> Construction of 4ha Carngham Road AOS Reserve adjacent to the NAC, including 1 oval, rectangular courts, local play space, shelter, toilets and car parking.
DLOS_5b	<b>AOS Reserve - NAC (sub-precinct 4) (part b)</b> Construction of 4ha AOS Reserve - West, including 1 football/cricket oval, rectangular hard courts, local play space and car parking.
DLOS_6	<b>Indoor Recreation Centre (8 courts) adjacent to LAC (sub-precinct 2)</b> Construction of Indoor Recreation Centre adjacent to the Greenhalghs AOS Reserve (8 courts).

Source: City of Ballarat based on ASR, 2024

### 3.5.4. ROADS

This DCP includes construction and land acquisition for new link roads, and upgrades to existing link roads, including land acquisition for widening.

Collector roads are excluded from the DCP and will be constructed/upgraded by adjacent development.

Road items are shown in Table 5.

#### T5. ROAD ITEMS

Project Number	Project Name
DLA_14	<b>Western Link Road (Stage 2b) - Land</b> Acquisition of land for the Western Link Road reserve (20m) between Carngham Road and Glenelg Highway: length 2650m, width 20m, area: 5.3ha.
DLA_15	<b>Ascot Gardens Drive Extension - Land</b> Land acquisition for Ascot Gardens Drive extension between existing road reserve and PSP area boundary: length 266m, width 24m, area: 0.64ha
DLA_16	<b>Webb Rd Widening - Land</b> Land acquisition to widen the existing 20m Webb Road reservation to 24m (total area to be acquired 0.26ha).
DLA_17	<b>Schreenans Road widening - Land</b> Land acquisition for Schreenans Road widening and roundabout with Cherry Flat Road: length 1050m, width 4m, area: 0.42ha
DLA_18	<b>Schreenans Road extension (re-routed) - Land</b> Land acquisition for re-routed Schreenans Road between existing reserve and Ross Creek Road: 287.5m x 24m, area 0.69ha.
DLA_19	<b>Cobden Street extension (re-routed) - Land</b> Land acquisition for re-routed Cobden Street between existing reserve and Ross Creek Road: 258m x 24m, area 0.62ha.
DLA_20	<b>Cobden Street widening - Land</b> Land acquisition for widening of existing Cobden Street reservation between Bonshaw Street and beginning of re-routed alignment. 4m x 1000m, area 0.40ha.
DLA_21	<b>Cobden Street link to Bells Road - Land</b> Land acquisition for new Cobden Street reservation to link southern limit of existing reservation with Bells Road. 24m x 35m, area 0.08ha.
DLA_22	<b>New north south road in sub-precinct 2 - Land</b> Acquisition of road reserve for new north south road in sub-precinct 2. Reserve width: 24m, length 1483m, area: 3.56ha.
DLA_23	<b>Greenhalghs Road widening - Land</b> Land acquisition for the widening of Greenhalghs Road between Wiltshire Lane and the future Western Link Road. Width: 4m, length: 2275m, area: 0.91ha.
DLA_24	<b>New north south road in sub-precinct 4 - Land</b> Land acquisition for new north south road reserve in sub-precinct 4: length: 2,492m, width 24m, area: 5.89ha.
DLRD_03a	<b>New N-S Road (North) between Cuthberts Road and Cuzens Road</b> Construction of new north-south road between Cuthberts Road and Cuzens Road to Link standard (747.5m).
DLRD_03b	<b>New N-S Road (North) between Cuzens Road and Carngham Road</b> Construction of new north-south road between Cuzens Road and Carngham Road to Link standard (747.5m).
DLRD_04	<b>New N-S Road (North) between Carngham Road and sub-precinct 4 southern boundary</b> Construction of new north-south road between Carngham Road and sub-precinct 4 Southern boundary to Link standard (675m)
DLRD_11	<b>New N-S Road construction - sub-precinct 2 northern section</b> Construction of the new north-south road between sub-precinct 2 northern boundary and Greenhalghs Road (758m).
DLRD_12	<b>New N-S Road construction - sub-precinct 2 southern section</b> Construction of the new north-south road between Greenhalghs Road and Glenelg Highway (462m).
DLRD_14	<b>Greenhalghs Road upgrade - western section</b> Upgrade of existing road to Link Road 1 standard between the north-south road (northern section) and future Western Link Road (632m).
DLRD_15	<b>Greenhalghs Road upgrade - central section</b> Upgrade of existing road to Link Road 1 standard between the north-south road (northern section) and the new north south road (southern section) (344m).
DLRD_16	<b>Greenhalghs Road upgrade - eastern section</b> Upgrade of existing road to Link Road 1 standard between the north-south road (southern section) and Wiltshire Lane (1035m).
DLRD_19	<b>Cherry Flat Road Upgrade - Wiltshire Road to Webb Road</b> Upgrade of existing road to Link Road between Wiltshire Lane and Webb Road (Length 320m).

Project Number	Project Name
DLRD_20	<b>Cherry Flat Road Upgrade - Webb Road to Schreenans Road</b> Upgrade of existing road to Link Road between Webb Road and Schreenans Road (Length 790m).
DLRD_21	<b>Cherry Flat Road Upgrade - Schreenans Road to Bells Road</b> Upgrade of existing road to Duplicated Link Road standard between Schreenans Road and Bells Road (Length 750m).
DLRD_22	<b>Tait Street upgrade</b> Upgrade of Tait Street between Ross Creek Road and sub-precinct 1 northern boundary to link road standard (780m).
DLRD_23	<b>Cobden Street construction north</b> Upgrade of existing Cobden Street and construction of re-routed (north) sections of Cobden Street between Ross Creek Road and Miles Street to Link standard (400m).
DLRD_24	<b>Cobden Street construction south</b> Construction of new Cobden Street extension between Miles Street and Bells Road to Link standard (480m).
DLRD_29	<b>Ascot Gardens Drive and Webb Rd</b> Construction of Ascot Gardens Drive and upgrading of Webb Road between PSP area boundary and Cherry Flat Road to Link standard (754m).
DLRD_31a	<b>Schreenans Lane upgrade</b> Upgrade of Schreenans Lane between Cherry Flat Road and Webb Road to Link standard (440m).
DLRD_31b	<b>Schreenans Lane extension west</b> Construction of Schreenans Lane between Webbs Rd and creek crossing to Link standard (340m).
DLRD_31c	<b>Schreenans Lane Creek Crossing</b> Construction of a creek crossing (bridge) for Schreenans Road.
DLRD_31d	<b>Schreenans Lane extension east</b> Construction of Schreenans Lane between Ross Creek Road and creek crossing to Link standard (2317m).
DLRD_38	<b>Ross Creek Road Upgrade</b> Upgrade of Ross Creek Road between Bells Road and Tait Street to link road standard (1080m).

Source: City of Ballarat based on Milward, 2024

### 3.5.5. TRAFFIC MANAGEMENT

The DCP includes construction of intersections of link roads and of link and arterial roads within the Ballarat West PSP area. Traffic management items are shown in Table 6.

Land within the Precinct Structure Plan area for future Western Link Road intersections is also included.

#### T6. TRAFFIC MANAGEMENT ITEMS

Project Number	Project Name
DL_LA_25	<b>Western Link Intersections – Land</b> Land acquisition to widen road reserves to accommodate intersection treatments and turning movements on the future Western Link Road, totalling 0.23ha.
DL_JNC_01	<b>Carngham Rd / Dyson Rd Roundabout</b> Construction of a 4 Arm 2 Lane Roundabout.
DL_JNC_02	<b>Carngham Rd / New N-S Rd (North) Signalised Intersection</b> Construction of a Signalised Intersection.
DL_JNC_04	<b>Greenhalghs Rd / New N-S Rd (North) Roundabout</b> Construction of a 3 Arm 1 Lane Roundabout.
DL_JNC_05	<b>Greenhalghs Rd / New N-S Rd (South) Signalised Intersection</b> Construction of a Signalised Intersection.
DL_JNC_08	<b>Glenelg Hwy / New N-S Rd (South) Roundabout</b> Construction of a 3 Arm 2 Lane Roundabout.
DL_JNC_09	<b>Glenelg Hwy / Wiltshire Ln / Cherry Flat Rd Signalised Intersection</b> Construction of a 4 Arm Signalised Intersection.
DL_JNC_10	<b>Cherry Flat Rd / Webb Rd Signalised Intersection</b> Construction of a 4 Arm Signalised Intersection.
DL_JNC_11	<b>Cherry Flat Rd / Schreenans Rd Roundabout</b> Construction of a 3 Arm 2 Lane Roundabout.
DL_JNC_12	<b>Ross Creek Rd / Schreenans Rd extension/ Cobden St (realignment) Roundabout</b> Construction of a 4 Arm 1 Lane Roundabout.

Source: City of Ballarat based on Milward, 2024

### 3.5.6. OTHER

Table 7 shows other items included in the DCP.

#### T7. OTHER ITEMS

Project Number	Project Name
DL_O_1	<b>Development Contributions Accounting Program</b> Purchase of Development Contributions Accounting Program
DL_O_2	<b>Heritage, Geotechnical and Contamination Studies - MR Power Park</b> Preparation of studies for MR Power Park on heritage, geotechnical and contamination to ascertain potential remediation works, encumbered areas and siting options for active open space reserves.
DL_O_3	<b>Heritage, Geotechnical and Contamination Studies - Mining Park</b> Preparation of studies for Mining Park on heritage, geotechnical and contamination to ascertain potential remediation works, encumbered areas and siting options for active open space reserves.
DL_O_4	<b>Strategic Planning Costs</b> Precinct Structure Plan and Development Contributions Plan Review.

Source: City of Ballarat, 2024



## 4. CALCULATION OF LEVIES

### 4.1. NET DEVELOPABLE AREA AND DEMAND UNITS

#### 4.1.1. LAND BUDGET & NET DEVELOPABLE AREA

In this DCP 'Net Developable Area' (NDA) is the total amount of land within the MCA that has been determined to be able to be developed for urban purposes, excluding land for community facilities, government and non-government schools, open space, encumbered land (land for drainage reserves and conservation areas) and arterial and link road reserves. A summary of the land budget for the DCP is shown in Table 8.

A detailed land budget by title is included in Appendix C.

T8. SUMMARY LAND BUDGET

Description	Area (ha)
<b>Total Area</b>	<b>1,286.77</b>
Land for Roads (existing reserves and DCP roads)	84.91
Drainage and Conservation	99.31
<i>Sub-total</i>	<i>184.22</i>
<b>Gross Developable Area</b>	<b>1,102.55</b>
Active Open Space	36.94
Passive Open Space	65.11
Community Facilities	4.70
Government Education	20.26
Non-Government Education	3.5
<i>Sub-total Open Space, Community and Education</i>	<i>130.51</i>
<b>Net Developable Area</b>	<b>972.04</b>

Source: City of Ballarat 2024

It should be noted that the Precinct Structure Plan (PSP) allocates a 3.5 hectare site for a private school. Individual properties to which this use has been allocated under the preferred development scenario are identified in by title in Appendix C of this document.

Where land with these preferred sites (as indicated with Plan 8 of the PSP - 'Future Urban Structure') is used for the primary purpose of a private school, land will be exempt from the requirement to pay the Development Infrastructure Levy.

In the event that land within these preferred sites is not used for the purpose of development of a private school, the Development Infrastructure Levy will apply unless otherwise agreed to by the Collecting Agency.

#### 4.1.2. DEVELOPMENT INFRASTRUCTURE LEVY RATE TYPES

The Development Infrastructure Levy has been structured with two contribution rates:

- A rate for the development of Residential land, and
- A rate for the development of Commercial and Industrial land.

The allocation of the land within the NDA for each Development Infrastructure Levy rate type is shown in Table 9.

##### T9. BREAKDOWN OF NDA BY RATE TYPE

Description	Area (ha)
Net Developable Area	972.04
Residential	931.26
Commercial and Industrial	40.78

Source: City of Ballarat, 2024

#### 4.1.3. COMMUNITY INFRASTRUCTURE LEVY

The Precinct Structure Plan provides for a range of lot sizes and housing types to satisfy the community. The projected dwelling yield of the MCA is 15,518 dwellings.

The projected number of lots is used as the basis for determining the number of demand units for calculation of the Community Infrastructure Levy.

#### 4.1.4. DEMAND UNITS BY DEVELOPMENT TYPE

In this DCP, one hectare of Net Developable Area equates to one demand unit for the Development Infrastructure Levy. One dwelling equates to one demand unit for the Community Infrastructure Levy. The total number of demand units is shown in Table 10.

All development (residential and commercial) contributes to roads, traffic management, drainage and 'other' items. The costs of these items are apportioned based on the 'total' demand units.

Only residential development contributes to open space and community items. The costs of these items are apportioned based on the 'residential' demand units.

##### T10. DEMAND UNITS BY LAND USE AND TYPE

Levy Type	Community Infrastructure Levy	Development Infrastructure Levy
DCP Rate Type	Residential Rate	Residential Rate
Demand Units	Dwellings	Hectares
Total Demand Units	15,518	931.26

Source: City of Ballarat, 2024; Urban Enterprise

#### 4.1.5. NON-RESIDENTIAL USES IN A RESIDENTIAL AREA

Where residential land is subdivided into lots that are proposed to be used for a purpose other than a dwelling, a Development Contribution will be levied and must be paid, equivalent to the contribution which would otherwise have been paid if the land had been developed for dwellings. The whole of the land which is subdivided will be assessed on the basis of the demand units for Net Residential Developable Area.

#### 4.1.6. RESIDENTIAL USES IN A COMMERCIAL AREA

The Mixed Use areas are likely to include dwellings; however there are no projections of dwelling yield available for these areas given the variety of land uses permissible. Any dwellings that are developed in these areas are also subject to the Community Infrastructure Levy.

Where Mixed Use land is subdivided into lots that are proposed to be used for residential purposes, a Development Contribution will be levied and must be paid, equivalent to the contribution which would otherwise have been paid if the land had been developed for commercial purposes. The whole of the land which is subdivided will be assessed on the basis of the demand units for Net Commercial Developable Area.

### 4.2. METHOD OF CALCULATING LEVIES

#### 4.2.1. PROJECT COSTS

Each item in the DCP has a cost specified for either capital works or land purchase associated with that infrastructure project. Costings are based upon detailed provision standards and detailed cost estimates have been prepared for each item. These costs are detailed in the DCP Projects Sheets contained in Appendix B of this DCP. Construction costs are expressed in July 2024 dollars. Land costs are expressed in July 2024 dollars.

#### 4.2.2. PROJECT TIMING

Each item in the DCP has an indicative provision trigger specified. The indicative provision trigger is based on City of Ballarat's best estimate of the time for delivery of each item based on forecast rates of development and logical staging of infrastructure provision.

These are indicative only and the actual delivery of items may vary at the discretion of the agency delivering the relevant infrastructure, having regard to a range of relevant factors and availability of funds. Further information on the timing and delivery of works is included in Section 5.

#### 4.2.3. EXTERNAL DEMAND

For some infrastructure projects a proportion of usage is expected to be generated from areas external to the DCP. For each item in this DCP, the proportion of usage attributable to the external area has been specified.

The proportion of costs attributable to external use is subtracted from the total project cost of an infrastructure item to give the net cost attributable to the Main Catchment Area for each infrastructure item.

#### 4.2.4. COST APPORTIONMENT METHODS

The cost of each of the infrastructure items has been apportioned based upon the likelihood that an item will be used by residents of the Main Catchment Area of the DCP.

The method and justification for the cost apportionment that has been used for each infrastructure item is outlined in the DCP Infrastructure Project Sheets (Appendix B).

#### 4.2.5. USAGE NEXUS BY DCP RATE TYPE

Not all DCP Rate Types create a usage nexus with all infrastructure types.

The usage nexus of each DCP Rate Type with each infrastructure category is illustrated in Table 11.

T11. DEVELOPMENT TYPES INFRASTRUCTURE USAGE NEXUS MATRIC

Levy Type	Community Infrastructure Levy	Development Infrastructure Levy	
	Residential Rate	Residential Rate	Commercial Rate
DCP Rate Type			
Community Facilities	Yes	Yes	No
Drainage	No	Yes	Yes
Open Space	Yes	Yes	No
Roads	No	Yes	Yes
Traffic Management	No	Yes	Yes
Other	No	Yes	Yes

#### 4.2.6. CALCULATION OF LEVY AMOUNTS

Levy amounts for each item are determined by dividing the cost apportioned to the MCA by the applicable Demand Units for that item. The total levy for each category of development is the sum of the individual levies generated by each applicable infrastructure item.

These calculations for each item are shown in Tables 12.

#### 4.3. CALCULATION OF DEVELOPMENT CONTRIBUTION RATES

T12. CALCULATION OF DCP LEVY AMOUNTS

Infrastructure Code	Levy Category	Project Name	Estimated Works Cost	Estimated Land Cost	Total Project Cost	% to MCA	Cost to MCA	Development Types Contributing	MCA Demand Units	Residential Levy (July 2024 dollars)	Commercial Levy (July 2024 dollars)
<b>Community Infrastructure Levy</b>											
CI_CF_1	Community	MAC Library (sub-precinct 1) co-located with Community Centre in MAC	\$16,197,281.87	\$0.00	\$16,197,281.87	100%	\$16,197,281.87	Residential	15,518	\$1,043.77	\$0.00
CI_CF_2	Community	Level 3 MAC Multi-Purpose Community Centre (sub-precinct 1)	\$4,836,907.48	\$0.00	\$4,836,907.48	100%	\$4,836,907.48	Residential	15,518	\$311.70	\$0.00
CI_CF_3	Community	Level 1 MAC Early Years Hub (sub-precinct 1) (CI component)	\$5,027,177.38	\$0.00	\$5,027,177.38	100%	\$5,027,177.38	Residential	15,518	\$323.96	\$0.00
CI_CF_4	Community	Level 1 Tait Street Early Years Hub (sub-precinct 1) (CI component)	\$5,266,475.10	\$0.00	\$5,266,475.10	100%	\$5,266,475.10	Residential	15,518	\$339.38	\$0.00
CI_CF_5	Community	level 1 LAC Multi-purpose Community Centre and Early Years Hub (sub-precinct 2) (CI component)	\$9,027,592.16	\$0.00	\$9,027,592.16	100%	\$9,027,592.16	Residential	15,518	\$581.75	\$0.00
CI_CF_6	Community	Level 1 NAC Multi-purpose Community Centre (sub-precinct 2) (CI component)	\$6,610,409.90	\$0.00	\$6,610,409.90	100%	\$6,610,409.90	Residential	15,518	\$425.98	\$0.00
CI_OS_1	Community	MR Power Park - Pavilion	\$2,066,580.48	\$0.00	\$2,066,580.48	100%	\$2,066,580.48	Residential	15,518	\$133.17	\$0.00
CI_OS_2	Community	Mining Park - Pavilion	\$3,435,868.41	\$0.00	\$3,435,868.41	100%	\$3,435,868.41	Residential	15,518	\$221.41	\$0.00
CI_OS_3	Community	Glenelg Highway reserve (MAC) - Pavilion	\$3,435,868.41	\$0.00	\$3,435,868.41	100%	\$3,435,868.41	Residential	15,518	\$221.41	\$0.00
CI_OS_4	Community	Greenhalghs reserve (LAC) - Pavilion	\$4,803,100.81	\$0.00	\$4,803,100.81	100%	\$4,803,100.81	Residential	15,518	\$309.52	\$0.00
CI_OS_5	Community	Carngham reserve (NAC) - Pavilion	\$3,435,868.43	\$0.00	\$3,435,868.43	100%	\$3,435,868.43	Residential	15,518	\$221.41	\$0.00
<b>Sub-Total</b>			<b>\$64,143,130.43</b>	<b>\$0.00</b>	<b>\$64,143,130.43</b>		<b>\$64,143,130.43</b>			<b>\$4,133.47</b>	<b>\$0.00</b>
<b>Community Facilities</b>											
DI_CF_1	Development	Level 1 MAC Early Years Hub (sub-precinct 1) (DI component)	\$3,057,865.07	\$0.00	\$3,057,865.07	100%	\$3,057,865.07	Residential	931.26	\$3,283.59	\$0.00
DI_CF_2	Development	Level 1 Tait Street Early Years Hub (sub-precinct 1) (DI component)	\$4,704,419.67	\$0.00	\$4,704,419.67	67%	\$3,151,961.18	Residential	931.26	\$3,384.63	\$0.00
DI_CF_3	Development	Level 1 LAC Multi-purpose Community Centre and Early Years Hub (sub-precinct 2) (DI component)	\$3,894,357.78	\$0.00	\$3,894,357.78	100%	\$3,894,357.78	Residential	931.26	\$4,181.83	\$0.00
DI_CF_4	Development	NAC Early Years Hub (sub-precinct 4)	\$2,851,624.31	\$0.00	\$2,851,624.31	100%	\$2,851,624.31	Residential	931.26	\$3,062.12	\$0.00
DI_LA_1	Development	MAC Library (sub-precinct 1) - Land	\$0.00	\$3,375,000.00	\$3,375,000.00	100%	\$3,375,000.00	Residential	931.26	\$3,624.13	\$0.00
DI_LA_3	Development	Level 3 MAC Multi-Purpose Community Centre (sub-precinct 1) - Land	\$0.00	\$3,750,000.00	\$3,750,000.00	100%	\$3,750,000.00	Residential	931.26	\$4,026.82	\$0.00

Infrastructure Code	Levy Category	Project Name	Estimated Works Cost	Estimated Land Cost	Total Project Cost	% to MCA	Cost to MCA	Development Types Contributing	MCA Demand Units	Residential Levy (July 2024 dollars)	Commercial Levy (July 2024 dollars)
DI_LA_4	Development	Level 1 Tait Street Early Years Hub (sub-precinct 1) - Land	\$0.00	\$550,000.00	\$550,000.00	100%	\$550,000.00	Residential	931.26	\$590.60	\$0.00
DI_LA_5	Development	LAC Early Years Hub - LAC (sub-precinct 2) - Land	\$0.00	\$850,000.00	\$850,000.00	100%	\$850,000.00	Residential	931.26	\$912.75	\$0.00
DI_LA_7	Development	NAC Early Years Hub (sub-precinct 4) - Land	\$0.00	\$450,000.00	\$450,000.00	100%	\$450,000.00	Residential	931.26	\$483.22	\$0.00
DI_LA_8	Development	Level 1 MAC Multi-purpose Community Centre (sub-precinct 4) - Land	\$0.00	\$720,000.00	\$720,000.00	100%	\$720,000.00	Residential	931.26	\$773.15	\$0.00
<b>Sub-Total</b>			<b>\$14,508,266.83</b>	<b>\$9,695,000.00</b>	<b>\$24,203,266.83</b>		<b>\$22,650,808.34</b>			<b>\$24,322.84</b>	<b>\$0.00</b>
<b>Drainage</b>											
DI_DR_A	Development	Drainage Scheme in sub-catchment A (sub-precinct 4)	\$1,436,159.20	\$0.00	\$1,436,159.20	100%	\$1,436,159.20	Residential & Commercial	972.04	\$1,477.47	\$1,477.47
DI_DR_AA/AB	Development	Drainage Scheme in sub-catchment AA/AB (sub-precinct 1)	\$6,009,936.13	\$0.00	\$6,009,936.13	100%	\$6,009,936.13	Residential & Commercial	972.04	\$6,182.83	\$6,182.83
DI_DR_AC/AT	Development	Drainage Scheme in sub-catchment AC/AT (sub-precinct 1)	\$10,646,060.70	\$0.00	\$10,646,060.70	100%	\$10,646,060.70	Residential & Commercial	972.04	\$10,952.33	\$10,952.33
DI_DR_AK/AM	Development	Drainage Scheme in sub-catchment AK/AM (sub-precinct 1)	\$4,446,269.67	\$0.00	\$4,446,269.67	100%	\$4,446,269.67	Residential & Commercial	972.04	\$4,574.18	\$4,574.18
DI_DR_AU/AY	Development	Drainage Scheme in sub-catchment AU/AY (sub-precinct 1)	\$4,163,369.06	\$0.00	\$4,163,369.06	100%	\$4,163,369.06	Residential & Commercial	972.04	\$4,283.14	\$4,283.14
DI_DR_AZ/CA	Development	Drainage Scheme in sub-catchment AZ/CA (sub-precinct 1)	\$3,951,612.72	\$0.00	\$3,951,612.72	100%	\$3,951,612.72	Residential & Commercial	972.04	\$4,065.29	\$4,065.29
DI_DR_BA/BQ	Development	Drainage Scheme in sub-catchment BA/BQ (sub-precinct 1)	\$13,915,348.18	\$0.00	\$13,915,348.18	100%	\$13,915,348.18	Residential & Commercial	972.04	\$14,315.66	\$14,315.66
DI_DR_BK/BL	Development	Drainage Scheme in sub-catchment BK/BL (sub-precinct 1)	\$482,585.14	\$0.00	\$482,585.14	100%	\$482,585.14	Residential & Commercial	972.04	\$496.47	\$496.47
DI_DR_BU/CP	Development	Drainage Scheme in sub-catchment BU/CP (sub-precinct 1)	\$11,549,185.53	\$0.00	\$11,549,185.53	93%	\$10,715,216.15	Residential & Commercial	972.04	\$11,023.47	\$11,023.47
DI_DR_BY/BZ	Development	Drainage Scheme in sub-catchment BY/BZ (sub-precinct 1)	\$2,773,808.39	\$0.00	\$2,773,808.39	100%	\$2,773,808.39	Residential & Commercial	972.04	\$2,853.61	\$2,853.61
DI_DR_C/O	Development	Drainage Scheme in sub-catchment C/O (sub-precinct 4)	\$10,178,019.66	\$0.00	\$10,178,019.66	100%	\$10,178,019.66	Residential & Commercial	972.04	\$10,470.82	\$10,470.82
DI_DR_CB/CF	Development	Drainage Scheme in sub-catchment CB/CF (sub-precinct 1)	\$2,007,755.60	\$0.00	\$2,007,755.60	100%	\$2,007,755.60	Residential & Commercial	972.04	\$2,065.51	\$2,065.51
DI_DR_CD/CR	Development	Drainage Scheme in sub-catchment CD/CR (sub-precinct 1)	\$8,035,539.69	\$0.00	\$8,035,539.69	100%	\$8,035,539.69	Residential & Commercial	972.04	\$8,266.71	\$8,266.71
DI_DR_CQ/CW	Development	Drainage Scheme in sub-catchment CQ/CW (sub-precinct 1)	\$11,242,998.54	\$0.00	\$11,242,998.54	100%	\$11,242,998.54	Residential & Commercial	972.04	\$11,566.44	\$11,566.44
DI_DR_CX/DC	Development	Drainage Scheme in sub-catchment CX/DC (sub-precinct 1)	\$8,342,828.15	\$0.00	\$8,342,828.15	100%	\$8,342,828.15	Residential & Commercial	972.04	\$8,582.83	\$8,582.83
DI_DR_D/J	Development	Drainage Scheme in sub-catchment D/J (sub-precinct 4)	\$12,934,850.80	\$0.00	\$12,934,850.80	100%	\$12,934,850.80	Residential & Commercial	972.04	\$13,306.96	\$13,306.96
DI_DR_KL	Development	Drainage Scheme in sub-catchment KL (sub-precinct 4)	\$4,195,090.40	\$0.00	\$4,195,090.40	100%	\$4,195,090.40	Residential & Commercial	972.04	\$4,315.77	\$4,315.77
DI_DR_M/Q	Development	Drainage Scheme in sub-catchment M/Q (sub-precinct 2)	\$7,213,611.89	\$0.00	\$7,213,611.89	100%	\$7,213,611.89	Residential & Commercial	972.04	\$7,421.13	\$7,421.13



Infrastructure Code	Levy Category	Project Name	Estimated Works Cost	Estimated Land Cost	Total Project Cost	% to MCA	Cost to MCA	Development Types Contributing	MCA Demand Units	Residential Levy (July 2024 dollars)	Commercial Levy (July 2024 dollars)
DI_DR_P/T	Development	Drainage Scheme in sub-catchment P/T (sub-precinct 2)	\$10,494,469.86	\$0.00	\$10,494,469.86	100%	\$10,494,469.86	Residential & Commercial	972.04	\$10,796.37	\$10,796.37
DI_DR_U/Z	Development	Drainage Scheme in sub-catchment U/Z (sub-precinct 2)	\$9,293,039.55	\$0.00	\$9,293,039.55	100%	\$9,293,039.55	Residential & Commercial	972.04	\$9,560.38	\$9,560.38
DI_LA_RB1	Development	Retarding Basin 1 - Land	\$0.00	\$838,500.00	\$838,500.00	100%	\$838,500.00	Residential & Commercial	972.04	\$862.62	\$862.62
DI_LA_RB2	Development	Retarding Basin 2 - Land	\$0.00	\$3,474,000.00	\$3,474,000.00	100%	\$3,474,000.00	Residential & Commercial	972.04	\$3,573.94	\$3,573.94
DI_LA_RB3	Development	Retarding Basin 3 - Land	\$0.00	\$1,312,500.00	\$1,312,500.00	100%	\$1,312,500.00	Residential & Commercial	972.04	\$1,350.26	\$1,350.26
DI_LA_RB4	Development	Retarding Basin 4 - Land	\$0.00	\$965,750.00	\$965,750.00	100%	\$965,750.00	Residential & Commercial	972.04	\$993.53	\$993.53
DI_LA_RB5	Development	Retarding Basin 5 - Land	\$0.00	\$599,500.00	\$599,500.00	100%	\$599,500.00	Residential & Commercial	972.04	\$616.75	\$616.75
DI_LA_RB6	Development	Retarding Basin 6 - Land	\$0.00	\$1,700,000.00	\$1,700,000.00	100%	\$1,700,000.00	Residential & Commercial	972.04	\$1,748.91	\$1,748.91
DI_LA_RB6a	Development	Retarding Basin 6 (part a) - Land	\$0.00	\$1,400,000.00	\$1,400,000.00	100%	\$1,400,000.00	Residential & Commercial	972.04	\$1,440.28	\$1,440.28
DI_LA_RB6b	Development	Retarding Basin 6 (part b) - Land	\$0.00	\$627,000.00	\$627,000.00	100%	\$627,000.00	Residential & Commercial	972.04	\$645.04	\$645.04
DI_LA_RB6c	Development	Retarding Basin 6 (part c) - Land	\$0.00	\$122,500.00	\$122,500.00	100%	\$122,500.00	Residential & Commercial	972.04	\$126.02	\$126.02
DI_LA_RB7	Development	Retarding Basin 7 - Land	\$0.00	\$3,088,000.00	\$3,088,000.00	100%	\$3,088,000.00	Residential & Commercial	972.04	\$3,176.84	\$3,176.84
DI_LA_RB11	Development	Retarding Basin 11 - Land	\$0.00	\$1,615,000.00	\$1,615,000.00	100%	\$1,615,000.00	Residential & Commercial	972.04	\$1,661.46	\$1,661.46
DI_LA_RB12	Development	Retarding Basin 12 - Land	\$0.00	\$1,895,500.00	\$1,895,500.00	100%	\$1,895,500.00	Residential & Commercial	972.04	\$1,950.03	\$1,950.03
DI_LA_RB13	Development	Retarding Basin 13 - Land	\$0.00	\$1,986,000.00	\$1,986,000.00	100%	\$1,986,000.00	Residential & Commercial	972.04	\$2,043.13	\$2,043.13
DI_LA_RB14	Development	Retarding Basin 14 - Land	\$0.00	\$1,391,000.00	\$1,391,000.00	100%	\$1,391,000.00	Residential & Commercial	972.04	\$1,431.02	\$1,431.02
DI_LA_RB15	Development	Retarding Basin 15 - Land	\$0.00	\$1,687,500.00	\$1,687,500.00	100%	\$1,687,500.00	Residential & Commercial	972.04	\$1,736.05	\$1,736.05
DI_LA_RB17	Development	Retarding Basin 17 - Land	\$0.00	\$2,581,000.00	\$2,581,000.00	100%	\$2,581,000.00	Residential & Commercial	972.04	\$2,655.25	\$2,655.25
DI_LA_RB18	Development	Retarding Basin 18 - Land	\$0.00	\$910,000.00	\$910,000.00	100%	\$910,000.00	Residential & Commercial	972.04	\$936.18	\$936.18
DI_LA_RB24	Development	Retarding Basin 24 - Land	\$0.00	\$2,430,000.00	\$2,430,000.00	100%	\$2,430,000.00	Residential & Commercial	972.04	\$2,499.91	\$2,499.91
DI_LA_RB26	Development	Retarding Basin 26 - Land	\$0.00	\$1,339,000.00	\$1,339,000.00	100%	\$1,339,000.00	Residential & Commercial	972.04	\$1,377.52	\$1,377.52
DI_LA_RB27	Development	Retarding Basin 27 - Land	\$0.00	\$2,689,000.00	\$2,689,000.00	100%	\$2,689,000.00	Residential & Commercial	972.04	\$2,766.36	\$2,766.36
DI_LA_RB29	Development	Retarding Basin 29 - Land	\$0.00	\$2,089,250.00	\$2,089,250.00	100%	\$2,089,250.00	Residential & Commercial	972.04	\$2,149.35	\$2,149.35
DI_LA_SB30	Development	Sediment Basin 30 - Land	\$0.00	\$649,000.00	\$649,000.00	100%	\$649,000.00	Residential & Commercial	972.04	\$667.67	\$667.67
<b>Sub-Total</b>			<b>\$143,312,538.87</b>	<b>\$35,390,000.00</b>	<b>\$178,702,538.87</b>		<b>\$177,868,569.48</b>			<b>\$182,985.48</b>	<b>\$182,985.48</b>

Infrastructure Code	Levy Category	Project Name	Estimated Works Cost	Estimated Land Cost	Total Project Cost	% to MCA	Cost to MCA	Development Types Contributing	MCA Demand Units	Residential Levy (July 2024 dollars)	Commercial Levy (July 2024 dollars)
<b>Open Space</b>											
DI_LA_10	Development	Active Open Space - (Crown Land) - Mining Park (sub-precinct 1) - Land	\$0.00	\$6,623,500.00	\$6,623,500.00	100%	\$6,623,500.00	Residential	931.26	\$7,112.43	\$0.00
DI_LA_11	Development	Active Open Space - MAC (sub-precinct 1) - Land	\$0.00	\$4,625,000.00	\$4,625,000.00	100%	\$4,625,000.00	Residential	931.26	\$4,966.41	\$0.00
DI_LA_12	Development	Active Open Space - LAC (sub-precinct 2) - Land	\$0.00	\$7,675,500.00	\$7,675,500.00	100%	\$7,675,500.00	Residential	931.26	\$8,242.09	\$0.00
DI_LA_12a	Development	Active Open Space - LAC (sub-precinct 2) (part a) - Land	\$0.00	\$1,105,000.00	\$1,105,000.00	100%	\$1,105,000.00	Residential	931.26	\$1,186.57	\$0.00
DI_LA_13	Development	Active Open Space - NAC (sub-precinct 4) - Land	\$0.00	\$7,200,000.00	\$7,200,000.00	100%	\$7,200,000.00	Residential	931.26	\$7,731.49	\$0.00
DI_OS_1	Development	AOS Reserve at MR Power Park (sub-precinct 1)	\$8,434,635.35	\$0.00	\$8,434,635.35	100%	\$8,434,635.35	Residential	931.26	\$9,057.26	\$0.00
DI_OS_2	Development	AOS Reserve - Mining Park (sub-precinct 1)	\$15,524,363.83	\$0.00	\$15,524,363.83	100%	\$15,524,363.83	Residential	931.26	\$16,670.34	\$0.00
DI_OS_3	Development	AOS Reserve - MAC (sub-precinct 1)	\$8,611,293.60	\$0.00	\$8,611,293.60	100%	\$8,611,293.60	Residential	931.26	\$9,246.96	\$0.00
DI_OS_4	Development	AOS Reserve - LAC (sub-precinct 2)	\$12,343,805.87	\$0.00	\$12,343,805.87	100%	\$12,343,805.87	Residential	931.26	\$13,255.00	\$0.00
DI_OS_5a	Development	AOS Reserve - NAC (sub-precinct 4) (part a)	\$2,782,272.89	\$0.00	\$2,782,272.89	100%	\$2,782,272.89	Residential	931.26	\$2,987.65	\$0.00
DI_OS_5b	Development	AOS Reserve - NAC (sub-precinct 4) (part b)	\$8,434,635.35	\$0.00	\$8,434,635.35	100%	\$8,434,635.35	Residential	931.26	\$9,057.26	\$0.00
DI_OS_6	Development	Indoor Recreation Centre (8 courts) adjacent to LAC (sub-precinct 2)	\$58,004,362.39	\$0.00	\$58,004,362.39	50%	\$29,002,181.20	Residential	931.26	\$31,143.06	\$0.00
<b>Sub-Total</b>			<b>\$114,135,369.27</b>	<b>\$27,229,000.00</b>	<b>\$141,364,369.27</b>		<b>\$112,362,188.08</b>			<b>\$120,666.52</b>	<b>\$0.00</b>
<b>Roads</b>											
DI_LA_14	Development	Western Link Road (Stage 2b) - Land	\$0.00	\$4,323,750.00	\$4,323,750.00	100%	\$4,323,750.00	Residential & Commercial	972.04	\$4,448.14	\$4,448.14
DI_LA_15	Development	Ascot Gardens Drive Extension - Land	\$0.00	\$738,500.00	\$738,500.00	100%	\$738,500.00	Residential & Commercial	972.04	\$759.75	\$759.75
DI_LA_16	Development	Webb Rd Widening - Land	\$0.00	\$451,500.00	\$451,500.00	100%	\$451,500.00	Residential & Commercial	972.04	\$464.49	\$464.49
DI_LA_17	Development	Schreenans Road widening - Land	\$0.00	\$578,500.00	\$578,500.00	100%	\$578,500.00	Residential & Commercial	972.04	\$595.14	\$595.14
DI_LA_18	Development	Schreenans Road extension (re-routed) - Land	\$0.00	\$690,000.00	\$690,000.00	100%	\$690,000.00	Residential & Commercial	972.04	\$709.85	\$709.85
DI_LA_19	Development	Cobden Street extension (re-routed) - Land	\$0.00	\$620,000.00	\$620,000.00	100%	\$620,000.00	Residential & Commercial	972.04	\$637.84	\$637.84
DI_LA_20	Development	Cobden Street widening - Land	\$0.00	\$350,750.00	\$350,750.00	100%	\$350,750.00	Residential & Commercial	972.04	\$360.84	\$360.84
DI_LA_21	Development	Cobden Street link to Bells Road - Land	\$0.00	\$46,000.00	\$46,000.00	100%	\$46,000.00	Residential & Commercial	972.04	\$47.32	\$47.32
DI_LA_22	Development	New north south road in sub-precinct 2 - Land	\$0.00	\$3,065,750.00	\$3,065,750.00	100%	\$3,065,750.00	Residential & Commercial	972.04	\$3,153.95	\$3,153.95

Infrastructure Code	Levy Category	Project Name	Estimated Works Cost	Estimated Land Cost	Total Project Cost	% to MCA	Cost to MCA	Development Types Contributing	MCA Demand Units	Residential Levy (July 2024 dollars)	Commercial Levy (July 2024 dollars)
DI_LA_23	Development	Widening of Greenhalghs Road - Land	\$0.00	\$819,250.00	\$819,250.00	100%	\$819,250.00	Residential & Commercial	972.04	\$842.82	\$842.82
DI_LA_24	Development	New north south road in sub-precinct 4 - Land	\$0.00	\$5,398,000.00	\$5,398,000.00	100%	\$5,398,000.00	Residential & Commercial	972.04	\$5,553.29	\$5,553.29
DI_RD_03a	Development	New N-S Road (North) between Cuthberts Road and Cuzens Road	\$3,103,436.44	\$0.00	\$3,103,436.44	100%	\$3,103,436.44	Residential & Commercial	972.04	\$3,192.72	\$3,192.72
DI_RD_03b	Development	New N-S Road (North) between Cuzens Road and Carngham Road	\$3,103,436.44	\$0.00	\$3,103,436.44	100%	\$3,103,436.44	Residential & Commercial	972.04	\$3,192.72	\$3,192.72
DI_RD_04	Development	New N-S Road (North) between Carngham Road and sub-precinct 4 southern boundary	\$2,817,230.08	\$0.00	\$2,817,230.08	100%	\$2,817,230.08	Residential & Commercial	972.04	\$2,898.28	\$2,898.28
DI_RD_11	Development	New N-S Road construction - sub-precinct 2 northern section	\$3,165,532.15	\$0.00	\$3,165,532.15	100%	\$3,165,532.15	Residential & Commercial	972.04	\$3,256.60	\$3,256.60
DI_RD_12	Development	New N-S Road construction - sub-precinct 2 southern section	\$1,936,964.81	\$0.00	\$1,936,964.81	100%	\$1,936,964.81	Residential & Commercial	972.04	\$1,992.69	\$1,992.69
DI_RD_14	Development	Greenhalghs Road upgrade - western section	\$2,371,791.31	\$0.00	\$2,371,791.31	100%	\$2,371,791.31	Residential & Commercial	972.04	\$2,440.02	\$2,440.02
DI_RD_15	Development	Greenhalghs Road upgrade - central section	\$708,170.35	\$0.00	\$708,170.35	100%	\$708,170.35	Residential & Commercial	972.04	\$728.54	\$728.54
DI_RD_16	Development	Greenhalghs Road upgrade - eastern section	\$2,363,184.86	\$0.00	\$2,363,184.86	100%	\$2,363,184.86	Residential & Commercial	972.04	\$2,431.17	\$2,431.17
DI_RD_19	Development	Cherry Flat Road Upgrade - Wiltshire Road to Webb Road	\$1,434,116.02	\$0.00	\$1,434,116.02	100%	\$1,434,116.02	Residential & Commercial	972.04	\$1,475.37	\$1,475.37
DI_RD_20	Development	Cherry Flat Road Upgrade - Webb Road to Schreenans Road	\$3,499,851.28	\$0.00	\$3,499,851.28	100%	\$3,499,851.28	Residential & Commercial	972.04	\$3,600.53	\$3,600.53
DI_RD_21	Development	Cherry Flat Road Upgrade - Schreenans Road to Bells Road	\$4,307,291.86	\$0.00	\$4,307,291.86	100%	\$4,307,291.86	Residential & Commercial	972.04	\$4,431.20	\$4,431.20
DI_RD_22	Development	Tait Street upgrade	\$3,773,598.58	\$0.00	\$3,773,598.58	100%	\$3,773,598.58	Residential & Commercial	972.04	\$3,882.16	\$3,882.16
DI_RD_23	Development	Cobden Street construction north	\$1,783,582.94	\$0.00	\$1,783,582.94	100%	\$1,783,582.94	Residential & Commercial	972.04	\$1,834.89	\$1,834.89
DI_RD_24	Development	Cobden Street construction south	\$2,012,722.36	\$0.00	\$2,012,722.36	100%	\$2,012,722.36	Residential & Commercial	972.04	\$2,070.62	\$2,070.62
DI_RD_29	Development	Ascot Gardens Drive and Webb Rd	\$3,077,675.16	\$0.00	\$3,077,675.16	100%	\$3,077,675.16	Residential & Commercial	972.04	\$3,166.21	\$3,166.21
DI_RD_31a	Development	Schreenans Lane upgrade	\$1,594,414.01	\$0.00	\$1,594,414.01	89%	\$1,419,028.47	Residential & Commercial	972.04	\$1,459.85	\$1,459.85
DI_RD_31b	Development	Schreenans Lane extension west	\$1,232,047.19	\$0.00	\$1,232,047.19	89%	\$1,096,522.00	Residential & Commercial	972.04	\$1,128.07	\$1,128.07
DI_RD_31c	Development	Schreenans Lane Creek Crossing	\$13,031,298.76	\$0.00	\$13,031,298.76	89%	\$11,597,855.89	Residential & Commercial	972.04	\$11,931.50	\$11,931.50
DI_RD_31d	Development	Schreenans Lane extension east	\$1,148,702.82	\$0.00	\$1,148,702.82	89%	\$1,022,345.51	Residential & Commercial	972.04	\$1,051.76	\$1,051.76
DI_RD_38	Development	Ross Creek Road Upgrade	\$4,940,516.34	\$0.00	\$4,940,516.34	89%	\$4,397,059.54	Residential & Commercial	972.04	\$4,523.55	\$4,523.55
<b>Sub-Total</b>			<b>\$61,405,563.76</b>	<b>\$17,082,000.00</b>	<b>\$78,487,563.76</b>		<b>\$76,073,396.06</b>			<b>\$78,261.87</b>	<b>\$78,261.87</b>

Infrastructure Code	Levy Category	Project Name	Estimated Works Cost	Estimated Land Cost	Total Project Cost	% to MCA	Cost to MCA	Development Types Contributing	MCA Demand Units	Residential Levy (July 2024 dollars)	Commercial Levy (July 2024 dollars)
<b>Intersections</b>											
DI_LA_25	Development	Land acquisition for intersections	\$0.00	\$205,250.00	\$205,250.00	100%	\$205,250.00	Residential & Commercial	972.04	\$211.15	\$211.15
DI_JNC_01	Development	Carngam Rd / Dyson Rd Roundabout	\$2,697,168.10	\$0.00	\$2,697,168.10	59%	\$1,591,329.18	Residential & Commercial	972.04	\$1,637.11	\$1,637.11
DI_JNC_02	Development	Carngam Rd / New N-S Rd (North) Roundabout	\$3,310,533.06	\$0.00	\$3,310,533.06	70%	\$2,317,373.14	Residential & Commercial	972.04	\$2,384.04	\$2,384.04
DI_JNC_04	Development	Greenhalghs Rd / New N-S Rd (North) Roundabout	\$1,430,233.41	\$0.00	\$1,430,233.41	61%	\$872,442.38	Residential & Commercial	972.04	\$897.54	\$897.54
DI_JNC_05	Development	Greenhalghs Rd / New N-S Rd (South) Roundabout	\$1,901,261.17	\$0.00	\$1,901,261.17	58%	\$1,102,731.48	Residential & Commercial	972.04	\$1,134.45	\$1,134.45
DI_JNC_08	Development	Glenelg Hwy / New N-S Rd (South) Roundabout	\$1,813,170.75	\$0.00	\$1,813,170.75	45%	\$815,926.84	Residential & Commercial	972.04	\$839.40	\$839.40
DI_JNC_09	Development	Glenelg Hwy / Wiltshire Ln / Cherry Flat Rd Signalised Intersection	\$7,137,372.57	\$0.00	\$7,137,372.57	45%	\$3,211,817.66	Residential & Commercial	972.04	\$3,304.22	\$3,304.22
DI_JNC_10	Development	Cherry Flat Rd / Webb Rd Signalised Intersection	\$2,941,739.23	\$0.00	\$2,941,739.23	83%	\$2,441,643.56	Residential & Commercial	972.04	\$2,511.88	\$2,511.88
DI_JNC_11	Development	Cherry Flat Rd / Schreenans Rd Roundabout	\$1,579,816.63	\$0.00	\$1,579,816.63	67%	\$1,058,477.14	Residential & Commercial	972.04	\$1,088.93	\$1,088.93
DI_JNC_12	Development	Ross Creek Rd / Schreenans Rd extension/ Cobden St (realignment) Roundabout	\$1,206,421.94	\$0.00	\$1,206,421.94	84%	\$1,013,394.43	Residential & Commercial	972.04	\$1,042.55	\$1,042.55
<b>Sub-Total</b>			<b>\$24,017,716.85</b>	<b>\$205,250.00</b>	<b>\$24,222,966.85</b>		<b>\$14,630,385.80</b>			<b>\$15,051.27</b>	<b>\$15,051.27</b>
<b>Other</b>											
DI_O_1	Development	Development Contributions Accounting Program	\$68,818.81	\$0.00	\$68,818.81	100%	\$68,818.81	Residential & Commercial	972.04	\$70.80	\$70.80
DI_O_2	Development	Heritage, Geotechnical and Contamination Studies - MR Power Park	\$348,223.23	\$0.00	\$348,223.23	100%	\$348,223.23	Residential & Commercial	972.04	\$358.24	\$358.24
DI_O_3	Development	Heritage, Geotechnical and Contamination Studies - Mining Park	\$605,605.60	\$0.00	\$605,605.60	100%	\$605,605.60	Residential & Commercial	972.04	\$623.03	\$623.03
DI_O_4	Development	Strategic Planning Costs	\$432,465.99	\$0.00	\$432,465.99	100%	\$432,465.99	Residential & Commercial	972.04	\$444.91	\$444.91
<b>Sub-Total</b>			<b>\$1,455,113.63</b>	<b>\$0.00</b>	<b>\$1,455,113.63</b>		<b>\$1,455,113.63</b>			<b>\$1,496.97</b>	<b>\$1,496.97</b>
<b>TOTAL</b>			<b>\$422,977,699.65</b>	<b>\$89,601,250.00</b>	<b>\$512,578,949.65</b>		<b>\$469,183,691.82</b>				
<i>DIL</i>			<i>\$358,834,569.21</i>	<i>\$89,601,250.00</i>	<i>\$448,435,819.21</i>		<i>\$405,040,461.39</i>			<i>\$422,774.96</i>	<i>\$277,795.60</i>
<i>CIL</i>			<i>\$64,143,130.43</i>	<i>\$0.00</i>	<i>\$64,143,130.43</i>		<i>\$64,143,130.43</i>			<i>\$4,133.47</i>	<i>\$0.00</i>

Source: Urban Enterprise

#### 4.3.1. SUMMARY OF COSTS AND CONTRIBUTIONS

Table 13 shows a summary of costs payable for each infrastructure category.

T13. SUMMARY OF COSTS

Summary - Total Costs Land and Construction	
Project Type	Total Costs of Projects Apportioned to the DCP
Estimated Project Cost: Land	\$89,601,250.00
Estimated Project Cost: Construction	\$379,582,341.82
<b>Total</b>	<b>\$469,183,591.82</b>

Summary - Total Costs Land and Construction	
Project Type	Total Costs of Projects Apportioned to the DCP
Community Facilities	\$69,616,652.23
Open Space	\$129,539,474.61
Roads	\$76,073,396.06
Traffic Management	\$14,630,385.80
Other	\$1,455,113.63
<b>Total (excl. Drainage)</b>	<b>\$291,315,022.34</b>
Drainage	\$177,868,569.48
<b>Total</b>	<b>\$469,183,591.82</b>

Source: Urban Enterprise

A summary of the development and community infrastructure contributions that are required to be made for development in the MCA are outlined in Table 14:

- These contributions are in July 2024 dollars. Table 14 will be indexed annually in accordance with the method specified in this DCP.
- The required Community Infrastructure Levy is outlined in Table 14. As at July 2024, the Community Infrastructure Levy is subject to a cap of \$1,450 per dwelling.
- The required Development Infrastructure Levy payable by infrastructure type per hectare of Net Developable Area is outlined in Table 14.
- All developable land is subject to the Development Infrastructure Levy. Only residential dwellings are subject to the Community Infrastructure Levy.

It should be noted that the Development Infrastructure Levy in this DCP includes contributions towards drainage items, as the City of Ballarat is the drainage authority. This should be taken into account when comparing levies with metropolitan Melbourne development infrastructure levies, which generally do not include a contribution towards drainage authority infrastructure.

T14. SUMMARY OF CONTRIBUTIONS

Summary - Development Infrastructure Levy (DIL) by Charge Area		
Charge Area	Rate (excl. Drainage) (July 2024)	Rate (July 2024)
Residential (per hectare NDA)	\$239,789.47	\$422,774.96
Commercial (per hectare NDA)	\$94,810.12	\$277,795.60

Summary - Community Infrastructure Levy (CIL) by Charge Area		
Charge Area	Rate before cap (July 2024)	Rate after cap (July 2024)
Residential (per dwelling)	\$4,133.47	\$1,450.00

Source: Urban Enterprise

\* Community Infrastructure Levy capped at \$1,450 per dwelling.

**4.4. CITY OF BALLARAT FUNDING**

City of Ballarat is responsible for funding the shortfall in funds collected towards community infrastructure items due to the CIL cap. City of Ballarat is also responsible for funding 'external' apportionment of road items on behalf of existing development.

City of Ballarat's funding liability based on the original DCP, and the previous \$900 CIL cap is shown in Table 15.

T15. CITY OF BALLARAT FUNDING LIABILITY, ORIGINAL DCP

	Community Infrastructure	Development Infrastructure	Total
<b>Total Infrastructure Cost</b>	\$34,364,970	\$223,157,064	\$257,522,034
<b>Costs Collected by DCP</b>	\$12,848,400	\$188,866,723	\$201,715,123
<b>Funding Gap (cost to City of Ballarat)</b>	<b>\$21,516,570</b>	<b>\$34,290,341</b>	<b>\$55,806,911</b>

Source: Urban Enterprise

Based on the revised DCP costs, apportionment and revised CIL levy cap, City of Ballarat's funding liability is shown in Table 16. Note that due to approximately 39% of the land having received Statement of Compliance, the funding gap will not be equivalent to either of the results shown in Table 15 or 16. This means that development that has already occurred has made contributions under the original DCP levy and apportionment scenarios, while future development will contribute under the revised condition of this DCP.

T16. CITY OF BALLARAT FUNDING LIABILITY, REVISED DCP

	Community Infrastructure	Development Infrastructure	Total
<b>Total Infrastructure Cost</b>	\$64,143,130	\$448,435,819	\$512,578,950
<b>Costs Collected by DCP</b>	\$22,501,100	\$405,040,461	\$427,541,561
<b>Funding Gap (cost to City of Ballarat)</b>	<b>\$41,642,030</b>	<b>\$43,395,358</b>	<b>\$85,037,388</b>

Source: Urban Enterprise



## 5. DCP ADMINISTRATION

### 5.1. ADJUSTMENT OF VALUES & INDEXATION OF LEVIES

The Development Infrastructure Levy in this DCP will be adjusted annually according to the following specified method:

- In relation to the costs associated with all development infrastructure items other than land, the cost of those projects will be adjusted (and then the contribution amounts recalculated) by reference to the Producer Price Indexes Australia, Victoria Table 17. Output of the Construction industries, subdivision and class index numbers - Road and Bridge Construction Victoria (for roads, bridges, trails, drainage and open space items), Building Construction Victoria (for buildings) published by the ABS (Series 6427.0 or similar index) and the Consumer Price Index, Australia Tables 1 and 2. CPI: All Groups Melbourne (for other items) published by the ABS (series 6401.0 or similar). The adjusted costings will then produce a recalculated Development Infrastructure Levy and Community Infrastructure Levy.
- The revised infrastructure costs and the adjustment of the contributions will be calculated as at June 30th of each year.
- In relation to the value of land required under the DCP, a revaluation of all land projects is to be carried out annually in accordance with the principles set out in Section 5.2. The valuations are to be carried out by a qualified valuer and member of the Australian Property Institute to be appointed by City of Ballarat.
- The revised land value and then the resulting adjustment of the Development Infrastructure Levy will be calculated as at June 30th of each year.
- Within 14 days of the adjustments being made, the Responsible Authority must publish a notice of the amended contributions on its website.

If the Community Infrastructure Levy cap is increased in the future, Council reserves the right to collect the CIL as shown in this DCP and indexed in accordance with the DCP, up to a maximum of the new cap amount.

### 5.2. VALUATION OF LAND

The valuation assessments (Opteon, July 2024) for land required for infrastructure items in this DCP were carried out in accordance with the following principles, consistent with the original valuation methodology for the DCP:

#### 1. Valuations were to be preliminary

Valuations provided were to be preliminary only, i.e. they were prepared using:

- a. the currently available information at the time in relation to the properties that were affected;
- b. indicative information in relation to the land that was required; and
- c. general guidance in relation to why the land was required.

#### 2. Valuations were to take into account the specifics of the land required

In determining the value of land in the Ballarat West Precinct Structure Plan area the valuation should be based upon the current underlying zones taking into consideration normal site constraints and development considerations, but without reference to specific future uses shown on the Future Urban Structure plan from the Precinct Structure Plan.

#### 3. Normal valuation principles applied

Whilst the valuations were "preliminary", normal valuation practices were adopted. For example, where only part of the land was required, valuations were carried out on a "before and after" basis. Comparable sales were analysed and compared to the affected properties as part of the valuation process. Normal valuation considerations such as location, topography, shape, views and development constraints were taken into account to the extent that there was readily available information.

#### 4. Availability of services was assumed

It was assumed that all normal services were available for connection to the various parcels. It was acknowledged that future reviews of the valuations could take account of changes in the location and availability of services, when these become clearer.

### 5.3. COLLECTING AGENCY

The City of Ballarat is the Collecting Agency responsible for collection of levies pursuant to section 46K of the Planning and Environment Act 1987.

### 5.4. DEVELOPMENT AGENCY

The City of Ballarat is the Development Agency for all infrastructure items pursuant to section 46K of the Planning and Environment Act 1987.

### 5.5. PAYMENT OF CONTRIBUTION LEVIES AND TIMING

The DIL will be payable to and collected by the collecting agency, for the:

- Subdivision of land; or
- Development of land which requires a planning permit; or
- Development of land which does not require a planning permit, as set out in this DCP.

#### SUBDIVISION

A development infrastructure levy must be paid to the collecting agency for the land, after certification of the relevant plan of subdivision but not more than 21 days prior to the issue of Statement of Compliance in respect to the relevant plan or, otherwise included in an implementation agreement under Section 173 of the Act.

Where the subdivision is to be developed in stages, the infrastructure levy for the stage to be developed may only be paid to the collecting agency within 21 days prior to the issue of a Statement of Compliance.

Additionally, a Schedule of Development Contributions must be submitted with each stage of the plan of subdivision. This schedule must show the amount of the development contributions payable for each stage and the value of the contributions made in respect of prior stages to the satisfaction of the collecting agency or, otherwise included in an implementation agreement under Section 173 of the Act.

If the collecting agency agrees to works and/or provision of land in lieu of the payment of the infrastructure levy, the landowner must enter into an agreement under Section 173 of the Act in respect of the proposed works and/or provision of land in kind to specific requirements.

#### DEVELOPMENT OF LAND WHERE NO SUBDIVISION IS PROPOSED

Provided an infrastructure levy has not already been paid on the subject land, an infrastructure levy must be paid to the collecting agency. Payments must be in accordance with the provisions of the approved DCP for each demand unit proposed to be developed prior to the commencement of any development (i.e. development includes buildings, car park, access ways, landscaping and ancillary components).

The collecting agency may require that development infrastructure levy contributions be made at either the planning permit or building permit stage.

If the collecting agency agrees to works and/or provision of land in lieu of the payment of the infrastructure levy, the land owner must enter into an agreement under Section 173 of the Act or propose another arrangement acceptable to the collecting agency in respect of the proposed works and/or land to be provided in kind.

**DEVELOPMENT NOT REQUIREMENT A PLANNING PERMIT (NO SUBDIVISION)**

The following requirement applies where no planning permit is required. The land may only be used and developed subject to the following requirements being met:

- Prior to the commencement of any development, a development infrastructure levy must be paid to the collecting agency in accordance with the provisions of the development contribution plan for the land unless some other arrangement has been agreed to by collecting agency in a Section 173 agreement; or
- If the collecting agency agrees to works and/or provision of land in lieu of the payment of the infrastructure levy, the land owner must enter into an agreement under Section 173 of the Act in respect of the proposed works or provision of land which are proposed to be provided in kind.

**COMMUNITY INFRASTRUCTURE LEVY**

The Community Infrastructure Levy must be paid to the Collecting Agency prior to the issue of a Building Approval for any dwelling in accordance with section 46(0) of the Planning & Environment Act (1987). Developers / landowners are encouraged to pay the CIL before the issue of a Statement of Compliance to simplify collection of development contributions, reduce the administrative burden on Council and facilitate the early provision of community infrastructure.

The Community Infrastructure Levy is payable on a per dwelling basis and for the purposes of the CIL a dwelling also includes each occupancy or independent living unit within a retirement / residential village, retirement living developments or the like. (e.g. a Retirement village with 20 independent living units must pay 20 CIL amounts).

**5.6. ADMINISTRATIVE PROCEDURES**

The City of Ballarat will undertake ongoing accounting and review of this DCP in terms of:

- The relevance of projects listed in the DCP;
- The level of contributions collected;
- The construction costs of infrastructure projects;
- The land costs of infrastructure projects;
- Updating the DCP to reflect any relevant amendments to the Planning and Environment Act, or any new Ministerial Directions relating to development contributions.

City of Ballarat will undertake a full review of this DCP at least every five years during the lifespan of the DCP.

Funds collected through development contributions will be held in a specific interest-bearing reserve account in accordance with the provisions of the *Planning and Environment Act* (1987). All monies held in this account will be used solely for the provision of infrastructure as itemised in this DCP.

If City of Ballarat resolves not to proceed with any of the infrastructure projects listed in this Development Contribution Plan, the Responsible Authority will comply with section 46Q of the *Planning & Environment Act* (1987).

**5.7. METHOD OF PROVISION**

Responsibility for the delivery of infrastructure items in this DCP resides with the City of Ballarat as Development Agency.

City of Ballarat as the Collecting Agency and Development Agency may agree to infrastructure items being provided by developers with a credit of offset provided against their development contribution obligations under this DCP (see Section 6 - Implementation Strategy).

## 6. IMPLEMENTATION STRATEGY

### 6.1. PROVISION OF LAND AND WORKS IN-KIND

Payment of development contributions is generally to be made in cash in accordance with Section 5.

Alternatively, infrastructure works and land may be provided by developers in return for a credit against their development contribution obligation, subject to the agreement of City of Ballarat at its absolute discretion. In determining whether to agree to the provision of works in lieu of cash City of Ballarat will have regard to any relevant matter including:

- Only works or land funded by the DCP can be provided “in-kind”;
- Works must be provided to a standard that generally accords with the DCP unless agreed between City of Ballarat and the developer;
- Detailed design must be approved by City of Ballarat and generally accord with the standards outlined in the DCP unless agreed by City of Ballarat and the developer;
- The construction of works must be completed to the satisfaction of City of Ballarat;
- The impact on the DCP must be cost and revenue neutral.

Where City of Ballarat agrees that works are to be provided by a developer in lieu of cash contributions:

- The credit for the works provided shall be granted only once the trigger for provision of the relevant item is reached;
- The credit for the works provided shall be an amount up to the value identified in the DCP, taking into account the impact of adjustment outlined in Section 5.1. Where the required scope of the item results in a DCP item delivery scope and cost that is materially less than what is in the DCP, credits will be limited to the value of works or land actually provided;
- The value of works provided in accordance with the principles outlined above will be offset against the development contributions liable to be paid by the developer;
- The developer will not be required to make cash payments for contributions until the value of any credits for the provision of agreed works-in-kind are exhausted;
- Where credit for works-in-kind can't be offset against future levy payments the developer will be reimbursed by City of Ballarat for any excess credit at the time of provision shown in the DCP, so long as there are sufficient DCP funds available to do so;
- Where a developer chooses to bring forward works ahead of the scheduled time in the DCP this can be done subject to agreement by City of Ballarat and provided the impact on the DCP is cost and revenue neutral;
- Developer delivered projects will only qualify for the contingency component of the project where the developer can demonstrate to the satisfaction of the responsible authority that the contingency component can be reasonably claimed.

Notwithstanding that Council has ultimate discretion in relation to allowing others to deliver DCP infrastructure projects, City of Ballarat cannot be expected to deliver all of the infrastructure projects itself according to time lines determined by developers' staging requirements. It is therefore the expectation of City of Ballarat as Collecting Agency that most of the infrastructure projects funded by this DCP will be delivered by developers as works-in-kind in accordance with an agreement in writing. This particularly applies to projects such as roads works, intersections, drainage and open space.

To coordinate the provision of infrastructure, Schedule 2 to the Urban Growth Zone (UGZ2) requires an application for a residential subdivision of 10 or more lots to be accompanied by a Public Infrastructure Plan (PIP), which addresses the following, as applicable:

- the provision, staging and timing of stormwater drainage works;

- what land may be affected or required for the provision of infrastructure works;
- the provision, staging and timing of roadworks internal and external to the land consistent with any relevant traffic report or assessment;
- the landscaping of any land;
- the provision of public open space and land for any community facilities;
- what, if any, infrastructure set out in the Ballarat West Development Contributions Plan is sought to be provided as "works in lieu" subject to the consent of the Collecting Agency; and
- any other matter required by the Responsible Authority.

Through the approval of these agreements, City of Ballarat (acting as the Collecting Agency) will consider if and what infrastructure should be provided as works-in-kind under this DCP in accordance with Section 46P of the Act. The agreement must include a list of the DCP infrastructure projects which the Collecting Agency has agreed to in writing, and detailing if the projects are to be provided as works and/or land in lieu.

## 6.2. LAND

City of Ballarat intends to obtain land required under the DCP as an off-set against a developer's development contributions where feasible. As with works-in-kind, the provision of land would be set out in an agreement between the developer and City of Ballarat pursuant to Section 173 of the Planning and Environment Act 1987. The value of the off-set for providing land will equal the value shown in the DCP, subject to indexation, as outlined in Section 5.1, except where the extent of the land required is materially different to what is in the DCP, in which case the off-set will be limited to the value of the land actually provided.

## 6.3. SUGGESTED WORKS IN-KIND

City of Ballarat encourages developers to discuss and agree with City of Ballarat, the potential for provision of works and land to offset their development contribution. A major aim is to ensure that the timing of infrastructure delivery appropriately supports development.

City of Ballarat is proposing to construct the Community Centre items given the need to comply with statutory requirements relating to maternal child health and kindergartens. However, City of Ballarat could consider developers providing this infrastructure on a case by case basis.

## 6.4. STAGING

The indicative triggers for the delivery of infrastructure projects shown in the DCP will be considered in conjunction with the staging provisions of the PSP.

Credit for works provided in-kind is only allocated in accordance with an agreement between the Collecting Agency and the developer. If works provided in-kind incur an additional construction cost due to being "out-of-sequence", this does not constitute grounds for claiming the contingency amount associated with that item.

## 6.5. DRAINAGE

The drainage scheme has been designed to service the development with infrastructure that is optimal in terms of cost and performance while protecting properties, existing waterways and the environment. The drainage scheme being funded is explained in greater detail in the Ballarat West PSP and updated Engeny Drainage Report (2024).

Construction works for the drainage scheme will be completed in stages over the life of the DCP. It is anticipated that many of the components of the drainage works will be delivered by developers as works in-kind subject to the consent of Council as the Responsible Authority and Development Agency. However, in order to ensure an orderly delivery of the drainage scheme Council will prepare an annual capital works program of works to be undertaken year on year. Prioritisation of the scheme's works will include:

- Allocation of funding over the life of the Ballarat West PSP, the flow of funding from the Ballarat West DCP and any medium term capital works plan developed by City of Ballarat;
- The rate of development within each sub-catchment;
- The estimated total cost of the downstream works required to provide trunk drainage for an individual parcel; and
- The likely timing of other civil infrastructure including sewerage and roads.

City of Ballarat as the Development Agency under this DCP will generally undertake drainage scheme works from the downstream end first as it ensures that all properties in the sub-catchment receive the benefit of these works and are not adversely impacted by additional flows. Where works are not 'out-of-sequence', these works are more likely to be considered favourably in terms of Council consenting to them being constructed in conjunction with development as an in-kind contribution.

If finances under this DCP are not available to deliver drainage infrastructure landowners may:

- Submit proposals for works in kind which defray or avoid costs for drainage infrastructure accounted for in the DCP which enhance the financial position of the DCP;
- Fund the required drainage works themselves, and seek reimbursement when funds become available to the Collecting Agency.

For sub-catchments with larger landholdings, developers will be encouraged to pool resources to fund permanent drainage works, rather than constructing temporary drainage works for individual development sites. Where landholdings are more fragmented, this may affect the rate at which development can be expected to occur and in turn, the timing of new shared drainage works.

#### OUT OF SEQUENCE DEVELOPMENT

Developments may be required to provide temporary works where development is 'out-of- sequence' for drainage provision. Where temporary works are required, credits to offset development contributions liabilities will not be granted unless the Collecting Agency is satisfied that granting a credit will not undermine the funding of permanent infrastructure to be funded by the Ballarat West DCP and that the temporary works can be utilised as part of the works funded through the DCP.

If a developer provides a drainage solution to service its development that benefits the DCP and results in significant savings to the DCP finances, The Collecting Agency may consider providing a partial rebate of development contributions for drainage. This will be assessed on a case-by-case basis.

Where an out-of-sequence development brings forward works as an in-kind contribution, City of Ballarat may delay provision of credits for these works for the purposes of the DCP.

#### DELIVERY OF DRAINAGE SCHEME IN OTHER WAYS

The Ballarat West PSP explicitly recognises that water management solutions may vary from the drainage scheme envisaged in the PSP provided the technical engineering and water quality requirements needed to protect urban areas from flooding are adhered to.

For example, the stormwater treatment areas proposed in the drainage scheme have been sized assuming there are no rainwater tanks in the catchment as a conservative approach for preliminary sizing. Modelling assumptions such as this can be revisited when more information becomes available on the design of individual developments.

Consequently, if savings are achieved in the way the drainage scheme is envisaged to be delivered, the Collecting Agency may compensate a developer or recognise the savings for design innovations that financially benefit the scheme by lowering its cost. This saving might be within a precinct or potentially, across the catchment. The level of recognition of any cost savings will be based on the particular circumstances relating to each solution.



#### DESIGN STANDARDS FOR DRAINAGE

Non-scheme works will generally be required to meet relevant design standards. Key design standards for the DCP area are as follows:

- Downstream flows must be no greater than pre-development levels;
- Stormwater management should promote conservation and re-use of stormwater for non-potable purposes;
- All new development is to be protected from the 1 in 100 year flood, and have no adverse effects on downstream or neighbouring properties;
- The local drainage system will have capacity to process a 1 in 10 year storm event for trunk drainage systems;
- Water quality is to be treated to best standard practice (currently 45% reduction in total nitrogen and phosphorus and 80% reduction in total suspended solids);
- Development should protect and enhance the environmental, social (including heritage) and economic values of waterway.

Developers will be strongly encouraged to promote water recycling and stormwater harvesting in accordance with the PSP, including for irrigation of public land.

These standards are in addition to the requirements of the planning scheme for particular developments.

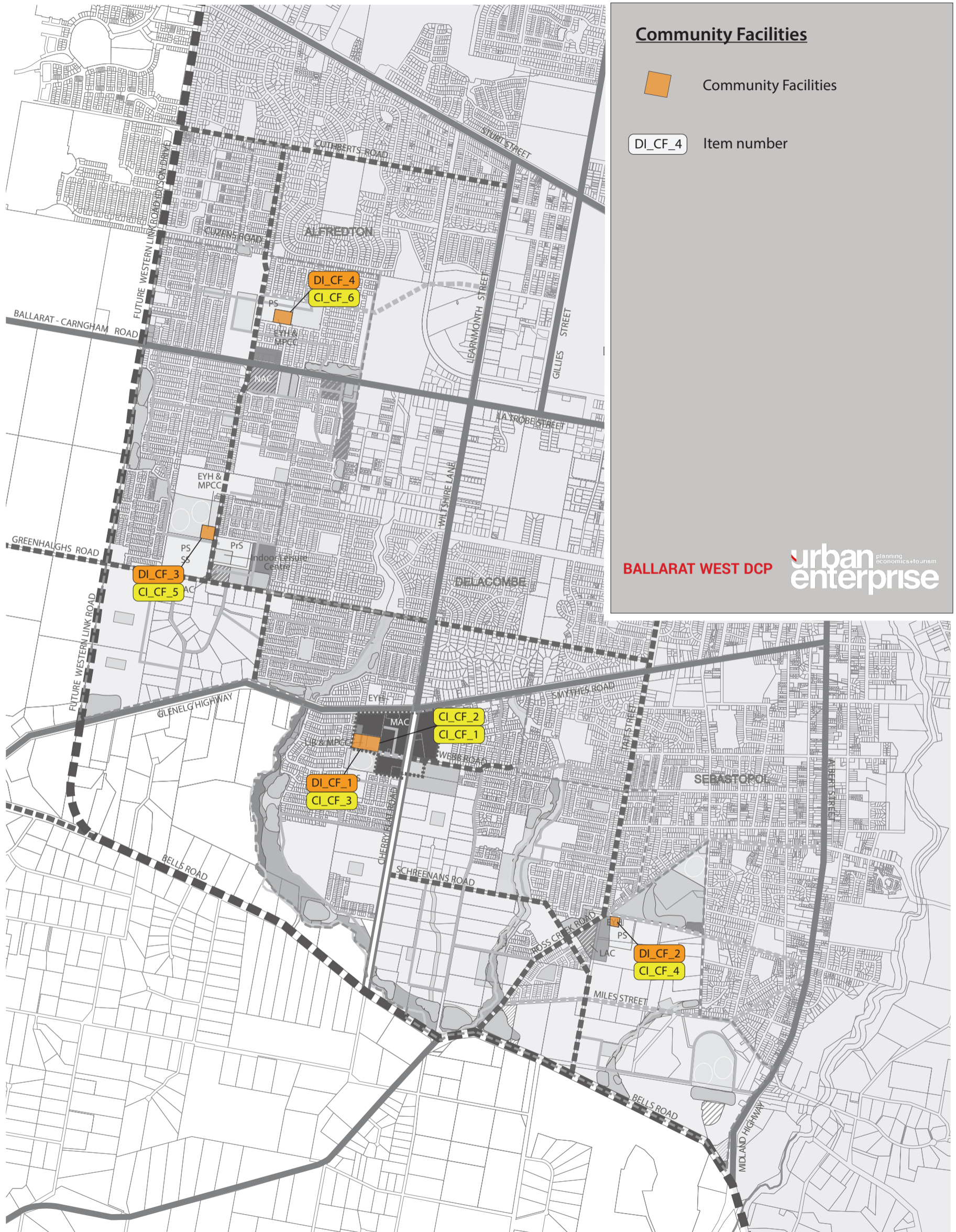
Council should be consulted directly for specifications for particular drainage projects identified in the DCP.

#### REVIEWS

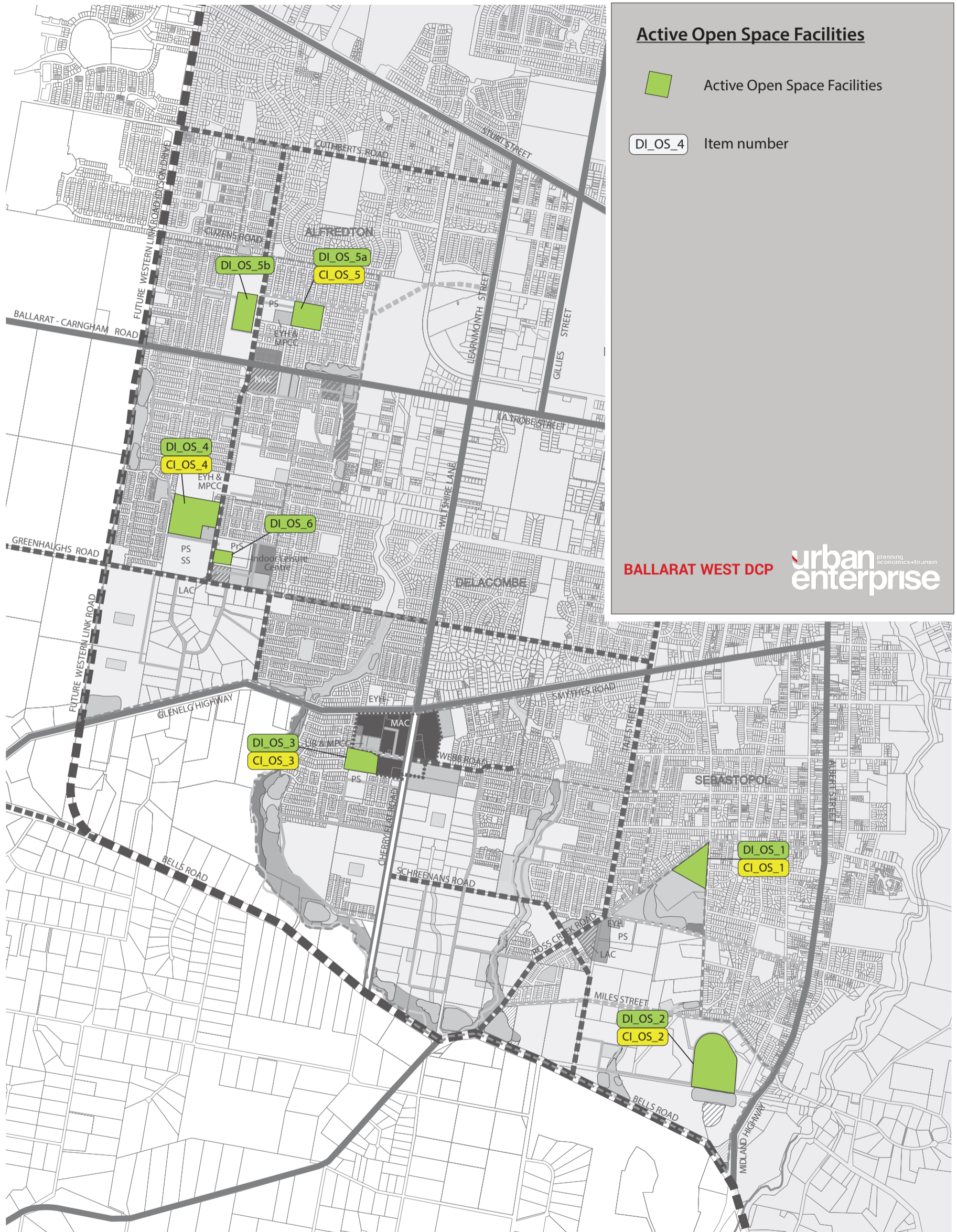
The scheme requires financial, engineering and environmental reviews on a regular basis to ensure costs are neither over nor under recovered and up-to-date requirements are met. Financial reviews will occur on an annual basis as part of setting the capital works program. Engineering reviews of the drainage scheme will be undertaken as part of regular reviews of the Ballarat West PSP and the Ballarat West DCP (approximately five-yearly). These will address the changing circumstances of the scheme, changes to engineering and environmental standards, revisions to climate change forecasts and so forth.

## **APPENDICES**

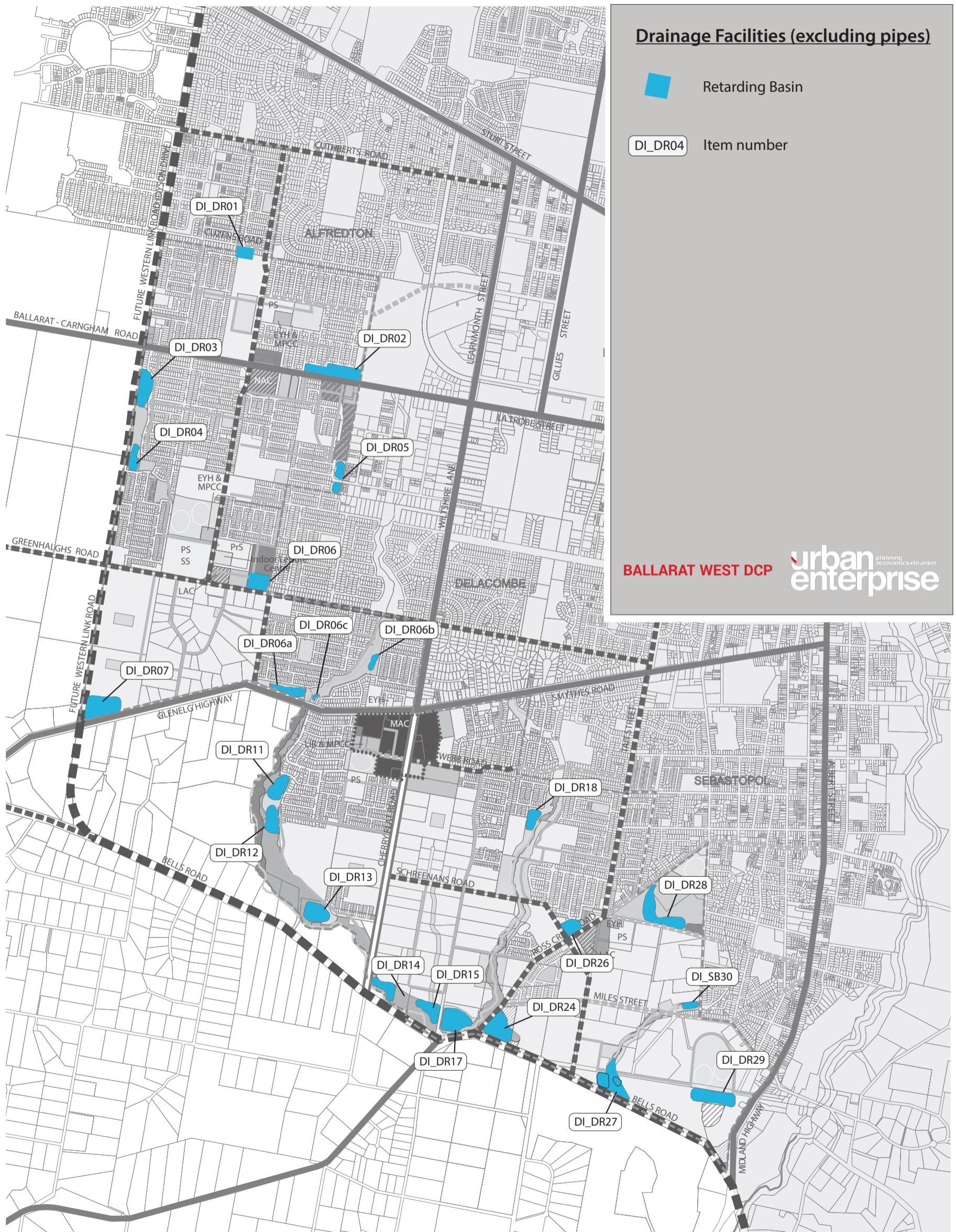
### APPENDIX A INFRASTRUCTURE LOCATION MAPS



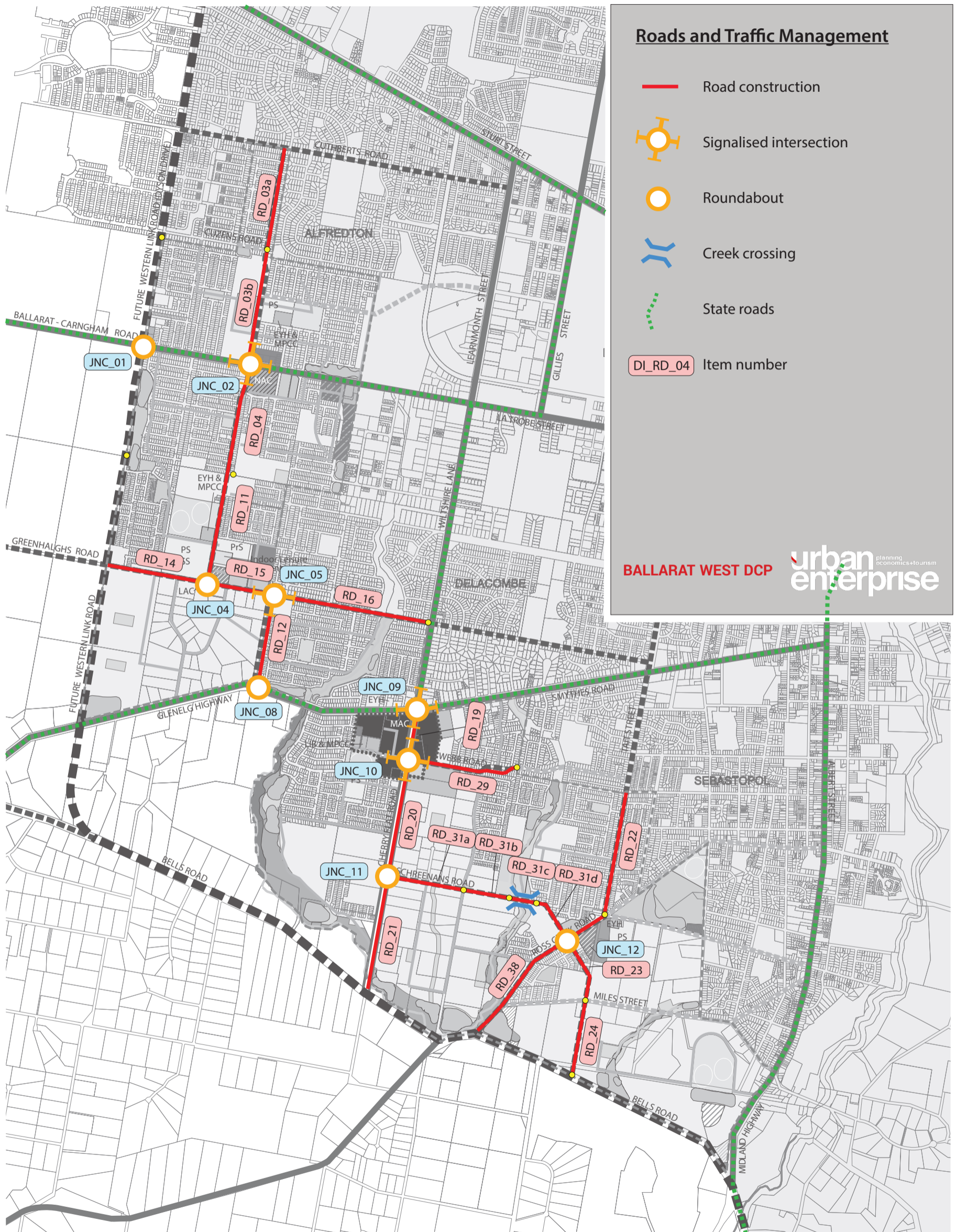




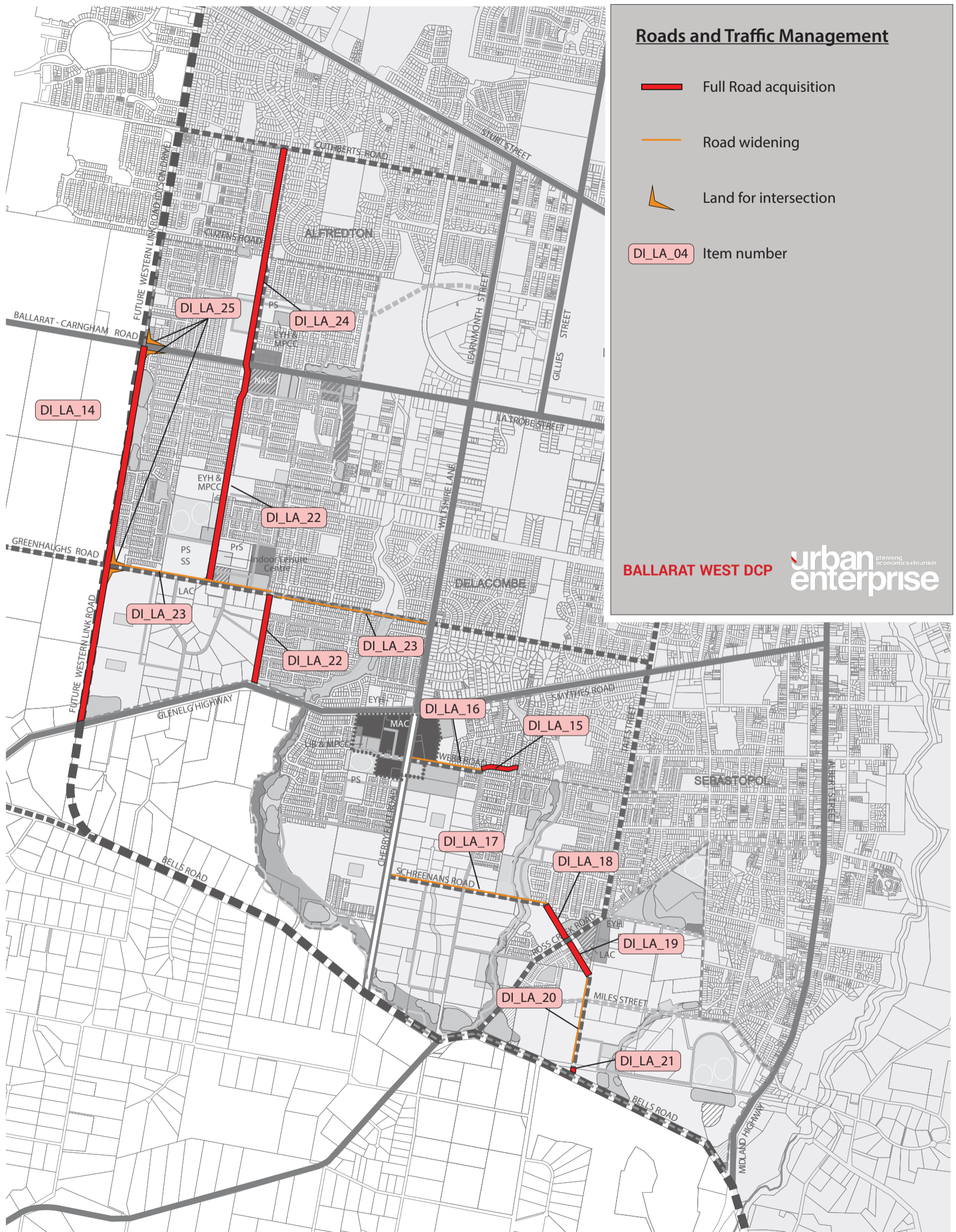




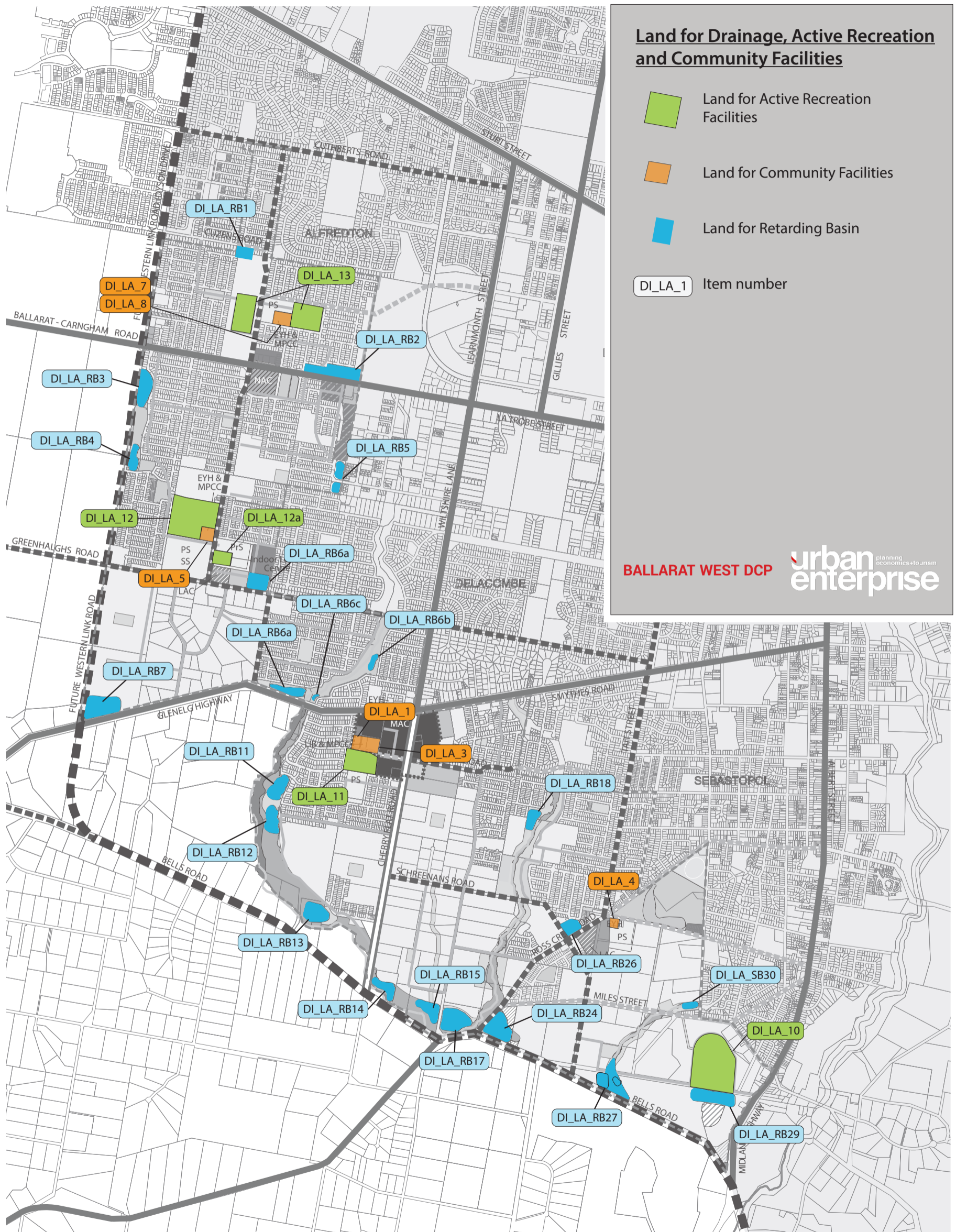




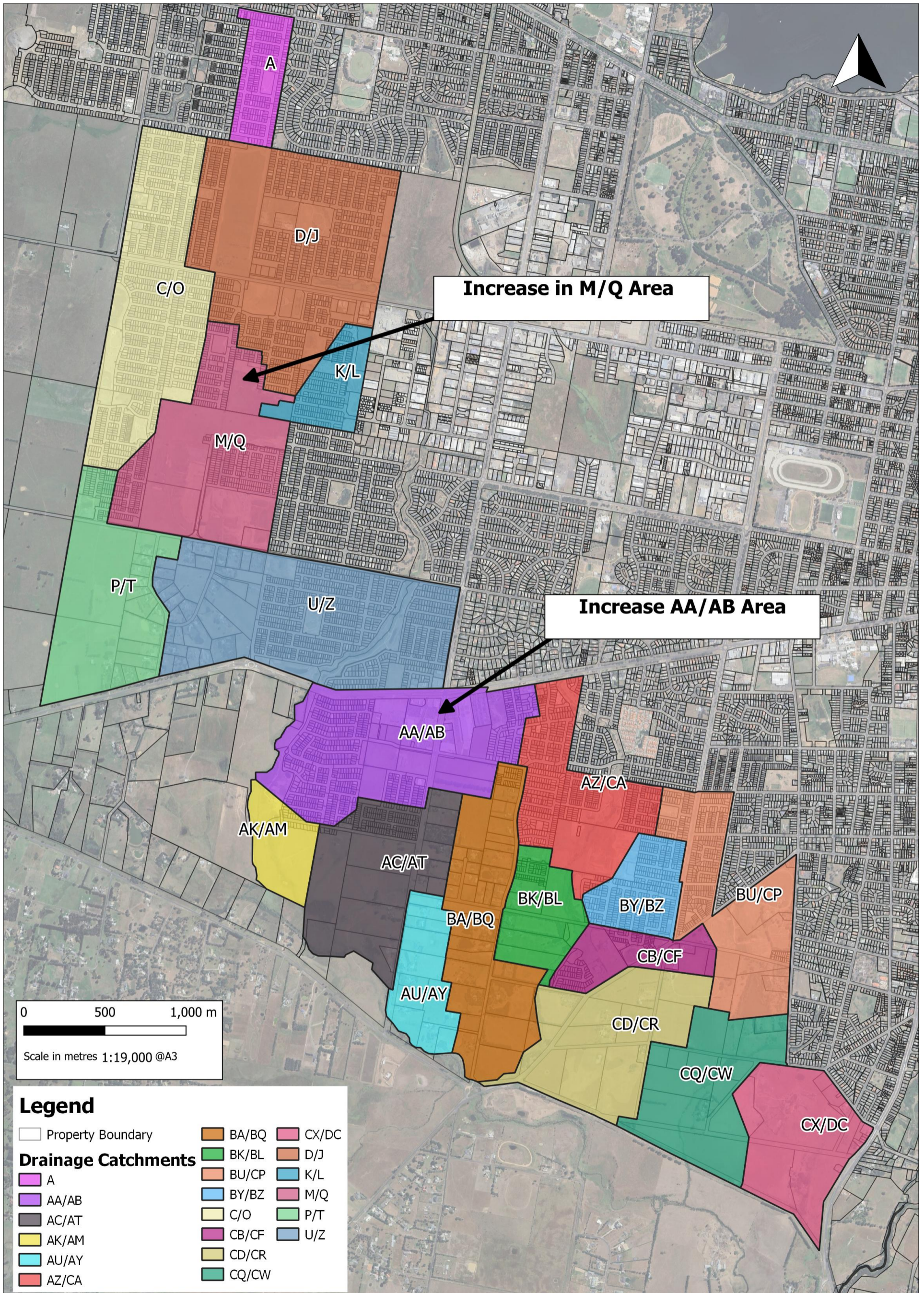














APPENDIX B DCP PROJECT SHEETS

Note 1: All values listed are in July 2024 dollars

CI_CF_1		MAC Library (sub-precinct 1) co-located with Community Centre in MAC		QUICK REFERENCE		
Project Description	Construction of one branch library of 1,800 sqm (excluding canopies, verandahs, etc) to be co-located with the community centre in MAC			CIL	CF	WORKS
Levy Type	Community	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
<b>Cost Breakdown</b>						
Cost	\$16,197,282	Units	Rate	Cost		
External	0%					
Cost to MCA	\$16,197,282					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$16,197,282					
Demand Units	15,518					
Levy Amount	\$1,043.77					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
		Indicative Project Trigger	No later than 12 000 dwellings occupied within the PSP area or at the discretion of the Responsible Authority for earlier provision	Version REF	1	1

CI_CF_2		Level 3 MAC Multi-Purpose Community Centre (sub-precinct 1)		QUICK REFERENCE		
Project Description	Construction of a level 3 multi-purpose community centre, which includes community rooms and meeting space, administrative spaces for staff and community groups and carparking within a building area of approx 4,400 sqm			CIL	CF	WORKS
Levy Type	Community	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
<b>Cost Breakdown</b>						
Cost	\$4,836,907	Units	Rate	Cost		
External	0%					
Cost to MCA	\$4,836,907					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$4,836,907					
Demand Units	15,518					
Levy Amount	\$311.70					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
		Indicative Project Trigger	No later than 12 000 dwellings occupied within the PSP area or at the discretion of the Responsible Authority for earlier provision	Version REF	1	2

CI_CF_3		Level 1 MAC Early Years Hub (sub-precinct 1) (CI component)		QUICK REFERENCE		
Project Description	Construction of community infrastructure component of early years hub, including community meeting rooms and associated facilities, outdoor areas and parking.			CIL	CF	WORKS
Levy Type	Community	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$5,027,177					
External	0%					
Cost to MCA	\$5,027,177					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$5,027,177					
Demand Units	15,518					
Levy Amount	\$323.96					
Cost Apportionment Method		Costing	VPA Benchmark Costings (indexed to July 2024)			
The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Justification				
		Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision	Version	1	
				REF	3	

CI_CF_4		Level 1 Tait Street Early Years Hub (sub-precinct 1) (CI component)		QUICK REFERENCE		
Project Description	Construction of community infrastructure component of early years hub, including community meeting rooms and associated facilities, outdoor areas and parking.			CIL	CF	WORKS
Levy Type	Community	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$5,266,475					
External	0%					
Cost to MCA	\$5,266,475					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$5,266,475					
Demand Units	15,518					
Levy Amount	\$339.38					
Cost Apportionment Method		Costing	Prowse (indexed to July 2024)			
The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Justification				
		Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision	Version	1	
				REF	4	



CI_CF_5 Level 1 LAC Multi-purpose Community Centre and Early Years Hub (sub-precinct 2) (CI component)				QUICK REFERENCE		
Project	Construction of community infrastructure component of LAC multi-use centre and early years hub, including community meeting rooms and associated facilities, outdoor areas and parking.			CIL	CF	WORKS
Description						
Levy Type	Community	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$9,027,592					
External	0%					
Cost to MCA	\$9,027,592					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$9,027,592					
Demand Units	15,518					
Levy Amount	\$581.75					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
			Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision		Version 1 REF 5

CI_CF_6 Level 1 NAC Multi-purpose Community Centre (sub-precinct 2) (CI component)				QUICK REFERENCE		
Project	Construction of community infrastructure component of NAC early years hub, including community meeting rooms and associated facilities, outdoor areas and parking.			CIL	CF	WORKS
Description						
Levy Type	Community	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$6,610,410					
External	0%					
Cost to MCA	\$6,610,410					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$6,610,410					
Demand Units	15,518					
Levy Amount	\$425.98					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	Prowse (indexed to July 2024)		
			Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision		Version 1 REF 6

CI_OS_1		MR Power Park - Pavilion		QUICK REFERENCE		
Project Description	Construction of a medium community pavilion to serve regional AOS Reserve			CIL	OS	WORKS
Levy Type	Community	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,066,580					
External	0%					
Cost to MCA	\$2,066,580					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,066,580					
Demand Units	15,518					
Levy Amount	\$133.17					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
			Indicative Project Trigger	When the trigger for construction of the Active Open Space reserve is reached.	Version REF	1 7

CI_OS_2		Mining Park - Pavilion		QUICK REFERENCE		
Project Description	Construction of small pavilion to serve the AOS Reserve - Gold Mining Area			CIL	OS	WORKS
Levy Type	Community	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$3,435,868					
External	0%					
Cost to MCA	\$3,435,868					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,435,868					
Demand Units	15,518					
Levy Amount	\$221.41					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
			Indicative Project Trigger	When the trigger for construction of the Active Open Space reserve is reached.	Version REF	1 8

CI_OS_3		Gleneilg Highway reserve (MAC) - Pavilion		QUICK REFERENCE		
Project Description	Construction of medium pavilion to serve the AOS Reserve - MAC			CIL	OS	WORKS
Levy Type	Community	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$3,435,868					
External	0%					
Cost to MCA	\$3,435,868					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,435,868					
Demand Units	15,518					
Levy Amount	\$221.41					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
			Indicative Project Trigger	When the trigger for construction of the Active Open Space reserve is reached.	Version REF	1 9

CI_OS_4		Greenhalghs reserve (LAC) - Pavilion		QUICK REFERENCE		
Project Description	Construction of medium pavilion to serve AOS Reserve - LAC			CIL	OS	WORKS
Levy Type	Community	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$4,803,101					
External	0%					
Cost to MCA	\$4,803,101					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$4,803,101					
Demand Units	15,518					
Levy Amount	\$309.52					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
			Indicative Project Trigger	When the trigger for construction of the Active Open Space reserve is reached.	Version REF	1 10

CI_OS_5		Carngham reserve (NAC) - Pavilion		QUICK REFERENCE		
Project Description	Construction of a medium pavilion to serve AOS Reserve - NAC			CIL	OS	WORKS
Levy Type	Community	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown						
Cost	\$3,435,868	Units	Rate	Cost		
External	0%					
Cost to MCA	\$3,435,868					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,435,868					
Demand Units	15,518					
Levy Amount	\$221.41					
Cost Apportionment Method	The item is required to serve the future population of the entire Ballarat West PSP area based only on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
		Indicative Project Trigger	When the trigger for construction of the Active Open Space reserve is reached.	Version REF	1	11
DI_CF_1		Level 1 MAC Early Years Hub (sub-precinct 1) (DI component)		QUICK REFERENCE		
Project Description	Construction of development component of early years hub, including kindergarten, maternal and child health centre and associated facilities, outdoor areas and parking.			DIL	CF	WORKS
Levy Type	Development	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community for community facilities.			
Category	Community Facilities	Justification				
Cost Breakdown						
Cost	\$3,057,865	Units	Rate	Cost		
External	0%					
Cost to MCA	\$3,057,865					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,057,865					
Demand Units	931					
Levy Amount	\$3,283.59					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	VPA Benchmark Costings (indexed to July 2024)		
		Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision	Version REF	1	12

DI_CF_2		Level 1 Tait Street Early Years Hub (sub-precinct 1) (DI component)			QUICK REFERENCE		
Project Description	Construction of development component of Early Years Hub, including kindergarten, associated facilities, outdoor areas and parking.			DIL	CF	WORKS	
Levy Type	Development		Strategic Justification	Item identified in CPG report (Jan 2010) as required to meet the basic needs of the future community for community facilities and subsequent additions identified in ASR report (May 2024) to meet future needs in response to changes in government funding for kindergarten places.			
Category	Community Facilities						
Cost Breakdown				Units	Rate	Cost	
Cost	\$4,704,420						
External	33%						
Cost to MCA	\$3,151,961						
Applies To	Residential						
Cell	Main Catchment Area						
Apportionment	67%						
Capital Cost	\$3,151,961						
Demand Units	931						
Levy Amount	\$3,384.63						
Cost Apportionment Method			Costing Justification	Prowse (indexed to July 2024) & VPA Benchmark Costings (indexed to July 2024)			
Two thirds of this item (i.e. two kindergarten rooms) is required to serve the future population of the Ballarat West PSP Area (ASR, 2024).			Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision		Version 1 REF 13	

DI_CF_3		Level 1 LAC Multi-purpose Community Centre and Early Years Hub (sub-precinct 2) (DI component)			QUICK REFERENCE		
Project Description	Construction of development component of LAC Multi-purpose Community Centre and Early Years Hub, including kindergarten and associated facilities, outdoor areas and parking.			DIL	CF	WORKS	
Levy Type	Development		Strategic Justification	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community for community facilities.			
Category	Community Facilities						
Cost Breakdown				Units	Rate	Cost	
Cost	\$3,894,358						
External	0%						
Cost to MCA	\$3,894,358						
Applies To	Residential						
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$3,894,358						
Demand Units	931						
Levy Amount	\$4,181.83						
Cost Apportionment Method			Costing Justification	VPA Benchmark Costings (indexed to July 2024)			
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.			Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision		Version 1 REF 14	



DI_CF_4		NAC Early Years Hub (sub-precinct 4)		QUICK REFERENCE		
Project Description	Construction of development component of NAC Early Years Hub, including kindergarten and associated facilities, outdoor areas and parking.			DIL	CF	WORKS
Levy Type	Development	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$2,851,624					
External	0%					
Cost to MCA	\$2,851,624					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,851,624					
Demand Units	931					
Levy Amount	\$3,062.12					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Prowse (indexed to July 2024)		
			Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision	Version REF	1 15
DI_LA_1		MAC Library (sub-precinct 1) - Land		QUICK REFERENCE		
Project Description	Land acquisition of 0.9 ha for the branch library			DIL	CF	LAND
Levy Type	Development	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$3,375,000	Property 3	0.90	\$3,750,000	\$3,375,000	
External	0%					
Cost to MCA	\$3,375,000					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,375,000					
Demand Units	931					
Levy Amount	\$3,624.13					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Opteon Valuation		
			Indicative Project Trigger	No later than 12 000 dwellings occupied within the PSP area or at the discretion of the Responsible Authority for earlier provision	Version REF	1 16

DJ_LA_3 Level 3 MAC Multi-Purpose Community Centre (sub-precinct 1) - Land				QUICK REFERENCE		
Project Description	Land acquisition of 1ha for integrated community facilities comprising multi-purpose community centre, with Kindergarten, Maternal and Child Health and flexible community space.			DIL	CF	LAND
Levy Type	Development	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$3,750,000	Property 4		1.00	\$3,750,000	\$3,750,000
External	0%					
Cost to MCA	\$3,750,000					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,750,000					
Demand Units	931					
Levy Amount	\$4,026.82					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Opteon Valuation		
	Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision		Version REF	1 17	

DJ_LA_4 Level 1 Tait Street Early Years Hub (sub-precinct 1) - Land				QUICK REFERENCE		
Project Description	Land acquisition of 0.5 ha for Early Years Hub comprising kindergarten and flexible community space			DIL	CF	LAND
Levy Type	Development	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$550,000	Property 120		0.50	\$1,100,000	\$550,000
External	0%					
Cost to MCA	\$550,000					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$550,000					
Demand Units	931					
Levy Amount	\$590.60					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Opteon Valuation		
	Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision		Version REF	1 18	

DJ_LA_5 LAC Early Years Hub - LAC (sub-precinct 2) - Land				QUICK REFERENCE		
Project Description	Land acquisition of 1ha of LAC Early Years Hub site consolidated with Level 1 Multipurpose Community Centre.			DIL	CF	LAND
Levy Type	Development	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$850,000	Property 156		1.00	\$850,000	\$850,000
External	0%					
Cost to MCA	\$850,000					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$850,000					
Demand Units	931					
Levy Amount	\$912.75					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Opteon Valuation		
			Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision	Version REF	1 19

DJ_LA_7 NAC Early Years Hub (sub-precinct 4) - Land				QUICK REFERENCE		
Project Description	Land acquisition of 0.5 ha for Early Years Hub collocated with the Primary School and NAC in sub-precinct 4.			DIL	CF	LAND
Levy Type	Development	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
Cost Breakdown				Units	Rate	Cost
Cost	\$450,000	Property 213		0.50	\$900,000	\$450,000
External	0%					
Cost to MCA	\$450,000					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$450,000					
Demand Units	931					
Levy Amount	\$483.22					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Opteon Valuation		
			Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision	Version REF	1 20

DJ_LA_8		Level 1 MAC Multi-purpose Community Centre (sub-precinct 4) - Land		QUICK REFERENCE		
Project Description	Land acquisition of 0.8ha for level 1 Multi-purpose Community Centre collocated with the NAC in sub-precinct 4. Collocated with Primary School and Early Years Hub.			DIL	CF	LAND
Levy Type	Development	Strategic	Item Identified in ASR report (May 2024) as required to meet the basic needs of the future community			
Category	Community Facilities	Justification	for community facilities.			
		Cost Breakdown	Units	Rate	Cost	
Cost	\$720,000	Property 213	0.80	\$900,000	\$720,000	
External	0%					
Cost to MCA	\$720,000					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$720,000					
Demand Units	931					
Levy Amount	\$773.15					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Opteon Valuation		
		Indicative Project Trigger	When the relevant enrolment trigger for the adjoining education facility is reached or at the discretion of the Responsible Authority for earlier provision	Version REF	1 21	
DI_DR_A		Drainage Scheme in sub-catchment A (sub-precinct 4)		QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment A, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$1,436,159					
External	0%					
Cost to MCA	\$1,436,159					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$1,436,159					
Demand Units	972					
Levy Amount	\$1,477.47					
Cost Apportionment Method	Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Costing Justification	SMEC Drainage Costs (indexed to July 2024)		
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1 22	

DI_DR_AA/AB Drainage Scheme in sub-catchment AA/AB (sub-precinct 1)			QUICK REFERENCE			
Project Description	Construction of a drainage scheme for sub-catchment AA/AB, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown			Units	Rate	Cost	
Cost	\$6,009,936					
External	0%					
Cost to MCA	\$6,009,936					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$6,009,936					
Demand Units	972					
Levy Amount	\$6,182.83					
Cost Apportionment Method		Costing	Engeny Drainage Costs			
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification				
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version	1	
				REF	23	

DI_DR_AC/AT Drainage Scheme in sub-catchment AC/AT (sub-precinct 1)			QUICK REFERENCE			
Project Description	Construction of a drainage scheme for sub-catchment AC/AT, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown			Units	Rate	Cost	
Cost	\$10,646,061					
External	0%					
Cost to MCA	\$10,646,061					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$10,646,061					
Demand Units	972					
Levy Amount	\$10,952.33					
Cost Apportionment Method		Costing	Engeny Drainage Costs			
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification				
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version	1	
				REF	24	



DL_DR_AK/AM Drainage Scheme in sub-catchment AK/AM (sub-precinct 1)				QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment AK/AM, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$4,446,270					
External	0%					
Cost to MCA	\$4,446,270					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$4,446,270					
Demand Units	972					
Levy Amount	\$4,574.18					
Cost Apportionment Method	Costing Justification		Engeny Drainage Costs			
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Indicative Project Trigger		Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.		Version REF	1 25

DL_DR_AU/AY Drainage Scheme in sub-catchment AU/AY (sub-precinct 1)				QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment AU/AY, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$4,163,369					
External	0%					
Cost to MCA	\$4,163,369					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$4,163,369					
Demand Units	972					
Levy Amount	\$4,283.14					
Cost Apportionment Method	Costing Justification		Engeny Drainage Costs			
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Indicative Project Trigger		Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.		Version REF	1 26

DI_DR_AZ/CA		Drainage Scheme in sub-catchment AZ/CA (sub-precinct 1)			QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment AZ/CA, including drainage pipes, retarding basins and bioretention areas				DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
Cost Breakdown					Units	Rate	Cost
Cost	\$3,951,613						
External	0%						
Cost to MCA	\$3,951,613						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$3,951,613						
Demand Units	972						
Levy Amount	\$4,065.29						
Cost Apportionment Method		Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	27	

DI_DR_BA/BQ		Drainage Scheme in sub-catchment BA/BQ (sub-precinct 1)			QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment BA/BQ, including drainage pipes, retarding basins and bioretention areas				DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
Cost Breakdown					Units	Rate	Cost
Cost	\$13,915,348						
External	0%						
Cost to MCA	\$13,915,348						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$13,915,348						
Demand Units	972						
Levy Amount	\$14,315.66						
Cost Apportionment Method		Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	28	

DI_DR_BK/BL Drainage Scheme in sub-catchment BK/BL (sub-precinct 1)				QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment BK/BL, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$482,585					
External	0%					
Cost to MCA	\$482,585					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$482,585					
Demand Units	972					
Levy Amount	\$496.47					
Cost Apportionment Method	Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	29	

DI_DR_BU/CP Drainage Scheme in sub-catchment BU/CP (sub-precinct 1)				QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment BU/CP, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$11,549,186					
External	7%					
Cost to MCA	\$10,715,216					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	93%					
Capital Cost	\$10,715,216					
Demand Units	972					
Levy Amount	\$11,023.47					
Cost Apportionment Method	Costing	Engeny Drainage Costs				
7% of costs in this sub-catchment have been apportioned to Council to reflect the proportion of works required to support existing urban development. The remaining cost has been apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	30	

DI_DR_BY/BZ Drainage Scheme in sub-catchment BY/BZ (sub-precinct 1)				QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment BY/BZ, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,773,808					
External	0%					
Cost to MCA	\$2,773,808					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,773,808					
Demand Units	972					
Levy Amount	\$2,853.61					
Cost Apportionment Method	Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	31	

DI_DR_C/O Drainage Scheme in sub-catchment C/O (sub-precinct 4)				QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment C/O, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$10,178,020					
External	0%					
Cost to MCA	\$10,178,020					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$10,178,020					
Demand Units	972					
Levy Amount	\$10,470.82					
Cost Apportionment Method	Costing	SMEC Drainage Costs (indexed to July 2024)				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	32	

DI_DR_CB/CF Drainage Scheme in sub-catchment CB/CF (sub-precinct 1)				QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment CB/CF, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,007,756					
External	0%					
Cost to MCA	\$2,007,756					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,007,756					
Demand Units	972					
Levy Amount	\$2,065.51					
Cost Apportionment Method	Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	33	

DI_DR_CD/CR Drainage Scheme in sub-catchment CD/CR (sub-precinct 1)				QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment CD/CR, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$8,035,540					
External	0%					
Cost to MCA	\$8,035,540					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$8,035,540					
Demand Units	972					
Levy Amount	\$8,266.71					
Cost Apportionment Method	Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	34	



DI_DR_CQ/CW Drainage Scheme in sub-catchment CQ/CW (sub-precinct 1)			QUICK REFERENCE			
Project Description	Construction of a drainage scheme for sub-catchment CQ/CW, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
			Cost Breakdown	Units	Rate	Cost
Cost	\$11,242,999					
External	0%					
Cost to MCA	\$11,242,999					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$11,242,999					
Demand Units	972					
Levy Amount	\$11,566.44					
Cost Apportionment Method	Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	35	

DI_DR_CX/DC Drainage Scheme in sub-catchment CX/DC (sub-precinct 1)			QUICK REFERENCE			
Project Description	Construction of a drainage scheme for sub-catchment CX/DC, including drainage pipes, retarding basins and bioretention areas			DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
			Cost Breakdown	Units	Rate	Cost
Cost	\$8,342,828					
External	0%					
Cost to MCA	\$8,342,828					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$8,342,828					
Demand Units	972					
Levy Amount	\$8,582.83					
Cost Apportionment Method	Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	36	

DI_DR_D/J		Drainage Scheme in sub-catchment D/J (sub-precinct 4)			QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment D/J, including drainage pipes, retarding basins and bioretention areas				DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
Cost Breakdown					Units	Rate	Cost
Cost	\$12,934,851						
External	0%						
Cost to MCA	\$12,934,851						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$12,934,851						
Demand Units	972						
Levy Amount	\$13,306.96						
Cost Apportionment Method		Costing	SMEC Drainage Costs (indexed to July 2024)				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.		Version REF	1	37

DI_DR_KL		Drainage Scheme in sub-catchment KL (sub-precinct 4)			QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment KL, including drainage pipes, retarding basins and bioretention areas				DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
Cost Breakdown					Units	Rate	Cost
Cost	\$4,195,090						
External	0%						
Cost to MCA	\$4,195,090						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$4,195,090						
Demand Units	972						
Levy Amount	\$4,315.77						
Cost Apportionment Method		Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.		Version REF	1	38

DI_DR_M/Q		Drainage Scheme in sub-catchment M/Q (sub-precinct 2)			QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment M/Q, including drainage pipes, retarding basins and bioretention areas				DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
Cost Breakdown					Units	Rate	Cost
Cost	\$7,213,612						
External	0%						
Cost to MCA	\$7,213,612						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$7,213,612						
Demand Units	972						
Levy Amount	\$7,421.13						
Cost Apportionment Method		Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	39	

DI_DR_P/T		Drainage Scheme in sub-catchment P/T (sub-precinct 2)			QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment P/T, including drainage pipes, retarding basins and bioretention areas				DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
Cost Breakdown					Units	Rate	Cost
Cost	\$10,494,470						
External	0%						
Cost to MCA	\$10,494,470						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$10,494,470						
Demand Units	972						
Levy Amount	\$10,796.37						
Cost Apportionment Method		Costing	Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.	Version REF	1	40	

DI_DR_U/Z		Drainage Scheme in sub-catchment U/Z (sub-precinct 2)			QUICK REFERENCE		
Project Description	Construction of a drainage scheme for sub-catchment U/Z, including drainage pipes, retarding basins and bioretention areas				DIL	DR	WORKS
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$9,293,040						
External	0%						
Cost to MCA	\$9,293,040						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$9,293,040						
Demand Units	972						
Levy Amount	\$9,560.38						
Cost Apportionment Method	Costing		Engeny Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification						
	Indicative Project Trigger	Staged delivery from the first sub-division within the sub-catchment in accordance with Section 5.			Version REF	1 41	

DI_LA_RB1		Retarding Basin 1 - Land			QUICK REFERENCE		
Project Description	Acquisition of land for Retarding Basin 1, total area: 0.9ha (developable).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$838,500	Property 211	0.50	\$950,000	\$475,000		
External	0%	Property 229	0.07	\$950,000	\$66,500		
Cost to MCA	\$838,500	Property 230	0.33	\$900,000	\$297,000		
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$838,500						
Demand Units	972						
Levy Amount	\$862.62						
Cost Apportionment Method	Costing		SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification						
	Indicative Project Trigger	As required for construction of the facility.			Version REF	1 42	

DI_LA_RB2 Retarding Basin 2 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 2, total area: 3.86ha (developable - non-residential).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$3,474,000	Property 212	2.76	\$900,000	\$2,484,000		
External	0%	Property 216	1.10	\$900,000	\$990,000		
Cost to MCA	\$3,474,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$3,474,000						
Demand Units	972						
Levy Amount	\$3,573.94						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.		Version	1	
					REF	43	

DI_LA_RB3 Retarding Basin 3 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 3, total area: 1.5ha (developable).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$1,312,500	Property 220	1.50	\$875,000	\$1,162,500		
External	0%						
Cost to MCA	\$1,312,500						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$1,312,500						
Demand Units	972						
Levy Amount	\$1,350.26						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.		Version	1	
					REF	44	



DI_LA_RB4 Retarding Basin 4 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 4, total area: 1.15ha (developable).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$965,750	Property 155	0.81	\$825,000	\$668,250		
External	0%	Property 220	0.34	\$875,000	\$297,500		
Cost to MCA	\$965,750						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$965,750						
Demand Units	972						
Levy Amount	\$993.53						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1 45		

DI_LA_RB5 Retarding Basin 5 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 5, total area: 1.09ha (developable - non-residential).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$599,500	Property 214	1.09	\$550,000	\$599,500		
External	0%						
Cost to MCA	\$599,500						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$599,500						
Demand Units	972						
Levy Amount	\$616.75						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1 46		

DI_LA_RB6 Retarding Basin 6 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 6, total area: 2.61ha (developable).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$1,700,000	Property 157	2.00	\$850,000	\$1,700,000		
External	0%						
Cost to MCA	\$1,700,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$1,700,000						
Demand Units	972						
Levy Amount	\$1,748.91						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.	Version	1		
				REF	47		

DI_LA_RB6a Retarding Basin 6 (part a) - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 6A, total area: 1.6ha (developable).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$1,400,000	Property 158	1.60	\$875,000	\$1,400,000		
External	0%						
Cost to MCA	\$1,400,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$1,400,000						
Demand Units	972						
Levy Amount	\$1,440.28						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.	Version	1		
				REF	48		

DI_LA_RB6b Retarding Basin 6 (part b) - Land				QUICK REFERENCE		
Project Description	Acquisition of land for Retarding Basin 6B, total area: 0.57ha (developable).			DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$627,000	Property 160	0.57	\$1,100,000	\$627,000	
External	0%					
Cost to MCA	\$627,000					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$627,000					
Demand Units	972					
Levy Amount	\$645.04					
Cost Apportionment Method	Costing	SMEC Drainage land requirements, Opteon valuation				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	As required for construction of the facility.	Version REF	1	49	

DI_LA_RB6c Retarding Basin 6 (part c) - Land				QUICK REFERENCE		
Project Description	Acquisition of land for Retarding Basin 6C, total area: .14ha (developable).			DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$122,500	Property 159	0.14	\$875,000	\$122,500	
External	0%					
Cost to MCA	\$122,500					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$122,500					
Demand Units	972					
Levy Amount	\$126.02					
Cost Apportionment Method	Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification					
	Indicative Project Trigger	As required for construction of the facility.	Version REF	1	50	

DI_LA_RB7 Retarding Basin 7 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 7, total area: 3.86ha (developable).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$3,088,000	Property 209	3.86	\$800,000	\$3,088,000		
External	0%						
Cost to MCA	\$3,088,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$3,088,000						
Demand Units	972						
Levy Amount	\$3,176.84						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1 51		

DI_LA_RB11 Retarding Basin 11 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 11, total area: 1.9ha (both developable and encumbered).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$1,615,000	Property 2	1.90	\$850,000	\$1,615,000		
External	0%						
Cost to MCA	\$1,615,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$1,615,000						
Demand Units	972						
Levy Amount	\$1,661.46						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1 52		

DI_LA_RB12 Retarding Basin 12 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 12, total area: 2.23ha (both developable and encumbered).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$1,895,500	Property 2	2.23	\$850,000	\$1,895,500		
External	0%						
Cost to MCA	\$1,895,500						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$1,895,500						
Demand Units	972						
Levy Amount	\$1,950.03						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1 53		

DI_LA_RB13 Retarding Basin 13 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 13, total area: 2.37ha (both developable and encumbered).				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$1,986,000	Property 11	0.45	\$1,000,000	\$450,000		
External	0%	Property 12	1.92	\$800,000	\$1,536,000		
Cost to MCA	\$1,986,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$1,986,000						
Demand Units	972						
Levy Amount	\$2,043.13						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1 54		



DI_LA_RB14 Retarding Basin 14 - Land				QUICK REFERENCE		
Project Description	Acquisition of land for Retarding Basin 14, total area: 1.74ha (encumbered).			DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Review Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,391,000	Property 81	1.70	\$800,000	\$1,360,000	
External	0%	Property 82	0.04	\$775,000	\$31,000	
Cost to MCA	\$1,391,000					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$1,391,000					
Demand Units	972					
Levy Amount	\$1,431.02					
Cost Apportionment Method		Costing	SMEC Drainage Costs			
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification				
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1	55

DI_LA_RB15 Retarding Basin 15 - Land				QUICK REFERENCE		
Project Description	Acquisition of land for Retarding Basin 15, total area: 2.25ha (encumbered)			DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Review Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,687,500	Property 83	2.25	\$750,000	\$1,687,500	
External	0%					
Cost to MCA	\$1,687,500					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$1,687,500					
Demand Units	972					
Levy Amount	\$1,736.05					
Cost Apportionment Method		Costing	SMEC Drainage Costs			
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification				
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1	56

DI_LA_RB17 Retarding Basin 17 - Land		QUICK REFERENCE						
Project Description	Acquisition of land for Retarding Basin 17, total area: 3.56ha (both developable and encumbered)				<table border="1"> <tr> <td>DIL</td> <td>DR</td> <td>LAND</td> </tr> </table>	DIL	DR	LAND
DIL	DR	LAND						
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024					
Category	Drainage	Justification						
		Cost Breakdown	Units	Rate	Cost			
Cost	\$2,581,000	Property 96	3.56	\$725,000	\$2,581,000			
External	0%							
Cost to MCA	\$2,581,000							
Applies To	Residential	Commercial						
Cell	Main Catchment Area							
Apportionment	100%							
Capital Cost	\$2,581,000							
Demand Units	972							
Levy Amount	\$2,655.25							
Cost Apportionment Method	Costing	SMEC Drainage Costs						
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification							
	Indicative Project Trigger	As required for construction of the facility.	Version REF	1	57			

DI_LA_RB18 Retarding Basin 18 - Land		QUICK REFERENCE						
Project Description	Acquisition of land for Retarding Basin 18, total area: 1.04ha (developable)				<table border="1"> <tr> <td>DIL</td> <td>DR</td> <td>LAND</td> </tr> </table>	DIL	DR	LAND
DIL	DR	LAND						
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024					
Category	Drainage	Justification						
		Cost Breakdown	Units	Rate	Cost			
Cost	\$910,000	Property 65	0.40	\$875,000	\$350,000			
External	0%	Property 67	0.64	\$875,000	\$560,000			
Cost to MCA	\$910,000							
Applies To	Residential	Commercial						
Cell	Main Catchment Area							
Apportionment	100%							
Capital Cost	\$910,000							
Demand Units	972							
Levy Amount	\$936.18							
Cost Apportionment Method	Costing	SMEC Drainage Costs						
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.	Justification							
	Indicative Project Trigger	As required for construction of the facility.	Version REF	1	58			

DI_LA_RB24 Retarding Basin 24 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 24, total area: 3.6ha (both developable and encumbered)				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$2,430,000	Property 101	3.40	\$675,000	\$2,295,000		
External	0%	Property 102	0.20	\$675,000	\$135,000		
Cost to MCA	\$2,430,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$2,430,000						
Demand Units	972						
Levy Amount	\$2,499.91						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.		Version	1	
					REF	59	

DI_LA_RB26 Retarding Basin 26 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 26, total area: 1.43ha (developable)				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$1,339,000	Property 68	1.04	\$875,000	\$910,000		
External	0%	Property 87	3.40	\$1,100,000	\$3,740,000		
Cost to MCA	\$1,339,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$1,339,000						
Demand Units	972						
Levy Amount	\$1,377.52						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.		Version	1	
					REF	60	

DI_LA_RB27 Retarding Basin 27 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 27 (RB27, SB27B, WL27), total area: 4.48ha (both developable and encumbered)				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$2,689,000	Property 134	1.13	\$675,000	\$762,750		
External	0%	Property 154	3.35	\$575,000	\$1,926,250		
Cost to MCA	\$2,689,000						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$2,689,000						
Demand Units	972						
Levy Amount	\$2,766.36						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.		Version	1	
					REF	61	

DI_LA_RB29 Retarding Basin 29 - Land		QUICK REFERENCE					
Project Description	Acquisition of land for Retarding Basin 29, total area: 3.43ha (developable)				DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024				
Category	Drainage	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$2,089,250	Property 153	2.34	\$625,000	\$1,462,500		
External	0%	Property 154	1.09	\$575,000	\$626,750		
Cost to MCA	\$2,089,250						
Applies To	Residential	Commercial					
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$2,089,250						
Demand Units	972						
Levy Amount	\$2,149.35						
Cost Apportionment Method		Costing	SMEC Drainage Costs				
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification					
		Indicative Project Trigger	As required for construction of the facility.		Version	1	
					REF	62	

DI_LA_SB30		Sediment Basin 30 - Land		QUICK REFERENCE		
Project Description	Acquisition of land for Sediment Basin 30, total area: 0.59ha (both developable and encumbered).			DIL	DR	LAND
Levy Type	Development	Strategic	Ballarat West PSP Reivew Drainage Strategy Update, Engeny, 2024			
Category	Drainage	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$649,000	Property 128	0.59	\$1,100,000	\$649,000	
External	0%					
Cost to MCA	\$649,000					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$649,000					
Demand Units	972					
Levy Amount	\$667.67					
Cost Apportionment Method		Costing	SMEC Drainage Costs			
Costs apportioned based on NDA between all landowners in the Ballarat West PSP Area.		Justification				
		Indicative Project Trigger	As required for construction of the facility.	Version REF	1 63	
DI_LA_10		Active Open Space - (Crown Land) - Mining Park (sub-precinct 1) - Land - Acquisition of Crown Land for the Mining Park Active Open Space Reserve: area 10.19ha		QUICK REFERENCE		
Project Description	Acquisition of Crown Land for the Mining Park Active Open Space Reserve: area 10.19ha			DIL	OS	LAND
Levy Type	Development	Strategic	This project is required to provide adequate regional open space facilities for the new community.			
Category	Open Space	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$6,623,500	Property 138	10.19	\$650,000	\$6,623,500	
External	0%					
Cost to MCA	\$6,623,500					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$6,623,500					
Demand Units	931					
Levy Amount	\$7,112.43					
Cost Apportionment Method		Costing	Opteon Valuation			
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Justification				
		Indicative Project Trigger	No later than 4,800 dwellings occupied in precinct 1 or at the discretion of the Responsible Authority for earlier provision	Version REF	1 64	

DI_LA_11		Active Open Space - MAC (sub-precinct 1) - Land - Land acquisition (3.5ha) for the Glenelg Highway (MAC) Active Open Space Reserve.			QUICK REFERENCE		
Project Description	Land acquisition (3.5ha) for the Glenelg Highway (MAC) Active Open Space Reserve.				DIL	OS	LAND
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.				
Category	Open Space	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$4,625,000	Property 2	0.50	\$850,000	\$425,000		
External	0%	Property 3	3.00	\$1,400,000	\$4,200,000		
Cost to MCA	\$4,625,000						
Applies To	Residential						
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$4,625,000						
Demand Units	931						
Levy Amount	\$4,966.41						
Cost Apportionment Method		Costing	Opteon Valuation				
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Justification					
		Indicative Project Trigger	No later than 2,400 dwellings occupied in precinct 1 or at the discretion of the Responsible Authority for earlier provision		Version REF	1 65	

DI_LA_12		Active Open Space - LAC (sub-precinct 2) - Land - Land acquisition (9.03ha) for the Greenhalghs LAC Active Open Space Reserve.			QUICK REFERENCE		
Project Description	Land acquisition (9.03ha) for the Greenhalghs LAC Active Open Space Reserve.				DIL	OS	LAND
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.				
Category	Open Space	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$7,675,500	Property 156	9.03	\$850,000	\$7,675,500		
External	0%						
Cost to MCA	\$7,675,500						
Applies To	Residential						
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$7,675,500						
Demand Units	931						
Levy Amount	\$8,242.09						
Cost Apportionment Method		Costing	Opteon Valuation				
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Justification					
		Indicative Project Trigger	No later than 2,400 dwellings occupied in precinct 2 or at the discretion of the Responsible Authority for earlier provision		Version REF	1 66	



DI_LA_12a		Active Open Space - LAC (part a) (sub-precinct 2) - Land - Land acquisition of 1.3ha for Indoor Recreation Centre adjacent to LAC (sub-precinct 2)			QUICK REFERENCE		
Project Description	Land acquisition of 1.3ha for Indoor Recreation Centre adjacent to LAC (sub-precinct 2)				DIL	OS	LAND
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.				
Category	Open Space	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$1,105,000	Property 156	1.30	\$850,000	\$1,105,000		
External	0%						
Cost to MCA	\$1,105,000						
Applies To	Residential						
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$1,105,000						
Demand Units	931						
Levy Amount	\$1,186.57						
Cost Apportionment Method		Costing	Opteon Valuation				
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Justification					
		Indicative Project Trigger	No later than 2,400 dwellings occupied in precinct 2 or at the discretion of the Responsible Authority for earlier provision		Version REF	1 67	

DI_LA_13		Active Open Space - NAC (sub-precinct 4) - Land - Land acquisition (8ha) for the Carngham Road Active Open Space Reserve collocated with the NAC.			QUICK REFERENCE		
Project Description	Land acquisition (8ha) for the Carngham Road Active Open Space Reserve collocated with the NAC.				DIL	OS	LAND
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.				
Category	Open Space	Justification					
		Cost Breakdown	Units	Rate	Cost		
Cost	\$7,200,000	Property 212	0.16	\$900,000	\$144,000		
External	0%	Property 213	3.84	\$900,000	\$3,456,000		
Cost to MCA	\$7,200,000	Property 230	4.00	\$900,000	\$3,600,000		
Applies To	Residential						
Cell	Main Catchment Area						
Apportionment	100%						
Capital Cost	\$7,200,000						
Demand Units	931						
Levy Amount	\$7,731.49						
Cost Apportionment Method		Costing	CPG Report (p.64)				
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Justification					
		Indicative Project Trigger	No later than 2,400 dwellings occupied in precinct 4 or at the discretion of the Responsible Authority for earlier provision		Version REF	1 68	

DI_OS_1		AOS Reserve at MR Power Park (sub-precinct 1)		QUICK REFERENCE		
Project Description	Construction of 4ha AOS Reserve at MR Power Park, including 1 football/cricket oval, regional play space, site establishment, water supply and car parking			DIL	OS	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$8,434,635					
External	0%					
Cost to MCA	\$8,434,635					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$8,434,635					
Demand Units	931					
Levy Amount	\$9,057.26					
Cost Apportionment Method		Costing	Prowse			
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Justification				
		Indicative Project Trigger	No later than 11,200 dwellings occupied within the PSP area or at the discretion of the Responsible Authority for earlier provision	Version REF	1	69

DI_OS_2		AOS Reserve - Mining Park (sub-precinct 1)		QUICK REFERENCE		
Project Description	Construction of the Mining Park Active Open Space reserve (10.19ha), including 3 soccer fields, local play space, water retention and car parking.			DIL	OS	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$15,524,364					
External	0%					
Cost to MCA	\$15,524,364					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$15,524,364					
Demand Units	931					
Levy Amount	\$16,670.34					
Cost Apportionment Method		Costing	Prowse			
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Justification				
		Indicative Project Trigger	No later than 4,800 dwellings occupied in precinct 1 or at the discretion of the Responsible Authority for earlier provision	Version REF	1	70

DI_OS_3		AOS Reserve - MAC (sub-precinct 1)		QUICK REFERENCE		
Project Description	Construction of Glenelg Highway AOS Reserve (3.5ha) adjacent to the MAC, including 2 football/cricket ovals and car parking.			DIL	OS	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$8,611,294					
External	0%					
Cost to MCA	\$8,611,294					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$8,611,294					
Demand Units	931					
Levy Amount	\$9,246.96					
Cost Apportionment Method	Costing		Opteon Valuation Report			
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.	Justification					
	Indicative Project Trigger	No later than 2,400 dwellings occupied in precinct 1 or at the discretion of the Responsible Authority for earlier provision	Version REF	1	71	

DI_OS_4		AOS Reserve - LAC (sub-precinct 2)		QUICK REFERENCE		
Project Description	Construction of 9.03ha Greenhalghs AOS reserve adjacent to the LAC, including 2 cricket/football ovals, 2 netball courts, local play space, water retention and car parking.			DIL	OS	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$12,343,806					
External	0%					
Cost to MCA	\$12,343,806					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$12,343,806					
Demand Units	931					
Levy Amount	\$13,255.00					
Cost Apportionment Method	Costing		Opteon Valuation Report			
The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.	Justification					
	Indicative Project Trigger	No later than 2,400 dwellings occupied in precinct 2 or at the discretion of the Responsible Authority for earlier provision	Version REF	1	72	

DL_OS_5a		AOS Reserve - NAC (sub-precinct 4) (part a)		QUICK REFERENCE		
Project Description	Construction of 4ha Carngham Road AOS Reserve adjacent to the NAC, including 1 oval, rectangular courts, local play space, shelter, toilets and car parking.			DIL	OS	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,782,273					
External	0%					
Cost to MCA	\$2,782,273					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,782,273					
Demand Units	931					
Levy Amount	\$2,987.65					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Actual cost incurred (indexed to July 2024)		
			Indicative Project Trigger	No later than 2,400 dwellings occupied in precinct 4 or at the discretion of the Responsible Authority for earlier provision	Version REF	1 73

DL_OS_5b		AOS Reserve - NAC (sub-precinct 4) (part b)		QUICK REFERENCE		
Project Description	Construction of 4ha AOS Reserve - West, including 1 football/cricket oval, rectangular hard courts, local play space and car parking.			DIL	OS	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$8,434,635					
External	0%					
Cost to MCA	\$8,434,635					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$8,434,635					
Demand Units	931					
Levy Amount	\$9,057.26					
Cost Apportionment Method	The item is required to serve the future population of the Ballarat West PSP Area only, based on provision ratios.		Costing Justification	Opteon Valuation Report		
			Indicative Project Trigger	No later than 2,400 dwellings occupied in precinct 4 or at the discretion of the Responsible Authority for earlier provision	Version REF	1 74

DI_OS_6		Indoor Recreation Centre (8 courts) adjacent to LAC (sub-precinct 2)		QUICK REFERENCE		
Project Description	Construction of Indoor Recreation Centre adjacent to the Greenhalghs AOS Reserve (8 courts)			DIL	OS	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate active open space facilities for the new community.			
Category	Open Space	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$58,004,362					
External	50%					
Cost to MCA	\$29,002,181					
Applies To	Residential					
Cell	Main Catchment Area					
Apportionment	50%					
Capital Cost	\$29,002,181					
Demand Units	931					
Levy Amount	\$31,143.06					
Cost Apportionment Method	50% of costs in this item have been apportioned externally to reflect the proportion of works needed to support the future population of Ballarat West PSP., based on the Community Needs Assessment (ANP 2024)		Costing Justification	Opteon Valuation Report		
			Indicative Project Trigger	No later than 14,000 dwellings occupied in the PSP area or at the discretion of the Responsible Authority for earlier provision	Version REF	1 75
DI_LA_14		Western Link Road (Stage 2b) - Land		QUICK REFERENCE		
Project Description	Acquisition of land for the Western Link Road reserve (20m) between Carrngham Road and Glenelg Highway: length 2650m, width 20m, area: 5.3ha			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$4,323,750	Property 155	1.73	\$825,000	\$1,427,250	
External	0%	Property 208	1.25	\$800,000	\$1,000,000	
Cost to MCA	\$4,323,750	Property 209	1.78	\$800,000	\$1,424,000	
Applies To	Residential Commercial	Property 220	0.54	\$875,000	\$472,500	
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$4,323,750					
Demand Units	972					
Levy Amount	\$4,448.14					
Cost Apportionment Method	That part of the Western Link Road reservation which is required to serve the PSP area only. Land for future duplication to act as a bypass for the wider city is not included.		Costing Justification	Opteon Valuation Report		
			Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.	Version REF	1 76

DI_LA_15		Ascot Gardens Drive Extension - Land		QUICK REFERENCE		
Project Description	Land acquisition for Ascot Gardens Drive extension between existing road reserve and PSP area boundary: length 266m, width 24m, area: 0.64ha			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification	the road hierarchy caters for traffic growth.			
Cost		Cost Breakdown		Units	Rate	Cost
External	\$738,500	Property 29	0.63	\$1,150,000	\$724,500	
Cost to MCA	0%	Property 57	0.01	\$1,400,000	\$14,000	
Applies To	\$738,500					
	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$738,500					
Demand Units	972					
Levy Amount	\$759.75					
Cost Apportionment Method	Costing		Opteon Valuation Report			
Full cost apportioned to the PSP Area (internal road network).	Justification					
	Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.		Version REF	1	77

DI_LA_16		Webb Rd Widening - Land		QUICK REFERENCE		
Project Description	Land acquisition to widen the existing 20m Webb Road reservation to 24m (total area to be acquired 0.26ha)			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification	the road hierarchy caters for traffic growth.			
Cost		Cost Breakdown		Units	Rate	Cost
External	\$451,500	Property 19	0.08	\$2,400,000	\$192,000	
Cost to MCA	0%	Property 23	0.05	\$1,800,000	\$90,000	
Applies To	\$451,500	Property 24	0.05	\$1,300,000	\$65,000	
	Residential	Commercial	Property 26	0.05	\$1,400,000	\$70,000
Cell	Main Catchment Area		Property 29	0.03	\$1,150,000	\$34,500
Apportionment	100%					
Capital Cost	\$451,500					
Demand Units	972					
Levy Amount	\$464.49					
Cost Apportionment Method	Costing		Opteon Valuation Report			
Full cost apportioned to the PSP Area (internal road network).	Justification					
	Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.		Version REF	1	78



DI_LA_17 Schreenans Road widening - Land				QUICK REFERENCE		
Project Description	Land acquisition for Schreenans Road widening and roundabout with Cherry Flat Road: length 1050m, width 4m, area: 0.42ha			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$578,500	Property 42	0.03	\$1,600,000	\$48,000	
External	0%	Property 43	0.02	\$1,650,000	\$33,000	
Cost to MCA	\$578,500	Property 44	0.02	\$1,650,000	\$33,000	
Applies To	Residential	Property 48	0.04	\$1,600,000	\$64,000	
	Commercial	Property 52	0.03	\$1,650,000	\$49,500	
Cell	Main Catchment Area	Property 55	0.03	\$1,625,000	\$48,750	
Apportionment	100%	Property 56	0.05	\$1,600,000	\$80,000	
Capital Cost	\$578,500	Property 64	0.09	\$1,400,000	\$126,000	
Demand Units	972	Property 68	0.11	\$875,000	\$96,250	
Levy Amount	\$595.14					
Cost Apportionment Method	Costing		Opteon Valuation Report			
Full cost apportioned to the PSP Area (internal road network).	Justification					
	Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.		Version REF	1 79	

DI_LA_18 Schreenans Road extension (re-routed) - Land				QUICK REFERENCE		
Project Description	Land acquisition for re-routed Schreenans Road between existing reserve and Ross Creek Road: 287.5m x 24m, area 0.69ha.			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$690,000	Property 86	0.69	\$1,000,000	\$690,000	
External	0%					
Cost to MCA	\$690,000					
Applies To	Residential					
	Commercial					
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$690,000					
Demand Units	972					
Levy Amount	\$709.85					
Cost Apportionment Method	Costing		Opteon Valuation Report			
Full cost apportioned to the PSP Area (internal road network).	Justification					
	Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.		Version REF	1 80	

DI_LA_19		Cobden Street extension (re-routed) - Land		QUICK REFERENCE		
Project Description	Land acquisition for re-routed Cobden Street between existing reserve and Ross Creek Road: 258m x 24m, area 0.62ha.			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$620,000	Property 97	0.62	\$1,000,000	\$620,000	
External	0%					
Cost to MCA	\$620,000					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$620,000					
Demand Units	972					
Levy Amount	\$637.84					
Cost Apportionment Method	Full cost apportioned to the PSP Area (internal road network).		Costing Justification	Opteon Valuation Report		
		Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.	Version REF	1	81

DI_LA_20		Cobden Street widening - Land		QUICK REFERENCE		
Project Description	Land acquisition for widening of existing Cobden Street reservation between Bonshaw Street and beginning of re-routed alignment. 4m x 1000m, area 0.40ha.			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$350,750	Property 99	0.22	\$900,000	\$198,000	
External	0%	Property 104	0.05	\$675,000	\$33,750	
Cost to MCA	\$350,750	Property 103	0.13	\$1,300,000	\$169,000	
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$350,750					
Demand Units	972					
Levy Amount	\$360.84					
Cost Apportionment Method	Full cost apportioned to the PSP Area (internal road network).		Costing Justification	Opteon Valuation Report		
		Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.	Version REF	1	82

DI_LA_21		Cobden Street link to Bells Road - Land		QUICK REFERENCE		
Project Description	Land acquisition for new Cobden Street reservation to link southern limit of existing reservation with Bells Road. 24m x 35m, area 0.08ha.			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$46,000	Property 154	0.08	\$575,000	\$46,000	
External	0%					
Cost to MCA	\$46,000					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$46,000					
Demand Units	972					
Levy Amount	\$47.32					
Cost Apportionment Method		Costing	Opteon Valuation Report			
Full cost apportioned to the PSP Area (internal road network).		Justification				
		Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.	Version REF	1 83	

DI_LA_22		New north south road in sub-precinct 2 - Land		QUICK REFERENCE		
Project Description	Acquisition of road reserve for new north south road in sub-precinct 2. Reserve width: 24m, length 1483m, area: 3.56ha.			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$3,065,750	Property 156	1.00	\$850,000	\$850,000	
External	0%	Property 157	0.97	\$850,000	\$824,500	
Cost to MCA	\$3,065,750	Property 158	1.59	\$875,000	\$1,391,250	
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,065,750					
Demand Units	972					
Levy Amount	\$3,153.95					
Cost Apportionment Method		Costing	Opteon Valuation Report			
Full cost apportioned to the PSP Area (internal road network).		Justification				
		Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.	Version REF	1 84	

DI_LA_23 Widening of Greenhalghs Road - Land			QUICK REFERENCE			
Project Description	Land acquisition for the widening of Greenhalghs Road between Wiltshire Lane and the future Western Link Road. Width: 4m, length: 2275m, area: 0.91ha.			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown			Units	Rate	Cost	
Cost	\$819,250	Property 155	0.15	\$825,000	\$123,750	
External	0%	Property 156	0.15	\$850,000	\$127,500	
Cost to MCA	\$819,250	Property 157	0.15	\$850,000	\$127,500	
Applies To	Residential	Property 158	0.15	\$875,000	\$131,250	
		Property 159	0.19	\$875,000	\$166,250	
Cell	Main Catchment Area	Property 160	0.04	\$1,100,000	\$44,000	
Apportionment	100%	Property 161	0.04	\$900,000	\$36,000	
Capital Cost	\$819,250	Property 163	0.03	\$1,550,000	\$46,500	
Demand Units	972	Property 164	0.01	\$1,650,000	\$16,500	
Levy Amount	\$842.82					
Cost Apportionment Method		Costing	Opteon Valuation Report			
Full cost apportioned to the PSP area (internal road network).		Justification				
		Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.	Version REF	1 85	

DI_LA_24 New north south road in sub-precinct 4 - Land			QUICK REFERENCE			
Project Description	Land acquisition for new north south road reserve in sub-precinct 4: length: 2492m, width 24m, area: 5.89ha.			DIL	RD	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown			Units	Rate	Cost	
Cost	\$5,398,000	Property 211 (actual credit value)	1.94	\$950,000	\$1,843,000	
External	0%	Property 218 (actual credit value)	1.94	\$900,000	\$1,746,000	
Cost to MCA	\$5,398,000	Property 230	2.01	\$900,000	\$1,809,000	
Applies To	Residential					
		Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$5,398,000					
Demand Units	972					
Levy Amount	\$5,553.29					
Cost Apportionment Method		Costing	Opteon Valuation Report			
Full cost apportioned to the PSP area (internal road network).		Justification				
		Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.	Version REF	1 86	

DI_RD_03a		New N-S Road (North) between Cuthberts Road and Cuzens Road		QUICK REFERENCE		
Project Description	Construction of new north-south road between Cuthberts Road and Cuzens Road to Link standard (747.5m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$3,103,436					
External	0%					
Cost to MCA	\$3,103,436					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,103,436					
Demand Units	972					
Levy Amount	\$3,192.72					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).		Costing Justification	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)		
			Indicative Project Trigger	Staged construction as access to adjacent development is required OR 600 lots in Precinct 4 and RD_03b completed.	Version REF	1 87

DI_RD_03b		New N-S Road (North) between Cuzens Road and Carngham Road		QUICK REFERENCE		
Project Description	Construction of new north-south road between Cuzens Road and Carngham Road to Link standard (747.5m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$3,103,436					
External	0%					
Cost to MCA	\$3,103,436					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,103,436					
Demand Units	972					
Levy Amount	\$3,192.72					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).		Costing Justification	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)		
			Indicative Project Trigger	In stages from the first subdivision between Cuzens Road and Carngham Road that requires access from the North South Road.	Version REF	1 88

DI_RD_04		New N-S Road (North) between Carngham Road and sub-precinct 4 southern boundary		QUICK REFERENCE		
Project Description	Construction of new north-south road between Carngham Road and sub-precinct 4 Southern boundary to Link standard (675m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,817,230					
External	0%					
Cost to MCA	\$2,817,230					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,817,230					
Demand Units	972					
Levy Amount	\$2,898.28					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).		Costing Justification	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)		
			Indicative Project Trigger	In stages from the first subdivision between Carngham Road and the sub-Precinct 4 southern boundary that requires access from the North South	Version REF	1 89

DI_RD_11		New N-S Road construction - sub-precinct 2 northern section		QUICK REFERENCE		
Project Description	Construction of the new north-south road between sub-precinct 2 northern boundary and Greenhalghs Road (758m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$3,165,532					
External	0%					
Cost to MCA	\$3,165,532					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,165,532					
Demand Units	972					
Levy Amount	\$3,256.60					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officer (indexed to July 2024).		
			Indicative Project Trigger	Staged construction from the first subdivision, school or community facility requiring access to the section of road.	Version REF	1 90



DI_RD_12		New N-S Road construction - sub-precinct 2 southern section		QUICK REFERENCE		
Project Description	Construction of the new north-south road between Greenhalghs Road and Glenelg Highway (462m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,936,965					
External	0%					
Cost to MCA	\$1,936,965					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$1,936,965					
Demand Units	972					
Levy Amount	\$1,992.69					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).	Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officer (indexed to July 2024).			
		Indicative Project Trigger	Staged construction from one end as required for access to subdivision.	Version	1	
				REF	91	
DI_RD_14		Greenhalghs Road upgrade - western section		QUICK REFERENCE		
Project Description	Upgrade of existing road to Link Road 1 standard between the north-south road (northern section) and future Western Link Road (632m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,371,791					
External	0%					
Cost to MCA	\$2,371,791					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,371,791					
Demand Units	972					
Levy Amount	\$2,440.02					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).	Costing Justification	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
		Indicative Project Trigger	Staged construction moving west from the LAC as access to adjacent development is required OR when a bus route is required along this section of Greenhalghs Road.	Version	1	
				REF	92	

DI_RD_15		Greenhalghs Road upgrade - central section		QUICK REFERENCE		
Project Description	Upgrade of existing road to Link Road 1 standard between the north-south road (northern section) and the new north south road (southern section) (344m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$708,170					
External	0%					
Cost to MCA	\$708,170					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$708,170					
Demand Units	972					
Levy Amount	\$728.54					
Cost Apportionment Method		Costing	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Full cost apportioned to the PSP area (internal road network).		Justification				
		Indicative Project Trigger	The first subdivision requiring access to this section of road OR when a bus route is required along this section of Greenhalghs Road OR construction of RD 11 commencing.	Version	1	
				REF	93	

DI_RD_16		Greenhalghs Road upgrade - eastern section		QUICK REFERENCE		
Project Description	Upgrade of existing road to Link Road 1 standard between the north-south road (southern section) and Wiltshire Lane (1035m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,363,185					
External	0%					
Cost to MCA	\$2,363,185					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,363,185					
Demand Units	972					
Levy Amount	\$2,431.17					
Cost Apportionment Method		Costing	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Full cost apportioned to the PSP area (internal road network).		Justification				
		Indicative Project Trigger	When a bus route is required along this section of Greenhalghs Road OR in stages as access to adjacent development on the southern side of	Version	1	
				REF	94	

DI_RD_19		Cherry Flat Road Upgrade - Wiltshire Road to Webb Road		QUICK REFERENCE		
Project Description	Upgrade of existing road to Link Road between Wiltshire Lane and Webb Road (Length 320m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,434,116					
External	0%					
Cost to MCA	\$1,434,116					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$1,434,116					
Demand Units	972					
Levy Amount	\$1,475.37					
Cost Apportionment Method		Costing	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Full cost apportioned to the PSP area (internal road network).		Justification				
		Indicative Project Trigger	The first commercial subdivision adjacent to this section of Cheery Flat Road OR when a bus route is required.	Version	1	
				REF	95	

DI_RD_20		Cherry Flat Road Upgrade - Webb Road to Schreenans Road		QUICK REFERENCE		
Project Description	Upgrade of existing road to Link Road between Webb Road and Schreenans Road (Length 790m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$3,499,851					
External	0%					
Cost to MCA	\$3,499,851					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,499,851					
Demand Units	972					
Levy Amount	\$3,600.53					
Cost Apportionment Method		Costing	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Full cost apportioned to the PSP area (internal road network).		Justification				
		Indicative Project Trigger	Staged construction moving south from Webb Road as access to adjacent development is required OR when a bus route is required along this section of Cherrv Flat Road.	Version	1	
				REF	96	

DI_RD_21		Cherry Flat Road Upgrade - Schreenans Road to Bells Road		QUICK REFERENCE		
Project Description	Upgrade of existing road to Duplicated Link Road standard between Schreenans Road and Bells Road (Length 750m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$4,307,292					
External	0%					
Cost to MCA	\$4,307,292					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$4,307,292					
Demand Units	972					
Levy Amount	\$4,431.20					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officer (indexed to July 2024).		
			Indicative Project Trigger	Staged construction moving south from Schreenans Road as access to adjacent development is required OR when a bus route is required along this section of Cherrv Flat Road.	Version	1
					REF	97

DI_RD_22		Tait Street upgrade		QUICK REFERENCE		
Project Description	Upgrade of Tait Street between Ross Creek Road and sub-precinct 1 northern boundary to link road standard (780m).			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$3,773,599					
External	0%					
Cost to MCA	\$3,773,599					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,773,599					
Demand Units	972					
Levy Amount	\$3,882.16					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).		Costing Justification	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)		
			Indicative Project Trigger	Staged construction moving south from the PSP area boundary as access to adjacent development is required OR construction of the Tait Street Primary	Version	1
					REF	98

DI_RD_23		Cobden Street construction north		QUICK REFERENCE		
Project Description	Upgrade of existing Cobden Street and construction of re-routed (north) sections of Cobden Street between Ross Creek Road and Miles Street to Link standard (400m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,783,583					
External	0%					
Cost to MCA	\$1,783,583					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$1,783,583					
Demand Units	972					
Levy Amount	\$1,834.89					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officer (indexed to July 2024).		
			Indicative Project Trigger	The first subdivision requiring access from this section of road OR construction of the Tait Street Primary School or LAC.	Version REF	1 99

DI_RD_24		Cobden Street construction south		QUICK REFERENCE		
Project Description	Construction of new Cobden Street extension between Miles Street and Bells Road to Link standard (480m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,012,722					
External	0%					
Cost to MCA	\$2,012,722					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$2,012,722					
Demand Units	972					
Levy Amount	\$2,070.62					
Cost Apportionment Method	Full cost apportioned to the PSP area (internal road network).		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officer (indexed to July 2024).		
			Indicative Project Trigger	Construction of RD_36 OR when a bus route is required along the road OR in stages as access to adjacent development is required.	Version REF	1 100

DI_RD_29		Ascot Gardens Drive and Webb Rd		QUICK REFERENCE		
Project Description	Construction of Ascot Gardens Drive and upgrading of Webb Road between PSP area boundary and Cherry Flat Road to Link standard (754m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$3,077,675					
External	0%					
Cost to MCA	\$3,077,675					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$3,077,675					
Demand Units	972					
Levy Amount	\$3,166.21					
Cost Apportionment Method		Costing	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Full cost apportioned to the PSP area (internal road network).		Justification				
		Indicative Project Trigger	Staged construction moving west from the PSP area boundary as access from adjacent development is required OR when a bus route is required along the road.	Version	1	
				REF	101	
DI_RD_31a		Schreenans Lane upgrade		QUICK REFERENCE		
Project Description	Upgrade of Schreenans Lane between Cherry Flat Road and Webb Road to Link standard (440m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$1,594,414					
External	11%					
Cost to MCA	\$1,419,028					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	89%					
Capital Cost	\$1,419,028					
Demand Units	972					
Levy Amount	\$1,459.85					
Cost Apportionment Method		Costing	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Construction costs apportioned based on internal/external traffic split from SMEC traffic model.		Justification				
		Indicative Project Trigger	On construction of the Schreenans Lane Creek Crossing (RD_31c) OR when a bus route is required along the road OR in stages as access to adjacent	Version	1	
				REF	102	



DI_RD_31b Schreenans Lane extension west		QUICK REFERENCE				
Project Description	Construction of Schreenans Lane between Webbs Rd and creek crossing to Link standard (340m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$1,232,047					
External	11%					
Cost to MCA	\$1,096,522					
Applies To	Residential Commercial					
Cell	Main Catchment Area					
Apportionment	89%					
Capital Cost	\$1,096,522					
Demand Units	972					
Levy Amount	\$1,128.07					
Cost Apportionment Method	Costing Justification		Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Construction costs apportioned based on internal/external traffic split from SMEC traffic model.		Indicative Project Trigger	In stages as access to adjacent development is required OR on construction of Schreenans Lane extension east (RD_31d).	Version REF	1	103

DI_RD_31c Schreenans Lane Creek Crossing		QUICK REFERENCE				
Project Description	Construction of a creek crossing (bridge) for Schreenans Road.			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$13,031,299					
External	11%					
Cost to MCA	\$11,597,856					
Applies To	Residential Commercial					
Cell	Main Catchment Area					
Apportionment	89%					
Capital Cost	\$11,597,856					
Demand Units	972					
Levy Amount	\$11,931.50					
Cost Apportionment Method	Costing Justification		Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Construction costs apportioned based on internal/external traffic split from SMEC traffic model.		Indicative Project Trigger	At the completion of both adjoining sections of Schreenans Road.	Version REF	1	104

DI_RD_31d Schreenans Lane extension east		QUICK REFERENCE				
Project Description	Construction of Schreenans Lane between Ross Creek Road and creek crossing to Link standard (317m)			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$1,148,703					
External	11%					
Cost to MCA	\$1,022,346					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	89%					
Capital Cost	\$1,022,346					
Demand Units	972					
Levy Amount	\$1,051.76					
Cost Apportionment Method	Costing Justification		Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Construction costs apportioned based on internal/external traffic split from SMEC traffic model.		Indicative Project Trigger	4,500 lots in sub-Precinct 1 OR at the discretion of the Responsible Authority for early provision.	Version REF	1	105

DI_RD_38 Ross Creek Road Upgrade		QUICK REFERENCE				
Project Description	Upgrade of Ross Creek Road between Bells Road and Tait Street to link road standard (1080m).			DIL	RD	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Road Construction	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$4,940,516					
External	11%					
Cost to MCA	\$4,397,060					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	89%					
Capital Cost	\$4,397,060					
Demand Units	972					
Levy Amount	\$4,523.55					
Cost Apportionment Method	Costing Justification		Construction costs estimated by Milward (July 2021) and indexed by Council officer (indexed to July 2024).			
Construction costs apportioned based on internal/external traffic split from SMEC traffic model.		Indicative Project Trigger	Staged construction moving south from Tait Street when either a bus route or access to adjacent development is required.	Version REF	1	106

DI_LA_25		Western Link Intersections – Land		QUICK REFERENCE		
Project Description	Land acquisition to widen road reserves to accommodate intersection treatments and turning movements on the future Western Link Road, totalling 0.23ha.			DIL	JNC	LAND
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$205,250	Property 155	0.07	\$825,000	\$57,750	
External	0%	Property 208	0.04	\$800,000	\$32,000	
Cost to MCA	\$205,250	Property 220	0.10	\$875,000	\$87,500	
Applies To	Residential Commercial	Property 222	0.02	\$1,400,000	\$28,000	
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$205,250					
Demand Units	972					
Levy Amount	\$211.15					
Cost Apportionment Method		Costing	Opteon Valuation			
Full cost apportioned to the PSP area (internal road network).		Justification				
		Indicative Project Trigger	In stages as immediately adjacent land is subdivided OR when required for road construction.	Version REF	1 107	

DI_JNC_01		Carngham Rd / Dyson Rd Roundabout		QUICK REFERENCE		
Project Description	Construction of a 4 Arm 2 Lane Roundabout			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
		Cost Breakdown	Units	Rate	Cost	
Cost	\$2,697,168					
External	41%					
Cost to MCA	\$1,591,329					
Applies To	Residential Commercial					
Cell	Main Catchment Area					
Apportionment	59%					
Capital Cost	\$1,591,329					
Demand Units	972					
Levy Amount	\$1,637.11					
Cost Apportionment Method		Costing	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Costs apportioned on the basis of projected usage (SMEC Traffic Model). 41% of demand is generated by existing development.		Justification				
		Indicative Project Trigger	When either Dysons Dr adjoining the intersection is upgraded (Item RD_01) OR the Western Link Road southward is constructed (Item RD_02).	Version REF	1 108	

DI_JNC_02		Carngham Rd / New N-S Rd (North) Signalised Intersection		QUICK REFERENCE		
Project Description	Construction of a Signalised Intersection			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$3,310,533					
External	30%					
Cost to MCA	\$2,317,373					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	70%					
Capital Cost	\$2,317,373					
Demand Units	972					
Levy Amount	\$2,384.04					
Cost Apportionment Method		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officers (indexed to July 2024). Costs apportioned on the basis of projected usage (SMEC Traffic Model). 30% of demand is generated by existing development.			
		Indicative Project Trigger	Completion of all of the following items: RD_4 and RD_3b, RD_3a and RD_11. An uncontrolled intersection will function satisfactorily in the interim.	Version REF	1	109

DI_JNC_04		Greenhalghs Rd / New N-S Rd (North) Roundabout		QUICK REFERENCE		
Project Description	Construction of a 3 Arm 1 Lane Roundabout			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,430,233					
External	39%					
Cost to MCA	\$872,442					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	61%					
Capital Cost	\$872,442					
Demand Units	972					
Levy Amount	\$897.54					
Cost Apportionment Method		Costing Justification	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024). Costs apportioned on the basis of projected usage (SMEC Traffic Model). 39% of demand is generated by existing development.			
		Indicative Project Trigger	Construction of both RD_11 and RD_04. A T-intersection will function satisfactorily in the interim.	Version REF	1	110

DI_JNC_05		Greenhalghs Rd / New N-S Rd (South) Signalised Intersection		QUICK REFERENCE		
Project Description	Construction of a Signalised Intersection			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,901,261					
External	42%					
Cost to MCA	\$1,102,731					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	58%					
Capital Cost	\$1,102,731					
Demand Units	972					
Levy Amount	\$1,134.45					
Cost Apportionment Method		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officers (indexed to July 2024).			
Costs apportioned on the basis of projected usage (SMEC Traffic Model). 42% of demand is generated by existing development.		Indicative Project Trigger	Completion of the north-south link road (south) joining Glenelg Highway Road. A T-intersection will function satisfactorily in the interim.	Version REF	1	111

DI_JNC_08		Glenelg Hwy / New N-S Rd (South) Roundabout		QUICK REFERENCE		
Project Description	Construction of a 3 Arm 2 Lane Roundabout			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,813,171					
External	55%					
Cost to MCA	\$815,927					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	45%					
Capital Cost	\$815,927					
Demand Units	972					
Levy Amount	\$839.40					
Cost Apportionment Method		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officers (indexed to July 2024).			
Costs apportioned on the basis of projected usage (SMEC Traffic Model). 55% of demand is generated by existing development.		Indicative Project Trigger	Construction of north-south link road (south) joining Glenelg Highway.	Version REF	1	112

DI_JNC_09		Glenelg Hwy / Wiltshire Ln / Cherry Flat Rd Signalised Intersection		QUICK REFERENCE		
Project Description	Construction of a 4 Arm Signalised Intersection			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$7,137,373					
External	55%					
Cost to MCA	\$3,211,818					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	45%					
Capital Cost	\$3,211,818					
Demand Units	972					
Levy Amount	\$3,304.22					
Cost Apportionment Method		Costing Justification	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Costs apportioned on the basis of projected usage (SMEC Traffic Model). 55% of demand is generated by existing development.		Indicative Project Trigger	At Level of Service E or worse, which should occur at traffic levels equivalent to 47% of the ultimate year volumes (2280 vehicles per hour through the		Version REF	1 113

DI_JNC_10		Cherry Flat Rd / Webb Rd Signalised Intersection		QUICK REFERENCE		
Project Description	Construction of a 4 Arm Signalised Intersection			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$2,941,739					
External	17%					
Cost to MCA	\$2,441,644					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	83%					
Capital Cost	\$2,441,644					
Demand Units	972					
Levy Amount	\$2,511.88					
Cost Apportionment Method		Costing Justification	Construction costs estimated by SMEC and verified by Council officers (indexed to July 2024)			
Costs apportioned on the basis of projected usage (SMEC Traffic Model). 17% of demand is generated by existing development.		Indicative Project Trigger	Duplication of Cherry Flat Road OR when a primary school is established at the MAC.		Version REF	1 114



DI_JNC_11		Cherry Flat Rd / Schreenans Rd Roundabout		QUICK REFERENCE		
Project Description	Construction of a 3 Arm 2 Lane Roundabout			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,579,817					
External	33%					
Cost to MCA	\$1,058,477					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	67%					
Capital Cost	\$1,058,477					
Demand Units	972					
Levy Amount	\$1,088.93					
Cost Apportionment Method		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officers (indexed to July 2024).			
Costs apportioned on the basis of projected usage (SMEC Traffic Model). 33% of demand is generated by existing development.		Indicative Project Trigger	Duplication of Cherry Flat Road OR construction of Schreenans Road bridge (Item RD_31c).		Version REF	1 115
DI_JNC_12		Ross Creek Rd / Schreenans Rd extension/ Cobden St (realignment) Roundabout		QUICK REFERENCE		
Project Description	Construction of a 4 Arm 1 Lane Roundabout			DIL	JNC	WORKS
Levy Type	Development	Strategic	This project is required to provide for the orderly and proper development of the area and ensures that the road hierarchy caters for traffic growth.			
Category	Traffic Management	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$1,206,422					
External	16%					
Cost to MCA	\$1,013,394					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	84%					
Capital Cost	\$1,013,394					
Demand Units	972					
Levy Amount	\$1,042.55					
Cost Apportionment Method		Costing Justification	Construction costs estimated by Milward (July 2021) and indexed by Council officers (indexed to July 2024).			
Costs apportioned on the basis of projected usage (SMEC Traffic Model). 16% of demand is generated by existing development.		Indicative Project Trigger	Construction of all Schreenans Road items OR construction of all Cobden Street road items.		Version REF	1 116

DI_O_1 Development Contributions Accounting Program				QUICK REFERENCE		
Project Description	Purchase of Development Contributions Accounting Program			DIL	PL	WORKS
Levy Type	Development	Strategic	The item is required to provide adequate accounting and reporting of development contributions and infrastructure provision.			
Category	Other	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$68,819					
External	0%					
Cost to MCA	\$68,819					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$68,819					
Demand Units	972					
Levy Amount	\$70.80					
Cost Apportionment Method	Costing		Urban Enterprise (indexed to July 2024)			
The item is required to provide adequate accounting and reporting of development contributions and infrastructure provisions.			Justification			
			Indicative Project Trigger	Incorporation of the DCP into the Planning Scheme	Version	1
					REF	117
DI_O_2 Heritage, Geotechnical and Contamination Studies - MR Power Park				QUICK REFERENCE		
Project Description	Preparation of studies for MR Power Park on heritage, geotechnical and contamination to ascertain potential remediation works, encumbered areas and siting options for active open space reserves.			DIL	PL	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate active open space and drainage facilities for the new community.			
Category	Other	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$348,223					
External	0%					
Cost to MCA	\$348,223					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$348,223					
Demand Units	972					
Levy Amount	\$358.24					
Cost Apportionment Method	Costing		Prowse (indexed to July 2024)			
This project is required to provide adequate active open space and drainage facilities for the new community.			Justification			
			Indicative Project Trigger	Prior to the commencement of construction of drainage basin RB28 or MR Power Park or at the discretion of the Responsible Authority for earlier provision.	Version	1
					REF	118

DI_O_3		Heritage, Geotechnical and Contamination Studies - Mining Park		QUICK REFERENCE		
Project Description	Preparation of studies for Mining Park on heritage, geotechnical and contamination to ascertain potential remediation works, encumbered areas and siting options for active open space reserves.			DIL	PL	WORKS
Levy Type	Development	Strategic	This project is required to provide adequate drainage facilities and active open space facilities for the new community.			
Category	Other	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$605,606					
External	0%					
Cost to MCA	\$605,606					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$605,606					
Demand Units	972					
Levy Amount	\$623.03					
Cost Apportionment Method		Costing	Prowse (indexed to July 2024)			
As above		Justification				
		Indicative Project Trigger	Prior to the commencement of construction of drainage basin RB29 or Mining Park or at the discretion of the Responsible Authority for earlier provision.	Version	1	
				REF	119	
DI_O_4		Strategic Planning Costs		QUICK REFERENCE		
Project Description	Precinct Structure Plan and Development Contributions Plan Review			DIL	PL	WORKS
Levy Type	Development	Strategic	The item is required to ensure the accurate and suitable preparation of a revised development contributions plan.			
Category	Other	Justification				
Cost Breakdown				Units	Rate	Cost
Cost	\$432,466					
External	0%					
Cost to MCA	\$432,466					
Applies To	Residential	Commercial				
Cell	Main Catchment Area					
Apportionment	100%					
Capital Cost	\$432,466					
Demand Units	972					
Levy Amount	\$444.91					
Cost Apportionment Method		Costing	City of Ballarat			
The item is required to ensure the accurate and suitable preparation of a revised development contributions plan.		Justification				
		Indicative Project Trigger	Incorporation of the Revised DCP into the Planning Scheme	Version	1	
				REF	120	

APPENDIX C DETAILED LAND BUDGET BY TITLE

Ballarat West Precinct 1, 2 & 4: Property Specific Land Budget

Property Number		Total Area (hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (hectares)
			Future Western Link Road	Arterial Road / Widening	Roundabout	Road Reserve	Drainage Reserve	Drainage Basins	Environmental Conservation Area	Heritage/Conservation Area	Community Facilities	Schools	Active Open Space	Passive Open Space (Local parks & Linear reserves)	Other - Regional Recreation	
			Not Included in NDA	Not Included in NDA	Not Included in NDA	Not Included in NDA	Not Included in OS%	Not Included in OS%	Not Included in OS%	Not Included in OS%	Not Included in NDA	Not Included in NDA	Included in OS%	Included in OS%	Included in OS%	
Property 1	2012292	0.82	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Property 2 & 7 & 16		72.46	0.00	0.00	0.00	0.00	13.05	4.13	0.00	0.00	0.00	0.00	0.50	1.93	0.00	52.85
Property 3	2012291	8.70	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	1.90	0.00	3.00	0.00	0.00	3.35
Property 4	2035436	9.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.43
Property 5	2035447	8.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95	0.00	0.00	0.00	5.15
Property 6	2035446	8.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	7.62
Properties 8 to 11		30.89	0.00	0.00	0.18	0.00	3.43	0.45	0.00	0.00	0.00	0.00	0.00	1.60	0.00	25.23
Property 12	2002746	3.33	0.00	0.00	0.00	0.00	1.24	1.92	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00
Property 13	2002747	2.08	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Property 14	2002751	1.17	0.00	0.00	0.00	0.00	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Property 15	2002749	0.33	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Property 17 to 19		6.25	0.00	0.08	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.06
Property 20 to 21		8.13	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.92
Property 22	2029914	2.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06
Property 23	2029915	2.09	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04
Property 25	2029912	2.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04
Property 24 & 26		7.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	7.00
Property 27	2029911	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.02
Property 28 & 29 & 30	2029909	15.33	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	0.00	12.80
Property 31	2034414	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.74
Property 32 to 33		2.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.91
Property 34	2034417	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61
Property 35	2051664	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.91
Property 36	2051665	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Property 37	2035439	8.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	7.27
Property 38	2035437	2.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04
Property 39	2035438	2.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.02
Property 40	2034419	1.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.93
Property 41	2034420	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87
Property 42	2034421	1.00	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Property 43	2028681	0.68	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
Property 44	2028681	0.69	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67
Property 45	2049703	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77
Property 46	2049704	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Property 47	2049705	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Property 48	2049706	0.92	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
Property 49	2049702	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70
Property 50	2049701	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65
Property 51	2049700	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65
Property 52	2049699	0.65	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Property 53	2035440	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
Property 54	2035441	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
Property 55	2051432	0.79	0.00	0.03	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
Property 56	2051433	1.19	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14
Property 57	2034430	3.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92
Property 58	2034429	2.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.53
Property 59	2034428	2.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.83
Property 60 to 64		10.94	0.00	0.09	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.83
Property 65 to 66		24.58	0.00	0.00	0.00	0.00	1.75	0.40	0.00	0.00	0.00	0.00	0.00	3.50	0.00	18.93
Property 67	2042495	24.42	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	0.00	0.00	3.21	0.00	20.57
Property 69	2035443	3.25	0.00	0.12	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	2.85
Property 70	2039204	2.04	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Property 71	2035444	2.04	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.90
Property 72	2035448	4.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	3.62
Property 73	2035445	4.03	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76
Property 74	2051046	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	1.92
Property 75	2051047	1.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	1.67
Property 76	2047568	4.06	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.80
Property 77	2028691	4.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	3.59
Property 78 to 81		16.84	0.00	0.00	0.00	0.00	0.34	1.70	0.00	0.00	0.00	0.00	0.00	1.31	0.00	13.49
Property 82	2002742	2.36	0.00	0.00	0.00	0.00	1.43	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
Property 83	2002741	6.17	0.00	0.00	0.00	0.00	1.92	2.25	0.00	0.00	0.00	0.00	0.00	0.40	0.00	1.60
Property 84 & 88		8.35	0.00	0.00	0.03	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.00	7.87
Property 86 & 87		28.27	0.00	0.11	0.01	0.00	2.23	1.43	0.00	1.06	0.00	0.00	0.00	3.96	0.00	19.47
Property 89	2028688	4.02	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	3.32
Property 90	2028689	3.95	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	3.17

Property Number		Total Area (hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (hectares)
			Future Western Link Road	Arterial Road / Widening	Roundabout	Road Reserve	Drainage Reserve	Drainage Basins	Environmental Conservation Area	Heritage/Conservation Area	Community Facilities	Schools	Active Open Space	Passive Open Space (Local parks & Linear reserves)	Other - Regional Recreation	
			Not Included in NDA	Not Included in NDA	Not Included in NDA	Not Included in NDA	Not Included in OS%	Not Included in OS%	Not Included in OS%	Not Included in OS%	Not Included in NDA	Not Included in NDA	Included in OS%	Included in OS%	Included in OS%	
Property 85 & 86 & 91		12.78	0.00	0.62	0.07	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	0.00	10.20
Property 92	2028690	5.70	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	1.47	0.00	4.14
Property 93	2027855	5.26	0.00	0.00	0.00	0.00	1.44	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	2.57
Property 94	2039846	5.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	5.06
Property 95	2041312	3.91	0.00	0.00	0.00	0.00	2.46	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	1.17
Property 96	2031574	5.36	0.00	0.00	0.02	0.00	0.59	3.56	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.77
Property 97 & 98 & 100	2027853	15.62	0.00	0.62	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	0.00	13.65
Property 99	2005747	4.42	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	4.19
Property 101	2000321	4.21	0.00	0.00	0.00	0.00	0.00	3.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
Property 102	2000321	8.22	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.02
Property 103	2000321	9.92	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.79
Property 104	2031578	0.50	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45
Property 105 & 106 & 107		4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.43
Property 108	2031571	3.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
Property 109 & 110		1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77
Property 111 & 112	2006617	4.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.14
Property 113	2041363	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.00
Property 114	2012845	9.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.64	6.32	0.00	0.00
Property 115	2012845	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00
Property 116	2012844	11.41	0.00	0.00	0.00	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	6.98	0.00	0.00
Property 117 & 118		0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Property 119 & 120		7.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	2.52	0.00	0.00	0.00	4.37
Property 121	2012842	2.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	1.90
Property 122	2012842	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48
Property 123	2012842	8.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	7.76
Property 124	2005750	8.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	7.78
Property 125	2023250	5.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.86
Property 126	2001990	5.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.85
Property 127 & 128	2045173	7.66	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.00	1.96	0.00	5.11
Property 129	2012840	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03
Property 130	2000321	1.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Property 131	2000321	1.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Property 132	2000321	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	2.23
Property 133	2000321	6.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.00	5.84
Property 134	2000321	8.11	0.00	0.00	0.00	0.00	0.00	1.13	0.00	0.00	0.00	0.00	0.00	0.87	0.00	6.11
Property 135	2000321	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	1.94
Property 136	2000321	2.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27	0.00	1.93
Property 137	2000321	7.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.10
Property 138	2049676	22.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.19	0.44	0.00	11.83
Property 139 & 140 & 141	2026429	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98
Property 142 & 143		0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70
Property 144	2026428	1.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54
Property 145	2000330	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Property 146	2000328	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
Property 147	2000328	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Property 148	2000327	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Property 149	2000326	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
Property 150	2000325	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Property 151	2000324	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Property 152	2000322	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Property 153	2000323	10.69	0.00	0.79	0.00	0.00	0.00	2.34	0.00	2.28	0.00	0.00	0.00	0.00	0.00	5.28
Property 154	2000321	19.51	0.00	0.08	0.00	0.00	0.00	3.35	0.00	0.00	0.00	0.00	0.00	0.58	0.00	15.50
Property 155	2012306	32.90	1.60	0.14	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.00	0.00	2.61	0.00	27.69
Properties 156 to 157	2012998	65.44	0.00	2.15	0.22	0.00	0.00	2.00	0.00	0.00	1.00	13.50	10.33	0.00	0.00	36.24
Property 158 & 159 & 160 & 161	2012289	82.32	0.00	1.80	0.15	0.00	6.56	2.31	0.00	0.00	0.00	0.00	0.00	4.44	0.00	67.07
Property 162	2012289	1.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.64
Property 163	2039201	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09
Property 164	2039199	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68
Property 165	2039200	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09
Property 166	2013004	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73
Property 167	2010410	1.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Property 168	2040644	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30
Property 169	2040447	1.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44
Property 170	2010408	5.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.46
Property 171	2040200	1.26	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25
Property 172	2012288	2.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.33
Property 173	2010411	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.46
Property 174	2040444	2.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47



Property Number		Total Area (hectares)	TRANSPORT				ENCUMBERED LAND				COMMUNITY		UNENCUMBERED LAND OPEN SPACE			Total Net Developable Area (hectares)
			Future Western Link Road	Arterial Road / Widening	Roundabout	Road Reserve	Drainage Reserve	Drainage Basins	Environmental Conservation Area	Heritage/Conservation Area	Community Facilities	Schools	Active Open Space	Positive Open Space (Local parks & Linear reserves)	Other - Regional Recreation	
			Not Included in NDA	Not Included in NDA	Not Included in NDA	Not Included in NDA	Not Included in OS%	Not Included in OS%	Not Included in OS%	Not Included in OS%	Not Included in NDA	Not Included in NDA	Included in OS%	Included in OS%	Included in OS%	
Property 175	2012287	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
Property 176	2012286	0.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Property 177	2042211	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Property 178	2022615	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
Property 179	2022633	1.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05
Property 180	2012285	0.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79
Property 181	2022616	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03
Property 182	2012284	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78
Property 183	2012283	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.89
Property 184	2012307	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95
Property 185	2046230	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01
Property 186	2046231	2.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01
Property 187	2022619	3.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.87
Property 188	2022620	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88
Property 189	2022621	2.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07
Property 190	2022622	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90
Property 191	2022623	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Property 192	2022624	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Property 193	2022625	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80
Property 194	2022626	1.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.60
Property 195	2022627	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72
Property 196	2022628	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86
Property 197	2022629	0.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85
Property 198	2022630	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Property 199	2022631	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Property 200	2022632	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Property 201	2010409	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81
Property 202	2022614	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94
Property 203	2010407	3.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	3.35
Property 204	2013003	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24
Property 205	2047864	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Property 206	2045820	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Property 207	2045819	1.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Property 208 & 209	2012306	43.92	3.07	0.00	0.00	0.00	0.00	3.86	0.00	0.00	0.00	0.00	0.00	2.18	0.00	34.80
Property 210	2036739	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40
Property 211	2036738	21.77	0.00	1.94	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	1.02	0.00	18.31
Property 212 & 213	2036752	65.40	0.00	0.00	0.00	0.00	0.00	2.76	3.27	0.00	1.30	2.86	3.98	0.00	0.00	51.23
Property 214	2001989	32.03	0.00	0.00	0.00	0.00	0.58	1.09	0.00	0.07	0.00	0.00	0.00	0.00	0.00	30.29
Properties 215 to 216		33.23	0.00	0.93	0.08	0.00	0.00	1.10	0.00	0.00	0.00	0.00	0.00	2.37	0.00	28.75
Property 217	2001991	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09
Property 218	2001992	16.39	0.00	1.89	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	13.37
Property 219	2001993	15.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.83
Property 220	2001994	32.73	0.53	0.00	0.00	0.00	0.00	1.84	1.59	0.00	0.00	0.00	0.00	2.33	0.00	26.44
Property 221	2036749	4.05	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.74
Property 222	2036748	2.14	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83
Property 223	2042384	1.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Property 224	2036747	3.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42
Property 225	2036746	4.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.34
Property 226 & 227	2036744	8.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.30
Property 228 & 229	2036750	20.28	0.00	0.05	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	1.00	0.00	19.16
Property 230	2036751	19.74	0.00	1.81	0.20	0.00	0.00	0.33	0.00	0.00	0.00	0.61	4.00	0.00	0.00	12.79
Sub-Total		1223.01	5.20	16.17	1.57	0.59	42.37	48.67	4.86	3.41	4.70	23.76	36.00	65.11	0.00	970.60
Existing Road Reserves		63.76	0.00	0.00	0.00	61.38	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.00	0.00	1.44
Total		1286.77	5.20	16.17	1.57	61.97	42.37	48.67	4.86	3.41	4.70	23.76	36.94	65.11	0.00	972.04

Ballarat West Precinct 1, 2 & 4: Property Specific Land Budget: Housing Yields

Property Number		Total Area (Hectares)	Total net Developable Area (Hectares)	OTHER LAND USES			Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (Up to 20 Dwellings/NRHa)		MEDIUM DENSITY (Up to 30 Dwellings/NRHa)		TOTAL COMBINED		
				Activity Centre (retail/office/mixed use)	Bulky Goods	Industrial/Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings/NRHa	Indicative Dwellings
Property 1	2012292	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 2 & 7 & 16		72.46	52.85	0.00	0.00	0.00	52.85	52.85	735	0.00	0	52.85	14	735
Property 3	2012291	8.70	3.35	2.99	0.00	0.00	0.37	0.01	0	0.36	54	0.37	148	54
Property 4	2035436	9.43	9.43	9.43	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 5	2035447	8.10	5.15	0.00	0.00	0.29	4.86	4.86	64	0.00	0	4.86	13	64
Property 6	2035446	8.09	7.62	0.00	0.00	0.00	7.62	7.62	133	0.00	0	7.62	17	133
Properties 8 to 11		30.89	25.23	0.00	0.00	0.00	25.23	25.23	439	0.00	0	25.23	17	439
Property 12	2002746	3.33	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 13	2002747	2.08	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 14	2002751	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 15	2002749	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 17 to 19		6.25	6.06	1.20	4.86	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 20 to 21		8.13	7.92	1.00	0.00	0.00	6.92	4.01	59	2.91	145	6.92	29	204
Property 22	2029914	2.06	2.06	0.00	0.00	2.06	0.00	0.00	0	0.00	0	0.00	-	0
Property 23	2029915	2.09	2.04	0.00	0.00	0.00	2.04	0.00	0	2.04	56	2.04	27	56
Property 25	2029912	2.04	2.04	0.00	0.00	0.00	2.04	2.04	33	0.00	0	2.04	16	33
Property 24 & 26		7.17	7.00	0.00	0.00	0.00	7.00	7.00	85	0.00	0	7.00	12	85
Property 27	2029911	2.02	2.02	0.00	0.00	0.00	2.02	2.02	34	0.00	0	2.02	17	34
Property 28 & 29 & 30	2029909	15.33	12.80	0.00	0.00	0.00	12.80	12.80	180	0.00	0	12.80	14	180
Property 31	2034414	1.74	1.74	0.00	0.00	0.20	1.54	1.54	31	0.00	0	1.54	20	31
Property 32 to 33		2.91	2.91	0.00	0.00	0.00	2.91	2.91	50	0.00	0	2.91	17	50
Property 34	2034417	1.61	1.61	0.00	0.00	0.00	1.61	1.61	32	0.00	0	1.61	20	32
Property 35	2051664	0.91	0.91	0.00	0.00	0.00	0.91	0.91	18	0.00	0	0.91	20	18
Property 36	2051665	0.93	0.93	0.00	0.00	0.00	0.93	0.93	19	0.00	0	0.93	20	19
Property 37	2035439	8.27	7.27	0.00	0.00	0.00	7.27	7.27	145	0.00	0	7.27	20	145
Property 38	2035437	2.04	2.04	0.00	0.00	0.00	2.04	2.04	41	0.00	0	2.04	20	41
Property 39	2035438	2.02	2.02	0.00	0.00	0.00	2.02	2.02	33	0.00	0	2.02	16	33
Property 40	2034419	1.93	1.93	0.00	0.00	0.00	1.93	1.93	34	0.00	0	1.93	18	34
Property 41	2034420	1.87	1.87	0.00	0.00	0.00	1.87	1.87	37	0.00	0	1.87	20	37
Property 42	2034421	1.00	0.94	0.00	0.00	0.00	0.94	0.94	19	0.00	0	0.94	20	19
Property 43	2028681	0.68	0.66	0.00	0.00	0.00	0.66	0.66	13	0.00	0	0.66	20	13
Property 44	2028681	0.69	0.67	0.00	0.00	0.00	0.67	0.67	13	0.00	0	0.67	20	13
Property 45	2049703	0.77	0.77	0.00	0.00	0.00	0.77	0.77	15	0.00	0	0.77	20	15
Property 46	2049704	0.64	0.64	0.00	0.00	0.00	0.64	0.64	13	0.00	0	0.64	20	13
Property 47	2049705	0.64	0.64	0.00	0.00	0.00	0.64	0.64	13	0.00	0	0.64	20	13
Property 48	2049706	0.92	0.88	0.00	0.00	0.00	0.88	0.88	18	0.00	0	0.88	20	18
Property 49	2049702	0.70	0.70	0.00	0.00	0.00	0.70	0.70	14	0.00	0	0.70	20	14
Property 50	2049701	0.65	0.65	0.00	0.00	0.00	0.65	0.65	13	0.00	0	0.65	20	13
Property 51	2049700	0.65	0.65	0.00	0.00	0.00	0.65	0.65	13	0.00	0	0.65	20	13
Property 52	2049699	0.65	0.62	0.00	0.00	0.00	0.62	0.62	12	0.00	0	0.62	20	12
Property 53	2035440	2.03	2.03	0.00	0.00	0.00	2.03	2.03	41	0.00	0	2.03	20	41
Property 54	2035441	2.03	2.03	0.00	0.00	0.00	2.03	2.03	41	0.00	0	2.03	20	41
Property 55	2051432	0.79	0.68	0.00	0.00	0.00	0.68	0.68	14	0.00	0	0.68	20	14
Property 56	2051433	1.19	1.14	0.00	0.00	0.00	1.14	1.14	23	0.00	0	1.14	20	23
Property 57	2034430	3.92	3.92	0.00	0.00	0.00	3.92	3.92	60	0.00	0	3.92	15	60
Property 58	2034429	2.53	2.53	0.00	0.00	0.00	2.53	2.53	39	0.00	0	2.53	15	39
Property 59	2034428	2.83	2.83	0.00	0.00	0.00	2.83	2.83	43	0.00	0	2.83	15	43
Property 60 to 64		10.94	10.83	0.00	0.00	0.00	10.83	10.83	183	0.00	0	10.83	17	183
Property 65 to 66		24.58	18.93	0.00	0.00	0.00	18.93	18.93	276	0.00	0	18.93	15	276
Property 67	2042495	24.42	20.57	0.00	0.00	0.00	20.57	20.57	345	0.00	0	20.57	17	345
Property 69	2035443	3.25	2.85	0.00	0.00	0.00	2.85	2.85	57	0.00	0	2.85	20	57
Property 70	2039204	2.04	1.90	0.00	0.00	0.00	1.90	1.90	38	0.00	0	1.90	20	38
Property 71	2035444	2.04	1.90	0.00	0.00	0.00	1.90	1.90	38	0.00	0	1.90	20	38
Property 72	2035448	4.07	3.62	0.00	0.00	0.00	3.62	3.62	72	0.00	0	3.62	20	72
Property 73	2035445	4.03	3.76	0.00	0.00	0.00	3.76	3.76	75	0.00	0	3.76	20	75
Property 74	2051046	2.18	1.92	0.00	0.00	0.00	1.92	1.92	38	0.00	0	1.92	20	38
Property 75	2051047	1.91	1.67	0.00	0.00	0.00	1.67	1.67	33	0.00	0	1.67	20	33
Property 76	2047568	4.06	3.80	0.00	0.00	0.00	3.80	3.80	76	0.00	0	3.80	20	76
Property 77	2028691	4.05	3.59	0.00	0.00	0.00	3.59	3.59	72	0.00	0	3.59	20	72
Property 78 to 81		16.84	13.49	0.00	0.00	0.00	13.49	13.49	235	0.00	0	13.49	17	235
Property 82	2002742	2.36	0.89	0.00	0.00	0.00	0.89	0.89	18	0.00	0	0.89	20	18
Property 83	2002741	6.17	1.60	0.00	0.00	0.00	1.60	1.60	32	0.00	0	1.60	20	32
Property 84 & 88		8.35	7.87	0.00	0.00	0.00	7.87	7.87	157	0.00	0	7.87	20	157
Property 86 & 87		28.27	19.47	0.00	0.00	0.00	19.47	19.47	297	0.00	0	19.47	15	297
Property 89	2028688	4.02	3.32	0.00	0.00	0.00	3.32	3.32	66	0.00	0	3.32	20	66
Property 90	2028689	3.95	3.17	0.00	0.00	0.00	3.17	3.17	63	0.00	0	3.17	20	63
Property 85 & 86 & 91		12.78	10.20	0.00	0.00	0.00	10.20	10.20	184	0.00	0	10.20	18	184
Property 92	2028690	5.70	4.14	0.00	0.00	0.00	4.14	4.14	83	0.00	0	4.14	20	83
Property 93	2027855	5.26	2.57	0.00	0.00	0.00	2.57	2.57	51	0.00	0	2.57	20	51
Property 94	2039846	5.39	5.06	0.00	0.00	0.00	5.06	5.06	101	0.00	0	5.06	20	101

Property Number		Total Area (Hectares)	Total net Developable Area (Hectares)	OTHER LAND USES			Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (Up to 20 Dwellings/NRHa)		MEDIUM DENSITY (Up to 30 Dwellings/NRHa)		TOTAL COMBINED		
				Activity Centre (retail/office/semi-residential use)	Bulky Goods	Industrial/Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings/NRHa	Indicative Dwellings
Property 95	2041312	3.91	1.17	0.00	0.00	0.00	1.17	1.17	23	0.00	0	1.17	20	23
Property 96	2031574	5.36	0.77	0.00	0.00	0.00	0.77	0.77	15	0.00	0	0.77	20	15
Property 97 & 98 & 100	2027853	15.62	13.65	1.81	0.00	0.00	11.84	9.97	157	1.87	64	11.84	19	221
Property 99	2005747	4.42	4.19	0.00	0.00	0.00	4.19	4.19	84	0.00	0	4.19	20	84
Property 101	2000321	4.21	0.81	0.00	0.00	0.00	0.81	0.81	16	0.00	0	0.81	20	16
Property 102	2000321	8.22	8.02	0.00	0.00	0.00	8.02	8.02	160	0.00	0	8.02	20	160
Property 103	2000321	9.92	9.79	0.00	0.00	0.00	9.79	9.79	196	0.00	0	9.79	20	196
Property 104	2031578	0.50	0.45	0.00	0.00	0.00	0.45	0.45	9	0.00	0	0.45	20	9
Property 105 & 106 & 107		4.43	4.43	0.00	0.00	0.00	4.43	4.43	89	0.00	0	4.43	20	89
Property 108	2031571	3.67	3.67	0.00	0.00	0.00	3.67	3.67	64	0.00	0	3.67	17	64
Property 109 & 110		1.77	1.77	0.00	0.00	0.00	1.77	1.77	34	0.00	0	1.77	19	34
Property 111 & 112	2006617	4.14	4.14	0.00	0.00	0.00	4.14	4.14	84	0.00	0	4.14	20	84
Property 113	2041363	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 114	2012845	9.96	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 115	2012845	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 116	2012844	11.41	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	-	0
Property 117 & 118		0.80	0.80	0.00	0.00	0.00	0.80	0.00	0	0.80	20	0.80	25	20
Property 119 & 120		7.39	4.37	0.00	0.00	0.00	4.37	3.12	61	1.25	31	4.37	21	92
Property 121	2012842	2.05	1.90	0.00	0.00	0.00	1.90	1.90	29	0.00	0	1.90	15	29
Property 122	2012842	1.48	1.48	0.00	0.00	0.00	1.48	1.48	22	0.00	0	1.48	15	22
Property 123	2012842	8.21	7.76	0.00	0.00	0.00	7.76	7.76	116	0.00	0	7.76	15	116
Property 124	2005750	8.63	7.78	0.00	0.00	0.00	7.78	7.05	135	0.73	22	7.78	20	157
Property 125	2023250	5.86	5.86	0.00	0.00	0.00	5.86	5.86	117	0.00	0	5.86	20	117
Property 126	2001990	5.85	5.85	0.00	0.00	0.00	5.85	5.85	117	0.00	0	5.85	20	117
Property 127 & 128	2045173	7.66	5.11	0.00	0.00	0.00	5.11	5.11	82	0.00	0	5.11	16	82
Property 129	2012840	2.03	2.03	0.00	0.00	0.00	2.03	2.03	41	0.00	0	2.03	20	41
Property 130	2000321	1.47	1.47	0.00	0.00	0.00	1.47	1.47	29	0.00	0	1.47	20	29
Property 131	2000321	1.47	1.47	0.00	0.00	0.00	1.47	1.47	29	0.00	0	1.47	20	29
Property 132	2000321	2.25	2.23	0.00	0.00	0.00	2.23	2.23	45	0.00	0	2.23	20	45
Property 133	2000321	6.46	5.84	0.00	0.00	0.00	5.84	5.84	117	0.00	0	5.84	20	117
Property 134	2000321	8.11	6.11	0.00	0.00	0.00	6.11	6.11	122	0.00	0	6.11	20	122
Property 135	2000321	2.25	1.94	0.00	0.00	0.00	1.94	1.94	39	0.00	0	1.94	20	39
Property 136	2000321	2.20	1.93	0.00	0.00	0.00	1.93	1.93	39	0.00	0	1.93	20	39
Property 137	2000321	7.10	7.10	0.00	0.00	0.00	7.10	7.10	142	0.00	0	7.10	20	142
Property 138	2049676	22.46	11.83	0.00	0.00	0.00	11.83	11.83	237	0.00	0	11.83	20	237
Property 139 & 140 & 141	2026429	1.98	1.98	0.00	0.00	0.00	1.98	1.98	33	0.00	0	1.98	17	33
Property 142 & 143		0.70	0.70	0.00	0.00	0.00	0.70	0.70	14	0.00	0	0.70	20	14
Property 144	2026428	1.54	1.54	0.00	0.00	0.00	1.54	1.54	31	0.00	0	1.54	20	31
Property 145	2000330	0.41	0.41	0.00	0.00	0.00	0.41	0.41	8	0.00	0	0.41	20	8
Property 146	2000328	0.36	0.36	0.00	0.00	0.00	0.36	0.36	7	0.00	0	0.36	20	7
Property 147	2000328	0.06	0.06	0.00	0.00	0.00	0.06	0.06	1	0.00	0	0.06	20	1
Property 148	2000327	0.06	0.06	0.00	0.00	0.00	0.06	0.06	1	0.00	0	0.06	20	1
Property 149	2000326	0.06	0.06	0.00	0.00	0.00	0.06	0.06	1	0.00	0	0.06	20	1
Property 150	2000325	0.18	0.18	0.00	0.00	0.00	0.18	0.18	4	0.00	0	0.18	20	4
Property 151	2000324	0.38	0.38	0.00	0.00	0.00	0.38	0.38	8	0.00	0	0.38	20	8
Property 152	2000322	0.20	0.20	0.00	0.00	0.00	0.20	0.20	4	0.00	0	0.20	20	4
Property 153	2000323	10.69	5.28	0.00	0.00	0.00	5.28	5.28	105	0.00	0	5.28	20	105
Property 154	2000321	19.51	15.50	0.00	0.00	0.00	15.50	15.50	105	0.00	0	15.50	7	105
Property 155	2012306	32.90	27.69	0.00	0.00	0.00	27.69	27.09	429	0.60	15	27.69	16	444
Properties 156 to 157	2012998	65.44	36.24	3.26	0.00	0.00	32.98	28.67	483	4.31	108	32.98	18	591
Property 158 & 159 & 160 & 161	2012289	82.32	67.07	0.00	0.00	1.37	65.70	64.90	952	0.80	28	65.70	15	980
Property 162	2012289	1.64	1.64	0.00	0.00	0.00	1.64	1.64	33	0.00	0	1.64	20	33
Property 163	2039201	1.09	1.09	0.00	0.00	0.00	1.09	1.09	22	0.00	0	1.09	20	22
Property 164	2039199	0.68	0.68	0.00	0.00	0.00	0.68	0.68	14	0.00	0	0.68	20	14
Property 165	2039200	1.09	1.09	0.00	0.00	0.00	1.09	1.09	22	0.00	0	1.09	20	22
Property 166	2013004	0.73	0.73	0.00	0.00	0.00	0.73	0.73	15	0.00	0	0.73	20	15
Property 167	2010410	1.89	1.89	0.00	0.00	0.00	1.89	1.89	38	0.00	0	1.89	20	38
Property 168	2040644	1.30	1.30	0.00	0.00	0.00	1.30	1.30	26	0.00	0	1.30	20	26
Property 169	2040447	1.44	1.44	0.00	0.00	0.00	1.44	1.44	29	0.00	0	1.44	20	29
Property 170	2010408	5.46	5.46	0.00	0.00	0.00	5.46	5.46	109	0.00	0	5.46	20	109
Property 171	2040200	1.26	1.25	0.00	0.00	0.00	1.25	1.25	25	0.00	0	1.25	20	25
Property 172	2012286	2.33	2.33	0.00	0.00	0.00	2.33	2.33	47	0.00	0	2.33	20	47
Property 173	2010411	3.46	3.46	0.00	0.00	0.00	3.46	3.46	69	0.00	0	3.46	20	69
Property 174	2040444	2.47	2.47	0.00	0.00	0.00	2.47	2.47	49	0.00	0	2.47	20	49
Property 175	2012287	0.81	0.81	0.00	0.00	0.00	0.81	0.81	16	0.00	0	0.81	20	16
Property 176	2012286	0.99	0.99	0.00	0.00	0.00	0.99	0.99	20	0.00	0	0.99	20	20
Property 177	2042211	0.60	0.60	0.00	0.00	0.00	0.60	0.60	12	0.00	0	0.60	20	12
Property 178	2022615	0.56	0.56	0.00	0.00	0.00	0.56	0.56	11	0.00	0	0.56	20	11
Property 179	2022633	1.05	1.05	0.00	0.00	0.00	1.05	1.05	21	0.00	0	1.05	20	21
Property 180	2012285	0.79	0.79	0.00	0.00	0.00	0.79	0.79	16	0.00	0	0.79	20	16
Property 181	2022616	1.03	1.03	0.00	0.00	0.00	1.03	1.03	21	0.00	0	1.03	20	21

Property Number		Total Area (Hectares)	Total net Developable Area (Hectares)	OTHER LAND USES			Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (Up to 20 Dwellings/NRHa)		MEDIUM DENSITY (Up to 30 Dwellings/NRHa)		TOTAL COMBINED		
				Activity Centre (retail/office/semi-res use)	Bulky Goods	Industrial/Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings/NRHa	Indicative Dwellings
Property 182	2012284	0.78	0.78	0.00	0.00	0.00	0.78	0.78	16	0.00	0	0.78	20	16
Property 183	2012283	0.89	0.89	0.00	0.00	0.00	0.89	0.89	18	0.00	0	0.89	20	18
Property 184	2012307	0.95	0.95	0.00	0.00	0.00	0.95	0.95	19	0.00	0	0.95	20	19
Property 185	2046230	2.01	2.01	0.00	0.00	0.00	2.01	2.01	40	0.00	0	2.01	20	40
Property 186	2046231	2.01	2.01	0.00	0.00	0.00	2.01	2.01	40	0.00	0	2.01	20	40
Property 187	2022619	3.87	3.87	0.00	0.00	0.00	3.87	3.87	77	0.00	0	3.87	20	77
Property 188	2022620	0.88	0.88	0.00	0.00	0.00	0.88	0.88	18	0.00	0	0.88	20	18
Property 189	2022621	2.07	2.07	0.00	0.00	0.00	2.07	2.07	41	0.00	0	2.07	20	41
Property 190	2022622	0.90	0.90	0.00	0.00	0.00	0.90	0.90	18	0.00	0	0.90	20	18
Property 191	2022623	0.80	0.80	0.00	0.00	0.00	0.80	0.80	16	0.00	0	0.80	20	16
Property 192	2022624	0.80	0.80	0.00	0.00	0.00	0.80	0.80	16	0.00	0	0.80	20	16
Property 193	2022625	0.80	0.80	0.00	0.00	0.00	0.80	0.80	16	0.00	0	0.80	20	16
Property 194	2022626	1.60	1.60	0.00	0.00	0.00	1.60	1.60	32	0.00	0	1.60	20	32
Property 195	2022627	1.72	1.72	0.00	0.00	0.00	1.72	1.72	34	0.00	0	1.72	20	34
Property 196	2022628	0.86	0.86	0.00	0.00	0.00	0.86	0.86	17	0.00	0	0.86	20	17
Property 197	2022629	0.85	0.85	0.00	0.00	0.00	0.85	0.85	17	0.00	0	0.85	20	17
Property 198	2022630	0.83	0.83	0.00	0.00	0.00	0.83	0.83	17	0.00	0	0.83	20	17
Property 199	2022631	0.83	0.83	0.00	0.00	0.00	0.83	0.83	17	0.00	0	0.83	20	17
Property 200	2022632	0.83	0.83	0.00	0.00	0.00	0.83	0.83	17	0.00	0	0.83	20	17
Property 201	2010409	0.81	0.81	0.00	0.00	0.00	0.81	0.81	16	0.00	0	0.81	20	16
Property 202	2022614	0.94	0.94	0.00	0.00	0.00	0.94	0.94	19	0.00	0	0.94	20	19
Property 203	2010407	3.60	3.35	0.00	0.00	0.00	3.35	3.35	67	0.00	0	3.35	20	67
Property 204	2013003	1.24	1.24	0.00	0.00	0.00	1.24	1.24	25	0.00	0	1.24	20	25
Property 205	2047864	0.27	0.27	0.00	0.00	0.00	0.27	0.27	5	0.00	0	0.27	20	5
Property 206	2045820	0.83	0.83	0.00	0.00	0.00	0.83	0.83	17	0.00	0	0.83	20	17
Property 207	2045819	1.00	0.93	0.00	0.00	0.34	0.59	0.59	12	0.00	0	0.59	20	12
Property 208 & 209	2012306	43.92	34.80	0.00	0.00	0.00	34.80	34.31	550	0.49	12	34.80	16	562
Property 210	2036739	0.40	0.40	0.00	0.00	0.10	0.30	0.30	5	0.00	0	0.30	17	5
Property 211	2036738	21.77	18.31	0.00	0.00	0.00	18.31	18.31	265	0.00	0	18.31	14	265
Property 212 & 213	2036752	65.40	51.23	0.00	0.00	0.00	51.23	51.23	608	0.00	0	51.23	12	608
Property 214	2001989	32.03	30.29	3.12	0.00	3.54	23.63	23.63	345	0.00	0	23.63	15	345
Properties 215 to 216		33.23	28.75	3.99	0.00	0.00	24.76	23.63	356	1.13	47	24.76	16	403
Property 217	2001991	0.09	0.09	0.00	0.00	0.00	0.09	0.09	1	0.00	0	0.09	16	1
Property 218	2001992	16.39	13.37	0.00	0.00	0.30	13.07	11.82	180	1.25	31	13.07	16	211
Property 219	2001993	15.83	15.83	0.00	0.00	0.00	15.83	15.83	229	0.00	0	15.83	14	229
Property 220	2001994	32.73	26.44	0.00	0.00	0.00	26.44	26.44	350	0.00	0	26.44	13	350
Property 221	2036749	4.05	3.74	0.00	0.00	0.00	3.74	3.74	65	0.00	0	3.74	17	65
Property 222	2036748	2.14	1.83	0.00	0.00	0.58	1.25	1.25	18	0.00	0	1.25	14	18
Property 223	2042384	1.89	1.89	0.00	0.00	0.34	1.55	1.55	31	0.00	0	1.55	20	31
Property 224	2036747	3.42	3.42	0.00	0.00	0.00	3.42	3.42	69	0.00	0	3.42	20	69
Property 225	2036746	4.34	4.34	0.00	0.00	0.00	4.34	4.34	85	0.00	0	4.34	20	85
Property 226 & 227	2036744	8.30	8.30	0.00	0.00	0.00	8.30	8.30	117	0.00	0	8.30	14	117
Property 228 & 229	2036750	20.28	19.16	0.00	0.00	0.00	19.16	19.16	277	0.00	0	19.16	14	277
Property 230	2036751	19.74	12.79	0.00	0.00	0.00	12.79	12.79	194	0.00	0	12.79	15	194
Sub-Total		1223.01	970.60	26.80	4.86	9.12	929.82	911.27	14853	18.55	634	929.82	17	15486
Existing Road Reserves		63.76	1.44	0.00	0.00	0.00	1.44	0.86	17	0.58	15	1.44	22	32
Total		1286.89	972.04	26.80	4.86	9.12	931.26	912.13	14870	19.13	648	931.26	17	15518









# TRANSPORT PROJECTS REVIEW

Ballarat West Precinct Structure Plan

## Abstract

Review the outstanding road and intersection projects as identified in the Ballarat West Development Contribution Plan (DCP), including assessment of project scope and implementation factors and establish a basis for any changes to be incorporated into a wider Ballarat West Precinct Structure Plan (PSP) review.



## DOCUMENT CONTROLS

Business Name	Milward Engineering Management Pty Ltd				
Document Title	Transport Projects Review Ballarat West Precinct Structure Plan				
Document No.	Issue	3.3	Date	13 February 2023	
Document Controller	██████████, Development & Technical Services Manager – Milward Engineering Management Pty Ltd				
Client	██████████, Manager Sustainable Growth – City of Ballarat				
Authorised by	██████████, Manager Sustainable Growth – City of Ballarat				
██			14/02/2024 ..... (Date)		

## Change History

Issue	Date	Description of change	Author
3.3	13 February 2024	Minor amendments to Final Draft for endorsement	██████████, Senior Project Manager – Milward Engineering Management Pty Ltd
3.2	31 January 2024	Further amendments to Final Draft following Project Control Group and DCP Consultant feedback for endorsement	██████████, Senior Project Manager – Milward Engineering Management Pty Ltd
3.1	22 December 2023	Amendments to Final Draft following Project Control Group and DCP Consultant feedback for endorsement	██████████, Senior Project Manager – Milward Engineering Management Pty Ltd
3.0	25 May 2023	Final Draft issued to Project Control Group for comment	██████████, Senior Project Manager – Milward Engineering Management Pty Ltd
2.1	11 April 2023	Second Draft issued to Project Control Group for comment	██████████, Senior Project Manager – Milward Engineering Management Pty Ltd
2.0	07 February 2023	Second Draft	██████████, Project Manager – Milward Engineering Management Pty Ltd
1.0	15 June 2022	First Draft issued to Project Control Group for comment	██████████, Senior Project Manager – Milward Engineering Management Pty Ltd
0.1	14 April 2022	First Draft	██████████, Project Manager – Milward Engineering Management Pty Ltd

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## EXECUTIVE SUMMARY

### Review Intent

The purpose of this review is to understand how the implementation of the road network to support the Ballarat West Precinct Structure Plan (PSP) is likely meeting the current and future needs of the precinct.

The scope of identified outstanding road and intersection projects (and associated land acquisition projects) and their suitability including their function, alignments, land requirements and delivery strategies are considered.

This information and the engineering principles are still relevant today, however there are a range of design factors such as Safe Systems and/or Road Safety Audit principles that have been used in this report other qualitative and quantitative assessments of each PSP project include:

1. Whether the scope of the projects as outlined in the DCP are appropriate for the development that is occurring
2. Determination of the most appropriate intersection control solution between a roundabout and a signalised intersection considering the safety and efficiency of pedestrian and cyclists as well as motor vehicles.
3. Consideration of the accuracy of any road length measurements.
4. Whether the costings of the road and intersection projects as outlined in the DCP are appropriate considering the scope and the corrected length (as required).
5. Consideration of whether the current DCP land projects are adequate to deliver the projects.
6. A review of the thresholds for the timing of the delivery of the projects to ensure the safe and satisfactory operational performance of road infrastructure.
7. A review and if required, an update of relevant PSP Cross Sections

This report includes recommendations for consideration only by the City of Ballarat and its representatives. Subsequent PSP and DCP planning and documentation to be prepared by others informed by this report will include formalisation of their own recommendations which are ultimately adopted by the City of Ballarat as the Planning Scheme Amendment.

### Precinct Structure Plan

The Ballarat West Precinct Structure Plan (PSP) is a comprehensive plan which provides direction for future urban development within the Ballarat West Precinct and is informed by the Ballarat West Growth Area Plan. The Ballarat West PSP describes how land is expected to be developed and identifies the community infrastructure and services required to support development.

This infrastructure which supports the PSP is typically provided through several mechanisms including:

- Subdivision construction works by developers.
- Development contributions (community infrastructure levy and development infrastructure levy).
- Utility service providers including road and drainage authorities; and
- Capital works projects by City of Ballarat, state government agencies and community groups.

### Land Acquisition

Aside from these project specific changes, the mechanism for the associated land acquisition should be clarified and strengthened in the PSP update, as securing land ahead of project delivery is one of the

key challenges in implementing the PSP and keeping up with development activity. As a minimum all land required for infrastructure projects are to be represented in the PSP.

Irrespective of whether the land acquisition is funded by the DCP or could potentially be gifted as part of future subdivision, it is highly recommended that a Public Land Acquisition Overlay (PAO) is prepared and included in the Ballarat Planning Scheme Amendment with the identified land.

### Development Contribution Plan

The Ballarat West Development Contribution Plan (DCP) was prepared concurrently with the PSP. The DCP sets out requirements for development proponents to contribute toward the necessary infrastructure to support the implementation of the Ballarat West PSP.

There are two (2) key prompts which have informed recommendations to the DCP.

1. A recommended change to the PSP, which is associated with an existing DCP project and/or would warrant a change to the DCP.
2. The review identifies and justifies a change to a DCP project scope in response to the changing needs of the precinct and/or where errors are evident.

### Summary of Changes

Table 1 - Recommended Road and intersection treatment changes to be reflected in the PSP and DCP

Project Name / Location (Precinct)	Original Description	Recommendation Description	Comments
DI_JNC_02 Carngham Rd / New N-S Rd (North) (Precinct 4)	Roundabout	Change to traffic signalisation	PSP and DCP to be updated. Project scope and cost estimated updated to reflect the change, noting extent of land acquisition reduced. Provision of safer crossing controls for vulnerable road users with proximity to neighbourhood activity centre is better delivered by traffic signals.
DI_RD_03b New N-S Road (North) between Cuzens Road and Carngham Road (Precinct 4)	Link Road 2	Realignment	Alignment has been affected by adjacent development areas thus impacting the intersection design of DI_JNC_02
DI_RD_04 New N-S Road (North) between Carngham Road and sub- precinct 4 southern boundary (Precinct 4)	Link Road 2	Realignment	Alignment has been affected by incomplete land acquisition thus impacting the intersection design of DI_JNC_02
DI_JNC_04 Greenhalghs Rd / New N-S Rd (North) (Precinct 2)	Roundabout	Realignment	Intersection has moved northwards thus land acquisition of the southern side land is no longer required

Project Name / Location (Precinct)	Original Description	Recommendation Description	Comments
DI_JNC_05 Greenhalghs Rd / New N-S Rd (South) (Precinct 2)	Roundabout	Change to traffic signalisation	PSP and DCP to be updated. Project scope and cost estimated updated to reflect the change, noting extent of land acquisition reduced. Required land acquisition on northern side for roundabout not possible due to existing urban development.
DI_JNC_08 Glenelg Hwy / New NS Rd (South) (Precinct 2)	Roundabout	Roundabout	DCP correction Pavement design standard amended from local road design to arterial road design.
DI_RD_11 New N-S Road construction – sub-precinct 2 northern section (Precinct 2)	Link Road 2	Realignment	Road realigned westward within the same development site to reflect actual development configuration
DI_RD_12 New N-S Road construction – sub-precinct 2 southern section (Precinct 2)	Link Road 2	Realignment	DCP correction. Project scope and cost estimated updated to reflect increased length in Link Road of ~62m to correct the total length of road required between DI_JNC_05 and DI_JNC_08. Road realigned westward adjacent to low density zoned land reflecting actual development configuration.
DI_RD_21 Cherry Flat Road Upgrade - Schreenans Lane to Bells Road (Precinct 1)	Duplicated Link Road	Duplicated Link Road	DCP correction. Project scope and cost estimated updated to reflect increased length in Duplicated Link Road of ~560m to reflect extension through to Bells Rd with land acquisition already covered by an existing Public Acquisition Overlay (PAO)
DI_JNC_11 Cherry Flat Rd / Schreenans Rd (Precinct 1)	Roundabout	Amendment to scope	Project to incorporate fourth roundabout arm and associated land acquisition reflecting development configuration
DI_RD_38 Ross Creek Road Upgrade (Precinct 1)	Link Road 2	Service road provisions	DCP correction. The PSP describes DI_RD_38 as being from Bells Road to Taits Street. The road scope and cost estimate omit the

Project Name / Location (Precinct)	Original Description	Recommendation Description	Comments
DI_RD_39 Ross Creek Road Upgrade - Schreenans Lane extension East to Tait Street (Precinct 1)	Link Road 2	Service road provisions	section from Schreenans Lane extension East to Tait Street. Projects are to be corrected to reflect the full length intended.  Existing cross section treatment to be retained, but support for addition of service roads to support safe connections are encouraged as optional
Webb Road / Schreenans Road (Precinct 1)	NA	New roundabout project	Existing government roads proposed as Link Road and Key Access Street with bus route are configured as an uncontrolled crossroad intersection. Note this is a PSP project only and will be delivered by developers.
Key Access Streets (All precincts)	Not provided	Apply standard cross sections	Apply a new Key Access Streets cross section except for when bus routes are identified which applies the Collector Street (Constrained) cross section
Local Access Streets (All precincts)	Not provided	Reference use of 18m wide road reserves for local access streets	Include reference in PSP to preference for adopting 18m wide road reserves for local access streets

### Network Implementation

The findings and recommendations from this review will be further considered to formally prepare revised documentation related to the Ballarat West PSP and DCP in support of an amendment to the Ballarat Planning Scheme.

In parallel to this, and to support the streamlining of implementation associated with these strategic plans it is recommended that priority and short-term projects have detailed designed completed to be 'construction ready', with medium-term projects advanced to functional design and/or preliminary site investigations to inform future budgets and integration with development.

Progressing design will also benefit the progress of land acquisition, irrespective of the mechanism used to secure land.



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## INTRODUCTION

### REVIEW PURPOSE

To review the remaining roads and intersections as identified in the Ballarat West Precinct Structure Plan (PSP) and consider development activity since the PSP was adopted, suitability of the outstanding projects including their function, alignments, land requirements and delivery strategies.

To enable the review to be comprehensive, background research and consideration on the original documentation and subsequent implementation of the PSP and DCP are captured in this report.

This report includes recommendations for consideration only by the City of Ballarat and its representatives. Subsequent PSP and DCP planning and documentation to be prepared by others will be informed by this report but will include formalisation of their own recommendations which are ultimately adopted by the City of Ballarat as the Planning Scheme Amendment.

### STUDY OUTPUTS

The outcomes of the project are:

1. Whether the scope of the road and intersection projects as outlined in the DCP are appropriate for the development that is occurring
2. Determination of the most appropriate intersection control solution between a roundabout and a signalised intersection considering the safety and efficiency of pedestrian and cyclists as well as motor vehicles
3. Consideration of the accuracy of any road length measurements
4. Whether the costings of the road and intersection projects as outlined in the DCP are appropriate considering the scope and the corrected length (as required)
5. Consideration of whether the current DCP land projects are adequate to deliver the projects.
6. A review of the thresholds for the timing of the delivery of the projects to ensure the safe and satisfactory operational performance of road infrastructure.
7. A review and if required, an update of relevant PSP Cross Sections

## BACKGROUND

The City of Ballarat (Council) is undertaking a review of the designs, funding and delivery mechanisms of planned roads and intersections as listed in Table 1. Delivery of these transport projects are funded by a Development Contribution Plan (DCP) which is driven by the over-arching Ballarat West Precinct Structure Plan document.

The Ballarat West DCP is the single source of truth for the project costings; this report will discuss how certain projects were either not correctly scoped (i.e., civil or land acquisition) thus cost or suggest including additional projects where current standards exceed those when the PSP/DCP were developed.



Table 2 - Roads and junctions selected for review.

DCP Project Code	Project Description
DI_RD_03b	North of Ballarat-Carngham Road
DI_RD_11	North-South Link Road
DI_RD_12	North-South Link Road
DI_RD_20	Cherry Flat Upgrade north of Schreenans Road
DI_RD_21	Cherry Flat Upgrade south of Schreenans Road
DI_RD_23	Cobden Street construction north
DI_RD_24	Cobden Street construction south
DI_RD_31a	Schreenans Road upgrade
DI_RD_31b	Schreenans Road extension west
DI_RD_31c	Schreenans Road Creek Crossing
DI_RD_31d	Schreenans Road extension east
DI_RD_38	Ross Creek Road Upgrade
DI_RD_39	Ross Creek Road Upgrade
DI_JNC_02	Carngham Rd / New N-S Rd (North) Roundabout
DI_JNC_05	Greenhalghs Road / New N-S Road (South) Roundabout
DI_JNC_08	Glenelg Hwy / New N-S Road (South) Roundabout
DI_JNC_11	Cherry Flat Road / Schreenans Road Roundabout
DI_JNC_12	Ross Creek Road / Schreenans Road extension/ Cobden St (realignment) Roundabout



Figure 1 - Locality plan study's roads and junctions

PSP EVOLUTION

There have been many changes to the PSP since its existence post-October 2016, which as individual items do not necessarily impact the immediate areas in where they are located. The cumulative impacts of these changes on the wider PSP need to be periodically analysed and assessed against the desired objectives.

Driving factors resulting in these changes include:

1. Multiple Responsible Authorities – Infrastructure requirements of City of Ballarat and Regional Roads Victoria (DTP) i.e., funding priorities and political interest.
2. Developer Driven – the nature of and timing of the land released for development is typically driven by the developer, with some development locations “out of sequence”.
3. Contemporary Design Standards – design requirements are continually updated to reflect new approaches; these changes can create additional costs for implementation.

4. Scope Changes – changes to project scope occurs to mitigate land acquisition and/or other challenges which are assessed against the desired outcomes of the PSP.
5. Unaccounted Infrastructure – portions of several roads and intersections were not included in the original PSP requiring corrections to be made.

This review will consider the decision-making processes and whether improvements are warranted to ensure the PSP’s aims and costs are not impacted in the long term.

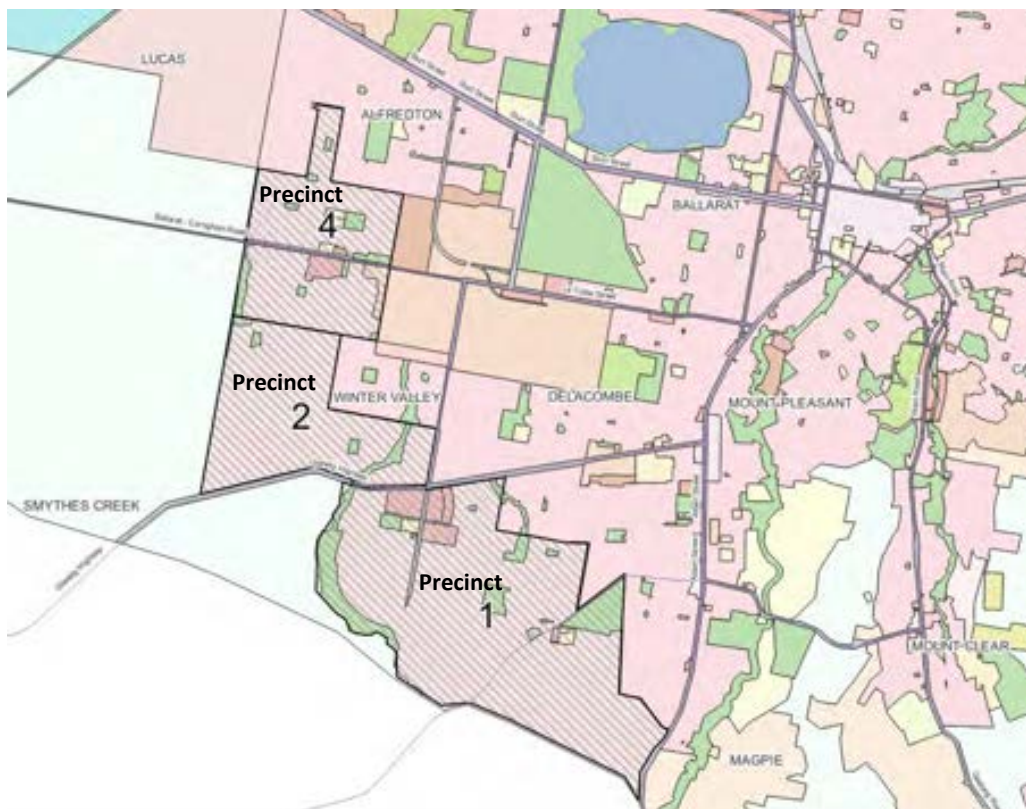


Figure 2 – Ballarat West Precinct Structure Plan overview map

**SUPPORTING DOCUMENTS**

This review considered the original Future Traffic Estimates & Road Infrastructure Requirements, SMEC 2011 report which informed the original road transport network in the PSP. Additional studies, strategies and reports have all linked back to the SMEC 2011 report that have in general improved on justifying the road network within the PSP. These documents include:

Document/Study/Report Name	Synopsis – Influence on PSP
Ballarat Strategy 2040 Part 4 Transport, City of Ballarat 2015	Outlines the key concepts, principles, and long-term actions to manage change so incremental short-term decisions consider our long-term challenges and opportunities. Two key platforms, the '10 Minute City' and the 'City in the Landscape' i.e., creating communities rather than satellite areas that feed the Ballarat CBD thus being less reliant on car use for short trips.

Document/Study/Report Name	Synopsis – Influence on PSP
Draft Schreenans Road Bridge Traffic Assessment Report, ESR Transport Planning 2015	<p>Reviews the drivers and the needs for the new bridge joining Schreenans Road and Ross Creek Road and whether there are suitable alternatives such as:</p> <ul style="list-style-type: none"> <li>• Joses Lane</li> <li>• Upgrading Webb Road</li> <li>• Settlers Drive/Edmund Street</li> </ul> <p>Concludes that a bridge is required more so for pedestrians and cyclists as alternatives are available for cars.</p>
Victorian Integrated Transport Model – City of Ballarat Phase 4 Preferred Scenario, AECOM 2016	<p>Review of the existing transport networks (E.g., road, rail, bus) with projected growth scenarios.</p> <p>The preferred approach to managing future growth is to increase mode share away from vehicle traffic, which links to the Ballarat Strategy 2040</p> <p>Identifies the timing of each PSP road project to support the project growth in the Victorian Integrated Transport Model (VITM)</p> <p>APPENDIX B presents an audit of the roads to be upgraded to what has been built to date.</p>
Ballarat Cycling Action Plan, City of Ballarat 2017	<p>Focuses on linking destinations and continuous and safe cycling routes for all types of users (families and children in particular).</p> <p>Routes predominately off-road or quieter streets</p> <p>Integrated with urban design, amenity, and landscaping improvements.</p> <p>Prioritises projects such as a safe route from the PSP to the CBD (Glenelg Highway to Yarrowee Creek trail); shared paths and bike lanes within the PSP join onto this priority route.</p>
Ballarat Integrated Transport Plan, City of Ballarat 2019	<p>Plan developed with the following discussion papers/inputs:</p> <ul style="list-style-type: none"> <li>• Ballarat’s Urban Transit Future Background Paper, Movement and Place Consulting 2019</li> <li>• Connecting Ballarat, Public Transport Users Association 2018</li> <li>• Ballarat Walking Framework – Evolution Roadmap, Movement and Place Consulting 2019</li> <li>• Ballarat’s Future Rail Network Background Paper, Movement and Place Consulting 2019</li> </ul> <p>The integrated transport plan builds on the above-mentioned documents and integrates with freight and public transport.</p> <p>Identifies priorities actions, namely:</p> <ul style="list-style-type: none"> <li>• Bus service improvements i.e., direct from PSP to CBD</li> <li>• Completion of the Ballarat Link Road</li> <li>• Walking and cycling routes</li> </ul>
Bonshaw Creek Sub-Precinct Transport Network Review, ESR Transport Planning 2021.	<p>This report extends on the Schreenans Road Bridge Traffic Assessment report with further analysis of the traffic impacts should the bridge not proceed.</p> <p>Further analysis, namely detailed design of the proposed bridge is required to truly understand the merits of continuing this project funded under the DCP model.</p>

Document/Study/Report Name	Synopsis – Influence on PSP
Greenhalghs Road/Innsbruck Road, Winter Valley SIDRA Analysis Report, ESR Transport Planning 2022	Report on the re-designed intersection i.e., roundabout to traffic signals and the impact to traffic movements at the intersection and their flow-on effects to the wider network. Concludes that will be during peak times the backing up of traffic, there is no detrimental impact to the wider network outside the morning peak period. This modelling was used to inform Memo – DI_JNC_05 options, Milward Engineering Management 2022 in recommending traffic signals at the Greenhalghs Road/Innsbruck Road intersection.
Intersection Treatment Option for Carngham Road/Presentation Boulevard and Sydney Way, Milward Engineering Management 2022	Draft report discussing the available options at the intersection considering: <ul style="list-style-type: none"> <li>• The challenges of land acquisition</li> <li>• The realignment of the intersection roads, Presentation Boulevard and Sydney Way</li> <li>• Potential high-speed traffic of a duplicated Carngham Road further creating unsafe environment for pedestrians and cyclists crossing given the collector status of Presentation Boulevard and Sydney Way.</li> </ul> The draft report recommends that the intersection changes to traffic signals to create a safer crossing point for pedestrians and cyclists, noting that further traffic modelling is required to understand the overall impacts of vehicle traffic movements in the wider PSP area.
Ballarat-Carngham Road Duplication between Dyson Drive and Wiltshire Lane Preliminary Drawings, SMEC 2022	Detailed design plans for the eventual duplication of Carngham Road between Wiltshire Lane and Dyson Drive. The plans show that all intersections along the route use roundabouts, P-turns or left-in/left-out treatments. There is only one signalised pedestrian crossing approx. 200m east of Presentation Boulevard/Sydney Way. Later discussions with DTP have indicated that there is further work required and they are open to modifying the Presentation Boulevard/Sydney Way intersection to traffic signals instead of roundabout.
Ballarat West Precinct Structure Plan Review Transport Assessment Report, ESR Transport Planning 2023	Reviewing traffic forecasting that informed the original PSP, the road network layout, intersections, and cross sections. The review considers infrastructure within or adjacent the PSP Growth Area and is focussed on road network infrastructure. This review is made in the context that much of the Growth Area development has already occurred, and therefore modifying planned road infrastructure should only be in response to significant issues or for significant benefits.

Table 3 - Roads and junctions' part of the DCP either delivered or commenced, excluded from this study.

DCP Project Code	Project Description
DI_RD_09	Glenelg Hwy / Wiltshire Ln / Cherry Flat Rd Signalised Intersection
DI_JNC_10	Cherry Flat Rd / Webb Rd Signalised Intersection
DI_RD_19	Cherry Flat Road Upgrade - Glenelg Highway to Webb Road
DI_RD_22	Tait Street upgrade
DI_RD_03a	New N-S Road (North) between Cuthberts Road and Cuzens Road (now Sydney Ave)
DI_RD_15	Greenhalghs Road upgrade - central section
DI_RD_16	Greenhalghs Road upgrade - eastern section
DI_RD_14	Greenhalghs Road upgrade - western section

## KEY CONSIDERATIONS

### MANAGING CHANGE

While the review included scope to determine appropriate solutions, consideration of accuracy issues, and update costings there was a clear mandate to make only necessary changes. This position was presented by Council as limiting the likely cost increases to the DCP and having high regard for consistency of implementation with the 50% of the PSP area already permitted under the original PSP and DCP.

Key aspects of the review have been aligned to follow:

- Unit quantities are adjusted where material errors, gaps or changes can be identified;
- Unit rates are indexed and not updated, unless there are errors or material changes identified; and
- Any material changes to scope (such as change from roundabout to signals) is captured.

Such parameters are to have any update align with the existing PSP / DCP, where the core elements, intents and outcomes are largely unchanged – a type of addendum. A potential challenge is that a ‘brand new’ PSP / DCP could present new methodology, projects and development outcomes when aligned to current greenfield development planning practices.

Ultimately the review is restricted to alignment with the outcomes of previous work, while undertaking enough critical analysis to identify any matters which cannot be ignored or excluded from an update to the PSP / DCP.

### DEPARTMENT OF TRANSPORT AND PLANNING (DTP)

DTP has been consulted throughout this review to ensure the implementation of works, funding, timing and any staging or works are coordinated. Carngham Road and the Glenelg Highway are the two arterial roads the bisect the PSP area. The demarcation line between new PSP roads and existing DTP roads is sometimes unclear as it is dependent on the local context, this review explores two PSP projects DI\_JNC\_02 and DI\_JNC\_08 where new local roads intersect with the existing arterial roads.

In developing the original PSP, DTP (as its predecessors, Regional Roads Victoria, VicRoads etc.) have earmarked the extension of Dyson Drive in Alfredton (known as Ballarat Link Road) to continue southwards around the outer boundary of the PSP to the Midland Highway near the Colac Road intersection.

Portions of the planned Ballarat Link Road relies on the widening of existing road reserves, creating new road reserves (mainly in Precinct 2) to ultimately build a duplicated road. DCP project DI\_LA\_25 is for land acquisition where the widened collector roads interface with the proposed Ballarat Link Road i.e., Greenhalghs, and Carngham Roads. Upgrades to Carngham Road and the Ballarat Link Road construction are projects delivered by DTP.

### TRAFFIC MODELLING

In developing the original PSP, each road and intersection used traffic modelling to estimate the volumes of traffic from within the PSP area and traffic that would enter/pass from outside the area. The DCP projects factor in a split between new and existing demands with the ratio of new demand typically funded by the DCP and ratio of existing demand by external sources such as the City of Ballarat and/or DTP etc.



This review includes an assessment of traffic modelling to confirm whether the original assumptions that informed the PSP and DCP still align with the actual development completed and the future development anticipated. Where there are identified deviations from the original projections, recommendations will be provided.

#### SUB-CONSULTANT – TRAFFIC

ESR Transport Planning (ESR) have been engaged in a sub-consultant capacity to undertake a review of the traffic modelling that underpins the PSP's Road network and their respective cross sections. The scope of the consultancy was as follows:

1. Dwelling density increases – both from zoning discrepancies and density changes (lots/ha)
2. Future traffic volume forecast – comparing the available traffic models that informed the PSP and Ballarat's Integrated Transport Plan
3. Potential new projects and/or where changes to the network are warranted.
4. Review the application of Key Access Streets – Cross Section (which is not part of the original set of PSP cross sections)

The report of this sub-consultancy is in APPENDIX B; the main findings of this report are:

#### *Traffic Modelling*

- SMEC forecasting was based on 26,640 new residents in the Growth Area over the 20 years to 2031, this compares with actual population growth for the entire Ballarat LGA of 20,260 in the 10 years to 2021.
- The SMEC forecasting likely underestimates trip generation within the established rural residential areas, i.e., Masada Boulevard and Webb Road localities (further discussion in the LAND USE PROJECTIONS section).
- The model does not consider if some trips are double counted, given some trips are shared between land uses (e.g., trip from a dwelling to nearby shopping / employment) and therefore should not be assigned onto the road network twice (i.e., surrounding the Delacombe Town Centre).

#### *Road Hierarchy and Cross Sections*

- The layout of the PSP's 4-lane roadways provides an even spatial distribution for Arterials/Duplicated Link Roads (DLR). Therefore, the Duplicated Link Roads, namely Ballarat Link Road and Cherry Flat Road will have a functional role within the network more akin to an Arterial Road.
- The separation of the PSP's 4-lane roadways are slightly greater than the ideal one-mile grid in Sub-Precinct's 2 and 4, while almost double at 3.0km in Sub-Precinct 1.
- Given the spatial distribution, Key Access Streets will have a functional role within the network more akin to a Collector Street classification.

#### *Active Transport Crossings*

Non-car movement of people within the precinct has been analysed further in this report, and has highlighted four pedestrian/shared paths crossings where further vehicle traffic control is warranted for the safe crossing by more vulnerable road users:

1. Ballarat-Carngham Road/Ballarad Link Road (which is outside of this study)
2. Ballarat-Carngham Road/DI\_JNC\_02
3. Glenelg Highway/DI\_JNC\_08
4. Cherry Flat Road (DI\_RD\_21) where it crosses Winters Creek.

ESR's above-mentioned findings have been integrated into the relevant sections of this report.

### LAND ACQUISITION

Many of the roads and junctions in this review will require land acquisition, whether this is to acquire small areas for splays at intersections or an entire section of property so there is sufficient land in the road reserve for the road itself, footpaths, shared paths, and underground services. Many road upgrades are typically delayed until the land acquisition is resolved.

The PSP/DCP has identified properties where portions of land are to be excised to enable the delivery of road and intersection projects. There are multiple pathways for the land to be acquired:

1. Gifted land – Developers design their subdivision with a requirement for portions to be gifted to the Responsible Authority (either the City of Ballarat or DTP).
2. Section 173 Agreement – Typically used in parallel with planning permit approvals to formalise the implementation and compensation for land and other DCP projects.
3. Public Acquisition Overlay (PAO) – Implemented under the Ballarat Planning Scheme to establish the future compulsory land acquisition for a public purpose. Once established the City of Ballarat would need to action the formal process.
4. By Negotiation – The Responsible Authority (either the City of Ballarat or DTP) would negotiate ultimately enter into an agreement with landowners for land acquisition.

This report will consider the following examples:

1. The junction at Cherry Flat Road and Schreenans Road (DI\_JNC\_11) is one example where through reviewing project priorities, the roundabout is to be delivered prior to the duplication of Cherry Flat Road. Three properties are affected by the construction of the roundabout, whereas only one property is affected by the duplication project. In reviewing, land acquisition in the DCP, it became apparent that the intersection splays were omitted from the DCP estimates.
2. The delayed land acquisition has resulted in redesign of projects. For example, a redesign of the roundabout intersection of the new North-South Connector and Greenhalghs Road (DI\_JNC\_05) to traffic signals as existing development constrained the land available for the circulating roadway portion of the roundabout. Figure 3 compares the original roundabout design concept with the finalised traffic signal design.
3. Parts of the road land acquisition can be used by the acquisition for the intersection, the land acquisition is not for the intersection specifically (and vice versa). There may be a timing gap for the land acquisition for the road and junction. For efficiency, the land acquisition for the road and junction should occur simultaneously for efficiency and certainty to the affected landowner(s).



Figure 3 - Original roundabout footprint vs traffic signals for DI\_JNC\_05

Table 5 lists the land acquisitions relevant to the roads and junctions listed in Table 3.

Table 4 -Land acquisition for the selected intersections

PSP Project Number	Linked to PSP Road Project Number	Project Name	Indicative Delivery Trigger(s)	Estimated Land Area to be Acquired (ha)	Estimated Land Acquisition Cost (2023 \$ estimate)
DI_LA_14	Ballarat Western Link Road	Western Link Road - Stage 2b land acquisition	In stages as immediately adjacent land is subdivided OR when required for road construction.	4.90	1,890,145
DI_LA_17	DI_JNC_11, DI_RD_31a, DI_RD_31b, DI_RD_31c	Land for Schreenans Road widening	In stages as immediately adjacent land is subdivided OR when required for road construction.	0.68	517,109
DI_LA_18	DI_JNC_12, DI_RD_31d	Land for Schreenans Road extension (re-routed)	In stages as immediately adjacent land is subdivided OR when required for road construction.	0.69	414,000

PSP Project Number	Linked to PSP Road Project Number	Project Name	Indicative Delivery Trigger(s)	Estimated Land Area to be Acquired (ha)	Estimated Land Acquisition Cost (2023 \$ estimate)
DI_LA_19	DI_JNC_12, DI_RD_23	Land for Cobden Street extension (re-routed)	In stages as immediately adjacent land is subdivided OR when required for road construction.	0.66	330,000
DI_LA_20	DI_RD_24	Land for Cobden Street widening	In stages as immediately adjacent land is subdivided OR when required for road construction.	0.40	232,750
DI_LA_21	DI_RD_24	Land for Cobden Street link to Bells Road	In stages as immediately adjacent land is subdivided OR when required for road construction.	0.08	28,601
DI_LA_22	DI_JNC_04, DI_JNC_05, DI_JNC_08, DI_RD_11, DI_RD_12, DI_RD_16	Land for new north south road in sub-precinct 2	In stages as immediately adjacent land is subdivided OR when required for road construction.	3.51	1,509,913
DI_LA_23	DI_JNC_05, DI_RD_14, DI_RD_15, DI_RD_16	Land for widening of Greenhalghs Road	In stages as immediately adjacent land is subdivided OR when required for road construction.	0.87	334,442
DI_LA_24	DI_JNC_02, DI_RD_03b, DI_RD_04	Land for new north south road in sub-precinct 4	In stages as immediately adjacent land is subdivided OR when required for road construction.	4.11	2,002,500
PAO2	DI_RD_21	Land for duplicated Cherry Flat Road	In stages as immediately adjacent land is subdivided OR when required for road construction.	0.99	594,336
Total				16.89	7,853,795

Note: Not all land projects listed are fully funded by DCP. The PAO2 is a separate project, and there may also be land areas around intersections which are not included in the land project.

### DEVELOPMENT ENVIRONS

Further analysis of the following is required to understand and verify the road and intersection projects identified:

1. **Population projections** – .id forecast have last completed the projections pre-COVID in 2019, these differ from the original forecasts used in developing the original PSP/DCP circa 2010. It is important to compare the original projections to see if there is a “step” change in growth, noting post-COVID travel patterns may have changed.
2. **Land uptake** – following on from the population projects, the rate which new dwellings have been built may have been a higher rate than originally forecast.

3. **Rezoning/modifications to planned land use** – there are small areas where one type of land use was planned, and the actual differs e.g., proposed industrial land changed to residential near Carngham Road.
4. **Actual vs Planned Growth patterns** – actual growth patterns differ from the “preferred” growth patterns, areas in precincts 2 & 4 started development from the western edge rather than their eastern edges adjacent to the existing developed areas.
5. **Modelled vs Actual Traffic Movements** – traffic is generated by where people live vs their destination, which is further compounded by certain planned destinations e.g., schools are not yet built within the PSP.
6. **Staged development** - many of the roads in this study have the land acquired or portions thereof for the construction of the road and intersections. This is due to the staged nature of the development in the PSP and the detailed design within these areas.
7. **Concept vs detailed design** – the PSP was developed using standard cross section templates with their position not finalised and based on typical practices at that time. Several completed/proposed sections are now in different locations.
8. **Land acquisition for intersection splays** – there are some landholders that are affected by the planned land acquisition that have not had (relatively) small portions of their land acquired. In one instance this has required an intersection to be re-aligned and redesigned to avoid land acquisition that would have delayed development.
9. **Construction Price Index** – actual CPI since the adoption of the PSP/DCP has been used to index costs of both the DCP levy and the project value / budget. Feedback from the development industry suggests that this indexation has not (in all cases) aligned with the actual cost of implementation.
10. **Changes to Design Standards and Legislation** – factors include:
  - a. Infrastructure Design Manual is an evolving document where the minimum design requirements have changed.
  - b. Roads transferring from Council to Regional Roads Victoria; DTP roads tend to carry higher percentages of heavy traffic, as such, pavement design tend to use more material in arterial roads, for example Cherry Flat Road may in the long term become an arterial road once the Ballarat Link Road is built.
  - c. New and updated Council Plans – for example, the Ballarat Integrated Transport Action Plan sets here clearer mandates for reducing car-dependency by increasing opportunities for walking and bike riding, connecting pedestrian, and cycling routes to key destinations and public transport and enhancing safety, amenity and accessibility for pedestrians and cyclists, and at bus shelters. These actions also link to links to Council’s Health and Wellbeing Plan 2021-31 plan.

The analysis of the Development Environs has been completed for each project in the form of a multi-Criteria Assessment, as discussed in the following section.

### MULTI-CRITERIA ASSESSMENT (MCA)

In general, the MCAs are a tool that assists, in the case of this review, in providing a consistent framework to review each project’s delivery risk to the principle aims of PSP.

The risks MCA considers the items listed in the Development Environs section, the tabular score summary of the Development Environs MCA is listed in Table 6, where the higher the score the greater the risk.

Table 5 – Project risks MCA results summary

Group	ID	Precinct Item	4			2					1															
			DI_RD_03b	DI_JNC_02	DI_RD_04	DI_RD_11	DI_JNC_04	DI_JNC_05	DI_RD_12	DI_JNC_08	DI_RD_20	DI_JNC_11	DI_RD_21	DI_RD_31a	DI_RD_31b	DI_RD_31c	DI_RD_31d	DI_JNC_12	DI_RD_38	DI_RD_39	DI_RD_23	DI_RD_24				
Growth Demand	1	Population Projections	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	Land Uptake	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1
	3	Rezoning/ Modification to Land Use	1	2	1	1	1	2	1	1	2	2	2	3	3	3	3	1	1	1	1	1	1	1	1	1
	4	Actual vs Planned Growth Patterns	1	3	1	1	1	1	1	1	1	1	1	3	3	3	2	2	2	2	2	2	2	2	2	2
Development Activity	5	Modelled vs Actual Traffic Movements	1	2	1	1	1	2	1	1	1	3	2	2	3	2	2	1	2	2	3	1	1	1	1	
	6	Staged Development	1	1	1	1	1	1	1	1	2	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1
Project scope & cost estimate	7	Concept vs Actual Design	1	1	1	1	1	2	1	1	1	2	2	3	3	3	2	3	1	1	1	1	1	1	1	1
	8	Land Acquisition	1	2	1	1	1	2	1	1	3	3	3	3	3	1	3	1	2	2	1	1	1	1	1	1
	9	Construction Costs	1	1	1	1	1	3	1	3	1	2	2	2	2	3	3	2	1	1	3	1	1	3	2	2
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1
Project Deliverability	11	Ease of Delivery	11	17	11	10	10	16	10	12	15	21	19	23	24	21	22	13	13	13	15	12				



Table 6 – Project risks MCA results summary for alternative alignments and extra junctions

Group	ID	Precinct Item	1		
			DI_JNC_X1	DI_RD_X1	DI_RD_X2
Growth Demand	1	Population Projections	1	1	1
	2	Land Uptake	2	2	1
	3	Rezoning/ Modification to Land Use	3	2	2
	4	Actual vs Planned Growth Patterns	3	1	1
Development Activity	5	Modelled vs Actual Traffic Movements	3	3	2
	6	Staged Development	3	2	2
Project scope & cost estimate	7	Concept vs Actual Design	3	2	2
	8	Land Acquisition	2	3	1
	9	Construction Costs	2	3	3
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	2	3	1
Project Deliverability	11	Ease of Delivery	24	22	16

## PRECINCT CHANGES

### LAND USE PROJECTIONS

The development of the PSP is predicated on the population forecasts completed for the City of Ballarat by id forecast. The available data was published in 2017 following the 2016 Census and according to the website (<https://forecast.id.com.au/ballarat/>).

The id forecast areas differ from the PSP areas (Figure 4), making it difficult to marry actual development with the forecasts. To overcome this, an analogue of estimating growth using the parcel creation date in the [www.data.vic.gov.au](http://www.data.vic.gov.au) parcel data set was used to create the actuals in years 2011 and 2016 in the following tables.

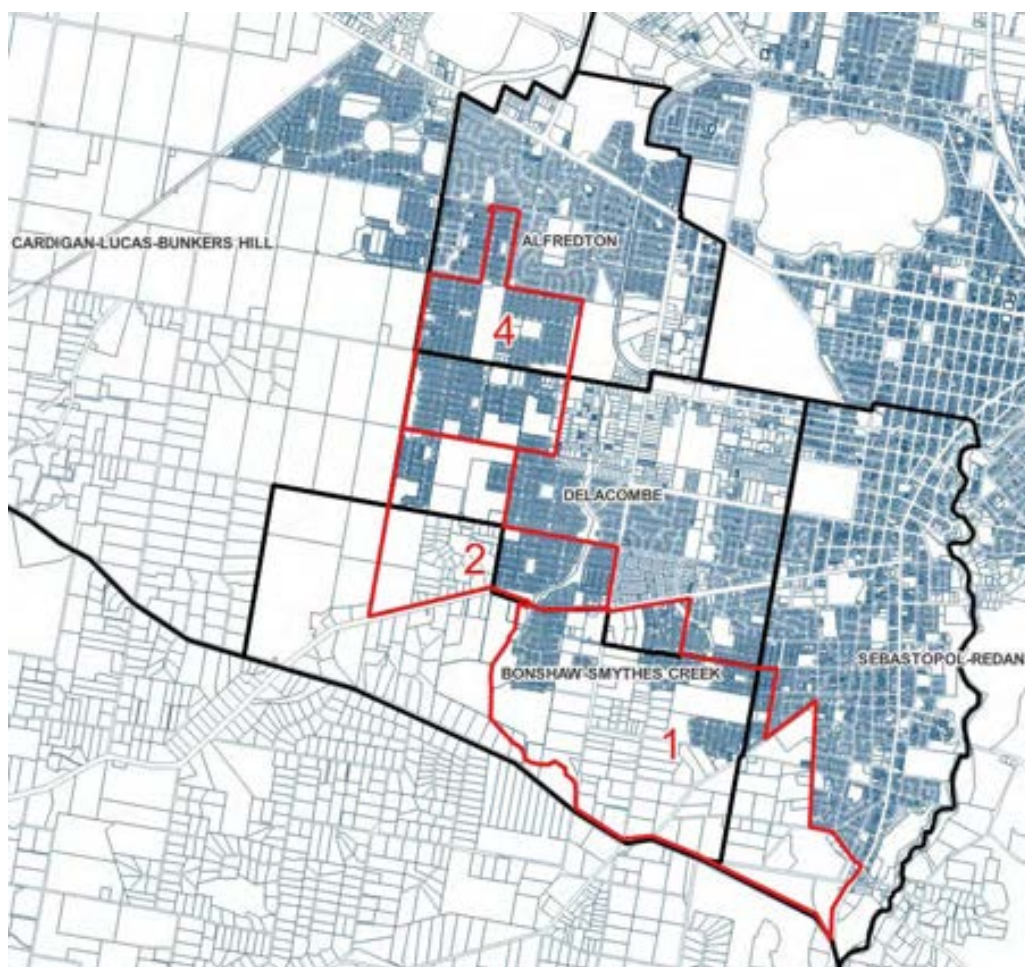


Figure 4 - overview map of ID Forecast Areas (black) and the subject area (red)

The id forecast data was modified to incorporate the actual data from land.vic.gov.au, City of Ballarat and allocated the forecast areas in Figure 4 to PSP precincts. This incorporated calculating the actual lots created to 2021 and the net dwelling growth from 2021 to 2041.

The following land availability projections (Table 8) also incorporated the adopted densities for future developments at a parcel level, supplied by the City of Ballarat.

Table 7 - Forecast net change of dwellings by precinct in five-year periods from 2011 to 2041.

Precinct	2011	2016	2021	2026	2031	2036	2041	Lots available	% Developed by 2041
4	660	698	2,657	3,235	3,676	3,676	3,676	3,676	100.0%
2	838	838	1,358	2,480	3,905	4,156	4,156	4,156	100.0%
1	598	713	1,728	2,127	2,615	5,129	7,894	8,104	97.4%
<b>Total</b>	<b>2,096</b>	<b>2,249</b>	<b>5,743</b>	<b>7,842</b>	<b>10,196</b>	<b>12,961</b>	<b>15,726</b>	<b>15,936</b>	<b>99.9%</b>

Note: Precinct 3 is the Lucas development area and is excluded from the PSP

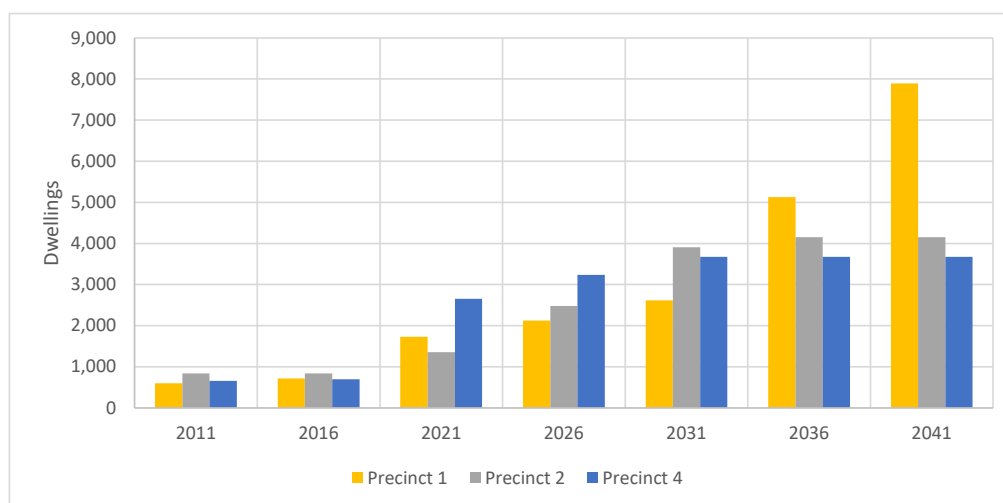


Figure 5 – Actual parcel data from 2011 to 2021 and re-forecasted ID projections after 2021 to 2041

Table 9 lists the remaining lots available for each precinct, in five-year intervals, starting from 2021 using data supplied by the City of Ballarat where:

- a minimum lot density of 15 lots/hectare is used for existing/approved subdivisions and
- up to 20 lots/hectare for future proposed developments in line with current State Government policy.
- Precincts 4 and 2 become fully developed in 2031 and 2036 respectively; in theory, the growth in these areas continue irrespective of the available lots. This growth would then “transfer” to Precinct 1, this presents the highest possible growth scenario for Precinct 1.

Table 8 – Remaining lots available by year

Precinct	2021		2026		2031		2036	
	Remaining Lots	% of Total	Remaining Lots	% of Total	Remaining Lots	% of Total	Remaining Lots	% of Total
4	1,019	28%	441	12%	0	0%	0	0%
2	2,798	67%	1,676	40%	554	13%	0	0%
1	6,376	79%	5,977	74%	5,441	67%	3,895	48%
Total	10,192	64%	8,093	51%	5,994	38%	3,895	24%

**LAND UPTAKE CHANGES TO THE OVERALL PSP AREA**

The over-arching result of applying the above forecasts to the PSP is that not all available lots are developed by 2036 in Precinct 1. Based on the available data, the revised growth steps-up from 2021 and continues to the end of the forecasting period.

10 years have passed since the original projections, Figure 6 shows the upwards step-change where the 2011 projections under-estimated the dwellings by 2021 by 651 dwellings.

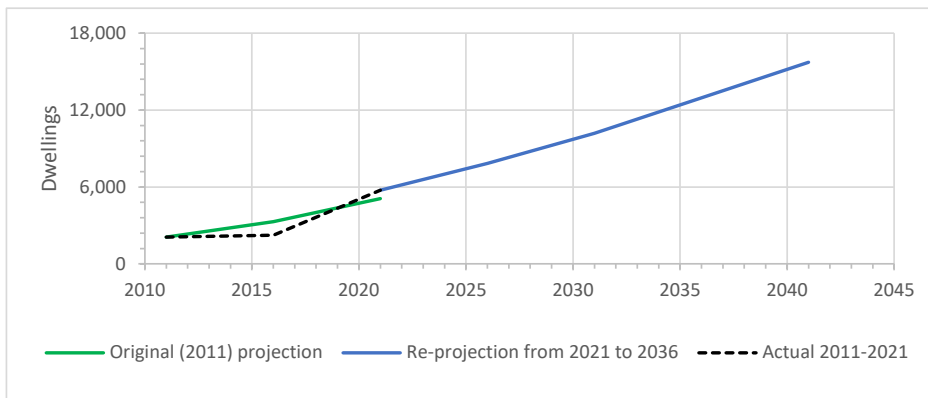


Figure 6 – Projected dwellings, original 2011 to 2021, re-projected from 2021 to 2036

In short, the projected dwellings used in the 2011 forecast, will be developed 2-3 years ahead of the original projection, this is more pronounced when reviewing at the individual precinct level starting the northern-most, Precinct 4, first down to Precinct 1 as the last, mirroring the actual general development trend.

**LAND UPTAKE CHANGES TO PRECINCT 4**

Actual net dwellings in Precinct 4 are 1,334 dwellings higher than the original 2011 projection indicating DCP items that service this precinct are brought forward or completed by 2026. Full development of Precinct 4 is reached by approximately 2027 with the assumption that the dwelling demand is moved to Precinct 1.

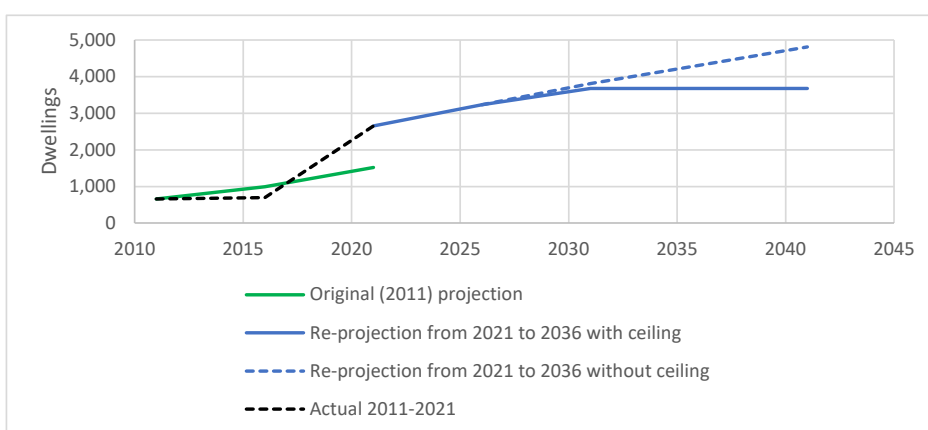


Figure 7 – Precinct 4 net dwellings using 2011 & 2021 projections.

**LAND UPTAKE CHANGES TO PRECINCT 2**

The actual net dwellings are lower than the 2011 projection, however, full development of Precinct 2 reached by 2027, the remaining dwelling demand moves to Precinct 1 (Figure 9).

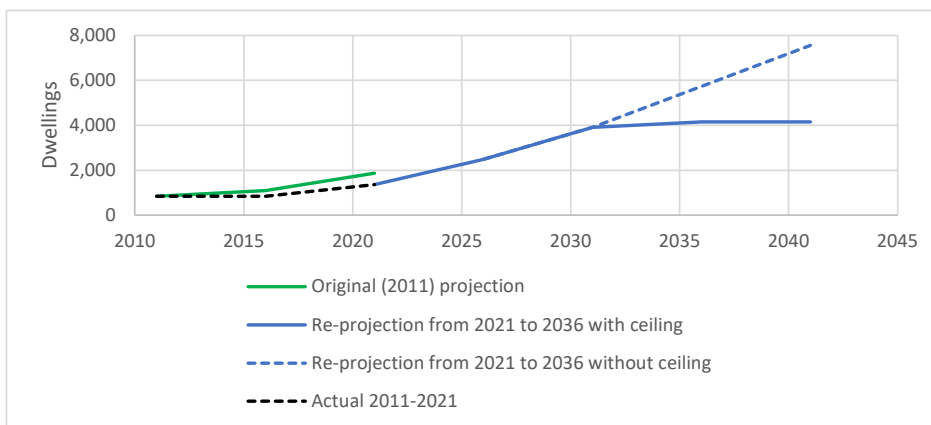


Figure 8 – Precinct 2 net dwellings using 2011 & 2021 projections.

**LAND UPTAKE CHANGES TO PRECINCT 1**

The net dwellings are higher than the 2011 projection i.e., 2,740 more than projected, as the “overflow” from Precincts 2 & 4 transfer to Precinct 1. There are 8,100 available lots for residential in Precinct 1 and 5,629 lots are taken up; the remaining undeveloped lots would be developed in the 2036-2041 period notwithstanding other development areas being adopted in the Ballarat Planning Scheme.

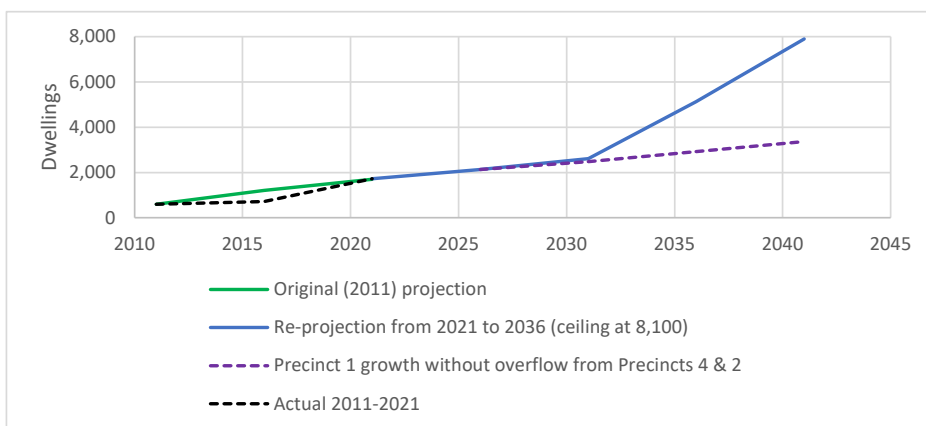


Figure 9 – Precinct 1 net dwellings using 2011 & 2021 projections (development ceiling at 8,100 dwellings).

The changes in the population/dwelling growth will be used to inform the construction timing of each road and junction studied in this report.

**TRAFFIC GENERATION FORECASTS**

The current lot densities are generally aligning with the planned densities, this is further acknowledged in the Bonshaw Creek Sub-Precinct Transport Network Review “urban development has been occurring at approximately the same densities when the PSP was prepared”.

The following has arisen during the review of the traffic modelling data:

1. Recent advice from the City of Ballarat states that future developments where they are in the process of gaining approval of their development plan or those that are yet to commence planning will subdivide from 17-18 lots/ha (observed trend) to ultimately 20 lots/ha (new target set by Victorian Planning Authority).
2. Seven traffic nodes have seen a reduction in the number of dwellings.
3. 13 nodes have seen an increase in estimated number of dwellings.
4. In reviewing the lot development in the existing Rural Residential area between Cherry Flat Road and Bonshaw creek, the projections appear to have not considered residential development and the incorrect assigning of general office-related traffic of these areas. The consequence of this is the traffic from these areas will be much higher (up to 7900 vehicle movements) than the original projections, this is summarised in Table 10.
5. Traffic estimates at the Delacombe Town Centre may be higher than projected.

Table 9 - Differences in traffic modelling trip generation and lot yields

Model-Zone	Trip Type	Original	Revised	% Diff. (forecast vs actual lots)	Comments
2-19	Residential	48	921	1819%	Existing low density residential, assumed rezoned to UGZ in new model, traffic loads would be much higher 8400 movements per day
2-21	Residential	411	1050	155%	Catchment approaching full development, three lots are to be developed as UGZ
1-7	Residential	718	1460	103%	Residential lots are over-estimated in projections given the POS/drainage infrastructure earmarked for this catchment will reduce the developable area
1-9	Residential from low to higher density	38	921	2323%	Original estimate considered these as rural residential, now UGZ being developed, further modelling work is required to understand how this impacts the wider transport network
1-13	Residential from low to higher density	190	1302	585%	This should be general residential, traffic model would be underestimating this catchment's impact, i.e., approx. 1636 dwellings x 9 = 14,724 movements/day

The impact of these changes with respect to residential development is shown in Figure 10 which only shows the impact to residential areas where there is a significant difference (100% or more). The main causes for the divergence from the original estimate can be explained by:

1. Original assumptions are incrementally changed as developments occur,
2. Movement of a residential area to another location within the precinct, and
3. Density changes e.g., low density residential to UGZ or State Government policy.

Further traffic modelling is required to ascertain what the future traffic loads are and to test whether the proposed roads reviewed in this study are still suitable.



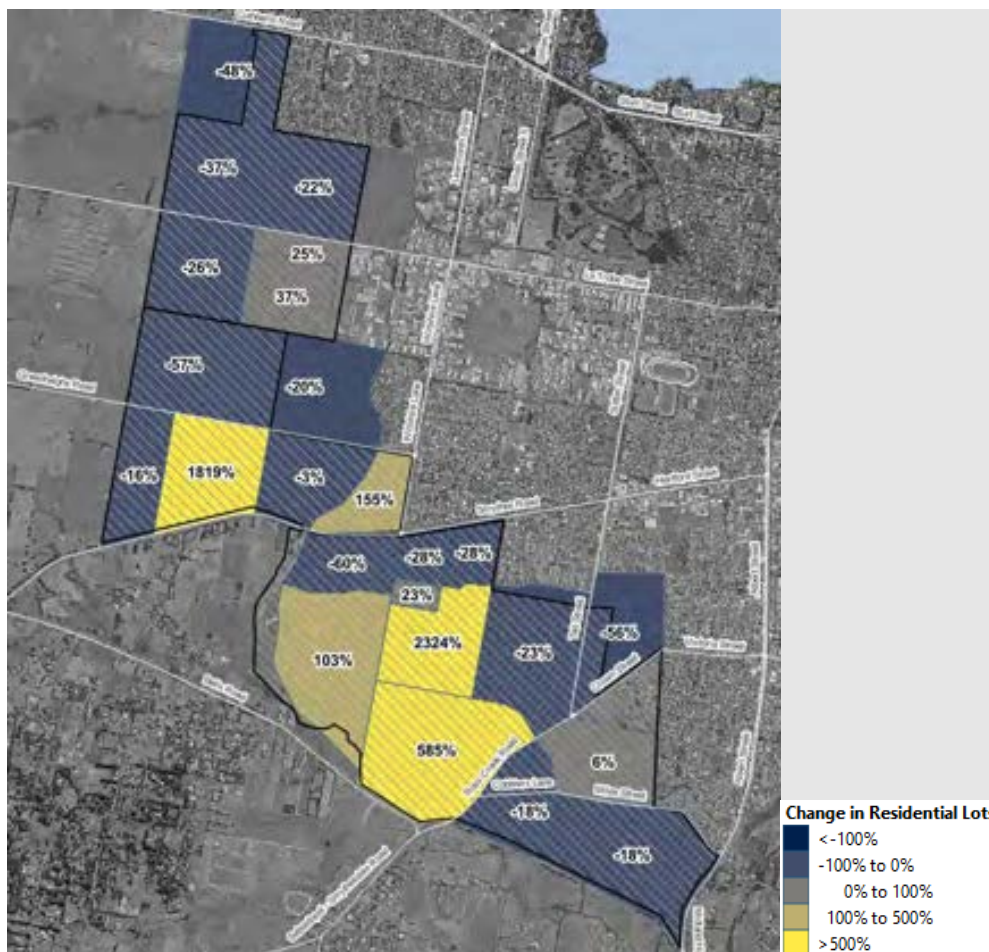


Figure 10 - Changes in dwellings in each traffic modelling node

### LAND ACQUISITION COSTS

In reviewing the land acquisition costs, through the detailed design phase, roads and junctions may have been realigned to fit in with the developer’s ambitions/vision for their development site or to overcome a site-specific issue (e.g., water mains, drainage etc).

A GIS-based assessment was undertaken where the proposed and actual (revised) areas of land acquisition were mapped.

In mapping these areas:

- the original data was updated to reflect the actual road casement/property boundaries where the land acquisition has been completed (e.g., parts of DI\_JNC\_02)
- new data was created:
  - where junctions were relocated or modified (e.g., DI\_JNC\_04)
  - missing splays (e.g., DI\_RD\_31b)
  - new roads connecting at proposed junctions (e.g., DI\_LA\_11)

While most of the land acquisition has been mapped within the PSP area, some of the land acquisition relates to the Ballarat Link Road. The Ballarat Link Road is not integral to the PSP’s Road network, which is the main reason as why it is outside of this review, however, portions of its alignment are within the PSP and intersect with some of the roads analysed in this review.

The results of the analysis highlighted that additional land is to be acquired on top of the original estimated land estimates. There is acknowledgement where the area of land acquisition differs from the DCP estimates at the impacted road/junction sections. This additional land will need to be acquired through planning permits / subdivisions and via public acquisition overlays.

APPENDIX H lists all the affected properties where land acquisition has changed from the original estimate for the studied roads. In some cases, an affected property may have multiple road/junction projects that require different areas of land acquisition, although it would be best for the property owner and Council that all portions are acquired at the same time. There are increases and decreases for each parcel listed in APPENDIX H.

Opteon had previously been engaged by the City of Ballarat to review land acquisition costs for the land acquisition projects in PSP and were used to estimate the revised land acquisition costs in this review. Where there are properties not valued by Opteon, their respective property values are estimated using a regression line with a 2<sup>nd</sup> order polynomial providing the best-fit curve (Figure 11).

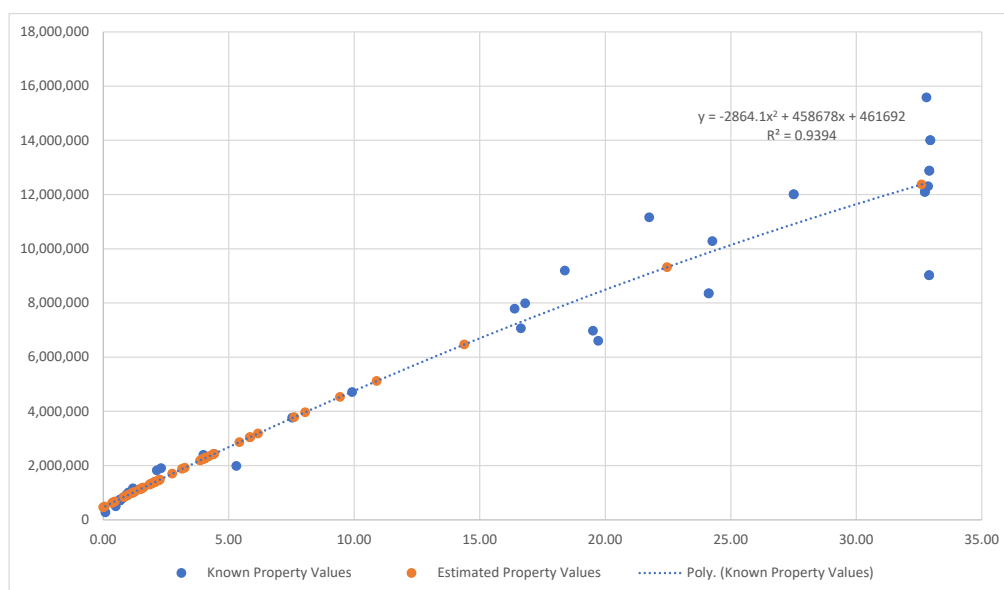


Figure 11 – Regression line used to estimate missing land values using parcel areas.

In summary, the estimated land acquisition costs for the reviewed DCP projects (using the latest available land valuations, 2023), have reduced from \$8,196,815 to \$7,347,226, saving \$849,590 (10%) from the original estimates. This estimate includes portions of the Ballarat Link Road that are within the PSP boundary – there are further land acquisitions outside of the PSP that have been excluded from DCP and this review.

The cost impacts to the revised land acquisition DCP projects are listed Table 11 which for 5 DCP projects have not changed, 1 project increased, however, this has been offset by the reduced costs for the remaining 5 projects.

Table 10 - Estimated costs for revised land area and cost by Land Acquisition ID

Land Acquisition ID	Original Estimate		Revised Estimate		Change in Area	Change in Land Acquisition Costs
	Area Excised	Excised Land Value	Area Excised	Excised Land Value		
DI_LA_14	4.91	1,584,810	4.91	1,584,810		
DI_LA_17	0.30	247,149	0.33	212,150	-0.03	34,998
DI_LA_18	0.83	497,626	0.69	414,000	0.14	83,626
DI_LA_19	0.66	330,000	0.66	330,000		
DI_LA_20	0.40	232,750	0.40	232,750		
DI_LA_21	0.08	28,601	0.08	28,601		
DI_LA_22	4.11	1,678,545	3.51	1,509,913	0.60	168,633
DI_LA_23	0.96	392,279	0.87	334,442	0.09	57,836
DI_LA_24	4.16	2,265,500	4.11	2,002,500	0.05	263,000
DI_LA_25	0.39	130,718	0.39	130,718		
PAO2	0.99	594,336	0.99	594,336		
Total	17.79	7,982,313	16.94	7,374,219	0.85	608,094

APPENDIX H lists the impacts to all properties where land is to be acquired for the PSP road network under this study.

The impacts to the individual properties are discussed in the following Road and Intersection Review section.

## ROAD AND INTERSECTION DESIGN

### KEY ACCESS STREET ROAD CROSS SECTION

The PSP includes road cross sections that set the minimum cross section width that would best service the projected traffic demands for any given profile, except for the Key Access Street cross section which has been reference but no specific profile provided.

Since the development of the PSP, the City of Ballarat has developed and is applying the profile known as Key Access Street. In several locations the Key Access Street has also adopted the Collector Street: Constrained minimum cross section to service public transport and active transport routes. The differences between the two profiles are as follows (Table 12).

Table 11 - comparison of Key Access Street and Collector Street: Constrained Road profiles

Road Section	Key Access Street	Collector Street: Constrained
Reserve width	20m	20m
Travel lanes	3.05m	4.2m
Bicycle lanes	NA – shared with traffic lane	NA – shared with traffic lane
Parking	2.25m (inclusive of kerb tray)	2.3m (inclusive of kerb tray)
Nature strip/verge	4.55m	3.5m
Footpath (within verge)	1.5m	1.5m

Key points to note are:

1. The Key Access Street travel lane width is narrower than the desirable 3.5m minimum.
2. Neither profile has dedicated allocation to on-road bicycle lanes.
3. Both provided similar parking provisions and are slightly greater than industry minimums.
4. Wider nature strip/verge provisions in the Key Access Street – allowing for greater space for tree planting and services.
5. The practice of adopting the Collector Street: Constrained minimum cross section where public transport and active transport routes are required is appropriate.

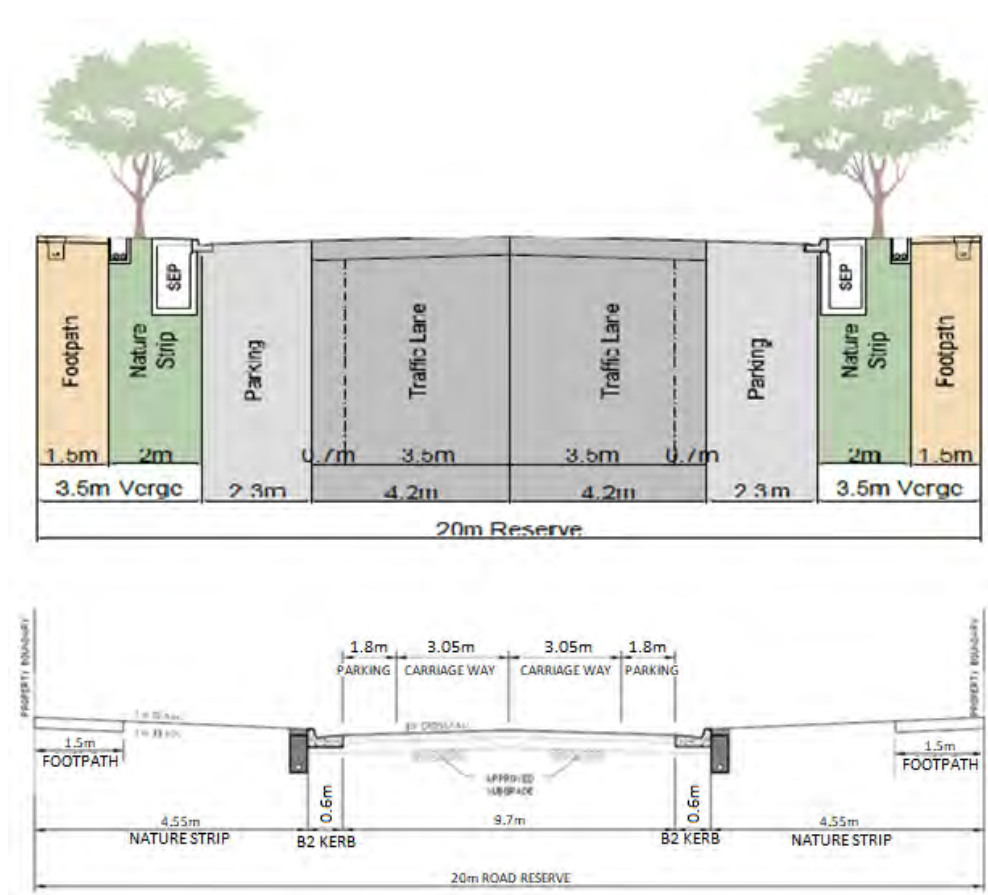


Figure 12 – Collector Street: Constrained and Key Access Street cross sections

It is recommended that Key Access Streets cross section implemented by Council is adopted as the minimum standard, except for when bus routes are identified which then applies the Collector Street (Constrained) cross section for all roads designated as Key Access Streets.

QUANTITY CORRECTIONS

UNIT RATES

Unit rates have not been critically assessed as part of this review, instead are indexed using ‘3101 Road and bridge construction Victoria’ from the Australian Bureau of Statistics (ABS).

A key reason for this is that limited information was available on the original unit rates adopted, in particular for road construction which meant all new justification would need to be developed. Additionally, Council does not maintain a register of unit rates which can be applied to represent local cost which would put a reliance on industry rates as found from Rawlinsons and other reference sources.

A concept to increase contingency amounts from the nominal 15% of the construction cost to 20%, was raised to improve the resilience of project amounts against latent conditions and any impacts of escalation and standard changes which may have occurred but remain unquantified since cost estimates were prepared initially. This will be further considered as part of the updated DCP documentation.

#### ROAD LENGTHS

The adopted lengths for several individual road sections in the original PSP were found to not match their plotted lengths in the GIS. Of these, sections that were found to be within 10% of the original estimate had no further analysis undertaken given the preliminary estimates have adopted a project contingency of 15%.

Table 13 (and Figure 50) lists only road projects where their differences are greater 10% of the original estimate.

Table 12 – Road projects original and revised estimated lengths

PSP Project ID	Project Name	Estimated Road Length (m)	Revised Road Length (m)	Difference in Length (m)	% Difference Estimate vs Revised Road Length
DI_RD_12	New N-S Road construction - sub precinct 2 southern section	400	462	-62	17%
DI_RD_21	Cherry Flat Road Upgrade - Schreenans Road to Bells Road	190	750	-560	295%

#### INTERSECTIONS

When developing the DCP estimates, the consultant delivered concept designs rather than detailed designs for each intersection. As intersections went through detailed design, all activities, civil works (to the standard of the day) and ancillary works have been incorporated into the final design.

One such intersection that experienced an approved design considered to be at a much higher standard than the original estimate is DI\_JNC\_08. A review undertaken by consultant GHD recommended that:

1. The road pavement standards adopted in the DCP for DI\_JNC\_08 be substituted from the Council (local road) standards to VicRoads (arterial) standards to reflect the relevant road authority standards applicable.
2. Design standards regarding roundabout design currently in the DCP are no longer current. Similar DCP projects should be reviewed against current design standard and applied where appropriate.

### ROUNDAABOUT DESIGN

This review of the PSP/DCP has an opportunity to strengthen its objectives to improve roundabout designs rather than retrofitting road safety improvements in a constrained budget environment later.

A key objective of roundabout design is the application of road safety typically requiring significant space to ensure that all road users are catered for. It is widely accepted that pedestrian and cycling safety at roundabouts is not as effective as traffic signals where dedicated time/phase for pedestrian and cyclists is given.

The Melbourne Metro Tunnel project funded an upgrade to Moray St to create an alternative safe cycling route while St Kilda Road is narrowed for the Metro Tunnel works. St Kilda Road has one of the highest bicycle counts of most metropolitan Melbourne roads and one of the highest car-vehicle accident rates.

The following schematic Figure 13 shows road safety elements that enhance pedestrian and cyclist safety without adversely affecting the vehicle traffic movements. The example design has been applied to a 30m wide road reserve, whereas PSP uses a mix of reserve widths from 20m.

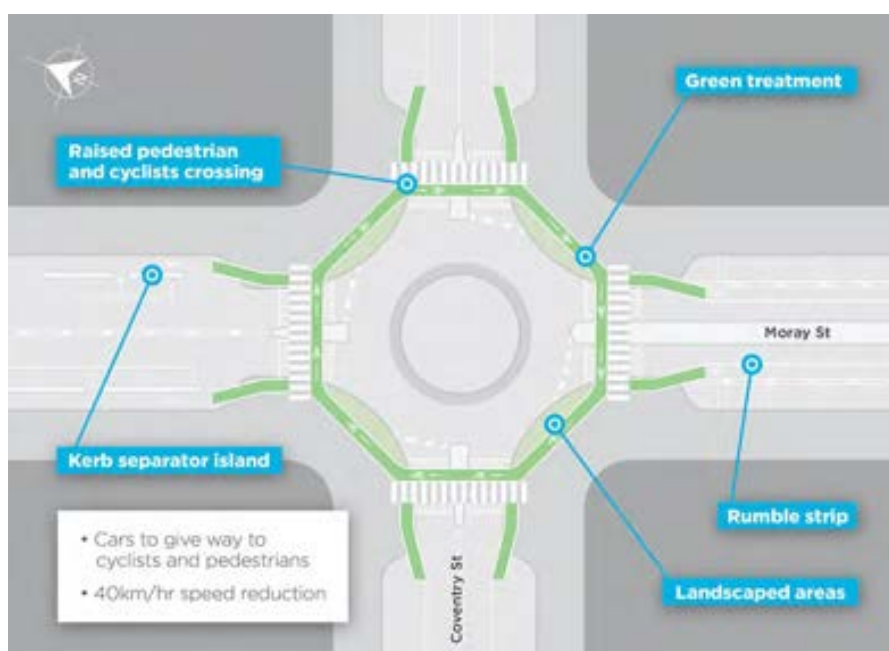


Figure 13 - Possible roundabout design incorporating physical separation of vehicle and cyclist traffic.

(Source: <https://bigbuild.vic.gov.au/projects/metro-tunnel/construction/road-network/moray-street>)





Figure 14 -before and after the treatment is applied in Figure 13 at Moray St, South Melbourne

(Source: <https://safesystemsolutions.com.au/safe-system-snippet-89-moray-street-roundabout/>)

For this concept design to work in the PSP context with a typical 20-24m road reserve:

- Potentially smaller roundabout annulus and larger apron for turning articulated vehicle traffic.
- Slip lanes for bicycles are required, like Wendouree Parade/Haddon St off the roundabout's approaches and departures (Figure 15).
- Raised pavements to reduce traffic speeds given the approaches/departures are straightened to create the additional space for the shared path area, reverse curves use more land at the expense of other users when land availability is low.
- Raised pavements are located so that there is an average car space between the hold line and the raised pavement.
- Line marking/green matting is laid to enforce priority.
- Improve streetlighting to illuminate the difference treatments for motorists.

The cost implications for these treatments are relatively low when considering against the typical civil costs for a roundabout, the estimated additional material costs (2021\$) are namely:

- Asphalt for the raised pavements (\$5,000 per raised pavement)
- Line marking, green matting (\$300 per metre) and road signs
- Streetlighting – increased lumens for the lanterns (\$500 per lantern)



Figure 15 – Wendouree Parade/Haddon St intersection with bicycle lane

The estimated cost increase to DI\_JNC\_11 and DI\_JNC\_12 to apply such treatments is approx. 15-18% (Table 14), cost breakdown in APPENDIX D. However, it should be noted that these are preliminary costs and that detailed designs are required to fully understand these. The cost of retrofitting road safety treatments is typically greater than building these as part of the initial construction.

Table 13 - Estimated costs summary for Moray St treatment at DI\_JNC\_11 and DI\_JNC\_12, details in APPENDIX D

	DI_JNC_11	DI_JNC_12
Original Estimate	\$1,137,034.76	\$849,826.96
Revised Estimate	\$1,307,961.52	\$998,820.65
Difference	\$170,926.77	\$148,993.69
% increase/decrease	15%	18%

A potential roundabout at the intersection of Webb Road and Schreenans Road is another candidate for this treatment as it provides a uniform treatment of all intersections along the Schreenans Road axis. This intersection has commitment for delivery as part of the surrounding development (not a DCP project), however this report includes a recommendation that a roundabout treatment here is included as part the PSP review.

It is recommended that DI\_JNC\_11 and DI\_JNC\_12 designs consider incorporating the above-listed treatments where possible.

#### LOCAL ACCESS STREETS

Requirements are specified in the Ballarat Planning Scheme, Infrastructure Design Manual, and Road Management Act Code of Practice for management of infrastructure in road reserves provide guidance for road authorities, utilities, and providers of public transport in planning and managing their infrastructure in road reserves ensuring the amenity and liveability of streets. As these requirements are applied at the lowest level of planning, and the extent of guidance is widely accepted this has not been an item previous covered by the PSP.

Council has for many years required road reservations for local access streets at 18m, specified wider than the typical minimum of 16m. The differing requirement is based upon reserve widths needing to accommodate desirable carriageway widths and verge widths as outlined within the Infrastructure Design Manual but also having greater regard for planning and design of green infrastructure for Ballarat and ensuring any challenges from the competing space demands for utilities, road user needs and amenity outcomes can be appropriately provisioned.

#### DEVELOPMENT CONTRIBUTION PLAN SCOPE CHANGES

DCP was estimated using the best-available information and using accepted assumptions at the time. With review of the DCP, there is potential adjustments along with scope / designs changes and it is understood that project contingency is considered a provision for any design standard changes.

Council has encountered situations where the actual DCP project costs are more than the available contingencies. For example:

1. DI\_JNC\_08: the adopted pavement design in the DCP was incorrectly stated as a local road, whereas the project needed to adopt arterial road standards.
  - a. This is not a scope change, but a correction for an error in the original documentation and the infrastructure standard applicable with no modification to quantity or unit rate costs used at the time.
2. DI\_RD\_21: the estimated length of duplicated road in the DCP is 190m, whereas the full length of this road section is 750m.
  - a. This is not a scope change, but a correction to an error in the original documentation with no modification to the unit rate cost used at the time.

This review has been undertaken following discussions with Council to establish informal policy positions for identified adjustments to projects.

Where a scope of project has been fundamentally changed (i.e., roundabout to signalisation) and/or the quantities / unit rates have been adjusted including due to corrections, the revised project should be included in the DCP review and accounted for.

Projects that remain fundamentally unchanged and/or have had corrections that do not alter the quantities / unit rates applied, are not subject to further revisions other than that required to make the project current for the DCP review.

**COMMON PRECINCT LEVEL THEMES/ISSUES**

This review has identified common themes at a Precinct level as listed in Table 15. All projects and their respective risks using the MCA framework is provided in APPENDIX D as one table and a tabular MCA score summary is listed in Table 6.

*Table 14 - Common themes identified from reviewing individual PSP projects.*

Group	Precinct 4	Precinct 2	Precinct 1
1. Population Projections	Precinct's dwelling creation is 1,334 dwellings or 88% higher than the original PSP projection (there is no increase in precinct's lot yield).	Net dwelling decrease of 516 or 38% below the original 2014 projections and the actual lots determined in 2021.	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.
2. Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare – there would be no significant deviation from the original assumptions for the area (there is no increase in precinct's lot yield).		Development adjacent to the proposed road is at original density of 15 lots/hectare on the western side. PSP allocated Low Density Residential traffic volumes on the eastern side; however, development will be at 15-20 lots/hectare depending on location
3. Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP		Surrounding land use has remained as per PSP, although the properties bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were considered in the traffic model to remain as low density residential, when several blocks in this area are developed as residential.
4. Actual vs Planned Growth Patterns	The development area is currently under construction, planned development in accordance with the PSP.		Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct. While part of Precinct 1, this section (east side of Bonshaw Creek) has not seen the scale of development as the area adjacent to Cherry Flat Road/Delacombe Town Centre (west side of Bonshaw Creek).
5. Modelled vs Actual Traffic Movements	Modelling required for DI_JNC_02 change to traffic signals		Additional modelling required – potentially significantly higher traffic loads from certain areas

Group	Precinct 4	Precinct 2	Precinct 1
6. Staged Development	Nil		Fragmanted property ownership creates uncertainty in timing/scheduling of certain roads
7. Concept vs Actual Design	Roads have moved westward without adversely affecting the cross section/function. Roundabout may possibly be modified to traffic signals		Duplicated section of Cherry Flat Road is the only road in review that has been delivered in part. Other roads/junctions have not been built, although planning & design underway for most roads/junctions
8. Land Acquisition	Nil		
9. Construction Costs	Additional civil costs associated with changing standards since the PSP development. Increased costs due to traffic signals instead of roundabouts		Additional civil costs associated with changing standards since the PSP development.
10. Active vs Car Dependant Transport	No changes to cross sections that prevent footpaths or shared paths. Opportunities to create safer pedestrian/cyclist crossing treatments rather than retrofitting at a significantly higher cost in the future		

### INDIVIDUAL PROJECT ASSESSMENTS

The following reviews each road and intersection project as nominated in Table 3, generally starting in the north in Precinct 4 and heading south by Precinct 2 and then Precinct 1.

#### NORTH SOUTH LINK (Sydney Way, Cuzens Road to Carngham Road)


DI\_RD\_03b North of Ballarat-Carngham Road (Precinct 4)

The proposed road creates a new north-south collector road, joining Carngham Road in the south to Sydney Way, Alfredton (DI\_RD\_03a) as shown in Figure 16.

Table 15 - MCA for DI\_RD\_03b

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling increase of 1,334 or 88% above the original 2014 projection and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare – there would be no significant deviation from the original assumptions for the area	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP The neighbouring property to the east (property 213) is fully subdivided with no allowance for DI_RD_03b within this property.	
	4	Actual vs Planned Growth Patterns	Surrounding developments have their own connections to other arterial roads (Dyson Drive, Carngham Road) – this road would be built as part of the development of Lot 1 of PS807486.	
Development Activity	5	Modelled vs Actual Traffic Movements	The road’s primary function is to connect the proposed schools with the surrounding developed areas.	
	6	Staged Development	Surrounding developments have their own connections to other roads – this road would be built as part of the development of Lot 1 of PS807486	
Project scope & cost estimate	7	Concept vs Actual Design	It is estimated that the alignment will move approximately 35 metres westward into Lot 1 of PS807486 or Property 230.	
	8	Land Acquisition	The realignment has meant the northern arm into proposed roundabout at Carngham Road is now off-90 degrees.	
	9	Construction Costs	Detailed design is required to understand the total project costs even though the proposed road has been marginally shortened.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	The N-S road will have footpaths, shared paths and cycle lanes that will connect to the wider network	



Group	ID	Item	Comments	Risk
Project Deliverability	11	Ease of Delivery	This delivery of this project is considered low risk of being further delayed given the single developer delivering the road as per PSP requirements	

The consequence of the realignment is the need to realign the intersection with Carngham Road and possibly altering the proposed roundabout (DI\_JNC\_02), which is discussed in the next section.

*Land Acquisition*

The land acquisition DCP identification number is DI\_LA\_24, which is adjacent to land acquisitions for DI\_JNC\_02, DI\_RD\_03a and DI\_RD\_04.

The alignment change has meant that while the road remains to be built, the burden of the delivering the land for the road falls onto 180 Carngham Road as listed in Table 17.

Table 16 - Changes to land acquisition for DI\_RD\_03b



Address	Property ID	Proposed		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
170 Carngham Road	213	0.53	251,750	0.00	0	0.53	251,750
180 Carngham Road	230	1.30	650,000	1.81	905,000	-0.51	-255,000
Total		1.83	901,750	1.81	905,000	0.02	-3,250









DI\_JNC\_02 Carngham Road / New N-S Road Roundabout

The proposed junction connects the proposed north-south collector road with Carngham Road (DI\_RD\_03a) as shown in Figure 17. Table 18 outlines the how the proposed intersection treatment measures against the multiple criteria assessment.

Link roads DI\_RD\_03b and DI\_RD\_04 connects planned primary and secondary schools, public open space in precincts 2 and 4, creating a potential for high vehicle, pedestrian and cycling traffic volumes between precincts.

Table 17 - MCA for DI\_JNC\_02

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling increase of 1,334 or 88% above the original 2014 projection and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare – there would be no significant deviation from the original assumptions for the area	

Group	ID	Item	Comments	Risk
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP The proposed NAC on the southeast corner presents a challenge that the property at 163 Carngham Road would be acquired to make the intersection operate as a roundabout	
	4	Actual vs Planned Growth Patterns	This intersection would be built as part of Regional Roads Victoria’s Carngham Road improvements (including duplication) coupled with the development of Lot 1 of PS807486 (PSP property ID 230).	
Development Activity	5	Modelled vs Actual Traffic Movements	The intersection’s function is to create a safer intersection with an arterial road (Carngham Road) for the N-S connector where there are proposed schools, sporting facilities and shops adjacent to the N-S road. Current traffic movements service only the southern side where the current intersection treatment is adequate, the norther arm would, in time, require roundabout/traffic signals.	
	6	Staged Development	Surrounding developments have their own connections to other roads (see Actual Vs Planned above)	
Project scope & cost estimate	7	Concept vs Actual Design	The northern roundabout arm will move approximately 35 metres westward into Lot 1 of PS807486, Property 230 and still requires the acquisition of 163 Carngham Road for a roundabout	
	8	Land Acquisition	The realignment moves the northern arm at the proposed roundabout at Carngham Road is now off-90 degrees where splays are still required. There is the potential need to modify the intersection to traffic signals for safer pedestrian/cyclist movements at Carngham Road, this may reduce the need to acquire 163 Carngham Road or at least the only acquiring a 5x5m splay instead of acquiring more than 50% of the property.	
	9	Construction Costs	Detailed design is required to understand the total project costs even though the proposed road has been marginally shortened.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	The N-S road will have footpaths, shared paths and cycle lanes that will connect to the wider network; there are no details about how non-vehicle traffic will safely cross intersection. VicRoads Traffic Engineering Manual discusses that car-pedestrian crash data at roundabouts is less than at signalised intersections although the perception is that it is less safe. Treatments such as raised pavements or pedestrian operated signals could be installed to reduce vehicle approach and departure speeds, however this needs to be considered as part of the wider transport network especially traffic movements around the NAC	



this intersection as per the DCP. The land use budget for the original planned alignment and revised alignment for the affected properties are listed in Table 19.

The southeast corner (property 216) is earmarked for a neighbourhood activity centre (NAC) where an allowance has been made for an intersection splay, however the current dwelling on this corner presents challenges until it is acquired for the road or sold to the owner of the NAC development area.

The land acquisition for the southwest corner of the intersection has been completed, with a minor increase from the proposed acquisition area to account for the “minor” westerly movement of the proposed intersection. This westerly movement of the proposed intersection results in less land to be acquired to the east, resulting in a marginal decrease of \$45,870 in the estimated land acquisition costs as listed in Table 19.

Table 18 - estimated changes in land acquisition costs from realigning DI\_JNC\_02

Address	Property ID	Proposed		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
170 Carngham	213	0.06	28,500	0.00	0	0.06	28,500
155 Carngham	216	0.05	23,750	0.08	38,000	-0.03	-14,250
163 Carngham	217	0.08	240,000	0.00	0	0.08	240,000
165 Carngham	218	0.10	47,500	0.13	61,750	-0.03	-14,250
180 Carngham	230	0.18	90,000	0.20	100,000	-0.02	-10,000
Total		0.47	429,750	0.41	199,750	0.06	230,000

#### *Development/Land Acquisition Timing*

The following at a meeting 19 October 2022 between Council and the developer of 180 Carngham Road:

*DTP will be involved in the design approval of the intersection treatment, but it is not yet determined who will design the infrastructure.*

*Cardno now Stantec indicated that we are currently designing the first stage of the development and would expect to be able to vest the central reserve to council in 2024/25 – council confirmed that there is no requirement on the developer to make improvements to this land.*

This suggested timing coincides with recent discussions with DTP who are designing the Carngham Road duplication, where detailed designs are likely to be completed by July 2023.



Figure 17 - Proposed alignment (orange), proposed realignment (red) and acquired land (blue)

*Intersection Treatment*

There are several factors that warrant further discussion that may impact on the proposed intersection design, these being:

1. The land acquisition issues surrounding 163 Carngham Road
2. Vehicle and pedestrian traffic movements surrounding the future NAC.
3. Shared path network interconnection

The PSP has adopted a roundabout for the intersection treatment, the SMEC traffic report identified the level of service to being for this treatment:

*“...represents reasonably free flow, and speeds at the free-flow speed are generally maintained. The lowest average spacing between vehicles is about 110m, or 18 car lengths. The ability to manoeuvre within the traffic the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still easily absorbed, though local deterioration in service may be more severe than for Level of Service A.”*

Milward Engineering Management Pty Ltd have previously compiled a draft report analysing the merits of traffic signals versus the adopted roundabout (APPENDIX I). In summary, the report recommends adopting traffic signals at the junction, this is due to:

1. Replaces the roundabout with traffic signals with full control of all traffic, pedestrian, and cyclist movements.
2. Retains existing Carngham Road turning lanes.
3. Protects 163 Carngham Rd from land acquisition until such a time the NAC is built on the southeast corner.
4. Increases the radius of the kerb on the southeastern corner to better protect pedestrians – even the Regional Roads Victoria concept designs acquire a portion of this property.
5. Minimizes the land acquisition requirement on the northern side to only the development itself.
6. Requires minimal widening of the existing Carngham Rd pavement for bicycle lanes heading east.
7. Modifies Presentation Boulevard to better align with Sydney Way and retain the north-heading bicycle lane through the intersection.
8. Utilizes existing road reserve on the southern side.
9. Replaces painted island with right-turning lane in future Sydney Way
10. Is scalable to allow for the future duplication of Carngham Road with little modification to the current road alignment.

Further analysis has been undertaken by ESR to further analyse the roundabout vs traffic signals; the findings largely confirm the above issues and recommends that traffic signals are the most appropriate intersection treatment.





Figure 18 -Areas of responsibility (as hatching) of the proposed intersection of Carngham Road, Presentation Boulevard, Sydney Way

A concept design for the signalized intersection was developed to better understand the cost impacts and is summarized in the following section.

Figure 19 shows the functional layout plan from DTP for a roundabout treatment at the junction and Figure 20 shows the concept design for a signalized intersection to possibly replace the original proposed roundabout.



Figure 19 - DTP functional layout plan for two-lane roundabout (note pedestrian operated signals approx.200m east)

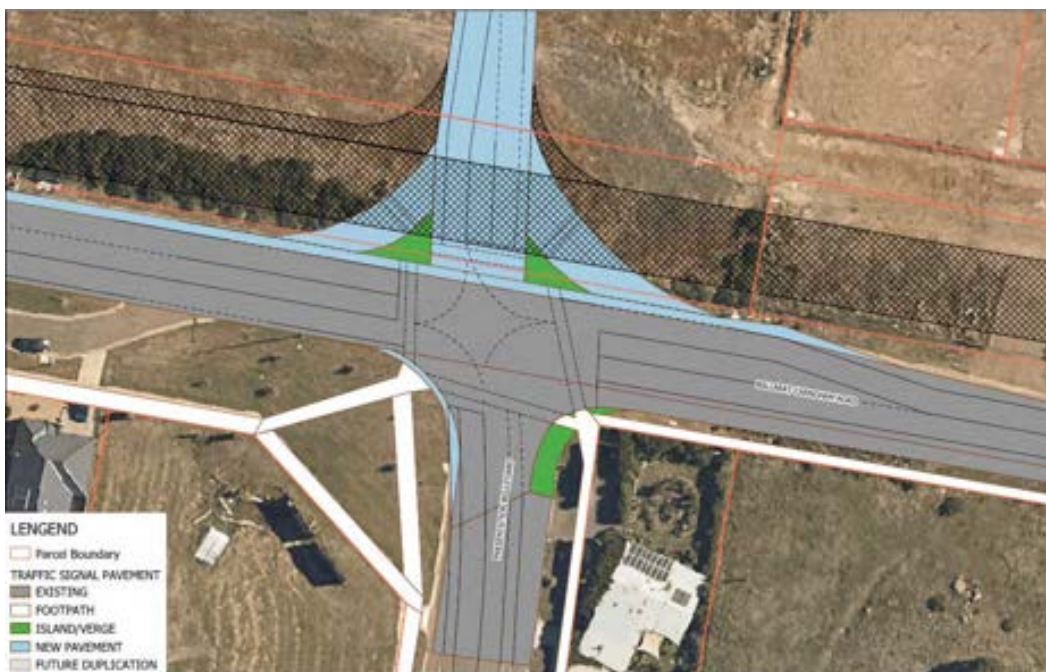


Figure 20 - Concept design for traffic signals for DI\_JNC\_02 (Milward Engineering Management)

*Costs of intersection treatments*

In developing the cost estimation for the intersection treatment, Presentation Boulevard (DI\_RD\_03b) and Sydney Way (DI\_RD\_04) are to be Council-controlled roads; Carngham Road is a DTP controlled road. The urban development on either side of the road triggers the intersection treatment requiring the two road authorities to reach an agreement regarding the design and cost sharing.

Discussions with DTP have yielded design plans for the duplication of Carngham between Dyson Drive and Wiltshire Lane. Six (6) additional functional layouts have been developed considering both roundabouts and traffic signals within 60, 70 and 80 km/h speed environments. These additional functional layout plans have been costed using the DCP methodology and are summarized in Table 20.

Table 19 - Estimated construction and land acquisition costs of each roundabout assessed by DTP.

	Description	Construction Costs	Land Acquisition Costs	Total	Comments
1	80 km/h Roundabout	2,403,043	565,000	2,968,043	Essentially all of 163 Carngham Road is acquired for there is little that remains for the property owner, option 5's construction costs are assumed to be the closest
2	60 km/h Roundabout	2,294,632	10,000	2,304,632	Approx 20 sq m of land acquired
3	80 km/h Compact Roundabout	2,823,448	10,000	2,833,448	Approx 20 sq m of land acquired
4	80km/h Raised Intersection	3,346,663	10,000	3,356,663	No land acquisition required, POS ~200m east of intersection remains, additional raised pavements
5	70 km/h Roundabout	2,512,322	60,000	2,572,322	Approx 170 sq m of land acquired of 163 Carngham Road is acquired, POS located 250m from intersection not included given N-S crossings are within roundabout
6	70 km/h Compact Roundabout	2,403,043	0	2,403,043	No land acquisition required, two lots of POS ~200m east/west of intersection included given there are no N-S ped crossings at roundabout
7	70 km/h Raised Intersection	2,740,856	0	2,740,856	No land acquisition required

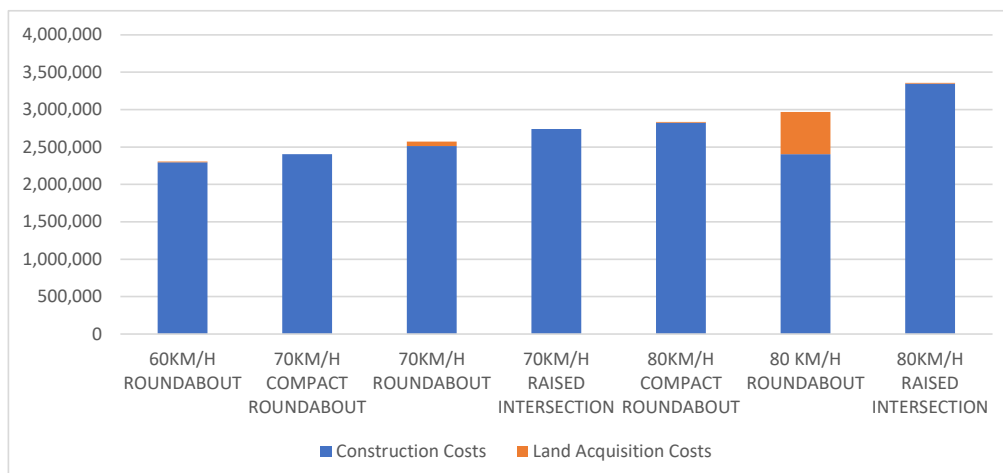


Figure 21 - Estimated construction and land acquisition costs of each roundabout assessed by DTP ranked from lowest to highest.

The above estimates considered:

1. Existing DCP cost estimation sheet with indexing to 2021 dollars
2. Revised pavement design to VicRoads 740mm deep pavement rather than Council 540mm deep pavement considering the intersection is on an arterial road.
3. GIS to estimate pavement areas.

No commitment has been made by DTP to the timing of these works; these works would be funded by DTP nor has there been a commitment to one of the above-listed options.

Each option listed in Table 20 are significantly higher than the costs developed in the original DCP at \$1.91 million for the duplicated roundabout treatment which is nominally \$500,000 less than option 1 in Table 20.

The lowest of the traffic signal options is Option 7: 70 km/h Raised Intersection at \$2.74 million, which is \$436,000 more than the preferred roundabout option (Option 2: 60 km/h roundabout) or approximately \$830,000 more than the original DCP estimate.

*Recommendation*

It is recommended that while the traffic signals are a costlier the intersection treatment, it is the most appropriate solution to what will be a busy intersection for all road users and will create safer crossing points for the more vulnerable road users i.e., pedestrians and cyclists.

**DI\_RD\_04 New N-S Road between Carngham Road and DI\_RD\_11**

This section of road heads south from DI\_JNC\_02 to the southern boundary of Precinct 4, connecting into DI\_RD\_11. The DCP land acquisition task identifier is DI\_LA\_24, which is the same land acquisition task for DI\_RD\_03a, DI\_RD\_03b and DI\_JNC\_02.





Figure 22 - Proposed alignment (orange), proposed realignment (red) and acquired land (blue)

*Land Acquisition*

This section is effectively now a built road or road reserve wholly within property 218 (Figure 22) as Presentation Boulevard, as such the MCA is not required for this item. The proposed alignment was to share the road reserve with property 216 and 217 (also the NAC) which are no longer required, this has resulted in a minor increase to the land acquired (Table 21).

Table 20 - changes to land acquisition for DI\_RD\_04 (Presentation Boulevard)

Address	Property ID	Original		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
155 Carngham	216	0.93	441,750	0.00	0	0.93	441,750
163 Carngham	217	0.02	60,000	0.00	0	0.02	60,000
165 Carngham	218	0.91	432,250	1.89	897,750	-0.98	-465,500
Total		1.86	934,000	1.89	897,750	-0.03	36,250

DI\_RD\_11 North-South Link Road

This section of road connects the southern end of Presentation Boulevard (DI\_RD\_04) with Greenhalghs Road (DI\_JNC\_04). The section of road is being built as part of the Winterfield North development and will serve as a north-south collector road that ultimately connects Greenhalghs Road in the south to Cuthberts Road in the north.

Table 21 - MCA for DI\_RD\_11

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 516 or 38% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare – there would be no significant deviation from the original assumptions for the area	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP	
	4	Actual vs Planned Growth Patterns	The development area is currently under construction, planned development in accordance with the PSP	
Development Activity	5	Modelled vs Actual Traffic Movements	The yet to be built road continues the N-S collector, adjacent properties are currently under development	
	6	Staged Development	The Winterfield (north) development is currently in progress triggering the requirement to build the road	
Project scope & cost estimate	7	Concept vs Actual Design	The road alignment has been moved further west to connect into DI_RD_04, no change to the cross-section design	
	8	Land Acquisition	Roads intersecting with DI_RD_11 will have splays for uncontrolled T and crossroads.	



Group	ID	Item	Comments	Risk
	9	Construction Costs	The westward realignment has no significant impact on the original cost estimates.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	DI_RD_11 will have footpaths, shared paths and cycle lanes that will connect to the wider network and to the schools and public open space that are part of the Winterfield (north) development	
Project Deliverability	11	Ease of Delivery	This delivery of this project is considered relatively low risk.	

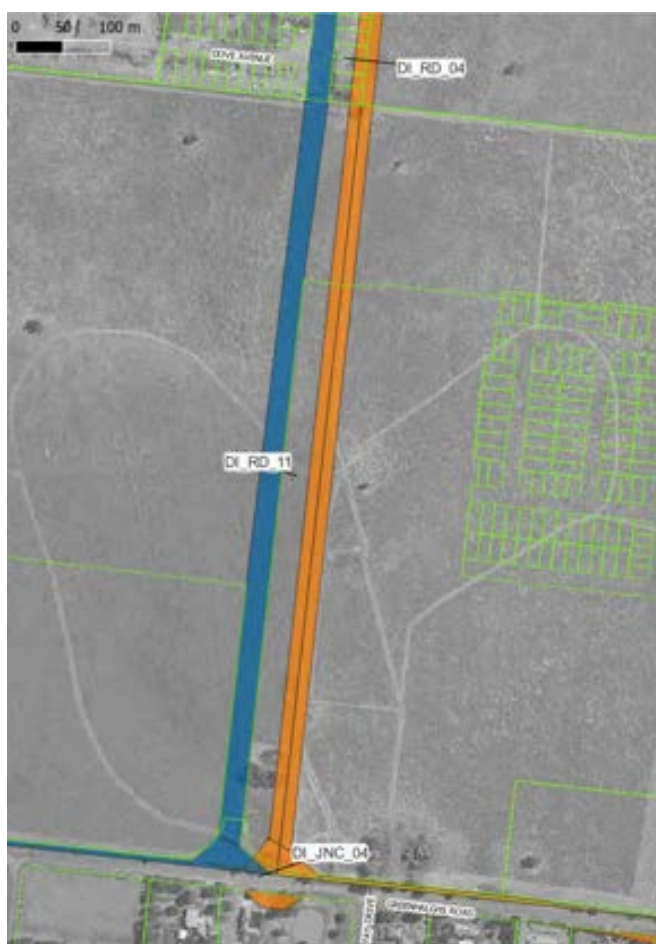


Figure 23 - Proposed (orange) and adopted alignments (blue) for DI\_RD\_11

**Land Acquisition**

In this case, the owner of the two properties (DCP property 156 and property 157) are the same therefore the altered, westward alignment of DI\_RD\_11 (and DI\_JNC\_04) still delivers this portion of the PSP/DCP with minimal changes to the land acquisition costs (Table 23).

Table 22 - Changes to land acquisition for DI\_RD\_11

Address	Property ID	Proposed		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
484 Greenhalghs Rd	156	0.94	399,500	1.79	760,750	-0.85	-361,250
464 Greenhalghs Rd	157	0.94	367,817	0.00	0	0.94	367,817
Total		1.88	767,317	1.79	760,750	0.09	6,567

*Road Design*

The proposed road’s cross section has not changed from the proposed westward movement, as such there are no foreseeable issues relating to the design and the estimated road costs.

ESR has identified 1-2 possible roundabouts are required within the Winterfield North development area given the concentration of schools and public open space adjacent to DI\_RD\_11. ESR has correctly apportioned these roundabouts as a deliverable solely within the development area, thus the DCP will not require updating to reflect this.

**NORTH-SOUTH LINK (Carngham Rd to Glenelg Highway)**

**DI\_JNC\_04 Greenhalghs Road / New N-S Road (North) Roundabout**

The proposed roundabout connects the existing Greenhalghs Road to the new N-S road DI\_RD\_12 (Figure 23). The concept design earmarked land acquisitions on both sides of Greenhalghs Road (Figure 24):

- the northern land acquisition would be part of the Winterfield North development; and
- the southern land acquisition would acquire a portion of 491 Greenhalghs Road, currently zone rural residential and is essentially part of the PSP.

Table 23 - MCA for DI\_JNC\_04

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 516 or 38% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at the original density of 15 lots/hectare – there would be no significant deviation from the original assumptions for the area	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP.	
	4	Actual vs Planned Growth Patterns	The development area is currently under construction, planned development in accordance with the PSP	

Group	ID	Item	Comments	Risk
Development Activity	5	Modelled vs Actual Traffic Movements	The intersection’s function is to create a safer intersection with Greenhalghs Road for the N-S connector where there are proposed schools, sporting facilities and shops adjacent along the N-S road corridor.	
	6	Staged Development	The junction will serve as the main entrance for the Winterfield (north) development which in time will connect with DI_RD_04 at the northern end.	
Project scope & cost estimate	7	Concept vs Actual Design	The westward movement of DI_RD_11 has no significant impact on the original estimates. The northward movement of roundabout avoids the acquisition of properties on the southern side of Greenhalghs Road.	
	8	Land Acquisition	The land has already been subdivided for the splays and northward movement of the proposed roundabout.	
	9	Construction Costs	Detailed design is required to understand the total project costs relative the DCP cost estimates, however it is likely that these increases will be relatively minor.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	The Greenhalghs Road shared path is located on the northern side, minimising the need for safer crossing points until DI_JNC_05 to the east.	
Project Deliverability	11	Ease of Delivery	This delivery of this project is considered relatively low risk.	

*Land Acquisition*

The Winterfield development is now underway after gaining approval to relocate DI\_RD\_12 further westwards with the same reserve width as per the PSP (LR2 cross section). The development also considers the new junction DI\_JNC\_04, the new intersection design moves the proposed roundabout northwards to avoid land acquisition on the southern side (0.07 ha of 491 Greenhalghs Road). This portion of the land acquisition is no longer required and is an example of how intersection land is gifted by the developer at the time of development to enable the development to proceed with the triggering of the DCP project providing access to their development.

Net impacts of moving the roundabout northwards on existing land budget are listed in Table 25.

Table 24- Net changes to DI\_JNC\_04

Address	Property ID	Proposed		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
484 Greenhalghs Rd	156	0.07	29,750	0.13	55,250	-0.06	-25,500
464 Greenhalghs Rd	157	0.06	23,478	0.00	0	0.06	23,478
491 Greenhalghs Rd	207	0.07	64,225	0.00	0	0.07	64,225
Total		0.20	117,453	0.13	55,250	0.07	62,203

### Intersection Treatment

The 2011 SMEC transport report determined the level of service at category C:

*provides for flow with speeds still at or near the free flow speed of the freeway. Freedom to manoeuvre within the traffic stream is noticeably restricted at LOS C, and lane changes require more vigilance on the part of the driver. Minimum average spacings are in the range of 70m, or 11 car lengths. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage.*

The SMEC report also states in the context of the SIDRA analyses with:

*Pedestrians do not have right of way when crossing at a roundabout intersection, and therefore are not included in most of the intersection analyses.*

Both Greenhalghs Road and the N-S road have the allowance for shared path facilities on top of 1.5m wide footpaths. The Eastward continuation of the shared path along Greenhalghs Road would eventually connect with the Glenelg Highway cycling corridor (Ballarat Cycling Action Plan 2017-2025). The shared path will travel on the northern side of Greenhalghs Road and switch over to the southern side at DI\_JNC\_05.

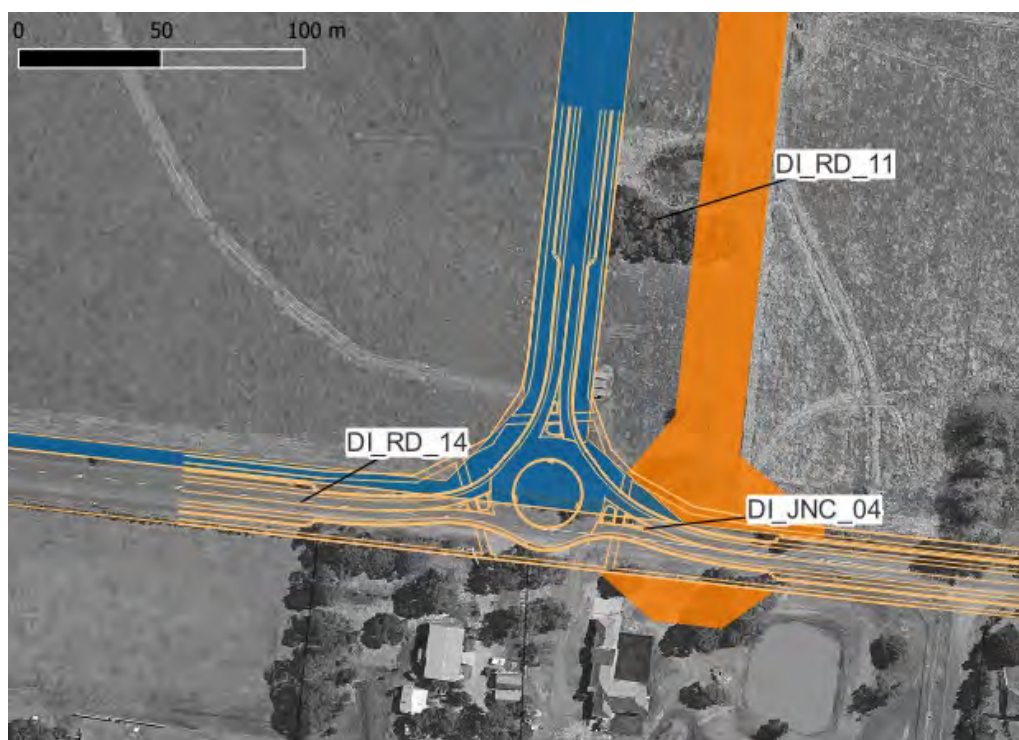


Figure 24 - Redesigned DI\_JNC\_04 (blue) and original alignment (orange)

The results of the changes of the intersection redesign can be seen in Table 25 for the adjacent properties. The changes also result in the no land acquisition of portions of property on the southern side of Carngham Road.

*Road Design and Costs*

The following elements were considered in developing a revised estimate for the modified intersection, namely:

1. Land acquisition on the southern side of Greenhalghs Road is no longer required.
2. Intersection splays are part of the land gifted by the developer.
3. Greenhalghs Road remains a Council-managed Road, thus pavement depth remains the same.

Table 25 - Revised estimated costs for DI\_JNC\_04





	Original	Revised	Difference
Project estimate	\$1,184,119	\$1,184,119	\$0.00
Land acquisition cost	\$117,453	\$55,250	\$62,203
Total	\$1,301,572	\$1,239,369	\$62,203

DI\_JNC\_05 Greenhalghs Road / New N-S Road (South) Roundabout

The proposed junction connects the N-S road with Greenhalghs Road, the original roundabout design includes land acquisition on the north side, which is now fully developed since the development of the PSP.

Table 26 - MCA for DI\_JNC\_05

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 516 or 38% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare - there would be no significant deviation from the original assumptions for the area	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP. low density residential property on the southwestern corner prevents the creation of splays for proposed roundabout	
	4	Actual vs Planned Growth Patterns	The development area is currently under construction, planned development in accordance with the PSP	
Development Activity	5	Modelled vs Actual Traffic Movements	The intersection's function is to create a safer intersection with Greenhalghs Road for the N-S collector and DI_RD_12.	
	6	Staged Development	The Winterfield's (south) development is currently in progress triggering the requirement to build the intersection	
Project scope & cost estimate	7	Concept vs Actual Design	The junction has been modified from a roundabout to traffic signals to avoid acquiring land other than from Winterfield (south)	

Group	ID	Item	Comments	Risk
	8	Land Acquisition	There is the potential need to modify the intersection to traffic signals given the spatial constraints. There are no splays acquired for slip lanes should the junction become traffic signalled.	
	9	Construction Costs	Replacing the proposed roundabout to traffic signals incurs a significant cost, these are detailed below.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	The Greenhalghs Road and DI_RD_12 will have footpaths, shared paths and cycle lanes that will connect to the wider network. Traffic signals will allow pedestrian and cyclists to cross in a regulated manner, given the shared path does transitions from the southern to the northern side of Greenhalghs Road.	
Project Deliverability	11	Ease of Delivery	The delivery of this project is moderate risk of being delayed due to the identified solution of traffic signals instead of a roundabout.	

*Land Acquisition*

The minor realignment of DI\_RD\_12 also affects the intersection of DI\_JNC\_05, a small portion of rural residential land (453 Greenhalghs Road) was to be acquired for the proposed roundabout, however landowner has no plans for development, in lieu of applying a PAO, a negotiated acquisition would be required. Given the critical timing of this infrastructure, signalisation is an alternative which both maintains the desired level of traffic management and road safety as well as requiring less land at a greater cost.

Land acquisition is required on the south-east corner of the Winterfield South development. A solution will be delivered that results in a re-designed intersection with minimal land acquisition. The developer is currently awaiting approval change the proposed roundabout design to traffic signals.

Address	Property ID	Proposed		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
Winterfield South	158	0.27	117,834	0.10	43,642	0.17	74,192
453 Greenhalghs Rd	163	0.04	37,000	0.00	0	0.04	37,000
Total		0.31	154,834	0.10	43,642	0.21	111,192

*Intersection Treatment*

The main benefits of changing from a roundabout to traffic signals at this intersection are:

- Reduced land acquisition, in this case, only one property is affected instead of four (noting that when the DCP was being developed, the Yorkdale Estate was in its infancy).
- Provision of safer crossing options for pedestrians and cyclists/better connections to the proposed shared path network.





Figure 25 - Redesigned DI\_JNC\_05 (blue) and original alignment (orange)

#### Cost of intersection treatments

Conversely there are disadvantages to moving away from the proposed roundabout to signals, DCP costings are in:

- The traffic report predicted that the roundabout would operate below capacity in 2031, suggesting that a higher standard of treatment such as traffic signals may be an over-provision.
- The costs of traffic signals are higher, preliminary estimates show an increase of \$345,050 (APPENDIX K).

The 2011 SMEC transport report does not analyse this intersection, however its proximity to DI\_JNC\_04 would largely indicate a similar level of service, i.e. (category C):









*...provides for flow with speeds still at or near the free flow speed of the freeway. Freedom to manoeuvre within the traffic stream is noticeably restricted at LOS C, and lane changes require more vigilance on the part of the driver. Minimum average spacings are in the range of 70m, or 11 car lengths. Minor incidents may still be absorbed, but the local deterioration in service will be substantial. Queues may be expected to form behind any significant blockage.*




Concept designs have been developed by Milward Engineering Management Pty Ltd (Dec 2021) and are in APPENDIX L. Axiom Consulting have been engaged to complete the detailed design of the signalised intersection.

**DI\_RD\_12 New N-S Road construction (Innsbruck Road)**

This section of road connects the Greenhalghs Road (DI\_JNC\_05) with the Glenelg Highway (DI\_JNC\_08) via a new collector road. This section of road is being built as part of the Winterfield South development.

Table 27 - MCA for DI\_RD\_12

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 516 or 38% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare - there would be no significant deviation from the original assumptions for the area	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP	
	4	Actual vs Planned Growth Patterns	The development area is currently under construction, planned development in accordance with the PSP, although the road is now immediately adjacent to western property boundary	
Development Activity	5	Modelled vs Actual Traffic Movements	The road's function is to create a N-S collector joining Glenelg Highway and Greenhalghs Road. The adopted road profile LR2 is considered appropriate.	
	6	Staged Development	The Winterfield (south) development is currently in progress triggering the requirement to build the road and intersections (DI_JNC_05 and DI_JNC_08) The revised position of the road allows for future connections for the low-density residential area which is under it is own development as a future PSP by Council.	
Project scope & cost estimate	7	Concept vs Actual Design	The road alignment has moved westward but is still inside property 158 (Winterfield South).	
	8	Land Acquisition	The proposed splays have been reduced or eliminated at the junctions (see DI_JNC_05 and DI_JNC_08). New splays will be required for any future western connection from the low-density residential area.	

Group	ID	Item	Comments	Risk
	9	Construction Costs	There are changes to the construction costs that can only be ascertained from detailed design and would be reflected more in the junction designs at each end.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	There are changes to the construction costs that can only be ascertained from detailed design and would be reflected more in the junction designs at each end. DI_RD_12 will have footpaths, shared paths and cycle lanes that will connect to the wider network, especially the southern end where it will connect to Ballarat's Strategic Cycling Corridor along the Glenelg Highway.	
Project Deliverability	11	Ease of Delivery	This project is considered relatively low risk of altering from the original PSP concepts.	

*Land Acquisition*

The proposed and adopted alignments differ; the adopted alignment is immediately adjacent to the western boundary, rather than being approximately 45m off said boundary and the adopted road profile (LR2) does not change, Figure 26 shows the proposed alignment in orange and adopted alignment in blue, Table 29 lists the impacts to the proposed and adopted land acquisition for the affected property 158.

Table 28 – Estimated land acquisition costs for DI\_RD\_12

Address	Property ID	Proposed		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
Winterfield South	158	1.40	610,992	1.47	641,542	-0.07	-30,550

In Figure 26 the southern end of the proposed N-S connects to the Glenelg Highway (DI\_JNC\_08), the intersection has moved approximately 20m to the west and does not adversely affect the overall layout of the proposed intersection.



Figure 26 – Redesigned DI\_RD\_12 (blue) and original alignment (orange)

*Road Design*

While the road cross section itself remains the same, the DCP costings referred to an estimated road length of 400m, which in reviewing this road project has been underestimated by 62m. Thus, the revised length increases the overall costs of the DCP project by \$211,758 or 15%, excluding land acquisition (Table 30).

Table 29 - Original and revised cost estimates for DI\_RD\_12





Cost Estimate Version	Estimated Length (m)	Estimated Construction Costs	Difference (%)
Original	400	\$1,391,893.82	
Revised	462	\$1,603,651.59	
Difference	120	\$211,757.77	15%

DI\_JNC\_08 Glenelg Hwy / New N-S Road (Innsbruck Road) Roundabout

The southern end of the N-S collector road terminates at the Glenelg Highway with a roundabout as the adopted junction treatment. The current cross section for the Glenelg Highway is a two-lane highway which at an undetermined date would be widened to a duplicated road when the traffic demand warrants this.

Table 30 - MCA for DI\_JNC\_08

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 516 or 38% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare - there would be no significant deviation from the original assumptions for the area	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP	
	4	Actual vs Planned Growth Patterns	The development area is currently under construction, planned development in accordance with the PSP. Minor realignment of DI_RD_12 has resulted in a minor reduction in land acquisition	
Development Activity	5	Modelled vs Actual Traffic Movements	The proposed roundabout is considered adequate for the current and future traffic demands, DTP have ensured the design also caters for the future possible duplication (outside of the PSP).	
	6	Staged Development	The Winterfield (south) development is currently in progress triggering the requirement to build the road (DI_RD_12) and the junction.	
Project scope & cost estimate	7	Concept vs Actual Design	The northern arm has moved westward but there is still enough road reserve for the proposed junction.	

Group	ID	Item	Comments	Risk
	8	Land Acquisition	The proposed splays have been reduced or eliminated at the junction.	
	9	Construction Costs	Council's review of the originally estimated DCP costs and the recently awarded tender shows significant underestimation. These differences can be attributed to changed standards/construction requirements, water main relocation and changing from Council to VicRoads pavement design, more discussion as to these caused are listed below.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	The proposed roundabout will have footpaths, shared paths and cycle lanes crossing points that connect to Ballarat's Strategic Cycling Corridor along the Glenelg Highway.	
Project Deliverability	11	Ease of Delivery	This delivery of this project is considered moderate risk of being delayed due to unresolved land acquisition and design-related issues.	

*Land Acquisition*

The concept design for the PSP/DCP is for a single lane roundabout and would be redesigned when the Glenelg Highway is duplicated (date unknown, delivered by DTP) – this has ramifications with the timing of the land acquisition of portions of land for two properties on the southern side of Glenelg Highway (439 Glenelg Highway and Lot L PS845411). The land acquisition for these properties is not a DCP project.

The adopted land alignment differs from the proposed alignment (Figure 27), which results in less land being acquired for properties 158 and 171 (Table 32), noting that property 158 has two intersections (i.e. DI\_JNC\_05 and DI\_JNC\_08).

Table 31 - Proposed and revised land acquisitions for DI\_JNC\_08

Address	Property ID	Proposed		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
Winterfield South	158	0.13	56,735	0.07	30,550	0.06	26,185
420 Glenelg Hwy	171	0.01	8,214	0.00	0	0.01	8,214
Total		0.14	64,949	0.07	30,550	0.06	26,185

*Intersection Treatment*

The 2011 SMEC transport report discusses that the traffic movements for the duplicated Glenelg Highway would operate as effectively as a single lane roundabout on all approaches, the determined the level of service at category A:



*...primarily free-flow operations. Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to manoeuvre within the traffic stream. Even at the maximum density for LOS A, the average spacing between vehicles is about 160m, or 26 car lengths, which affords the motorist with a high level of physical and psychological comfort. The effects of incidents or point breakdowns are easily absorbed at this level.*

There are large land areas allocated to both the Glenelg Highway reserve (currently 60m wide) and the adjacent parklands create the necessary space for pedestrian and cyclist networks on the northern side of the Glenelg Highway without modifying the intersection design.

ESR’s recommendation is to incorporate a formal crossing at DI\_JNC\_08, this crossing design would be more suited the next Growth Investigation Area transport and movement investigations which the southern side of the Glenelg Highway will be part of. This is made more challenging at the roundabout considering the volume of earthworks required to achieve the design surface levels creates a steep embankment on the southern side of the road.



Figure 27 – Redesigned DI\_JNC\_12 (blue) and original alignment (orange)

A review of the proposed roundabout design has been completed by GHD, who recommends for the intersection:

- The road pavement standards adopted in the DCP for DI\_JNC\_08 be substituted from the Council (local road) standards to VicRoads (arterial) standards to reflect the relevant road authority standards applicable.
- Design standards regarding roundabout design currently in the DCP are no longer current. Similar DCP projects should be reviewed against current design standard and applied where appropriate.



Figure 28 - SMEC vs Reeds (adopted) design footprints for DI\_JNC\_08

*Cost of Intersection Treatment*

The GHD report assessed changes in scope and cost estimation between DCP concept, detailed design and tenders suggesting an increased the cost of DI\_JNC\_08 by 71% in 2020 and 153% when the project was tendered in 2021. The cost estimations summarised in Table 33 and detailed in APPENDIX M.

Table 32 - cost estimation summary from the original design estimate (SMEC) and revised estimates by GHD and DTP (indexed to 2021)

Source	DCP	External	Total Estimated Cost	Difference from original estimate
Original estimate (SMEC, 2014)	675,522	825,638	1,574,092	-
Revised estimate (Reeds 2020)	939,490	1,148,265	2,087,755	33%
Tendered estimate (Winslow)	1,395,033	1,705,041	3,100,074	96%

A short coming of the original DCP estimations is not being able to confirm at such an early stage of planning the extent of underground services and the respective authorities' upgrading and/or augmentation plans. In this case, Glenelg Highway has two water mains to relocate at significant cost to the project, however only a modest \$20,000 was provisioned in the initial cost estimate.

This review recommends that the DCP be amended to reflect the correction to the road pavement standard, but not recognise any additional costs incurred because of detailed design.




**CHERRY FLAT ROAD (Ascot Gardens Drive to Bells Road)**

DI\_RD\_20 Cherry Flat Upgrade north of Schreenans Road

This section is a duplicated road under the DCP and approximately 380m (~45%) of the proposed 840m duplicated road is already built by Council as part of the Delacombe town centre development. The remaining single lane section will not require land acquisition as the road reserve in this section is already 40m, conforming to the DCP requirements of DLR1.

Table 33 - MCA for DI\_RD\_20

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare on the western side. PSP allocated Low Density Residential traffic volumes on the eastern side; however, development will be at 15-20 lots/hectare depending on location	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP, although the properties bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were considered to remain as low density residential, when several blocks in this area are developed as residential.	
	4	Actual vs Planned Growth Patterns	Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct.	
Development Activity	5	Modelled vs Actual Traffic Movements	The existing duplicated road adequately serves the traffic demands of the area.	
	6	Staged Development	The further duplication of Cherry Flat beyond the current extent is based on the development of the western side of road, however, the area bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were not considered as a trigger for further duplication works in the PSP.	
Project scope & cost estimate	7	Concept vs Actual Design	The staged development of this road would adequately serve the current and future traffic demands.	
	8	Land Acquisition	The southern end of this section terminates at a proposed roundabout (DI_JNC_11) which requires further land acquisition for the splays/roundabout. Land acquisition is a "mix" of PAO and DCP-related land acquisition.	

Group	ID	Item	Comments	Risk
	9	Construction Costs	The construction costs are largely dependent on the construction timing of the adjacent development sites. Previous section was delivered by Council instead of the developers.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	This section has footpaths, shared paths and cycle lanes that connect into Ballarat's Strategic Cycling Corridor along the Glenelg Highway.	
Project Deliverability	11	Ease of Delivery	This delivery of this project is relatively moderate risk of being delayed due to unresolved land acquisition and design-related issues.	

*Land Acquisition*

Approved or pending development applications that will impact on the operation of Cherry Flat Road Areas shown in Figure 29. The development area west of this section of road has been proposed with a fourth arm of the proposed roundabout at DI\_JNC\_11 be approved, which is discussed in the DI\_JNC\_11 section. Preliminary subdivision plans show the allowance for the roundabout for property 9.

As stated in the DCP, the duplication of the remaining section is proposed to be delivered “in stages as immediately adjacent land is subdivided OR when required for road construction”. Unlike the western side of Cherry Flat Road, the eastern side does not have any known plans for development in the immediate future, however, this section is already 40m wide, which presents no barrier to the duplication until after Schreenans Road.

Cherry Flat Road is classified as DLR1/2 in the PSP documentation with only 40m wide reserve being considered. Developments adjacent to Cherry Flat Road have service roads, therefore widening the reserve to 60m, assuming both sides are developed. Reviewing the DCP estimates shows that only 40m wide reserve is being funded by the PSP, the remaining 20m (10m each side of the road) to achieve the aspirational 60m is delivered by the landowners/developers.



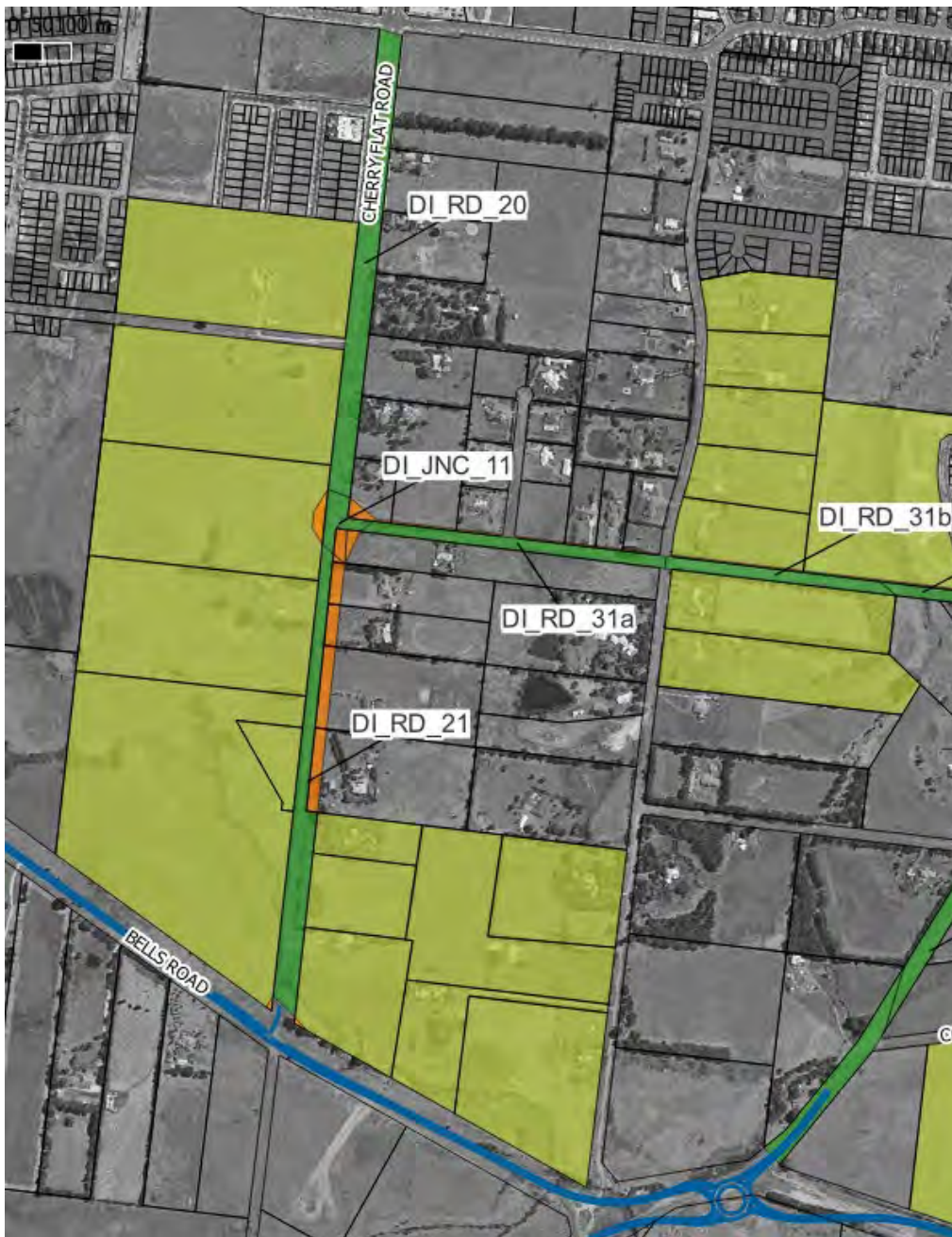


Figure 29 – future development areas adjacent to Cherry Flat Rd



Figure 30 – DI\_RD\_20, existing road reserve (green), proposed (orange), additional (yellow).

*Road Design*

The SMEC traffic modelling considered the area east of Cherry Flat Road to Bonshaw Creek to effectively generate low density residential level of traffic whereas the properties are zoned UGZ, creating additional traffic that would either go to Ascot Gardens Drive or Cherry Flat Road.






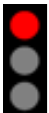







Only concept designs have been developed for the further duplication of Cherry Flat Road at this stage. There are not issues identified that would suggest detailed design in accordance with the original scope would be unreasonably beyond the DCP estimates.

DI\_JNC\_11 Cherry Flat Road / Schreenans Road Roundabout

The proposed treatment in the DCP is a roundabout at the Cherry Flat Road/Schreenans Road intersection.

Table 34 - MCA for DI\_RD\_20

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare on the western side. PSP allocated Low Density Residential traffic volumes on the eastern side; however, development will be at 15-20 lots/hectare depending on location	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP, although the properties bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were considered to remain as low density residential, when several blocks in this area are developed as residential.	
	4	Actual vs Planned Growth Patterns	Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct.	
Development Activity	5	Modelled vs Actual Traffic Movements	The duplicated Cherry Flat Road would adequately serve the north-south traffic demands to the junction. The Schreenans Road arm cross section (LR2) was developed using the SMEC traffic modelling, however the new fourth arm proposed to connect the development site on the western side warrants further investigation to understand the traffic movement impacts this new arm creates.	
	6	Staged Development	The further duplication of Cherry Flat Road is planned for south of the intersection. However as discussed above, the area bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were not directly considered as a well-defined trigger (unlike the west side) for further duplication works.	

Group	ID	Item	Comments	Risk
Project scope & cost estimate	7	Concept vs Actual Design	The traffic modelling suggests that the level of service at the roundabout delivers is the best solution for the intersection. Other options, namely traffic signals would impact the overall movements and create unnecessary traffic wait times outside of peak flow periods.	
	8	Land Acquisition	The south-eastern corner of the intersection has an existing Public Acquisition Overlay unlike the other land acquisitions within the PSP. While a PAO achieves the same outcome as the other land acquisitions in PSP, the process differs and the funding for this acquisition is outside the PSP and possibly not budgeted by Council.	
	9	Construction Costs	The design standards have changed since the development of the PSP, as such, it is expected the costs for the intersection treatment to increase accordingly.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	This junction will have footpaths, shared paths and cycle lanes intersecting that will connect into the wider network. May need to investigate treatments that create a safer crossing for more vulnerable users.	
Project Deliverability	11	Ease of Delivery	This project has a high number of high-risk items i.e., unresolved land acquisition (PAO2/splays) and design-related issues (fourth arm and pavement design).	

*Land Acquisition*

As discussed in DI\_RD\_20, the future development area to the west of Cherry Flat Road is to develop in the immediate future. This future development site would best connect into the road network as a fourth arm at this junction (Figure 31). Thus, the internal road network would be best designed to channel internal traffic to this new roundabout arm. This development would also trigger the construction of the roundabout rather than when Cherry Flat Road and/or Schreenans Road is upgraded/widened, thus the land acquisition is required at this time (Table 36).

This assumes that land acquisition of the properties on the eastern side (111 Cherry Flat Road and 149 Schreenans Road) proceeds for the creation of the roundabout. Table 36 lists the original proposed land acquisition for two land acquisition projects, DI\_LA\_17 and PAO2 for the three impacted properties. The review has identified splays for creating the roundabout that were considered in the plans, however this did not carry across into the land acquisition estimates, the area and estimated values are listed in the additional columns in Table 36, adding \$212,150 to the land acquisition budget.

The additional land acquisition and delivery mechanism (i.e., PAO) needs to be recognised in the PSP to ensure the land is made available at the appropriate time. If these land parcels are not funded by the DCP it will be at Council's expense.

Table 35 - Land acquisition areas for DI\_JNC\_11

Address	Property ID	LA Project	Proposed		Additional		Revised	
			Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
111 Cherry Flat Road	55	DI_LA_17	0.03	30,750	0.08	82,000	0.11	112,750
		PAO2	0.00	0	0.00	0	0.00	0
132 Cherry Flat Road	9	DI_LA_17	0.00	0	0.18	88,748	0.18	88,748
		PAO2	0.00	0	0.00	0	0.00	0
149 Schreenans Road	69	DI_LA_17	0.00	0	0.07	41,402	0.07	41,402
		PAO2	0.10	59,146	0.00	0	0.10	59,146
<b>Total</b>			0.13	89,896	0.33	212,150	0.46	302,046

**Note:** Proposed and additional columns are combined unlike previous land acquisition tables

A possible alternative is to re-align the roundabout so only land acquisition on 132 Cherry Flat Road proceeds, avoiding the acquisition of 111 Cherry Flat Road and 149 Schreenans Road. This has the benefit of negotiating with one landowner and potentially reduces the land acquisition costs by \$88,748. This option is negated as it significantly impacts the alignment of future duplicated Cherry Flat Road south of the intersection. Noting that there is already a development plan proposed for 132 Cherry Flat Road implementing this project as per the original alignment would not be practical.



Figure 31 – DI\_JNC\_11, existing road reserve shown as green, proposed shown as orange.

*Cost of Intersection Treatment*

The civil construction cost of the junction is expected to increase with the inclusion of the fourth arm by approximately \$120,250 as summarised in Table 37.

Table 36 - estimated costs 3- and 4-armed roundabout for DI\_JNC\_11

Roundabout Type	Estimated Cost (2021 costs)
3 arms	\$1,137,034.76
4 arms	\$1,257,282.72
Change	\$120,247.96


While the PSP should recognise the additional roundabout arm and connectivity, this amendment only serves the adjoining development and not the broader precinct which DCP projects are intended to do. Hence, the DCP should not be updated to reflect this change other than to reflect the development component.

**DI\_RD\_21** Cherry Flat Upgrade south of Schreenans Road

Cherry Flat continues for 850m to Bells Road/Ballarat Link Road where a portion of the road is a duplicated link road for 190m at the northern end. Approximately 490m of the 850m section of road requires further land acquisition (PAO2) on the eastern side to achieve the minimum 40m road reserve for the duplicated link road.

Table 37 - MCA for DI\_RD\_21

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare on the western side. PSP allocated Low Density Residential traffic volumes on the eastern side; however, development will be at 15-20 lots/hectare depending on location	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP, although the properties bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were considered to remain as low density residential, when several blocks in this area are developed as residential.	
	4	Actual vs Planned Growth Patterns	Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct.	
Development Activity	5	Modelled vs Actual Traffic Movements	The duplicated Cherry Flat Road would adequately serve the north-south traffic demands, especially when the Ballarat Link Road is built after 2036.	
	6	Staged Development	The further duplication of Cherry Flat Road is planned for south of the intersection to only 190m, however development on either side of would necessitate further duplication ~600m longer. The fragmented lot ownership/development on the eastern side warrants further investigation.	
Project scope & cost estimate	7	Concept vs Actual Design	Traffic modelling is required to determine whether the remaining duplication is required	
	8	Land Acquisition	The intersection is subject to PSP-related land acquisition (further acquisition required) and PAO2 for a duplicated Cherry Flat Road. Five properties are subject to the existing PAO2, where two already have a 20m carriageway easement over the nominated alignment. The PAO2 is not funded by the DCP and would be subject to Council funding.	
	9	Construction Costs	Cherry Flat Road is also earmarked as an arterial road upon duplication. As such the design standards differ, could require additional funding to deliver this section of road.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	This section of Cherry Flat Road has an allowance for footpaths, shared paths and cycle lanes that run parallel and would continue to connect into Ballarat's Strategic Cycling Corridor along the Glenelg Highway.	

Group	ID	Item	Comments	Risk
Project Deliverability	11	Ease of Delivery	The above listed issues regarding the funding of and finalising the PAO2, 120m of 750m of the full length to be duplicated, this project is at risk of not meeting the aims of the PSP.	

*Land Acquisition*

The duplicated Cherry Flat Road alignment affects five (5) properties where an existing Public Acquisition Overlay (PAO2) is already in place. Other properties were included in the PAO2 although their subdivision has created the required road reserve for these three (3) properties (Figure 32). Delivery of the PAO2 sits outside the DCP but should be recognised in the PSP and referred to Council for budget consideration and delivery.

The southern end of Cherry Flat Road terminates at Bells Road, which is earmarked as the Ballarat Link Road and is the boundary between City of Ballarat and Golden Plains Shire Councils. The Ballarat Link Road construction timing is assumed to be outside of the DCP timeframes (beyond 2035).

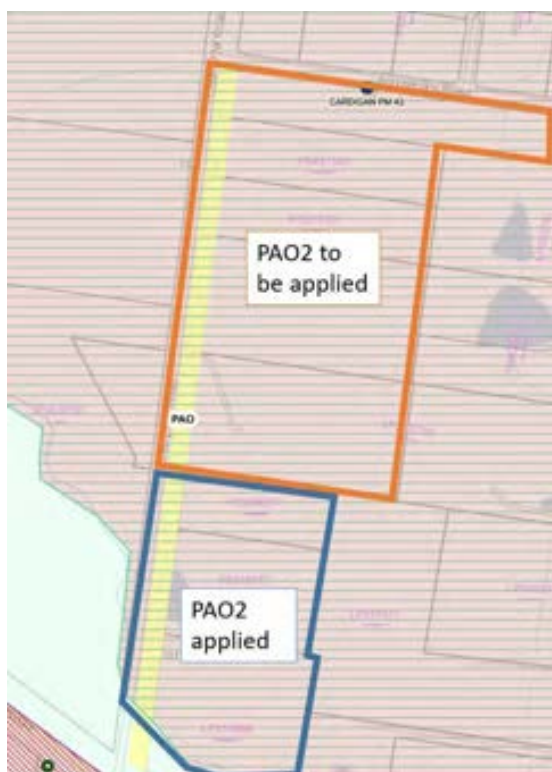


Figure 32 – properties where PAO2 applies.



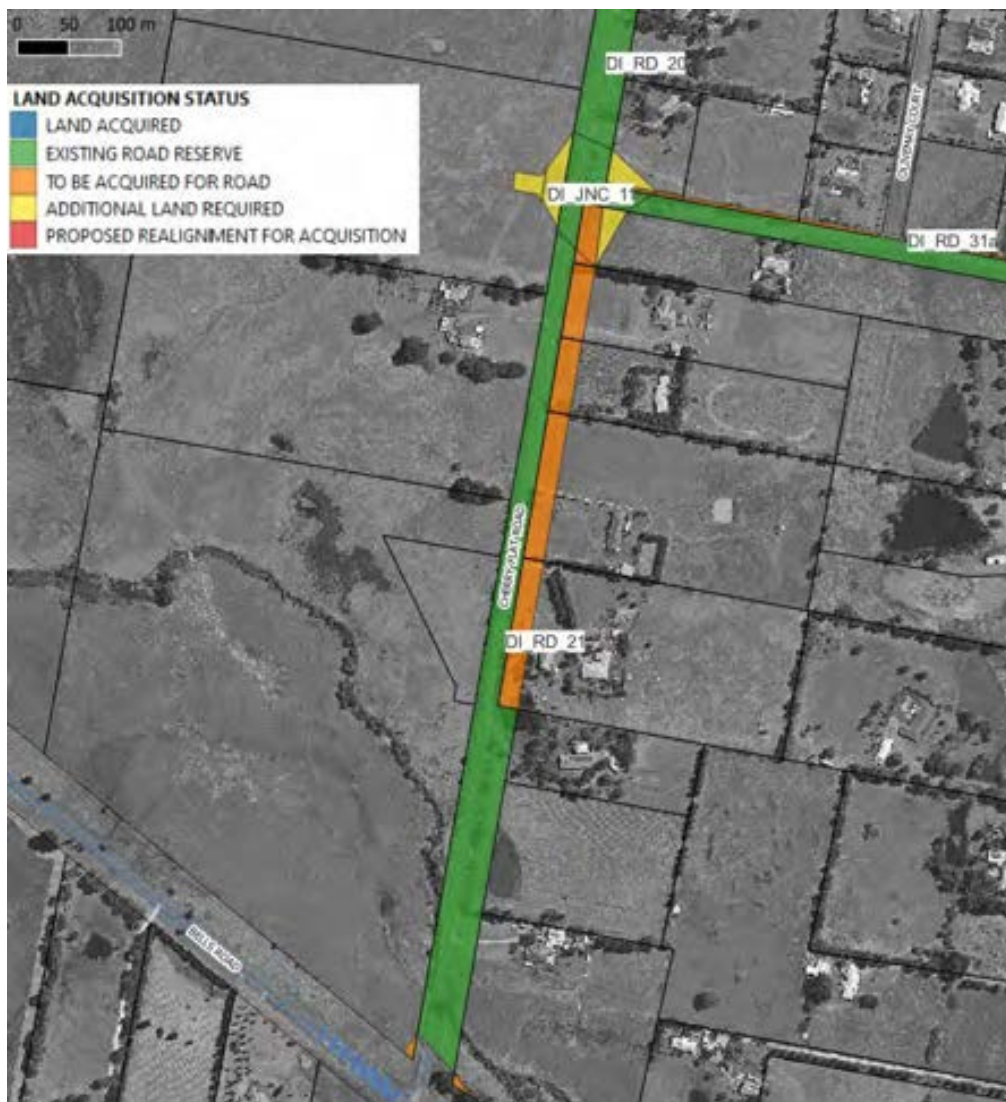


Figure 33 – DI\_RD\_21 existing road reserve (green) and proposed widening (orange)

The DCP states the trigger(s) for the duplication being access to adjacent development areas as required OR when a bus route is required along this section of Cherry Flat Road is created. The listing of only 190m when this entire section was marked as a duplicated link road, estimated duplication length 750m, there is no documentation to explain the reason for the apparent shortfall.

There is also no information regarding the application of the PAO2 for properties at 133 and 139 Cherry Flat Road (properties 70 and 71), these properties already have a 20m easement, as viewed in data.vic.gov.au. All properties have the PAO2 listed in the online VICPLAN property reports. Table 39 Land acquisition summary for DI\_RD\_21.

Table 38 Land acquisition summary for DI\_RD\_21

Address	Property ID	Land Acquisition ID	Proposed	
			Area Excised	Excised Land Value
149 Schreenans Road	69	PAO2	0.01	5,915
		DI_LA_17	0.10	59,146
133 Cherry Flat Road	70	PAO2	0.15	101,875
139 Cherry Flat Road	71	PAO2	0.15	101,875
149 Cherry Flat Road	73	PAO2	0.29	162,900
155 Cherry Flat Road	76	PAO2	0.29	162,625
Total			0.99	594,336

\*Property 69 is also affected by the land acquisition for DI\_JNC\_11

*Road Design and Costs*

The DCP costs are largely for creating the duplicated road from the roundabout at the Schreenans Road with land acquisition for this is under a Public Acquisition Overlay. The allocated \$816,000 is not considered sufficient to bring the full length of the road up to DLR1 standard considering the civil costs for the were approximately \$1.73 million (indexed to 2021 values) and will only deliver 190m of the 895m section. The 895m section is further reduced given each end of the road will be a roundabout treatment, further reducing the duplicated road length to 750m.

The following estimate (Table 40) assumes full pavement reconstruction of the existing road to the same standard as DI\_RD\_20.

Table 39 – Revised construction costs for DI\_RD\_21

Description	Indexation (Jun 2021)	Comments
Revised estimate	\$3,566,092.36	
Original Estimate	\$987,391.08	Noting the line marking, drainage etc. still required for the full 750m
Change	\$2,578,701.29	

The revised estimate increases the construction costs of DI\_RD\_21 to \$3,566,092 (up 261%) from the original \$987,391 DCP estimate.

This estimate excludes land acquisition costs associated with PAO2 properties. The PAO2/additional splays would be a separate Council funded capital works project to ensure the additional splays are incorporated in an updated PSP, noting that the DCP is not funding this item.

**SCHREENANS ROAD (DI\_RD\_31a to d)**

The PSP/DCP lists for four sub-projects for Schreenans Road that connects Cherry Flat Road with Ross Creek Rd. The cross-section profile for Schreenans Road is Link Road 2, requiring a minimum 24m wide road reserve. The current road reserve width is 20m, requiring an additional 4 m on the northern side of Schreenans Road to create the required 24m for the Link Road 2 profile.

The sequence of construction for the road sections would be timed with the subdivision of the adjacent land, which is more challenging given the fragmented ownership. Figure 34 shows recent Council advice of emerging development areas in Precinct 1; the developments adjacent to Cherry Flat Rd have been discussed previously in the DI\_RD\_20, DI\_JNC\_11 and DI\_RD\_21 sections.



Figure 34 – development areas adjacent to Schreenans Road (located in green area)

DI\_RD\_31a Schreenans Road upgrade (between Cherry Flat and Webb Roads)

This section starts at Cherry Flat Road (DI\_JNC\_11) through to Webb Road where splays already exist on the northern side (properties 42 and 64). New splays will need to be considered for the future improved intersection of Schreenans Road/Webb Road intersection.

Table 40 - MCA for DI\_RD\_31a

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare on the western side. PSP allocated Low Density Residential traffic volumes on the eastern side; however, development will be at 15-20 lots/hectare depending on location	










Group	ID	Item	Comments	Risk
	3	Rezoning/ Modification to Land Use	Properties bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were considered to remain as low density residential, when several blocks in this area are developed as residential (15 lots/hectare), creating significant increases to traffic in the area.	
	4	Actual vs Planned Growth Patterns	Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct. Further analysis is required to understand how this translates to the low-density residential area is required.	
Development Activity	5	Modelled vs Actual Traffic Movements	The proposed road would adequately serve the traffic demands of the area, although there is uncertainty with reviewing/increasing the densities to the areas adjacent to the proposed road.	
	6	Staged Development	Fragmented property ownership increases the risk of ad hoc development adjacent to the road	
Project scope & cost estimate	7	Concept vs Actual Design	The existing traffic modelling will need to be reviewed considering the increased housing densities in the adjacent low density residential areas	
	8	Land Acquisition	The splays at the Cherry Flat Rd end have been discussed in the previous section (DI_JNC_11) which requires further land acquisition for the splays/roundabout. The widening of the road reserve on the northern side ignores the need to create splays at the Webb Road intersection for a possible roundabout (not considered in the PSP).	
	9	Construction Costs	Subject to the traffic analysis, the construction costs are likely to increase given the increase in traffic loads and potential intersection treatments.	
Delivery to Council's Strategic Aims	10	Active vs Car- dependant transport	This section has footpaths, shared paths and cycle lanes that connect into the wider network, especially Cherry Flat Road and Delacombe Town Centre.	
Project Deliverability	11	Ease of Delivery	Given the above listed issues regarding the housing density, this project is at risk being delivered without meeting the PSP performance criteria of meeting the traffic loads at full development.	



Figure 35 – DI\_RD\_31a existing road reserve (green), future land acquisition (orange)

*Land Acquisition*

Table 42 lists the required area of land for each impacted property for DI\_RD\_31a road widening.

Table 41 – DI\_RD\_31a land acquisition

Address	Property ID	Original	
		Area Excised	Excised Land Value
134 Webb Road	42	0.03	30,000
120 Schreenans Road	43	0.02	22,000
124 Schreenans Road	44	0.02	21,000
8 Olivemay Road	48	0.04	40,000
1 Olivemay Road	52	0.03	33,000
111 Cherry Flat Road	55	0.11	112,750
Schreenans Road	56	0.05	48,750
Total		0.30	307,500

The DCP has not considered what type of intersection will be adopted at Webb Road for the original SMEC plans show an uncontrolled crossroad and any intersection treatment will be outside of the DCP.

**New Roundabout - Schreenans Road and Webb Road**

There is the potential need to include a new junction in the PSP at the intersection of Schreenans Road and Webb Road. The former rural living properties adjacent to Webb Road are part of the PSP, where developments at the northern end of Webb Road have commenced.

Of all the junctions in the PSP, DI\_JNC\_12 is the closest representation to the proposed roundabout at Schreenans Road and Webb Road. This roundabout will be used to develop a preliminary understanding of the financial and land acquisition implications.





Figure 36 - Additional splays for DI\_JNC\_X1

*Land Acquisition*

Four properties are impacted by the proposed roundabout, two of these properties are already impacted by the acquisition to create a wider road reserve, i.e., 133 and 134 Webb Road. Table 43 lists the area required and estimated land acquisition costs on top of the any other land acquisitions for the respective properties.

Table 42 - Estimated land acquisition for new roundabout at Schreenans Road and Webb Road

Address	Property ID	Revised	
		Area Excised	Excised Land Value
134 Webb Road	42	0.03	30,000
133 Webb Road	64	0.02	16,500
149 Schreenans Road	69	0.05	23,658
104 Schreenans Road	84	0.07	16,889
Total		0.17	87,048

*Cost of Intersection Treatment*

The proposed new roundabout at Schreenans Land and Webb Road is estimated to be \$850,000. Delivery of the proposed roundabout has already been discussed and is understood to be incorporated with an adjoining development as part of the local infrastructure requirements. As this roundabout already has a funding and delivery mechanism, it is not being considered for inclusion into the DCP, however is recommended to be reflected in the PSP.



DI\_RD\_31b Schreenans Road extension west

This section is like DI\_RD\_31a, where the properties on the northern side will have a 4m wide strip of land acquired to create the 24m road reserve from the existing 20m reserve.

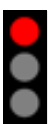






Figure 34 shows development adjacent to Webb Road and Schreenans Rd (DI\_RD\_31b), this development area is relatively isolated to neighbouring development areas where they are potentially building more infrastructure in an out-of-sequence manner. This would trigger the need to acquire the 4 m wide strip of land for DI\_RD\_31a and DI\_RD\_3b.



Figure 37 – DI\_RD\_31b & DI\_RD\_31c existing road reserve (green) and future land acquisition (orange)

Table 43 - MCA for new roundabout at Schreenans Road and Webb Road intersection

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare on the western side. PSP allocated Low Density Residential traffic volumes on the eastern side; however, development will be at 15-20 lots/hectare depending on location	
	3	Rezoning/ Modification to Land Use	Properties bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were considered to remain as low density residential, when several blocks in this area are developed as residential (15 lots/hectare), creating significant increases to traffic in the area.	
	4	Actual vs Planned Growth Patterns	Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct. Further analysis is required to understand how this translates to the low-density residential area is required.	

Group	ID	Item	Comments	Risk
Development Activity	5	Modelled vs Actual Traffic Movements	The approaching roads may adequately serve the traffic demands of the area, although some form of intersection treatment is required given the increasing the densities to the areas adjacent to the proposed road.	
	6	Staged Development	Fragmented property ownership increases the risk of ad hoc development adjacent to the road	
Project scope & cost estimate	7	Concept vs Actual Design	The existing traffic modelling will need to be reviewed considering the increased housing densities in the adjacent areas from low density residential to UGZ	
	8	Land Acquisition	The widening of the road reserve on the northern side ignores the need to create splays at the Webb Road intersection for a possible roundabout (not considered in the PSP).	
	9	Construction Costs	Subject to the traffic analysis, the construction costs are likely to mirror the construction costs of DI_JNC_12.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	Footpaths, shared paths, and cycle lanes are part of the cross section.	
Project Deliverability	11	Ease of Delivery	The above listed issues highlight that traffic modelling will be required.	

*Land Acquisition*

The land acquisition for DI\_RD\_31b relies on only acquiring properties on the northern side of the unnamed road (Schreenans Road heads south at the Webb Road intersection. The cost impact of this acquisition is outlined in Table 45.

Table 44 - Land acquisition for DI\_RD\_31b & DI\_RD\_31c

Address	Property ID	Original	
		Area Excised	Excised Land Value
133 Webb Road	64	0.09	74,250
90 Clydesdale Drive	68	0.05	21,187
Total		0.14	95,437

DI\_RD\_31c Schreenans Road Creek Crossing

The land acquisition for the crossing (DI\_LA\_17) is an extension of that required for DI\_RD\_31b section (Table 45). The creek crossing is located at possibly one of the deepest locations of Bonshaw Creek relative to the surrounding area (greater than 10m). The proposed crossing may require additional earthworks (and possibly retaining walls) into the existing ground to reduce the

height of the bridge embankments and span lengths. Figure 38 shows the elevation profile/cross section where the proposed bridge passes over Bonshaw Creek and 1% AEP flood level.

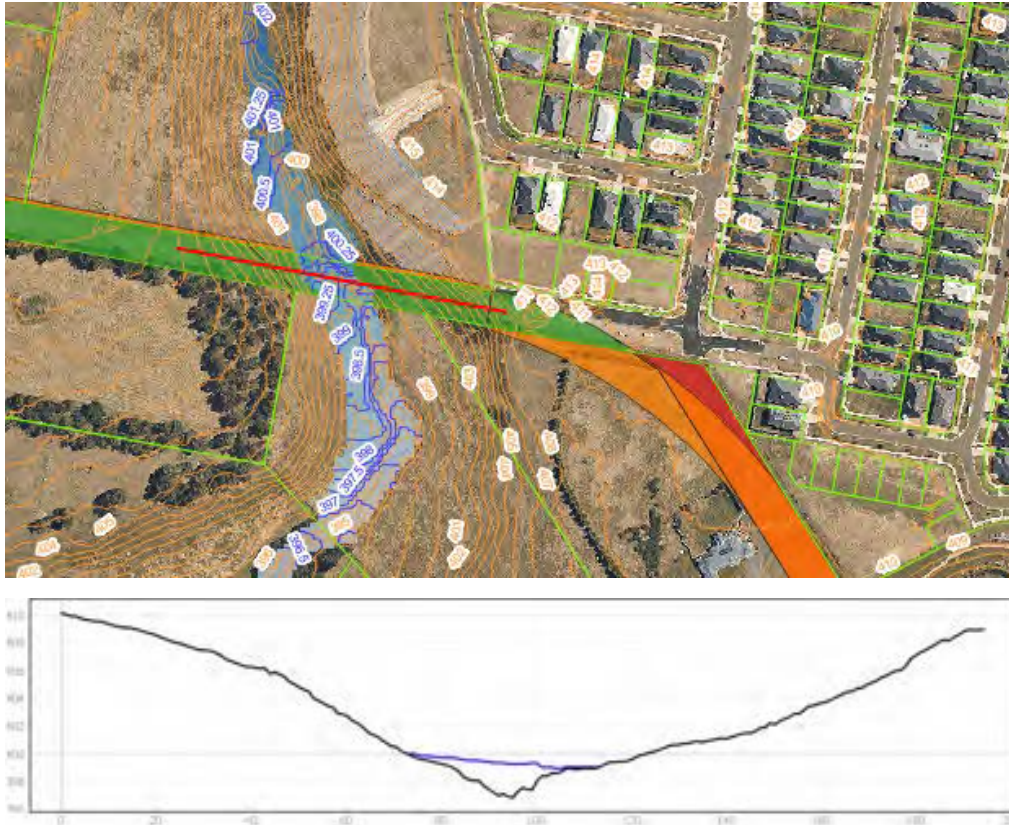


Figure 38 - Centreline cross section of proposed road bridge (DI\_RD\_31c) and 1% AEP flood level (blue)

Table 45 - MCA for DI\_RD\_31c

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare on the western side. PSP allocated Low Density Residential traffic volumes on the eastern side; however, development will be at 15-20 lots/hectare depending on location	

Group	ID	Item	Comments	Risk
	3	Rezoning/ Modification to Land Use	Properties bounded by Ascot Garden Drive, Cherry Flat Road, Webb Road, and Ross Creek Road were considered to remain as low density residential, when several blocks in this area are developed as residential (15 lots/hectare), creating significant increases to traffic in the area.	
	4	Actual vs Planned Growth Patterns	Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct. Further analysis is required to understand how this translates to the low-density residential area is required.	
Development Activity	5	Modelled vs Actual Traffic Movements	The proposed bridge is included to address a large gap between creek crossings (i.e., Ascot Garden Drive and Joses Lane) over Bonshaw Creek. Modelling to date suggests that the bridge is not warranted until 2030+.	
	6	Staged Development	Cannot be staged given it is proposed to be a two-way bridge.	
Project scope & cost estimate	7	Concept vs Actual Design	There are no concept designs for the proposed bridge.	
	8	Land Acquisition	The widening of the road reserve on the northern side is proposed, however there may be more land required (Council reserve available)	
	9	Construction Costs	The height of the proposed bridge will determine the costs where there is at least 12 m from bottom of the creek channel to the develop-able land.	
Delivery to Council's Strategic Aims	10	Active vs Car- dependant transport	Previous traffic analysis has commented that a bridge is required in this location to best connect footpaths, shared paths, and cycle lanes to the wider network, while vehicle traffic have alternative locations to cross.	
Project Deliverability	11	Ease of Delivery	The above listed issues highlight many unknowns as to whether the project would continue.	

The ESR has reviewed this crossing in detail (in 2015 and 2021). The following summarises the reports' findings:

1. Cost – the report states the estimated costs are considerably higher than a similar bridge located upstream at Ascot Garden Drive
2. Traffic volume – the SMEC report estimates 22,500 vpd while VITM 8,500 vpd, while the ESR reports estimates 5,000-15,000 vpd, as there are large discrepancies between the various models, it would suggest the proposed bridge could be over-servicing.

3. Need – there are alternative routes to the proposed bridge for vehicle traffic that are within 1 km of the proposed bridge site with Joses Lane and Webb Road Key Access Streets.
4. Location – the houses fronting Carthew Road are currently fronting a cul de sac, the bridge’s construction would change the road priority for the residents as per the PSP.
5. Alternative Routes – Joses Lane is within 600m of the proposed bridge, and it already has a crossing that would be relatively simpler and cheaper to upgrade for the collector road standard. However, this would require reallocating the land acquisition for DI\_RD\_31b to Joses Lane and N-S section of Schreenans Road to widen the road reserve to 24m. Preliminary land acquisition estimate 4,010 sq m are required to create the 24 m road reserve, this cost would be funded by the avoided bridge construction costs at Schreenans Road.

In addition to the ESR report, the traffic volumes in this area are underestimated with the now UGZ only generating traffic in the SMEC model aligning with low density residential use. The traffic generation from this area is potentially 10 times greater than originally forecasted.

*Land Acquisition*

The land acquisition for the bridge itself is through a Council reserve, where approximately 0.04 ha is required, this amount may increase depending on the adopted bridge design and the amount of cut/fill.

*Bridge Design*






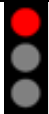

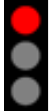
The challenge of the site is that there is 12m elevation change from surrounding area to the bottom of Bonshaw Creek. It would be prudent to engage a bridge designer to further consider the design options and develop functional designs and cost estimates before progressing any detailed design. This design work would support management of the DCP budget allocation but is not intended to redefine the project scope or seek an amendment to the DCP value.

**DI\_RD\_31d Schreenans Road extension east**

This section starts from the eastern abutment of the proposed crossing through to Ross Creek Road and largely bounded to the north by the “Ploughman’s Arms” development. One section of the road is already within an established road reserve and while the development immediately to the south is under detailed design (Figure 40).

Table 46 - MCA for DI\_RD\_31d

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed road is at original density of 15 lots/hectare.	
	3	Rezoning/ Modification to Land Use	Surrounding land use has remained as per PSP Realignment is driven by developer not the PSP	

Group	ID	Item	Comments	Risk
	4	Actual vs Planned Growth Patterns	While part of Precinct 1, this section (east side of Bonshaw Creek) has not seen the scale of development as the area adjacent to Cherry Flat Road/Delacombe Town Centre (west side of Bonshaw Creek). Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct.	
Development Activity	5	Modelled vs Actual Traffic Movements	The proposed road would adequately serve the traffic demands of the area without the bridge (DI_RD_31c). As discussed in previous sections, the increased lot development in the low density residential and the construction of the bridge would significantly alter the traffic patterns.	
	6	Staged Development	Development is occurring in stages, development on the southern side may reduce the land available for the road and Settlers Drive intersection	
Project scope & cost estimate	7	Concept vs Actual Design	The road without the bridge connection would adequately service the adjacent developments, in fact, it would be over-designed as a standalone road. The LR2 profile is considered an appropriate profile for the modelled traffic demands. It will need to be validated when in the increased lot yields in the low-density residential areas for this would increase the traffic demands.	
	8	Land Acquisition	The splays at the Ross Creek Road end are required for the future roundabout (DI_JNC_12). The PSP concept design showed a sweeping corner and the detailed design of PLP202167SC has altered this into a more straightened alignment. The intersection of Carthew Road and Settlers Drive will require additional analysis as the intersection may need additional control (i.e., traffic signals or roundabout).	
	9	Construction Costs	Subject to the traffic analysis, the construction costs are likely to increase given the potential intersection treatment at Settlers Drive	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	This section has footpaths, shared paths and cycle lanes that connect into the wider network.	
Project Deliverability	11	Ease of Delivery	Given the above listed issues regarding the alignment, this project is at risk being delivered without meeting the PSP performance criteria of meeting the traffic loads at full development.	



*Land Acquisition*

The PSP proposed that only one property (Property 86) to be the only affected property for this proposed road. By changing the proposed road from a sweeping bend to a more angular configuration has reduced the amount of land to be acquired (Table 48).

*Table 47 - Land acquisition DI\_RD\_31d (not considering ESR's recommendation)*

Address	Property ID	Original		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
36 Ross Creek Road	86	0.76	456,000	0.62	372,000	0.14	84,000
Total			456,000	0.62	372,000	0.14	84,000

The development on the southern side of DI\_RD\_31d is currently under detailed planning, a preliminary layout is in Figure 40. The development is staged from Joses Lane, heading north to Stage 4b, this implies that there is the opportunity the proposed road's alignment following the more curved alignment of the original PSP.

The plans show the proposed road is now straightened to create additional residential lots in Stage 4a, however this is not suitable solution for the future transport network operation.

ESR was engaged to review the alignment; the recommendation from the report is that more land is required to create a curve radius of 160m and to fit in the Settlers Drive intersection (as T-intersection). This recommended alignment still requires land acquisition (Table 49), however, it is less than the original PSP/DCP alignment as listed in Table 48.

This alignment is still problematic considering it may result in a controlled intersection with Settlers Drive intersection such as a roundabout. However, the preliminary Council roundabout design has been produced for discussion only and alternative solutions are still being considered.

*Table 48 - Land acquisition for DI\_RD\_31d after considering ESR Transport's recommended alignment.*

Address	Property ID	Proposed		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
36 Ross Creek Road	86	0.76	456,000	0.69	414,000	0.14	42,000
Total			456,000	0.69	414,000	0.14	42,000



Figure 39 – DI\_RD\_31d proposed alignment (orange), existing road reserve (green), proposed re-alignment (red), note the aerial photography accuracy is poor for the Ploughman's Estate.



Figure 40 - Future lot layout adjacent to DI\_RD\_31d

*Road Design*

Assuming the 160m radius curve alignment by ESR is adopted, existing properties facing Carthew Road will be facing the completed Schreenans Road extension, this section of road will be widened to LR2 cross section. This will also require the redesigning of the DI\_RD\_31d-Carthew Road - Settlers Road intersection.

An initial functional layout plan has been developed by Council to test this concept as shown in Figure 41 with the reduced land available, however this would be further improved should the ESR alignment be adopted.

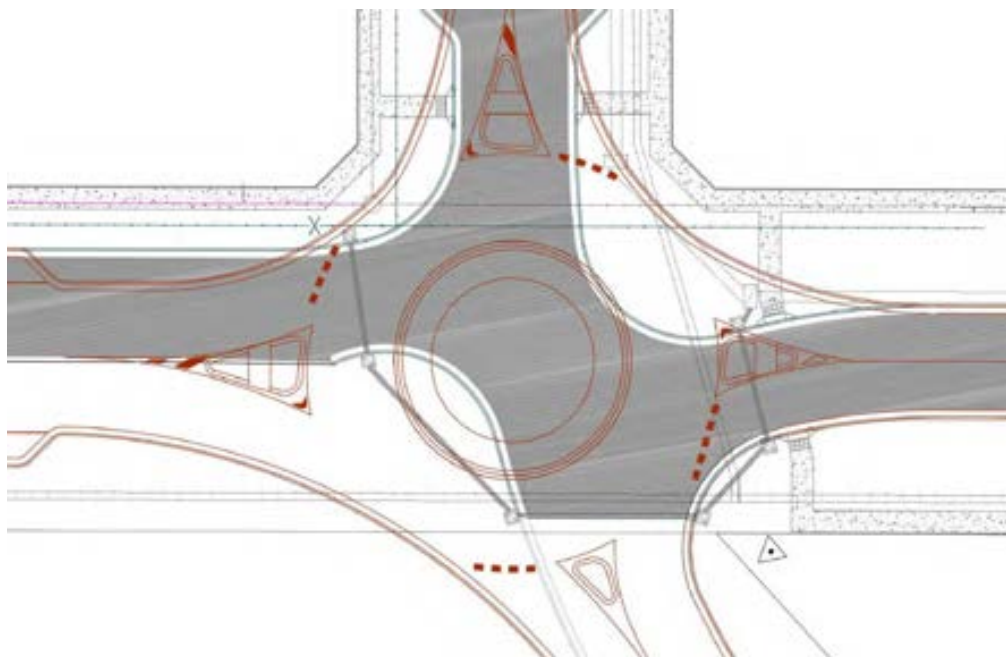


Figure 41 - initial functional layout plan for DI\_RD\_31d/Settlers Drive intersection.



Figure 42 - Realigned DI\_RD\_31d (source: ESR Transport Planning)



The main benefits of the proposed ESR alignment are:

- Self-explanatory road – the through-route is obvious to the driver; the small annulus roundabout is not an appropriate treatment for LR2 cross section when the through-route needs to turn.
- Improved sightlines – larger radius curve allows driver to see further, potentially reducing the need to further intersection treatment(s)
- Space for properties facing Carthew Road – the alternative alignment places through-traffic very close to pedestrians and houses i.e., run-off road crashes risk increases.

#### *Road Design Costs*

It is recommended that a detailed design of the ESR Alignment is carried out and this is completed in tandem with the Bonshaw Creek bridge (DI\_RD\_31c) options assessment for there are multiple design issues that do not allow for an estimation of the revised road alignment and intersection treatment as discussed above.

#### *Alternative to Schreenans Road*

The ESR transport report discusses alternative routes should DI\_RD\_31c – the Bonshaw Creek bridge not be built (Figure 43). This reduction may not be fully realised given an alternative route would require other road and bridge upgrades within the PSP but not funded in the DCP.

The ESR report discusses the alternative alignment being the N-S heading section of Schreenans and Joses Lanes (Figure 43), however it stopped short of suggesting re-aligning DI\_RD\_23 to directly connect Miles and Prince Streets, thus creating a direct link to Albert Street (Midland Highway) at an established signalised intersection and bypassing established areas of Sebastopol.

This route also has land acquisition and would require negotiation with these landholders for the alternative route to be realised. One such example is 2 Joses Lane, which is currently under development would require significant redesign to accommodate the 4 m wide addition road reserve. Essentially, development activity no longer enables this outcome to be considered.



Figure 43 - Alternative alignment for DI\_RD\_31b & DI\_RD\_31c

**Webb Road/Schreenans Road Reclassification**

As discussed in DI\_RD\_31a and DI\_RD\_31b, the area adjacent to Webb Road and Schreenans Road where it heads in north-south direction was not modelled with urban growth zone traffic loads. This area was initially modelled using low-density rural living zone traffic generation, several lots are now being subdivided into residential areas, hence the reclassification of this section of Webb Road and Schreenans Road is considered.

The reprojected traffic volumes are discussed in the TRAFFIC MODELLING and TRAFFIC GENERATION FORECASTS sections of this study. The result of having increased traffic loads on Webb Road is already being realised with properties at the northern end of Webb Road developed at ~15 lots/ha, other existing lots are also in the planning stages as detailed in APPENDIX B and Figure 34.



Figure 44 – DI\_RD\_X2 alignment in magenta hatch



*Land Acquisition*

ESR has recommended that Webb Road is reclassified from its current Key Access Street to Collector Street: Constrained (CS1) cross section. Both road cross sections utilise the 20m road reserve thus not requiring further land acquisition from the adjacent properties.

*Road Design*

It is recommended that Key Access Streets cross section implemented by Council is adopted as the minimum standard, except for when bus routes are identified which then applies the Collector Street (Constrained) cross section for all roads designated as Key Access Streets.

Part of Webb Road is already being delivered as part of adjoining development as local infrastructure. This approach can be maintained for the remaining section of Webb Road.

**ROSS CREEK ROAD (Tait Street to Three Chain Road)**

DI\_JNC\_12 Ross Creek Road / Schreenans Road extension/ Cobden St (realigned) Roundabout

The proposed junction connects the Schreenans Road extension and the realigned Cobden St with Ross Creek Road with a roundabout. The eastern side is earmarked to have a NAC and already has schools/childcare centre adjacent to the intersection.

Table 49 - MCA for DI\_JNC\_12

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed junction is at UGZ (15-20 lots/hectare) or part of the LAC.	
	3	Rezoning/ Modification to Land Use	No significant changes to date	
	4	Actual vs Planned Growth Patterns	While part of Precinct 1, this section (east side of Bonshaw Creek) has not seen the scale of development as the area adjacent to Cherry Flat Road/Delacombe Town Centre (west side of Bonshaw Creek). Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct.	
Development Activity	5	Modelled vs Actual Traffic Movements	The proposed roundabout would adequately service the expected traffic volumes.	
	6	Staged Development	Development is occurring in stages	
Project scope & cost estimate	7	Concept vs Actual Design	Ross Creek Road commences at the Tait St roundabout, the proposed roundabout ensures allow free-flowing traffic throughout the day.	

Group	ID	Item	Comments	Risk
	8	Land Acquisition	Splays have been accounted for in the DCP for this junction	
	9	Construction Costs	The design standards have changed since the development of the PSP, as such, it is expected the costs for the intersection treatment to increase accordingly.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	This junction will have footpaths, shared paths and cycle lanes intersecting that will connect into the wider network. May need to investigate treatments that create a safer crossing for more vulnerable users.	
Project Deliverability	11	Ease of Delivery	Given the above listed issues regarding the alignment, it is recommended to continue with the original alignment.	

*Land Acquisition*

The land acquisition for the proposed junction is tied into the development of DI\_RD\_31d and DI\_RD\_23, it is likely that land acquisition will be less than originally proposed.

Table 50 – Land acquisition for DI\_JNC\_12

Address	Property ID	Original		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
28 Ross Creek Road	86	0.06	36,000	0.07	42,000	-0.01	-6,000
36 Ross Creek Road	87	0.01	5,626	0.00	0	0.01	5,626
30 Cobden Street	97	0.05	41,626	0.07	0	-0.02	41,626
Total			83,253	0.14	42,000	-0.02	41,253

*Junction Design*

The 2011 SMEC traffic report has determined the level of service for the proposed roundabout treatment as:

*primarily free-flow operations. Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in their ability to manoeuvre within the traffic stream. Even at the maximum density for LOS A, the average spacing between vehicles is about 160m, or 26 car lengths, which affords the motorist with a high level of physical and psychological comfort. The effects of incidents or point breakdowns are easily absorbed at this level.*

Knowing this intersection is adjacent to a Local Activity Centre/schools, it may be prudent to revisit the traffic modelling in this area. ESR also notes concerns about traffic travelling direct to Albert St (Midland Highway) through mainly Crown Street (the continuation of Ross Creek Road). More traffic counts and modelling may be required to determine this impact given the level of development already in place.

### *Estimated Costs*

The review of this junction has shown a reduction to the land acquisition costs and possible adjustments to the roundabout design i.e., geometry and possible pavement design that may increase the total cost of the junction, however this would be estimated at the detailed design phase.



Figure 45 – DI\_JNC\_12 proposed alignment (orange), existing road reserve (green) and proposed re-alignment (red)

### DI\_RD\_38 Ross Creek Road Upgrade

Ross Creek Road is an existing road with a reserve width of 30m with no plans within the DCP to widen the reserve further (Figure 47) from DI\_JNC\_12 and Bells Road/Three Chains Road at an estimated length of 850m, not from Tait St/Morgan St roundabout which increases the estimated length to 1080m, the additional 230m relates to DI\_RD\_39. The adopted road cross section profile for Ross Creek Road is Local Link Road 2 which has a minimum width of 24m.

Ross Creek Road carries a significant portion of traffic that is generated outside of the PSP, e.g., from Golden Plains Shire.

Table 51 - MCA for DI\_RD\_38

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed junction is at UGZ (15-20 lots/hectare) or part of the LAC.	
	3	Rezoning/ Modification to Land Use	No significant changes to date	
	4	Actual vs Planned Growth Patterns	While part of Precinct 1, this section (east side of Bonshaw Creek) has not seen the scale of development as the area adjacent to Cherry Flat Road/Delacombe Town Centre (west side of Bonshaw Creek). Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct.	
Development Activity	5	Modelled vs Actual Traffic Movements	There is a potential flow-on effect of underestimating the traffic generated for Schreenans Road that needs further analysis to ensure the road design is suitable	
	6	Staged Development	Ross Creek Road is already 30m wide, thus being a suitable width for proposed cross section. Adjacent developments would require service roads to be constructed on their land as part of the gifted assets process	
Project scope & cost estimate	7	Concept vs Actual Design	ESR have recommended that the cross section matches the Tait St cross-section LR3 instead of LR2, which is possible to deliver if the service roads are in the adjacent development areas	
	8	Land Acquisition	No additional land acquisition is required for the LR2 cross section and conceptually for the LR3 cross section if the service roads are in the adjacent development	
	9	Construction Costs	It is considered that building to LR2 cross section would not see any significant increase to projected construction costs.	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	This section of road will have footpaths, shared paths, and cycle lanes adjacent and intersecting that will connect into the wider network.	
Project Deliverability	11	Ease of Delivery	Rated as moderate risk until LR2/LR3 cross section is resolved	

#### *Land Acquisition*

ESR has proposed that Ross Creek Road is upgraded from LR2 to LR3 to separate local from through traffic, which essentially continues the road profile found in Tait Street. ESR also mentions that the LR3 profile could be modified to suit the existing 30m road reserve, however this will most likely result in the loss of the bicycle lanes, centre turning lane, narrower nature strips and median strips, potentially negating the objectives of the PSP.

A possible approach to achieving the widened road reserve width as per ESR's report to retain all bicycle lanes, centre turning land and median strip is to ensure developers adjacent to the road, include 10m for their service roads on the southern side of Cherry Flat Road. The advantages of taking this approach are:

1. Staged/incremental approach – the current rural profile adequately services current traffic demand.
2. Properties at the southern end of Ross Creek Road are designated Public Open Space or similar – service roads are not required for this section.

The disadvantages of this approach are:

1. Missed opportunity on the northern side given recent development planning approval on the northern side, these properties directly access/face the road i.e., no service road facing these properties.
2. Additional construction costs, up to \$363,000 should the LR3 cross section be employed.
3. Additional land acquisition costs, up to \$482,276.

This profile would offset the land acquisition specifically for the Ross Creek Road upgrade itself. Figure 46 shows and Table 53 lists the properties on the southern side where land acquisition could take place, given planning permit approval for has been granted on the northern side of Ross Creek Road.

The recommended approach to balance access aspirations and site constraints is to maintain the existing LR2 cross section treatment, but for the PSP to strengthen support for the addition of service roads for safer connections which are encouraged as optional.



Figure 46 - properties where 10m is acquired for widened Ross Creek Road reserve (red) on the southern side.

Table 52 –properties that may be acquired for a potential widened 40m road reserve in Ross Creek Road

Address	Comment
30 Cobden Street	Land allocated for a general residential, LAC and passive open space, impacted by two DCP road projects DI_RD_38 and DI_RD_39
81 Ross Creek Road	
37 Cobblers Lane	
39 Miles Street	Significant portion of parcel will be reserved for drainage and open space – it is unlikely that a service road would be required, thus Ross Creek Road reserve would remain the current width
7 Cobden Street	Land zoned for education purposes and small section already acquired for the intersection treatment at Tait St/Ross Creek Road roundabout

Table 53 – estimated land acquisition costs for DI\_RD\_38

Address	Property ID	Original		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
30 Cobden Street*	97	0.00	0	0.26	130,000	-0.26	-130,000
81 Ross Creek Road	98	0.00	0	0.22	123,431	-0.22	-123,431
37 Cobblers Lane	100	0.00	0	0.15	84,208	-0.15	-84,208
39 Miles Street	101	0.00	0	0.26	144,637	-0.26	-144,637
Total		0.00	0	0.89	482,276	-0.89	-482,276

\*This property is also affected by DI\_RD\_39, only the portion for DI\_RD\_38 is shown above



**DI\_RD\_39 Ross Creek Road Upgrade**

Ross Creek Road is an existing road with a reserve width of 30m with no plans within the DCP to widen the reserve further from Tait St/Morgan St roundabout and DI\_JNC\_12. Maps in the PSP and DCP do not clearly show this section of road given its length and some of the existing documentation refers to this section as DI\_RD\_38. The estimated length of DI\_RD\_39 is 200m which is 30m shorter than planned at 230m.

This section passes a proposed Local Activity Centre of which the existing rural-standard road cross section would not be an appropriate cross section in the long term. The issues discussed in the previous section for DI\_RD\_38 also relate to DI\_RD\_39.

The PSP describes the road and always intended to be a DCP project, even though the road was omitted from the DCP - it does not fundamentally change what the DCP delivers.

*Land Acquisition*

There is no additional land acquisition for the existing section of Ross Creek Road. Table 55 lists the estimated areas and land values for the impacted properties should a 40m wide road reserve be pursued as shown in Figure 46.

Table 54 – estimated land acquisition costs for DI\_RD\_39

Address	Property ID	Original		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
30 Cobden Street*	97	0.00	0	0.24	120,000	-0.24	-120,000
7 Cobden Street	119	0.00	0	0.05	42,848	-0.05	-42,848
<b>Total</b>		<b>0.00</b>	<b>0</b>	<b>0.29</b>	<b>-162,848</b>	<b>-0.29</b>	<b>-162,848</b>

\*This property is also affected by DI\_RD\_38, only the portion for DI\_RD\_39 is shown above

*Road Design and Costs*

The proposed crossed section is to remain as LR2 as per the discussion in DI\_RD\_38, however there is only a minor change in the estimated length of 30m, increasing the estimated costs by \$112,171 or by 14%, which is within the contingency of the original cost estimate (Table 56).

Table 55 - original and revised estimation for DI\_RD\_39


	Estimated Costs	Difference
Original estimation	774,279.45	
Revised	886,450.73	
Difference	112,171.27	14%

**DI\_RD\_23 Cobden Street (North)**

The existing alignment of Cobden St is redirected to the proposed DI\_JNC\_12 on Ross Creek Road. The creates a new 24m wide road reserve through property 97. The realignment improves the future through traffic movements and this section of Cobden Street becomes a street for the proposed shopping strip.

Table 56 - MCA for DI\_RD\_23

Group	ID	Item	Comments	Risk
Growth Demand	1	Population Projections	Net dwelling decrease of 33 or 2% below the original 2014 projections and the actual lots determined in 2021.	
	2	Land Uptake	Development adjacent to the proposed junction is at UGZ (15-20 lots/hectare) or part of the LAC.	
	3	Rezoning/ Modification to Land Use	No significant changes to date	
	4	Actual vs Planned Growth Patterns	While part of Precinct 1, this section (east side of Bonshaw Creek) has not seen the scale of development as the area adjacent to Cherry Flat Road/Delacombe Town Centre (west side of Bonshaw Creek). Revised year 2036 projections indicate that an additional 1,312 dwellings in the precinct.	
Development Activity	5	Modelled vs Actual Traffic Movements	The realignment of Cobden Street ultimately connects to DI_JNC_12 thus creating a four-arm roundabout. It is also uncertain about how the original Cobden Street alignment will connect into the new alignment. It needs to be resolved given the issues that are now faced at Di_RD_31d/Carthew Road/Settlers Drive intersection	
	6	Staged Development	Development adjacent to the proposed road would allow the road to be built to the required cross section	
Project scope & cost estimate	7	Concept vs Actual Design	LR2 cross section is considered adequate for the proposed road and the modelled traffic volumes Roundabout construction will be required when Cobblers Lane/Miles Street is similarly upgraded	
	8	Land Acquisition	PSP & DCP accounts for the extra width required for the 24 m road reserve	
	9	Construction Costs	Further detailed design is required for the intersection of the old and new Cobden Road intersection to avoid the issue that is now present at Settlers Drive/DI_RD_31d	
Delivery to Council's Strategic Aims	10	Active vs Car-dependant transport	This section of road will have footpaths, shared paths, and cycle lanes adjacent and intersecting that will connect into the wider network.	

Group	ID	Item	Comments	Risk
Project Deliverability	11	Ease of Delivery	This project is at risk being delivered without meeting the PSP performance criteria of meeting the traffic loads at full development at the junction of the old and new Cobden Streets.	

*Land Acquisition*

There is one property, property 97 that is affected by the Cobden realignment, the value of the land acquisition is outlined in Table 58.

Table 57 – Land acquisition associated with DI\_RD\_23

Address	Property ID	Original		Revised		Change	
		Area Excised	Excised Land Value	Area Excised	Excised Land Value	Area Excised	Excised Land Value
30 Cobden Street	97	0.61	305,000	0.61	305,000	0.00	0
Total			305,000	0.61	305,000	0.00	0

*Road Design*

The future connection to the Ballarat Link Road will also need to be part of this analysis as this would fundamentally change travel patterns in the area with more traffic potentially travelling south.