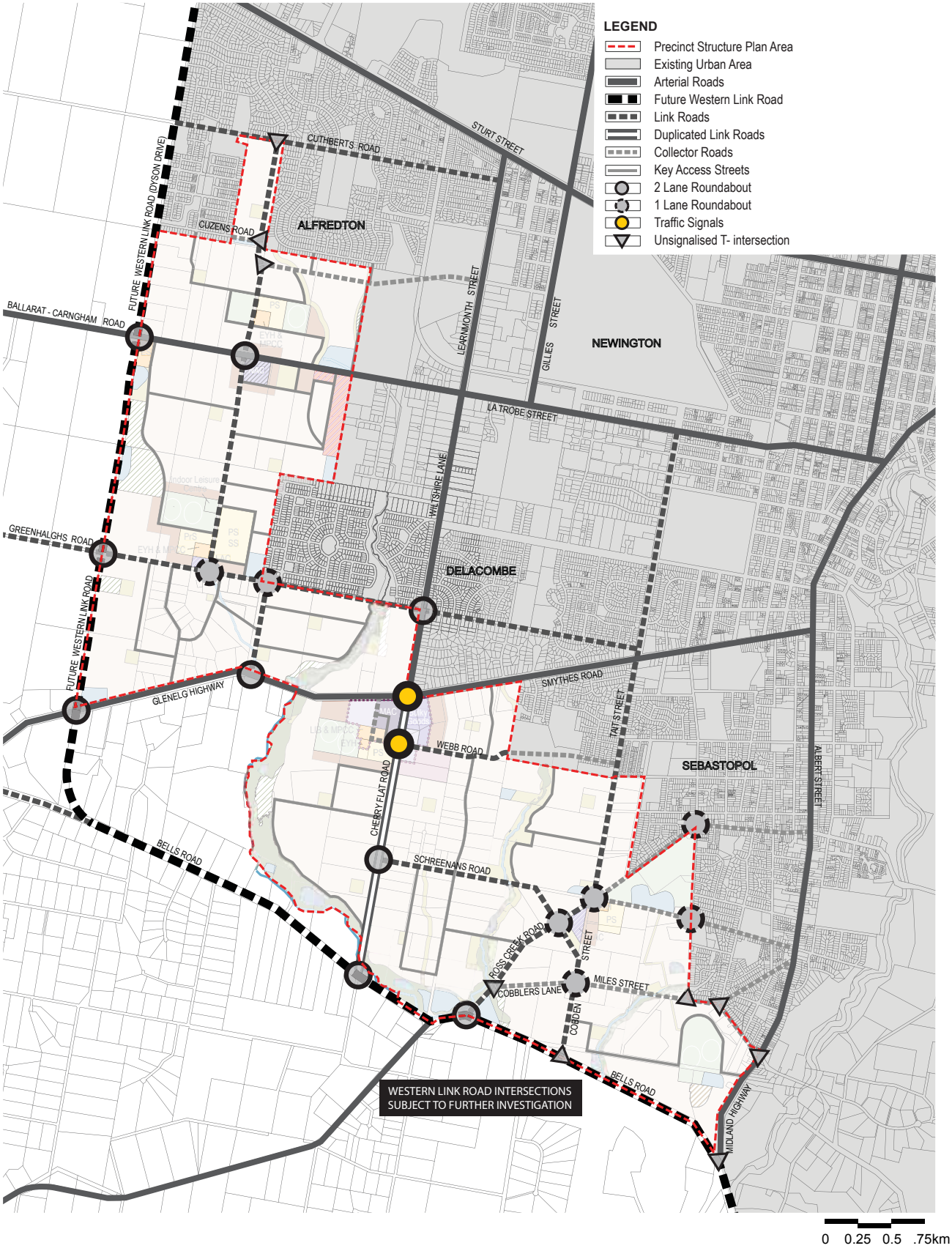
Plan 17 Road Network



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 VicRoads 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 9-11: 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 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 (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 Public 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^	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
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
Glenelg Highway	Arterial 1	N/A	29000	60	60	4	70	Yes	On-road	Yes	VicRoads
Dyson Drive (future Western Link Road)$_1$	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$_2$	Interim: Link Duplicated Link	LR2 DLR1/ DLR2	13750	40	40	2/4	70	Yes	On-road	Yes	Council
Tait Street$_3$	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$_4$	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@	Council
Morgan Street*	Collector	CS1	7500	20	20	2	60	Yes	Wider traffic lanes	Yes@	Council

Future Road Names	Road Hierarchy^	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[1] (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.

^ 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.

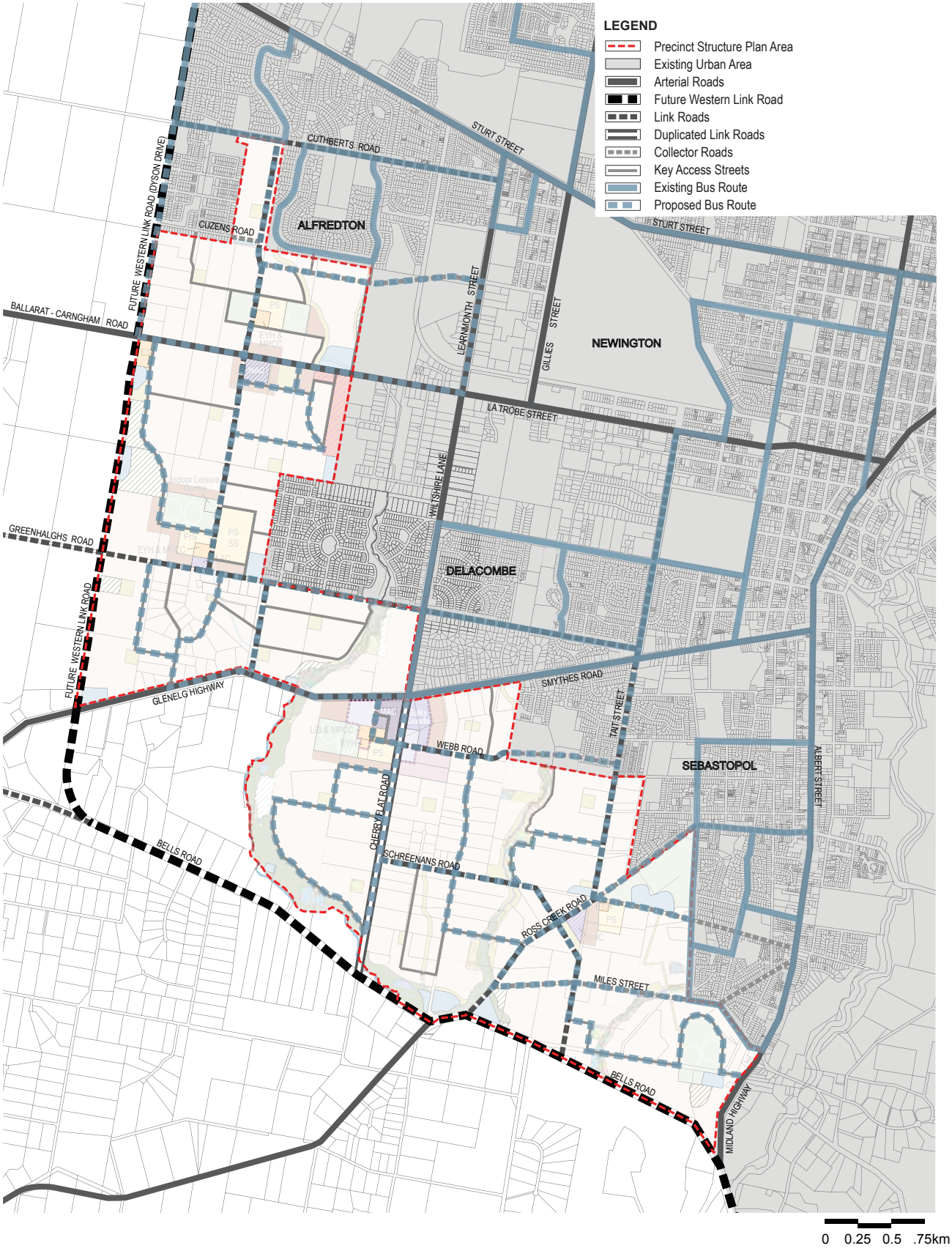
1 - Service Roads should be provided and are outside the road reservation (developer land);
- Driveways and low-volume streets are not to be accessed directly from the Western Link Road traffic lanes.
- Once the ultimate (duplicated) alignment is installed, full intersections will be limited to the locations 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.

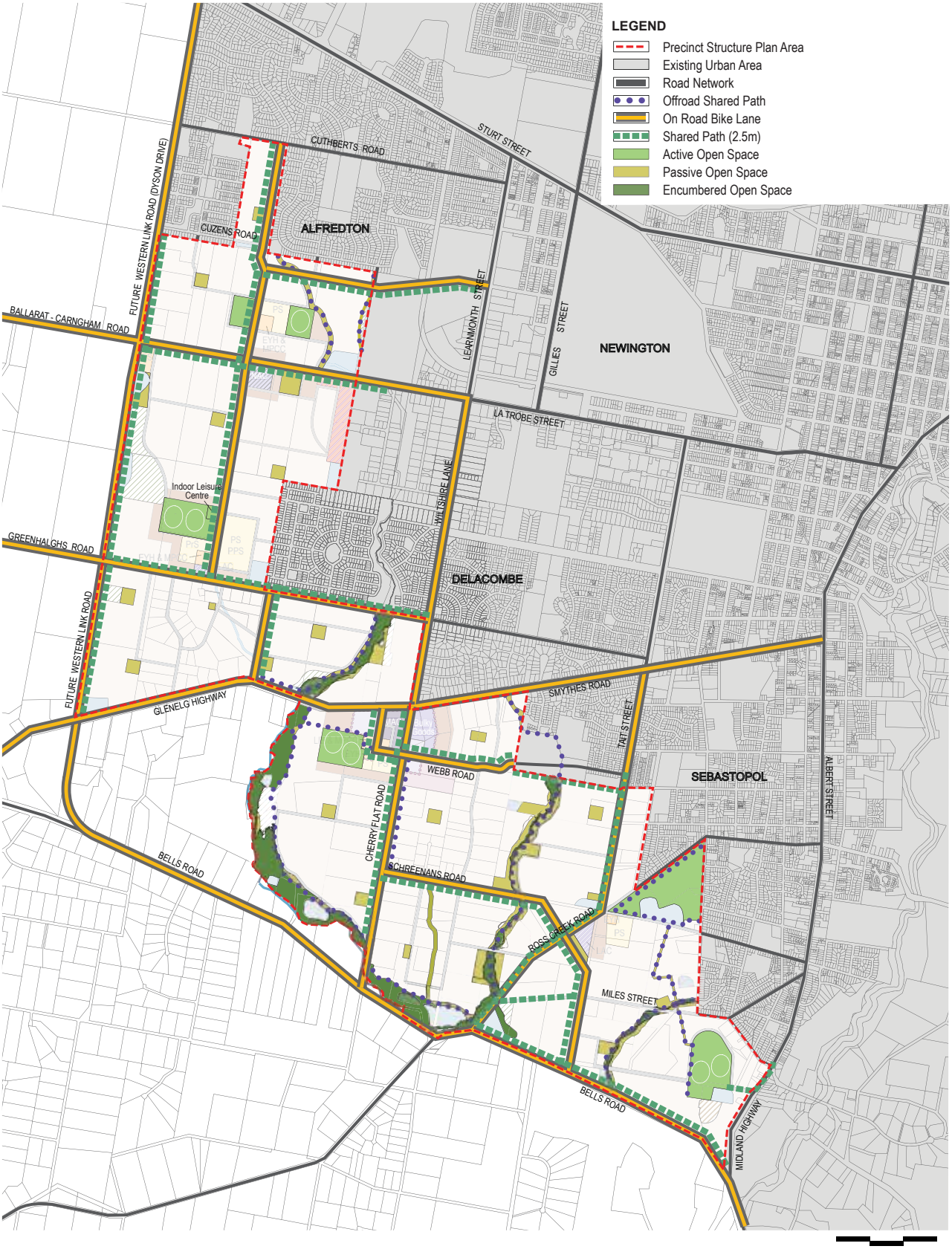
3 - Service roads are to be provided within the road reservation (City of Ballarat land).
- Driveways and low-volume streets are not to be accessed directly from Tait Street traffic lanes (i.e. accessed via the service road).
- Full intersections should be limited to key streets, other locations (e,g, 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 amd therefore the width of verges & the location of the centreline of the road will vary.

Plan 18 Public Transport



Plan 19 Walking and Trails



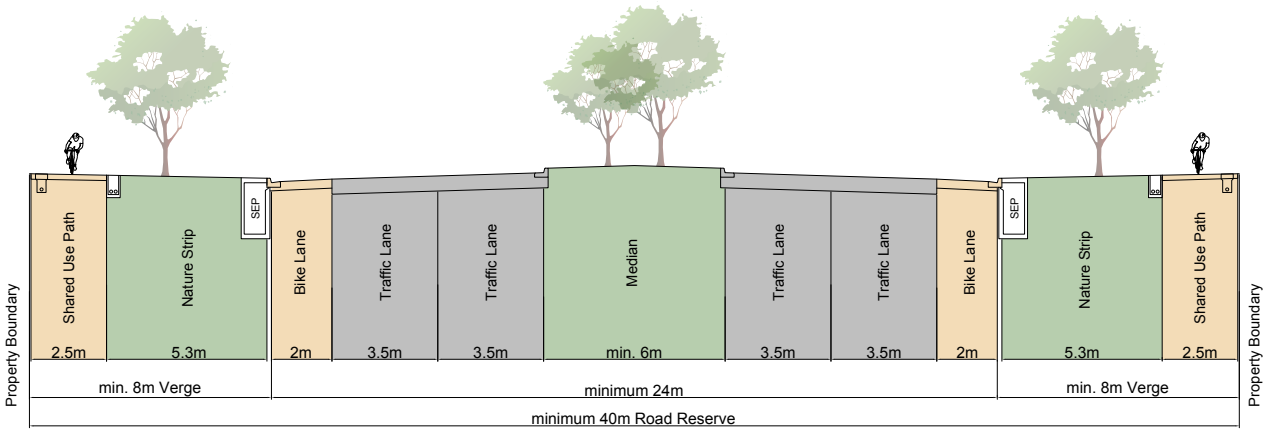


Figure 9: DLR1 - Duplicated Link Road with Verge on both sides

0 2 4 6m

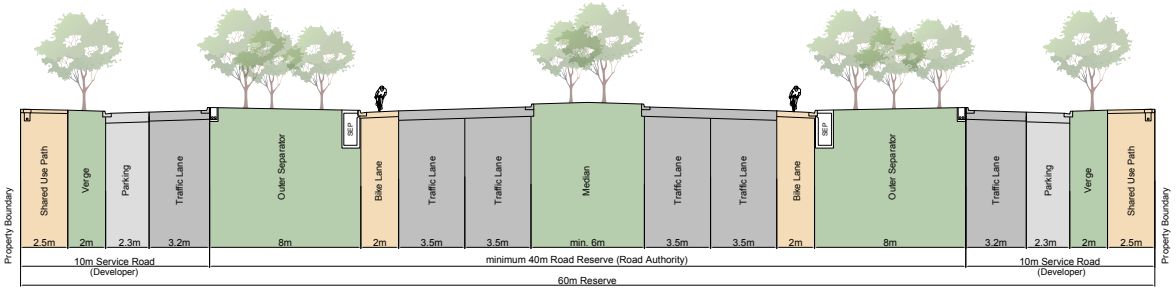


Figure 9: DLR2 - Duplicated Link Road with Service Road on both sides

0 2 4 6m

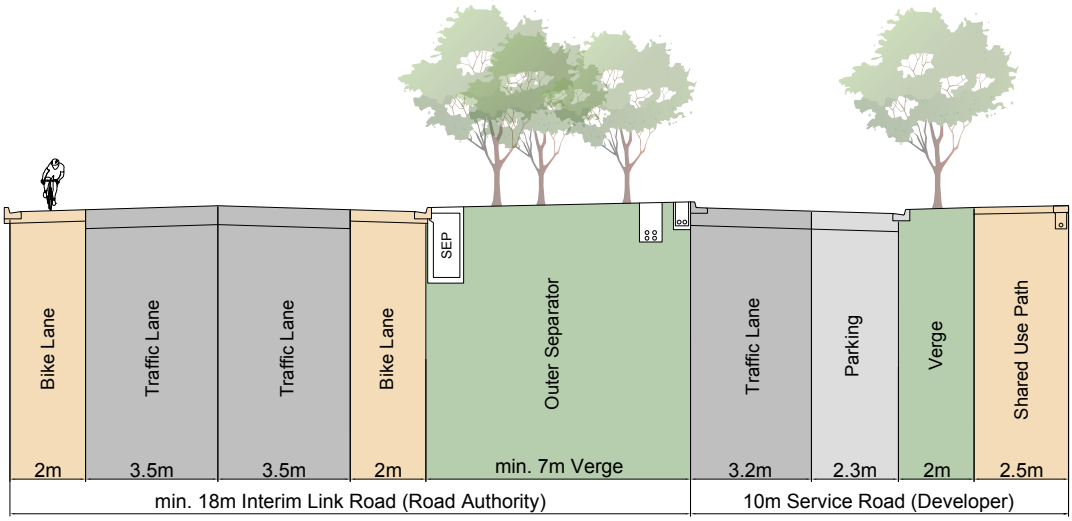


Figure 10: LR1 - Interim Link Road with Service Road on One Side

0 1 2 3m

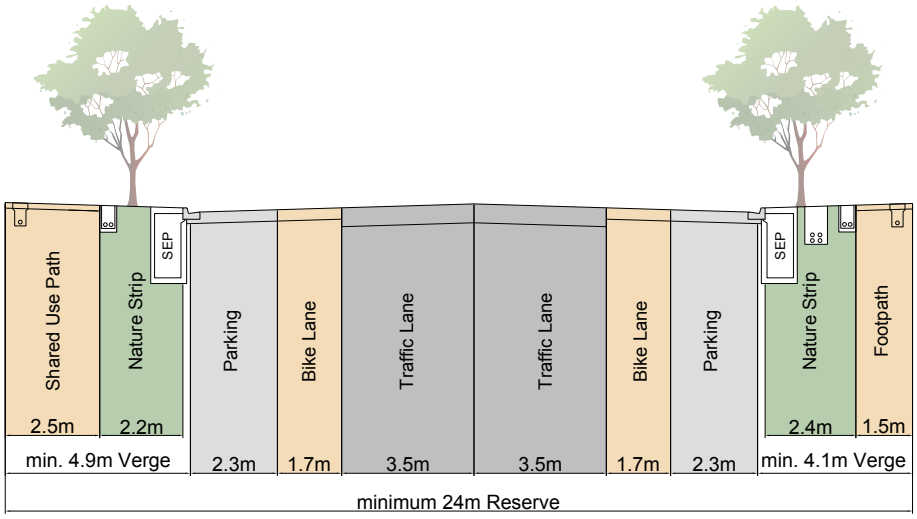


Figure 10: LR2 - Link Road with On-Road Bike Lane

0 1 2 3m

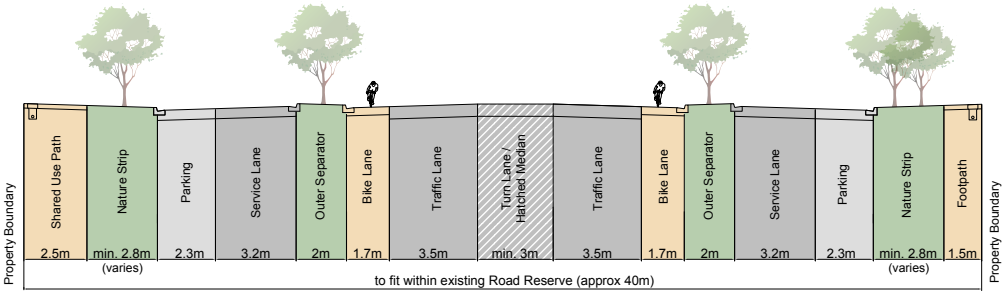


Figure 10: LR3 - Duplicated Link Road with Service Road on both sides

0 2 4 6m

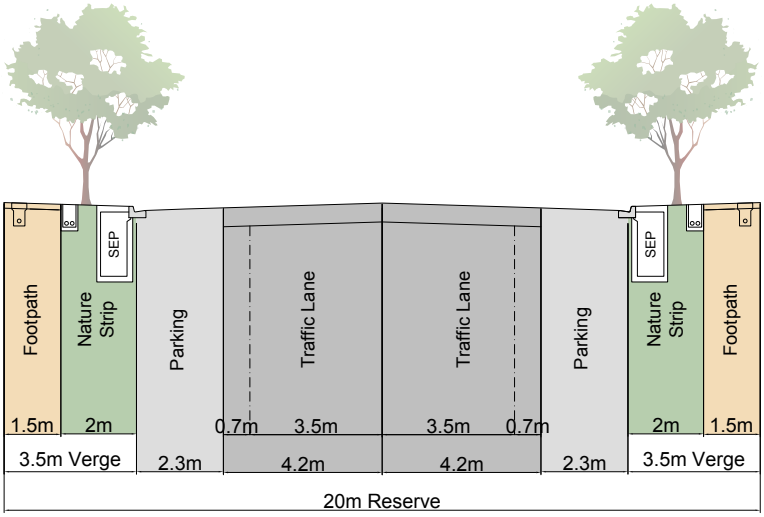


Figure 11: CS1 - Collector Street: Constrained

0 1 2 3m

Figure 11: CS2 - Collector Street: Unconstrained

0 1 2 3m

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;
  - Gas; and
  - 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 22 Central Highlands Water Ease of Servicing;
- Plan 23 Natural Gas Network;
- Plan 24 Power Supply;
- Planning and design guidelines set out in Section 5.10.3; and
- Meeting requirements of the relevant service authorities.

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.

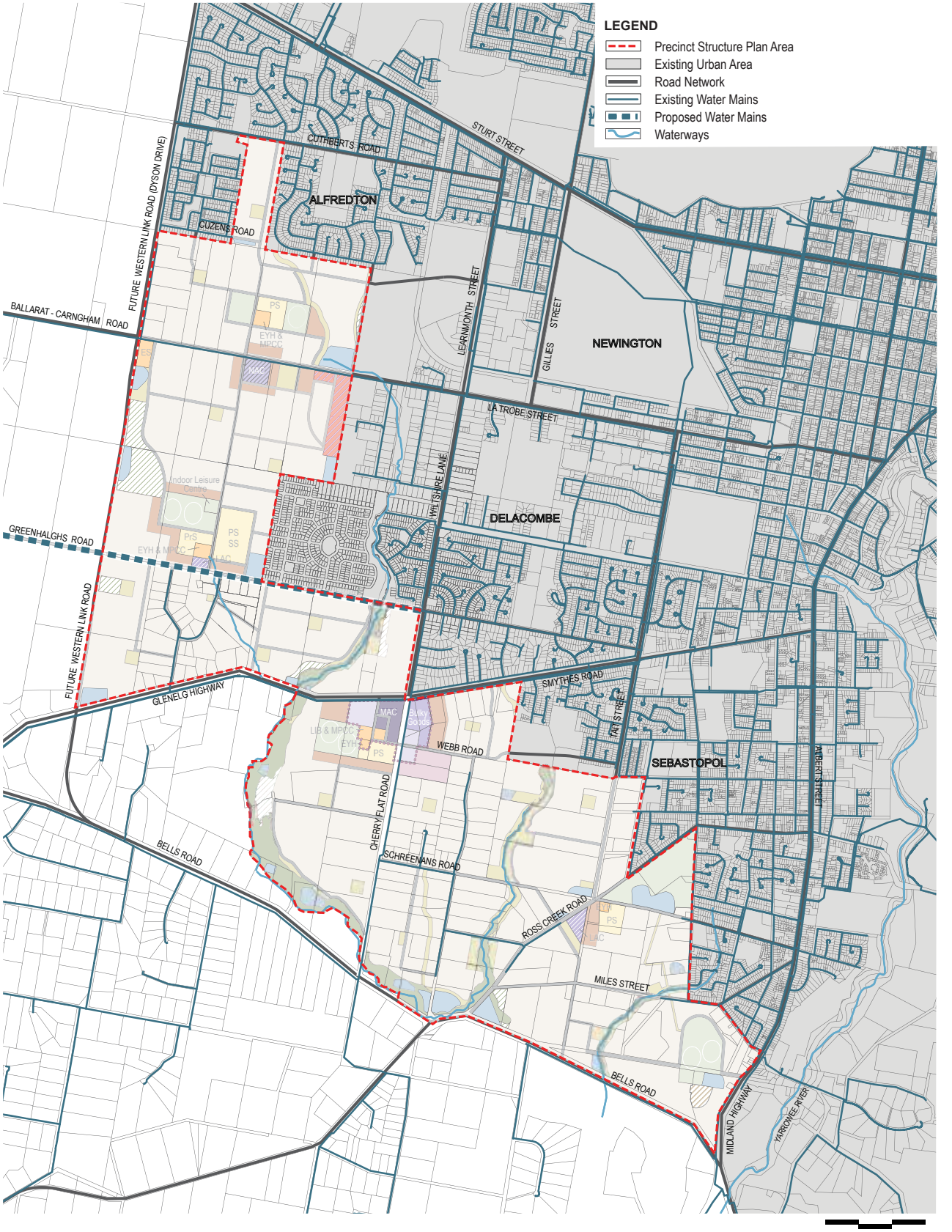
Where development is not in accordance with the staging requirements listed above, developers must demonstrate to the satisfaction of the Responsible Authority and relevant referral authorities how their development achieves orderly planning and will not unreasonably disadvantage residents or prejudice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

Utilities

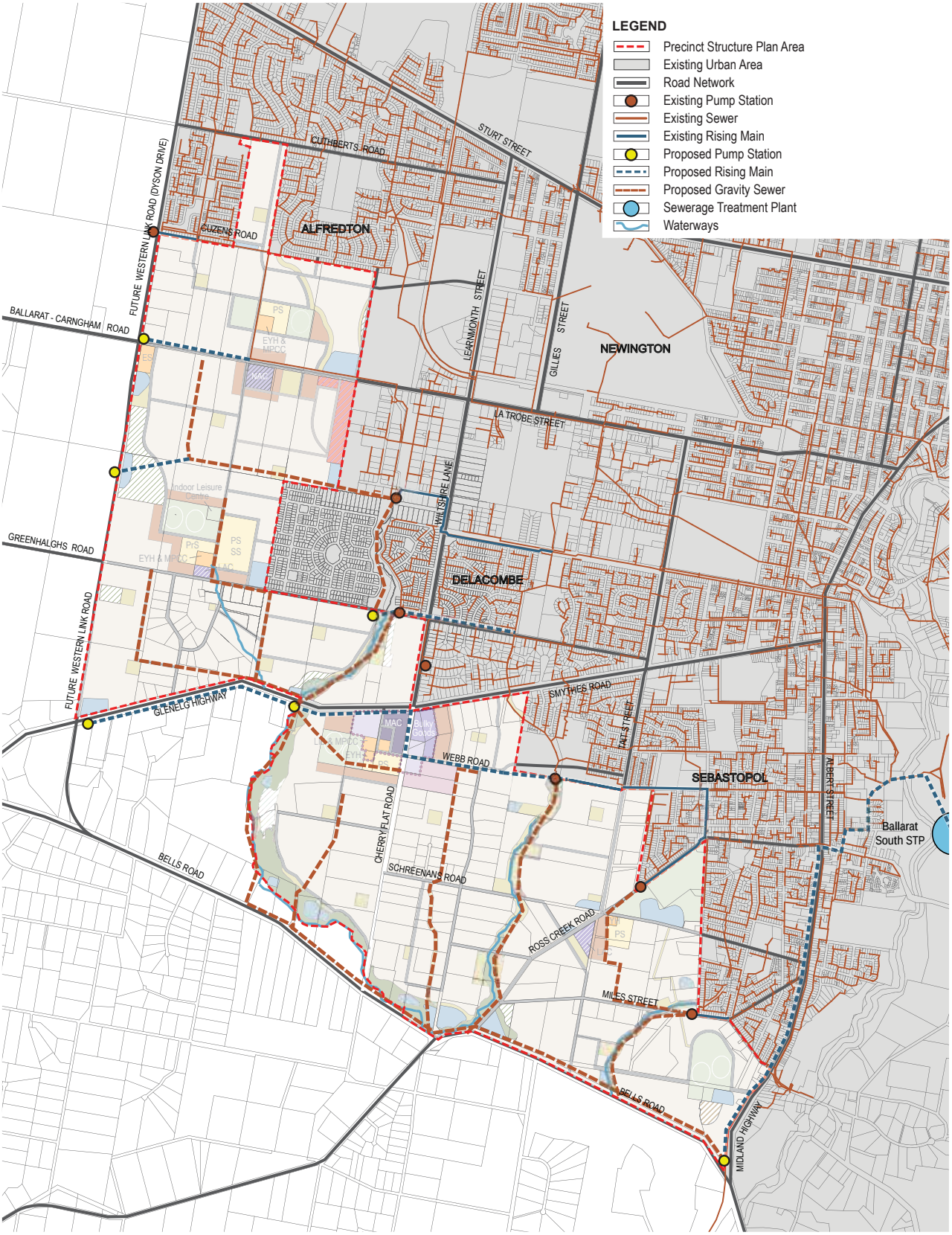
The installation of underground utilities and services should be coordinated to maximise the use of common trenching.

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.