GREATER SHEPPARTON

VICTORIA
State Government

Shepparton South East

Precinct Structure Plan

December 2024

Victorian Planning Authority

ACKNOWLEDGMENT OF COUNTRY

The Victorian Planning Authority (VPA) proudly acknowledges Victoria's Aboriginal communities and their rich cultures and pays respect to their Elders past, present and emerging. We acknowledge Aboriginal people as Australia's First People and as the Traditional Owners and custodians of the land and water on which we rely.

We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life and how this enriches us. We embrace the spirit of reconciliation and ensuring that Aboriginal voices are heard.

The VPA would like to thank the Yorta Yorta Nation Aboriginal Corporation for their engagement throughout this project.

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Shepparton South East PSP & DCP

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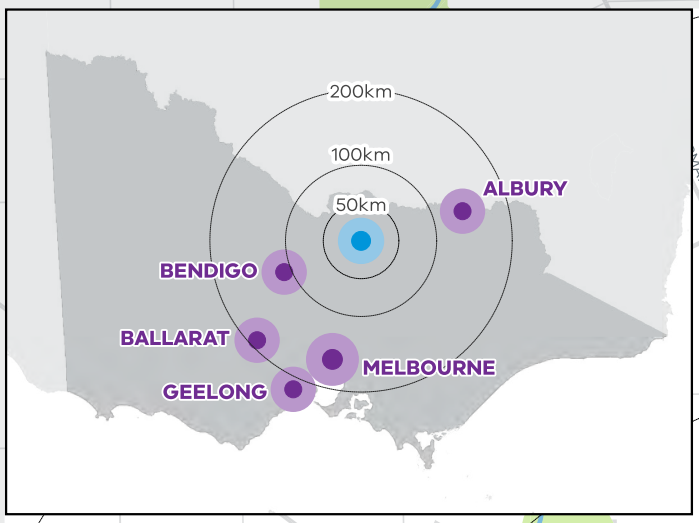

Shepparton North

Shepparton CBD

Shepparton Marketplace

Mooroopna

Riverside Plaza

Shepparton South East PSP

5km

MAH-SHEPPARTON ROAD

GOULBURN VALLEY HIGHWAY

SHEPPARTON ALTERNATIVE ROUTE ROAD

DOOKIE-SHEPPARTON ROAD

MIDLAND HIGHWAY

MIDLAND HIGHWAY

MIDLAND HIGHWAY

MOOROOPNA-MURCHISON ROAD

Broken River

Goulburn River

GOULBURN VALLEY HIGHWAY

EUROA-SHEPPARTON ROAD

- precinct boundary
- railway line & V-Line station
- school
- central activities district
- regional retail centre
- sub-regional centre
- mixed use zone
- township zone
- commercial
- current/ future residential growth
- open space
- existing urban area

1.0 CONTEXT

1.1 Introduction

The Shepparton South East Precinct Structure Plan (PSP) has been prepared by the Victorian Planning Authority (VPA) in collaboration with the Greater Shepparton City Council (Council) and with assistance from Government departments and agencies, service authorities and major stakeholders.

The PSP is a long-term plan for urban development. It describes how the land is expected to be developed, and how and where services are planned to support the development of new communities.

Generally, the PSP:

- Sets out plans to guide the delivery of quality urban environments in generally in accordance with the Victorian Government guidelines
- Enables the transition of non-urban land to urban land
- Sets the vision for how the land should be developed, illustrates the future urban structure and describes the outcomes to be achieved by the future development
- Outlines the projects required to ensure that future residents, visitors and workers within the area can be provided with timely access to services and transport necessary to support a quality and affordable lifestyle
- Sets out objectives, requirements and guidelines for land use, development and subdivision
- Provides government agencies, the council, developers, investors and local communities with certainty about future development
- Addresses the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in accordance with an endorsed program under Part 10

The PSP is informed by:

- *The Planning Policy Framework as set out in the Greater Shepparton Planning Scheme*
- *The Hume Regional Growth Plan* (DELWP, May 2014)
- *The Precinct Structure Plan Guidelines*
- *Guidance Note: Applying the PSP Guidelines in regional areas*
- *Victoria's Housing Statement – The decade ahead 2024 – 2034*
- *Shepparton and Mooroopna 2050: Regional City Growth Plan*
- *Greater Shepparton Housing Strategy*
- *Greater Shepparton 2030 Strategy.*

The following planning documents have been developed in parallel with the PSP to inform and direct the future planning and development of the Precinct:

- *The Shepparton South East Development Contributions Plan* (DCP)
- *The Shepparton South East Background Report* (Background Report)

1.2 Purpose of the PSP

The purpose of the PSP is to embed the vision for the Shepparton South East precinct through the preparation of an orderly and integrated place based spatial plan.

To this end, the PSP will:

- Support the timely delivery of integrated transport options, including public and active transport.
- Support the retail and services catchment of the proposed Local Convenience Centre, Shepparton Marketplace and the Benalla Road commercial corridor.
- Facilitate the final stormwater drainage strategy and flood mitigation outcomes, including outcomes associated with the protection of the Broken River environs and floodplain.
- Integrate the significant areas of vegetation and biodiversity into the future urban landscape and open space network and promote connections to greenspace.
- Integrate with the existing developed areas of Shepparton and deliver community facilities and open spaces to complement adjoining precincts.

The purpose of the PSP is to activate these outcomes by:

- Providing the planning conditions for private industry delivery.
- Identifying and, where appropriate, providing the shared funding for a diverse range of open spaces and community infrastructure.
- Ensuring planning permit applications will generate the necessary population to support investment in critical infrastructure.

1.3 Development Contributions Plan

Development proponents within the Shepparton South East PSP will be bound by the *Shepparton South East Development Contributions Plan* (the DCP). The DCP sets out requirements for infrastructure funding across the Shepparton South East Precinct.

The DCP will be incorporated in the *Greater Shepparton Planning Scheme*.

1.4 Background information

The *Shepparton South East PSP Background Report* (Background Report) provides detailed background information relating to the precinct, including its local and regional context, history, landform and topography, biodiversity, drainage, open space, transport infrastructure, employment, and community facilities. The report also summarises various background technical studies that have informed the preparation of this PSP.

The technical studies are available on the VPA webpage.

1.5 Land to which the PSP applies

The PSP covers 384.81 hectares of land located approximately 2km south east of the Shepparton CBD. The precinct is bound by urban development to the west and north, and farmlands to the east of Doyles Road (Shepparton Alternative Route) to the east. The Broken River sits at the southern boundary of the precinct and borders with the Kialla North Growth Corridor. Land to which this PSP applies is illustrated on Plan 2 Precinct Features

1.6 How to Read this Document

This PSP guides land use and development where a planning permit is required under Schedule 2 to the Urban Growth Zone (Clause 37.07 of the *Greater Shepparton Planning Scheme*), or any other provision of the *Greater Shepparton Planning Scheme* that references this PSP.

A planning application and subsequent planning permit must implement the outcomes of the PSP. The outcomes are expressed as the **Vision** and **Objectives**.

Each element of the PSP contains requirements and guidelines as relevant.

Requirements must be adhered to in developing the land. Where they are not demonstrated in a permit application, requirements will usually be included as a condition on a planning permit whether or not they take the same wording as in the structure plan. A requirement may reference a plan, table or figure in the structure plan.

Guidelines express how discretion will be exercised by the responsible authority in certain matters that require a planning permit. If the responsible authority is satisfied that an application for an alternative to a guideline, implements the outcomes, the responsible authority may consider the alternative. A guideline may include or reference a plan, table or figure in the PSP.

Meeting these **Requirements** and **Guidelines** will implement the vision of the PSP.

Conditions that must be included in a planning permit are outlined in Schedule 2 to the Urban Growth Zone (Clause 37.07 of the *Greater Shepparton Planning Scheme*).

Development must also comply with other Acts and approvals where relevant the *Environment Protection and Biodiversity Conservation Act 1999* in the case of biodiversity or the *Aboriginal Heritage Act 2006* (Victoria) in the case of cultural heritage, amongst others.

Not every aspect of the land's use, development or subdivision is addressed in this structure plan. A responsible authority may manage development and issue permits as relevant under its general discretion.

Plan 2
Precinct Features
Shepparton South East Precinct Structure Plan

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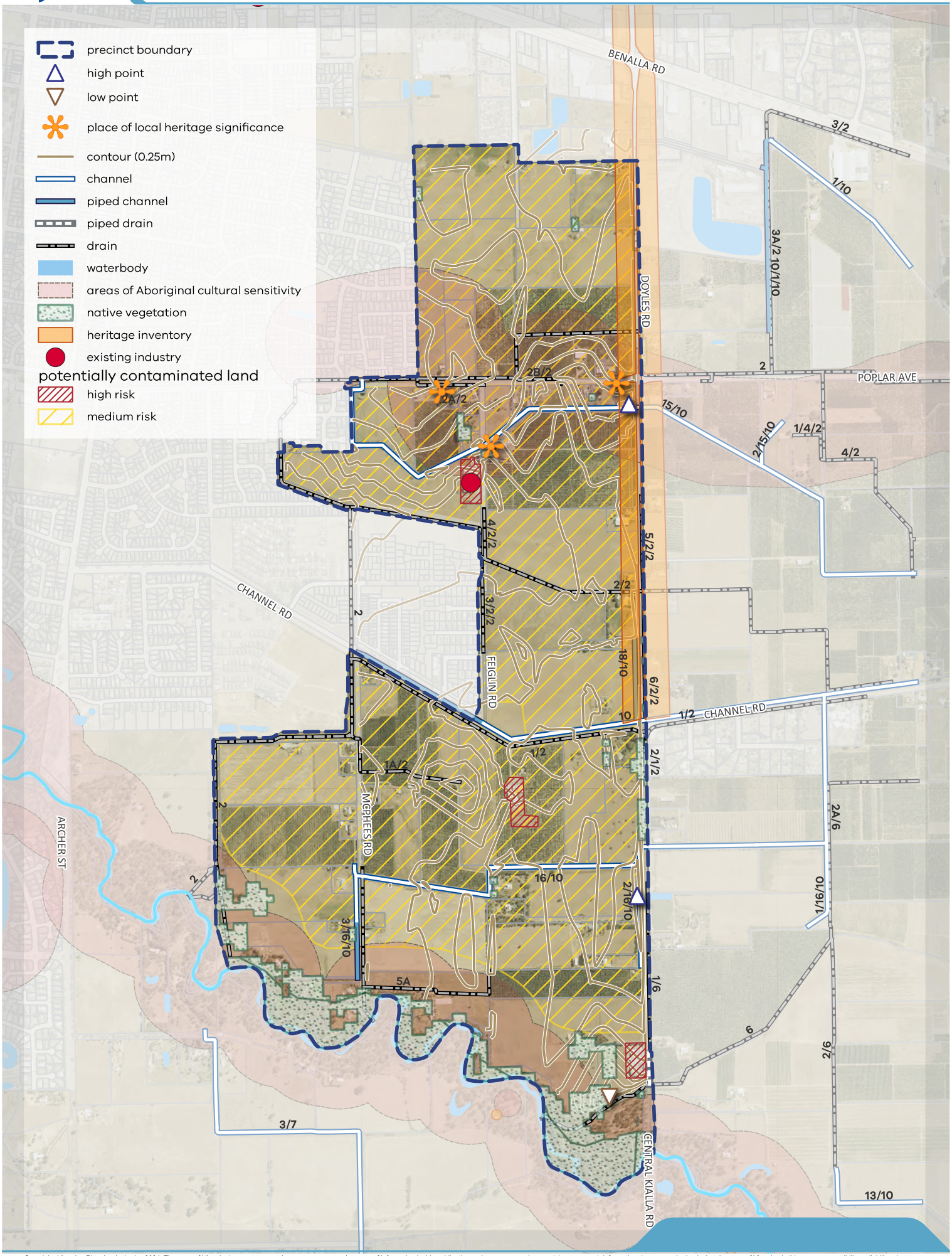

2.0 PRECINCT FEATURES

The PSP has been prepared to ensure the seamless integration of the precinct into the surrounding local and regional context. shows the existing natural, constructed and cultural features of the precinct. The precinct features, guide and influences the future precinct structure and character of the future neighbourhood.

The following features are shown in this plan:

- Areas of cultural heritage sensitivity
- Historical heritage (post settlement) places
- Existing native vegetation
- Topography of terrain
- The Broken River
- GMW irrigation channels and drains
- High points with view lines to landscape features
- Existing industry and operational orchards
- Subdivision layout pattern surrounding the precinct.

This PSP applies to all land within the precinct boundary shown in this plan.

Existing industry and orchards are anticipated to transition out of the precinct over the lifetime of the PSP; however, until that point, Requirements and Guidelines as set out in Section 4.6 of the PSP must be employed to manage the transition.

Plan 3
Place Based Plan
Shepparton South East Precinct Structure Plan

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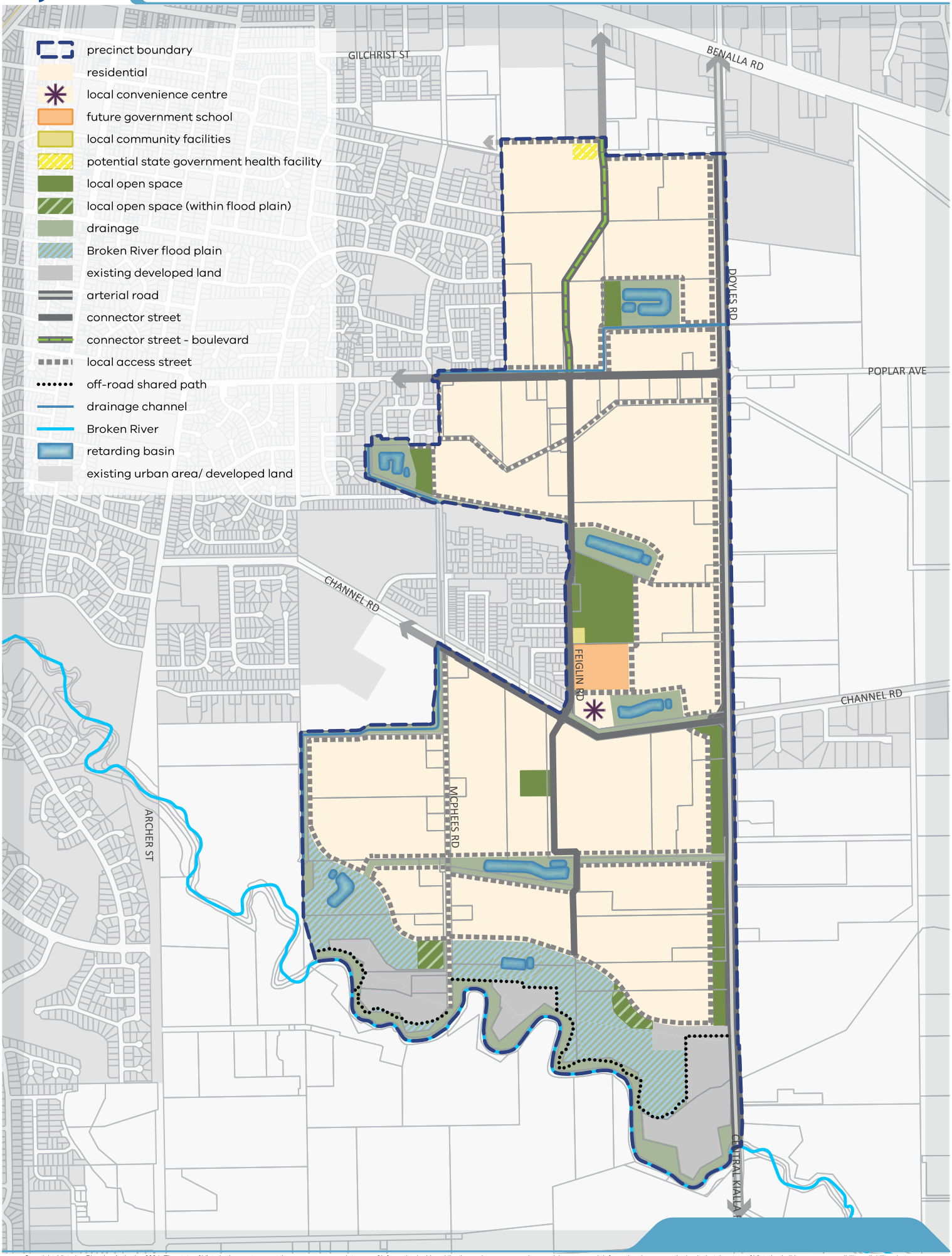

3.0 PSP OUTCOMES

3.1 Vision

For thousands of years, the precinct and surrounding areas has been a place of significant cultural heritage for the Yorta Yorta people, with rich biodiversity and landscapes.

The Shepparton South East Precinct Structure Plan (PSP) is located to the south east of the existing Shepparton urban area. The PSP will embrace the historical and natural characteristics of the area, such as the Broken River and heritage sites, to contribute to creating a vibrant, distinct, sustainable, and connected community. The PSP will offer the Greater Shepparton community a new residential neighbourhood in proximity to Shepparton's existing services, with well-connected tree-lined streets and landscaped open spaces. The PSP will deliver a new community of 2,980 new homes for a population of approximately 7,200 residents that seamlessly integrates with the surrounding urban framework of Shepparton. The PSP will capture the regional city character of Shepparton and acknowledge its surrounding rural landscapes. It will assist and strengthen the growth of the regional city, while maintaining its unique character and high standard of liveability.

The PSP will encourage increased diversity in housing and feature abundant open space, including seven distinct drainage basins that integrate with a variety of adjoining local parks. and Sports reserves associated with the retained Goulburn-Murray Water drains will be enhanced to form landscaped shared path links and utilised to connect the open space network and community facilities, including new active recreational areas, a proposed new government primary school, health facility and an integrated children's centre.

Proximity to the Shepparton Marketplace and the Benalla Road commercial corridor will provide future residents excellent access to existing community and retail services. The direct interface between the precinct and Shepparton Marketplace will be carefully managed to facilitate the expansion of the Marketplace and its integration into the new residential area. A local convenience centre within the precinct will allow residents to shop locally for basic conveniences whilst capitalising on its Channel Road frontage for exposure to surrounding neighbourhoods.

The PSP will connect the precinct with the existing road network of Shepparton, enhancing safe and convenient access to Archer Street, Benalla Road, Channel Road, Doyles Road and Poplar Avenue. Tree-lined connector roads will cater to local bus routes within the precinct and feature shared bicycle and pedestrian paths that directly link residents to the principal bicycle network, retail, schools, community facilities and the open space network.

The PSP provides a strategic planning framework for the area that outlines the preferred location of land uses and infrastructure to guide development, subdivision and building permits. The vision for the PSP is underpinned by eight objectives to ensure the preparation of an orderly and integrated place-based plan.

3.2 Objectives

PRECINCT OBJECTIVES	
O1	Provide a framework for establishing a high amenity and integrated urban environment that respects existing urban character of Shepparton and encourages a sense of place, community, and connection to existing and emerging precincts.
O2	To work in harmony with natural attributes of the precinct, including the Broken River floodplain and its cultural and ecological values to leverage opportunities for place-making.
O3	Manage water in an integrated and sustainable way that responds holistically to drainage considerations and prioritises sustainable consumption and blue-green infrastructure.
O4	Identify and guide timely delivery of adaptable and multi-purpose open space, community, and other essential infrastructure to support development.
O5	Facilitate 20-minute neighbourhoods by planning for the provision of an integrated transport network that integrates with the adjoining established areas and supports active and public transport options, movement of goods and connections to jobs.
O6	Facilitate a safe, resilient, and environmentally sustainable urban environment that holistically manages natural hazards such as impact of climate change, bushfire, flooding and other hazards.
O7	To facilitate investment in an innovative and vibrant local and regional economy within a network of highly accessible activity and employment centres that leverage the precinct's proximity to the Shepparton Marketplace and allow for flexible employment uses that respond to evolving challenges and opportunities.
O8	Identify and guide the timely delivery and staging of key essential infrastructure required for the PSP including establishing clear provision of education infrastructure and community infrastructure that respond to the individual and community's social needs and facilitates 20-minute neighbourhoods.

Plan 4
Land Use Budget
Shepparton South East Precinct Structure Plan

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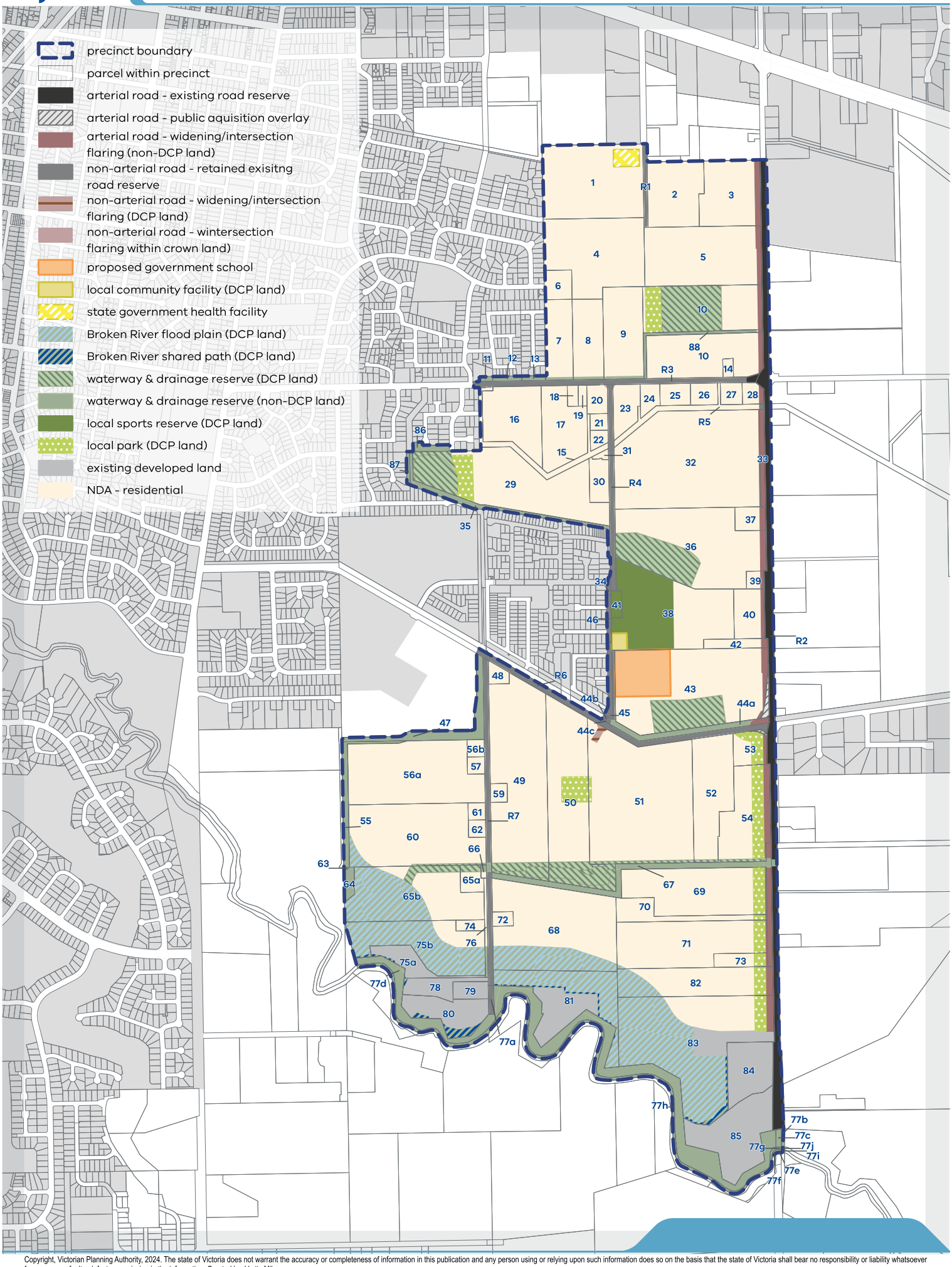

3.3 Land Use Budget

The land use budget in Table 1 provides a summary of the land required for transport, community facilities, health and education facilities, and open space and identifies the total amount of land available for development in the PSP. The Shepparton South East Development Contributions Plan provides the details of the land use budget on each parcel.

The Net Developable Area (NDA) is established by deducting the land requirements for transport, community facilities, public and private education facilities, open space (sports reserves and local parks), drainage corridors, conservation areas and other encumbered land from the Gross Developable Area (GDA).

"The GDA for Shepparton South East PSP is 384.81 hectares while the NDA is 248.63 hectares. This equates to approximately 64.61% of the land within the Shepparton South East PSP area being available for development.

Shepparton South East PSP will generate approximately 2,980 dwellings to accommodate more than 7,200 new local residents.

The land budget has been prepared to reflect current advice from Greater Shepparton City Council regarding land required for drainage assets as part of the preparation of the drainage strategy for the PSP area. The land required for drainage assets may be subject to minor refinement through the subdivision process.

Table 1 Summary land use budget

DESCRIPTION	HECTARES	% OF TOTAL	% OF NDA
TOTAL PRECINCT AREA (Ha)	**384.81**		
TRANSPORT			
Arterial Road - Existing Road Reserve	8.25	2.14%	3.32%
Arterial Road - Public Acquisition Overlay	0.27	0.07%	0.11%
Arterial Road - New / Widening / Intersection Flaring (non-DCP land)	7.08	1.84%	2.85%
Non-Arterial Road - Retained Existing Road Reserve	10.25	2.66%	4.12%
Non-Arterial Road - Intersection Flaring within Crown Land	0.004	0.00%	0.00%
Non-Arterial Road - New / Widening / Intersection Flaring (DCP land)	0.21	0.06%	0.09%
SUB-TOTAL TRANSPORT	**26.07**	**6.8%**	**10.49%**
COMMUNITY & EDUCATION			
Proposed Government Primary School	3.50	0.91%	1.41%
Local Community Facility (DCP land)	0.35	0.09%	0.14%
Potential State Government Health Facility	0.60	0.16%	0.24%
Sub-total Community & Education	**4.45**	**1.2%**	**1.8%**
OPEN SPACE			
UNCREDITED OPEN SPACE			
Broken River Floodplain (DCP Land)	29.72	7.72%	11.95%
Broken River Shared Path (DCP Land)	1.35	0.35%	0.54%
Waterway and Drainage Reserve (DCP Land)	17.13	4.45%	6.89%
Waterway and Drainage Reserve (non-DCP Land)	22.65	5.88%	9.11%
SUB-TOTAL UNCREDITED OPEN SPACE	**70.85**	**18.41%**	**28.49%**
CREDITED OPEN SPACE			
Local Sports Reserve (DCP land)	6.44	1.7%	2.59%
Local Network Park (DCP land)	7.44	1.9%	2.99%
SUB-TOTAL CREDITED OPEN SPACE	**13.88**	**3.6%**	**5.58%**
TOTAL ALL OPEN SPACE	**84.72**	**22.0%**	**34.08%**
OTHER			
Existing developed land	20.94	5.44%	8.42%
TOTAL ALL OTHER	**20.94**	**5.44%**	**8.42%**
TOTAL NET DEVELOPABLE AREA (NDA)	**248.63**	**64.61%**	

TABLE NOTE: The summary land budget included in this table clearly sets out the NDA for the PSP. The NDA will not be amended to respond to minor changes to land budgets that may result from the subdivision process for any other reason than those stated above unless the variation is agreed to by the responsible authority.

Plan 5
Character and Housing
Shepparton South East Precinct Structure Plan

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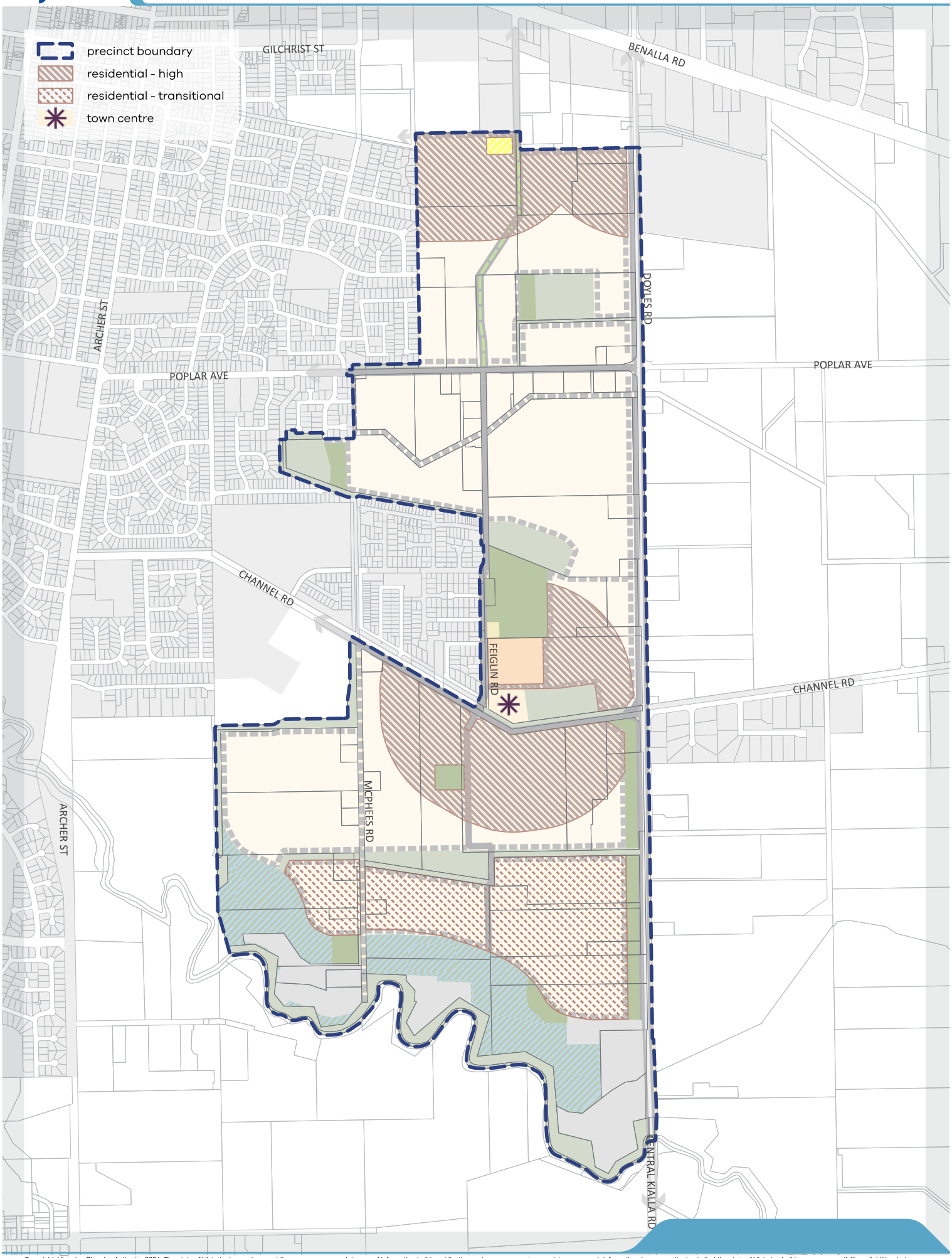

4.0 IMPLEMENTATION

4.1 Character, Heritage & Housing

4.1.1 Character and Heritage

REQUIREMENTS	
R1	Development of land adjoining the Broken River must respect environmental values and its Aboriginal cultural heritage significance.
R2	Subdivision for residential development must provide for a diverse neighbourhood character by providing a range of lot sizes and dwelling types in appropriate locations across the Precinct, including achieving preferred average densities as specified in Table 2.
R3	Visual character elements must be incorporated into the design of streets, waterway and drainage reserve land, public open space and local convenience centres where appropriate to the satisfaction of the responsible authority.
R4	All public landscape areas must be planted and designed to the satisfaction of the responsible authority.
R5	Street tree planting must use locally appropriate species and be consistent with any guidance provided on the relevant cross sections in Appendix 5.4, unless otherwise approved by the responsible authority.
R6	Where retaining structures or changes to ground levels are necessary, they must be incorporated as a positive landscape or site feature by: • Integrating retaining structures as part of the building design by including the level difference within the building where practicable • Retaining walls or changes in ground level over 1m in height should be attractively designed and landscaped, and stepped where practicable, to avoid visual dominance or overshadowing effects as viewed from the street or the boundary of the application area. • Have regard to the balanced cut and fill requirements and ensure that lots are filled 300 millimetres above the applicable 1%AEP as determined by the Catchment Management Authority.

GUIDELINES	
G1	Subdivision layouts and development should respond to and address the relevant provisions of the Urban Design Guidelines for Victoria.
G2	Landmark sites and gateway entry points should be planned, developed, and landscaped to create a sense of arrival and entry.
G3	Aboriginal and post contact heritage should be recognised through the design of public places, infrastructure and interpretive installations. Opportunity should be explored through cultural heritage interpretation trails along public path networks in areas of known historic cultural history or areas of Aboriginal cultural heritage sensitivity in consultation with the Yorta Yorta Nation Aboriginal Corporation (YYNAC).
G4	A consistent suite of lighting and furniture should be used across neighbourhoods, appropriate to the type and role of street or public space to the satisfaction of the responsible authority.
G5	Any retaining structures within public and private spaces (except for those which are part of a building) should be: • no more than 1.0 metre in height between a dwelling and a street or public space, or where visible from a street or public space • set back at least 1.0 metres from any building envelope • staggered, with a minimum 0.75 metre distance between each stagger to allow for the inclusion of landscaping where cutting and filling is deeper than 1.0 metre • positioned so that associated drainage infrastructure and structural foundation are fully located within the same lot
G6	Unless a permit is specifically required by other provisions of the *Greater Shepparton Planning Scheme*, demolition of existing buildings associated with the rural and agricultural uses is encouraged to facilitate land amalgamation.

GUIDELINES	
G7	New application for use and development of a land for Accommodation use should be assessed against any requirements and guidelines under the PSP, the DCP and the UGZ schedule that are applicable to residential subdivision.

4.1.2 Housing

REQUIREMENTS	
R7	Residential subdivisions must meet the preferred average density as outlined in Table 2. Where a subdivision proposal represents a single stage or limited number of stages, proponents must demonstrate how the subdivision will contribute to the eventual satisfaction of this requirement through further stages of development.
R8	Residential subdivisions must deliver a broad range of lot sizes capable of accommodating a variety of housing types to cater to a range of lot prices and promote affordability. Table 2 and Table 3 should be used as a guide to demonstrate this requirement has been met.
R9	New subdivision that proposes to exceed the preferred average dwelling density must demonstrate to the satisfaction of the responsible authority that the planned DCP infrastructure can accommodate the proposed increase in dwelling density.
R10	Until the Poplar Avenue/Doyles Road intersection and the Channel Road/Doyles Road intersection are constructed and all land required is vested in the relevant public authority, a planning permit may be issued for subdivision that creates super lots, roads, open spaces or utility service installations subject to an approved masterplan that is generally consistent with the PSP and complies with the UGZ schedule and will not result in a combined total number of 800 residential lots in the precinct.
R11	Subdivision layouts including road alignment, lot diversity and housing typologies must positively respond to the existing and natural features of the area, including (but not limited to): • Topographical features and slopes • Landscape values • Broken River environs including its flood plain areas (including any impacts of the 1% AEP) • GMW irrigation channels and drains, where retained • Rural landscape interface east of Doyles Road • Existing operational orchards and industry • Existing adjoining residential areas in the Broken River corridor and current urban area of Shepparton
R12	Development must provide for active frontages to adjoining open space, landscape values areas and waterway corridors

GUIDELINES	

G8	Subdivision should deliver a broad mix of lots that are an appropriate size and shape to support the planned neighbourhood character of the precinct, as specified in Table 3, by:
	• Providing a range of lot sizes, widths, depths and densities
	• Providing higher residential densities and more intensive building typologies 400m walkable catchment areas as outlined in Table 2 and Plan 5 that will:
	  ◦ support the viability and vibrancy of activity centres, have good access to community infrastructure and amenities
	  ◦ have good access to public transport and support walking and cycling
	  ◦ make a positive impact to planned neighbourhood character and identity

GUIDELINES	
G9	Where applicable, subdivisions should: • retain lots around existing dwellings should be designed to ensure that the future subdivision of retained lots will appropriately integrate with the surrounding subdivision layout and respond to internal lot flood levels and stormwater drainage of existing allotments. • incorporate natural and constructed design elements, which respond to local heritage, neighbouring land uses and topography to assist in place making and the achievement of a "sense of place". • respond sensitively to the visual setting and character of Aboriginal and - any post-contact heritage places and their values. • be designed to maximise the number of connections and direct views to the open space network, Broken River, community facilities and the local convenience centre.
G10	Subdivision should provide a street separating private lots from adjoining open space, landscape value areas, waterway corridors and drainage assets. If a street is not provided: • a "paper road" should be provided along the lot frontage that includes a footpath or shared path with a minimum dimension of 1.5 metres • lots should directly address the open space/waterway corridor and maximise opportunities for informal passive surveillance • vehicle access should be provided via a rear laneway This must be to the satisfaction of the responsible authority, GMW and CMA where adjacent to a waterway or drainage asset. See Appendix 5.4 for cross section guidance.
G11	An application for subdivision of land into residential lots or development of land for residential or mixed use purposes should provide affordable housing as defined by the *Planning and Environment Act 1987*. The affordable housing should be located within the walkable catchment and provide for a range of housing typologies to meet demonstrated local need.
G12	Subdivision applications for super-lots for future medium density, high density, or integrated housing should demonstrate: • Expected dwelling yield. • Connections and active interfaces with adjacent streets, open space and waterways • Safe and effective internal vehicle and pedestrian circulation
G13	Lots should front (in order of priority where a lot fronts multiple elements): • public open space • landscape areas • local access streets • connector roads • Doyles Road Interface • Broken River Interface • GMW drainage reserves. Built form on corner lots should positively address both frontages through the use of sensitive architectural treatments and landscaping. Note: where lots front open space, the dwelling front access must front the open space and not be a side or rear elevation.
G14	Specialised housing forms, such as retirement living, or aged care should: • Be integrated with adjoining development. • Be accessible by public transport. • Not present a barrier to movement through the surrounding road network

Table 2 Neighbourhood Character and Housing Density Guide

Development Area	Neighbourhood Character Statement	Preferred Average Density (dwellings per NDHa)
Lower density residential within transitional area.	Development will have a lower density character transitioning into larger lots (up to 1000sqm) providing an interface to existing rural living and the Broken River open space corridor to the south. Development will generally comprise detached typologies on larger lots, with smaller lot sizes and semi-detached typologies provided where appropriate near the transition to standard densities to the north around areas of higher amenity. Small Lot Housing Code products are discouraged in most cases.	8
Standard residential outside of 400m walkable catchment area.	Development will have a traditional suburban neighbourhood character characterised of buildings up to two storeys in height. Housing will generally comprise detached and semi-detached typologies, however more intensive forms of development such as terraced homes and townhouses should be provided in proximity to areas of high amenity, or where it can be demonstrated that a positive contribution will be made to neighbourhood character. Small Lot Housing Code products may be utilised in limited cases.	12
Residential within 400m walkable catchment area.	Development will have an urban neighbourhood character, characterised of buildings up to two to three storeys in height. Housing will comprise a variety of typologies, including townhouses (including rear-loaded products), and detached dwellings. Small Lot Housing Code products are encouraged in appropriate locations to meet the overall density target.	15

Table 3 Housing Type by Lot Size

The following table provides an example of the typical housing types that might be provided on a range of lot sizes that support the housing diversity objectives.

Housing Types That May Be Supported	Lot Size Category		
	LESS THAN 300M2	301-600M2	MORE THAN 600M2
Small lot housing (including town houses and attached, semi-detached and detached houses)			
Dual occupancies, including duplexes			
Detached housing			
Multi-unit housing sites (including terraces, row houses and villas)			
Stacked housing (including apartments and walk up flats)			

Plan 6
Local Convenience and Employment
Shepparton South East Precinct Structure Plan

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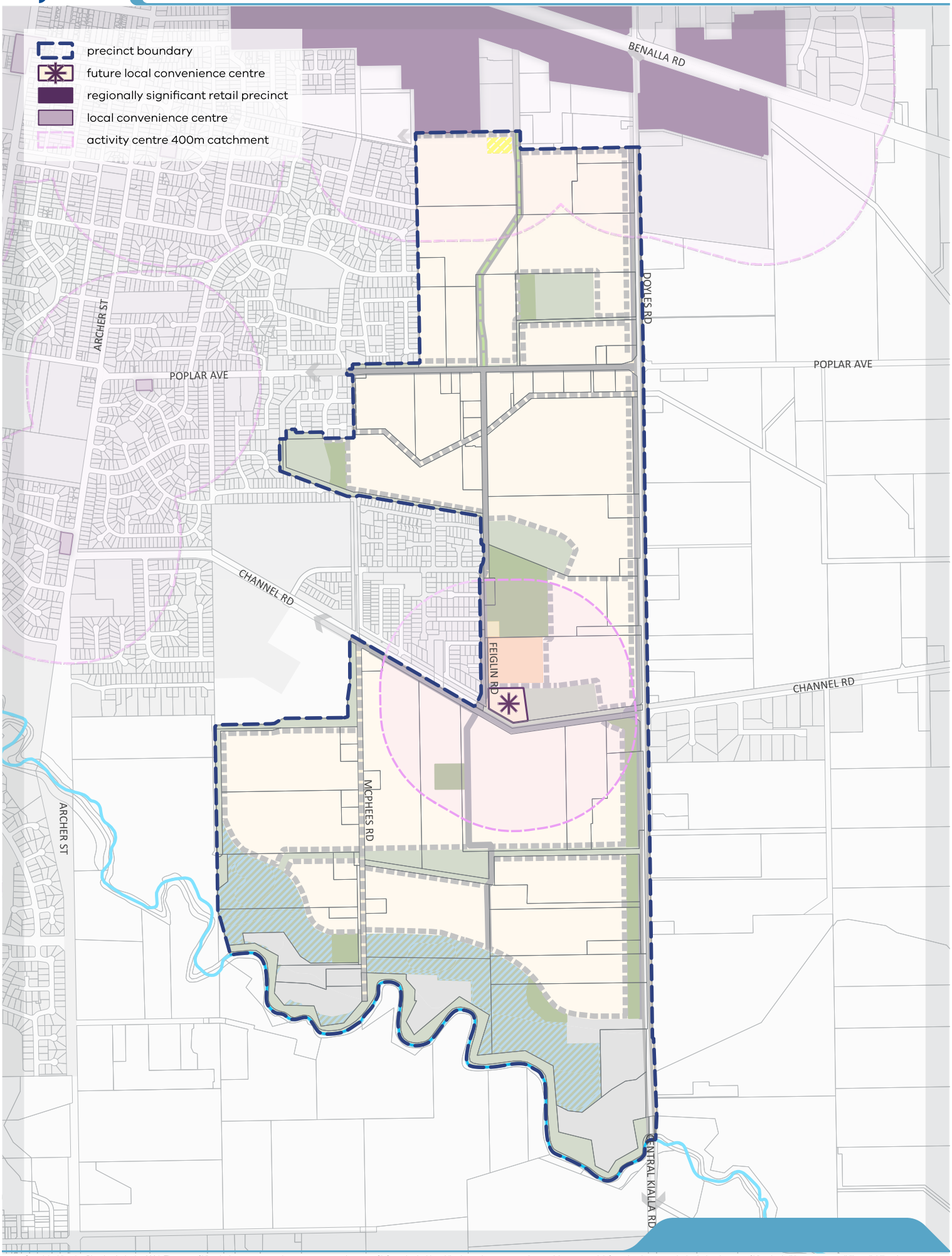

4.2 Town Centre & Employment

REQUIREMENTS	
R13	A Local Convenience Centre is to be developed proximate to the location shown on Plan 6 and consistent with the role and function of the centre as outlined in Table 4.
R14	Applications involving the subdivision and development of the Local Convenience Centre must demonstrate: • how the proposed design has appropriately considered and responded to the Performance Criteria in Appendix 5.1 and design principle in Appendix 5.2 having regard to local context and the functional requirements of the proposed activity. • the provision of safe and continuous links to surrounding walking, cycling and pt networks • that the street layout and location of car park access points provide straightforward links to the connector road network
R15	Buildings as part of a Local Convenience Centre must: • Provide active and articulated frontages to Channel and Feiglin Roads and any local access streets • Locate any servicing infrastructure, loading areas and/or car parking to the rear or centre of the allotment in a manner that protects the visual amenity of the precinct

GUIDELINES	
G15	The subdivision and design of any local convenience centre should: • Provide for a range of lot configurations to cater for various uses, including small enterprise. • Provide for a mix of tenancies • Consider the inclusion of two-storey built form and ensure that all buildings are well-articulated and of a high-quality design • Feature a high degree of permeability and clear circulation to ensure that key destinations with the centre are easily located • Locate any servicing infrastructure or car parking to the rear or centre of the allotment in a manner that protects the amenity of the surrounding neighbourhood Provide convenient and accessible pedestrian connections with the surrounding open space network
G16	Additional local convenience centres may be provided subject to demonstrating that they do not compromise the function and role of nearby retail or commercial centres.

4.2.1 Retail Hierarchy

The PSP sits proximate to both the Shepparton Central Business District (CBD) and Shepparton Marketplace which are classified as a Central Activities District (CAD) and Regional Retail Centre respectively in the *Shepparton Commercial Activity Centres Strategy* (Essential Economics Pty Ltd, 2015, Ethos Urban Pty Ltd, 2022). The Shepparton CBD is the primary focus for public and private investment in retail, commercial, administrative and community facilities. The Shepparton Marketplace is a Regional Centre providing retailing relevant to the surrounding region and complementing the higher order Shepparton CBD. As a result, other commercial and retail centres within Shepparton are used to complement the services provided by the Shepparton CBD and Shepparton Marketplace rather than compete with it.

The proposed convenience centre within the PSP is considered a 'local centre' in the *Shepparton Commercial Activity Centre Strategy* (Essential Economics Pty Ltd, 2015, Ethos Urban Pty Ltd, 2022) and is intended to meet local convenience needs only. A local centre is defined as a small activity centre that serves a local convenience role to a surrounding urban locality. The need for this local centre is generated by the forecasted population in the area and will provide a walkable convenience retail offering for the new community.

The local convenience centre will service the basic retail needs of the local and nearby residents, visitors to the community centre and schools, and passing traffic on Channel Road. The design of the centre will directly integrate with the adjoining neighbouring community facilities and open space to form a vibrant community hub.

Table 4 Shepparton South East Town Centre Hierarchy

Town Centre	Retail Floor Space	Commercial Floor Space	Location And Uses
Shepparton Market Place	14,876 sqm		2km from Shepparton CBD. Regional retail centre that provides access to a large format variety store, supermarket and a range of specialty food, clothing and other shops, drawing visitors from Shepparton, the wider municipality and the broader northcentral Victorian catchment.
Shepparton South East Local Convenience Centre	3,000m2 – 3,750m2	500m2 – 700m2	The Local Convenience Centre will have the opportunity to cater for a small-scale supermarket operator, specialty retail and non-retail shopfront commercial businesses.

Table 5 Anticipated Employment Creation within Precinct

Land Use	Employment Measure	Jobs Per Employment Measure	Anticipated Quantity In Precinct	Anticipated Quantity Of Jobs
Local town centre and convenience retail	40	Jobs/Ha	0.5	20
Community centre including childcare centre	18	Jobs / centre	1	18
Potential State health facility	125	Jobs / Ha	0.6	75
Government Primary School	11.5	Jobs / campus	1	12
Home based business	0.05	1 Jobs / dwelling	2,980	149
TOTAL ESTIMATED				**274**

Plan 7
Open Space and Community Facilities
Shepparton South East Precinct Structure Plan

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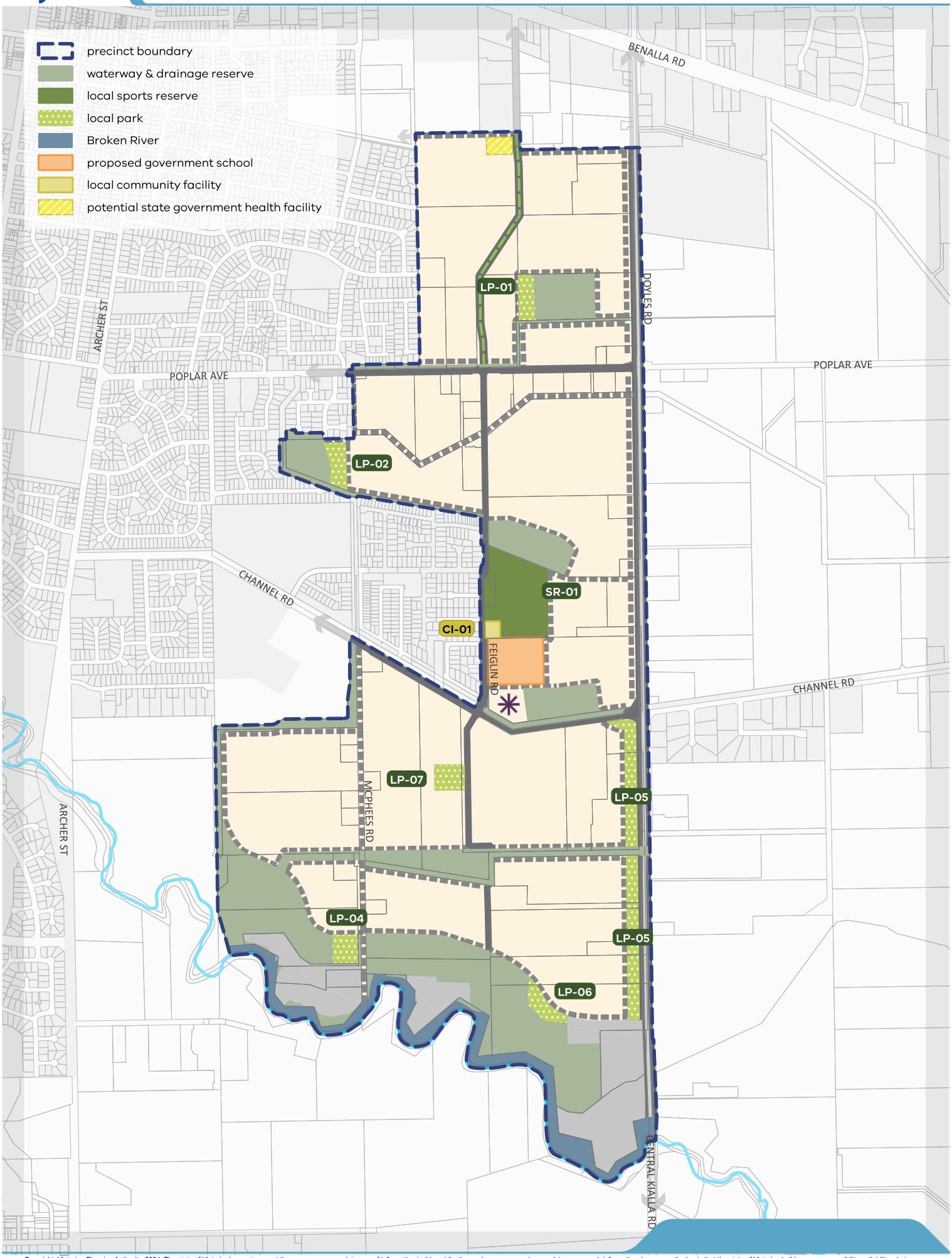

4.3 Open Space, Biodiversity, Community Facilities & Education

4.3.1 Open Space & Biodiversity

REQUIREMENTS	
R16	Existing high-quality native vegetation as identified in Plan 2 must be retained within public space, including road reserves and open spaces, where safe and practical.
R17	The urban interface with the Broken River must protect and enhance the natural waterway environs.
R18	Trees in streets, civic places and the open space network must be provided in generally in accordance with any Council Street Tree Policy or equivalent and: • Complement the existing native indigenous and exotic species. • Be larger species to facilitate continuous canopy cover. • Be planted in modified and improved soil to support tree establishment. • Be appropriately sized to nature strips, nearby utilities and buildings. • Suited to local conditions. Or, be provided to the satisfaction of the responsible authority.

GUIDELINES	
G17	Subdivision and development involving the delivery of the open space network should: • be generally provided where shown on Plan 7 and as outlined in Table 6. • make a positive contribution to neighbourhood character and identity • support the delivery of diverse housing products. • be landscaped to the satisfaction of the responsible authority. • maximise the amenity and value of service open space through the provision of shared paths, trails, and other recreational elements. • respond to the values of adjoining open space, waterways, and Aboriginal and post-contact heritage. • provide flexible recreational opportunities that allow for the anticipated range of sporting reserves, and local parks and recreational uses required by the community. • feature low scale and visually permeable fencing to facilitate public safety and surveillance. • retain existing vegetation, and provide indigenous revegetation opportunities to provide habitat and movement corridors for local fauna. • be located adjacent to significant landscape value areas and waterways to create and or enhance any buffer area.
G18	Subdivision and development involving the delivery of any linear open space should: • Enhance the wider walking and cycling network. • retain existing vegetation, and provide indigenous revegetation opportunities to provide habitat and movement corridors for local fauna. • Connect and integrate key neighbourhood destinations and landscape features. • Support neighbourhood legibility and sense of place. • Enhance the diversity of open space environments. • Incorporate drainage depressions and seasonal wetlands where practical. • Provide active frontages. • Avoid vehicle crossings
G19	Alternative locations and configurations for credited open space, as illustrated on Plan 7, may be considered subject to: • Walkable access as demonstrated on Plan 10 not being adversely impacted. • Not diminishing the quality or usability of the space. • Not adversely impacting on the overall diversity of the precinct open space network. • Being equal to or more than the passive open space provision shown in Table 6. • Still being supported by the preferred path network outlined in Plan 10.

GUIDELINES	
G20	Where open space as illustrated on Plan 7 spans multiple parcels, the first development proponent to lodge a permit application for land containing the park should prepare a master plan for the entire park. Consultation with all relevant landowners should be undertaken as part of the master plan preparation.
G21	The layout and design of waterways, wetlands and retarding basins (including the design of paths, bridges and boardwalks, and the stormwater drainage system) should integrate with biodiversity and natural systems to the satisfaction of the relevant responsible authorities and be designed in in consideration of the *Growling Grass Frog Habitat Design Standards* (DELWP 2017) to provide best practice habitat standards for local fauna.

Table 6 Credited Open Space Delivery Guide

The following table sets out the open space provision expected to be delivered within the PSP area. The table is linked to Appendix 5.3 open space delivery guide.

Park Id	Area	Type	Attributes	Responsibility	Property #
LP-01	1	Local park	Standard local park abutting retardation basin	Greater Shepparton City Council	10
LP-02	1	Local park	Standard local park	Greater Shepparton City Council	29
LP-04	1	Local park	Standard local park abutting Broken River floodplain	Greater Shepparton City Council	75b
LP-05	4.41	Local park	Linear open space corridor in Doyles Road with floodwater conveyance at 1%AEP(CC)	Greater Shepparton City Council	53, 54, 69, 70, 71, 73, 82, 83
LP-06	1	Local park	Standard local park abutting Broken River floodplain	Greater Shepparton City Council	83
LP-07	1	Local park	Standard local park abutting retardation basin	Greater Shepparton City Council	50, 51
SR-01	6.44	Sporting Reserve	Multi-Purpose Sports Reserve One senior size football and two senior size soccer ovals adjoining proposed school site with, lights, pavilion, playground and ancillary facilities	Greater Shepparton City Council	38, 41

4.3.2 Community Facilities & Education

REQUIREMENTS	
R19	Proposed school sites must have a minimum of two road frontages (three preferred), one of which must be a connector road abutting the school with a road easement wide enough to allow for student drop-off zones and school bus movement and parking while accommodating on-street indented parking and two-way traffic movement
R20	The community facility site must be directly abutting the proposed government primary school site and provide an active interface with any nearby open space.
R21	The location of key entries to community facilities must allow for safe and convenient pedestrian and cyclist access for all ages and abilities.
R22	Education facilities, community facilities and sports reserves must be co-located and accessible by active and public transport routes and provide active street frontages.
R23	Any lot created for a proposed government school site must be designed and serviced to the satisfaction of Department of Education (DE).
R24	Any lot created for a proposed state government facility must be designed and serviced to the satisfaction of Department of Health. (DH)

GUIDELINES	
G22	Subdivision and development should facilitate integration of schools, sports reserves and community facilities where they are co-located and promote: • integration with neighbouring facilities to maximise efficiencies through the sharing of car parking and other complementary infrastructure. • out-of-hours use, street activation and permeability. • safe and convenient pedestrian and cyclist shared path access
G23	Educational, community or civic infrastructure not shown on Plan 7 should be located within or proximate to local convenience centre, community hub or council community building, as appropriate to support: • Integration with neighbouring facilities to maximise efficiencies through the sharing of car parking and other complementary infrastructure: • Out-of-hours use, street activation and permeability. • Safe and convenient pedestrian and cyclist shared path access.
G24	State provided public health services should be located within 5km to local health services and within 2km to a train station.
G25	The land identified as the potential State Government Health Facility may be used for an alternative purpose, which is generally in accordance with the PSP and consistent with the provision of the applied zone, until such time the Department of Health requires the land. Any use must be consistent with the priorities of the Victorian Public Health and Well-being Plan. When the land is required by the Department of Health, the land must be finished to a standard (clean of any identified contamination and serviced as would normally be expected of any residential lot) that satisfies the requirements of the Department of Health prior to the transfer of the land back to the Department of Health.
G26	Where the responsible authority is satisfied that land shown as a potential state health facility is unlikely to be used for that purpose, the land may be used for an alternative purpose which is generally in accordance with the PSP and consistent with the provisions of the applied zone. The responsible authority must be in receipt of a letter from the Department of Health stating that the land is no longer required, and a minimum of ten years has passed following the gazettal date of the PSP.
G27	Emergency services should have access to the arterial road network to maximise coverage and reduce response times.
G28	Public health and justice services should be located within or adjacent to a community hub or town centre and with access to public transport.
G29	Where the responsible authority is satisfied that land shown as a non-government school site is unlikely to be used for a school at ultimate development of the PSP, that land must be used for an alternative purpose that is compatible with the surrounding land uses and the provisions of the applied zone. Justification should be provided in generally in accordance with the VPA's guidance note titled Development of Non-Government School Sites for an alternative purpose.
G30	The indicative layout of community facilities and open space as illustrated in Plan 7 may be altered to the satisfaction of the relevant responsible authorities. Where the alterations may impact a proposed government school site, the Department of Education (DE) should be consulted by the responsible authority to ensure that the changes are also to the satisfaction of that Department.
G31	Common boundaries of school sites with residential uses should be avoided whenever possible to avoid potential amenity impacts on residential areas and potential future land use conflicts.

Plan 8
Bushfire Hazard Areas
Shepparton South East Precinct Structure Plan

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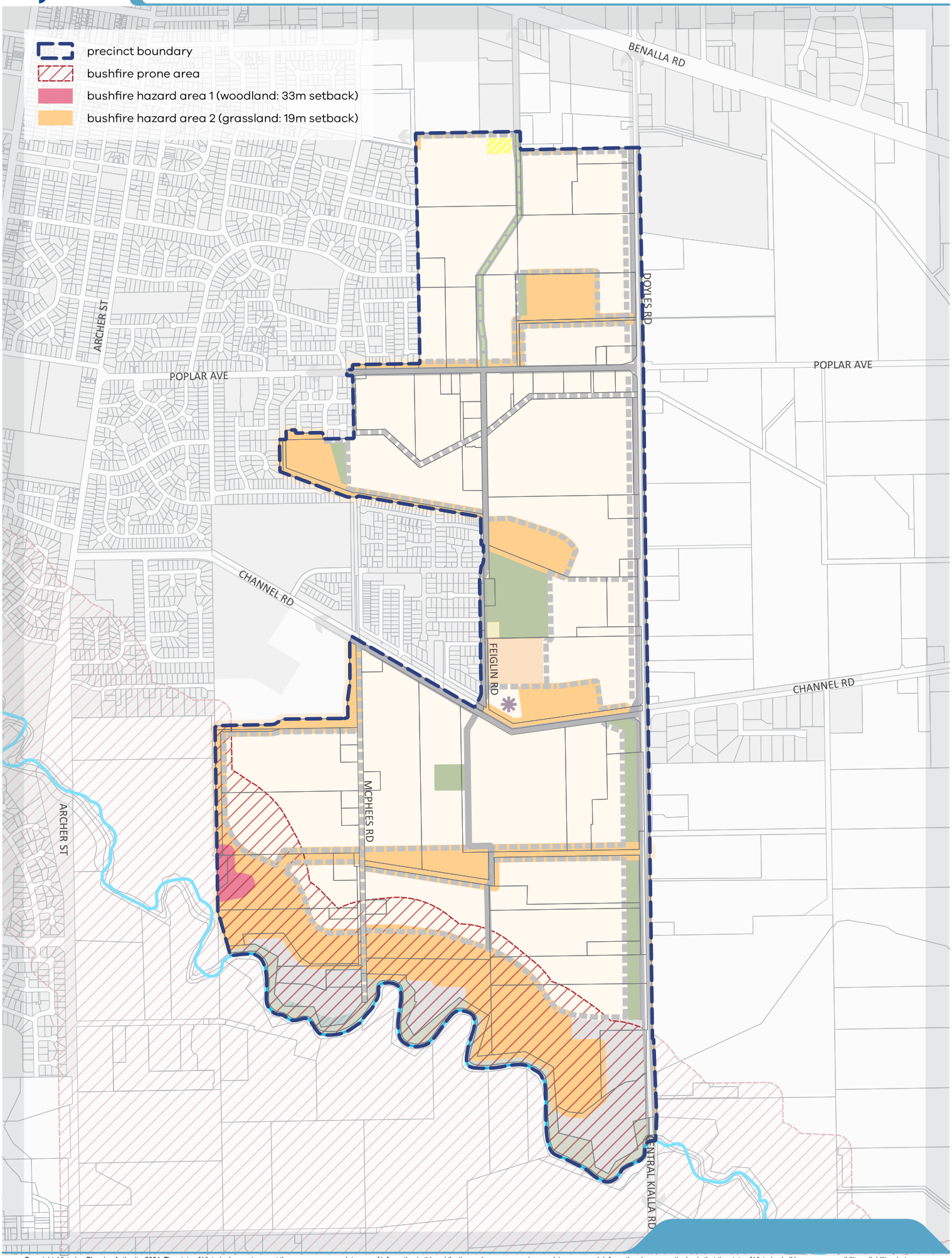

4.4 Bushfire Management

REQUIREMENTS	
R25	Vegetation within bushfire hazard areas shown on Plan 8 must be managed in accordance with the bushfire hazard designations to the satisfaction of the responsible authority and relevant fire authority.
R26	Development adjoining bushfire hazards shown on Plan 8 must be setback in accordance with the corresponding bushfire hazard designations to the satisfaction of the responsible authority and relevant fire authority and as outlined in cross section 4.
R27	Where a setback from a bushfire hazard area is required, unless otherwise agreed by the responsible authority and relevant fire authority, vegetation within the setback must be managed as follows: • Grass must be short cropped and maintained during the declared fire danger period • All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period • Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building • Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building • Shrubs must not be located under the canopy of trees • Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres • Trees must not overhang or touch any elements of the building • The canopy of trees must be separated by at least 2 metres • There must be a clearance of at least 2 metres between the lowest tree branches and ground level

GUIDELINES	
G32	All vegetation outside of a bushfire hazard area shown on Plan 8 should be managed to ensure a low risk of bushfire.
G33	Subdivision adjoining a bushfire hazard area should include a publicly accessible perimeter road.
G34	Subdivision should include a network of streets that provide multiple evacuation routes away from bushfire risks and areas of bushfire hazard.
G35	Where a setback is required from a bushfire hazard, the setback should be provided on public land where practical as outlined in cross section 4.
G36	All fencing adjoining bushfire hazard areas shown on Plan 8 should be made from non-combustible materials.
G37	Lot design adjoining bushfire hazard areas, shown on Plan 8 should allow for the provision of a static water supply of 2,500 litres for personal firefighting where practical.
G38	Landscape design and plant selection in open spaces, including waterways and drainage corridors, should not increase bushfire risk.
G39	Interim measures may be required to manage grassfire risk at interfaces with non-developed land or land that is bushfire prone to the satisfaction of the responsible authority and relevant fire authority.

Plan 9
Road Network
Shepparton South East Precinct Structure Plan

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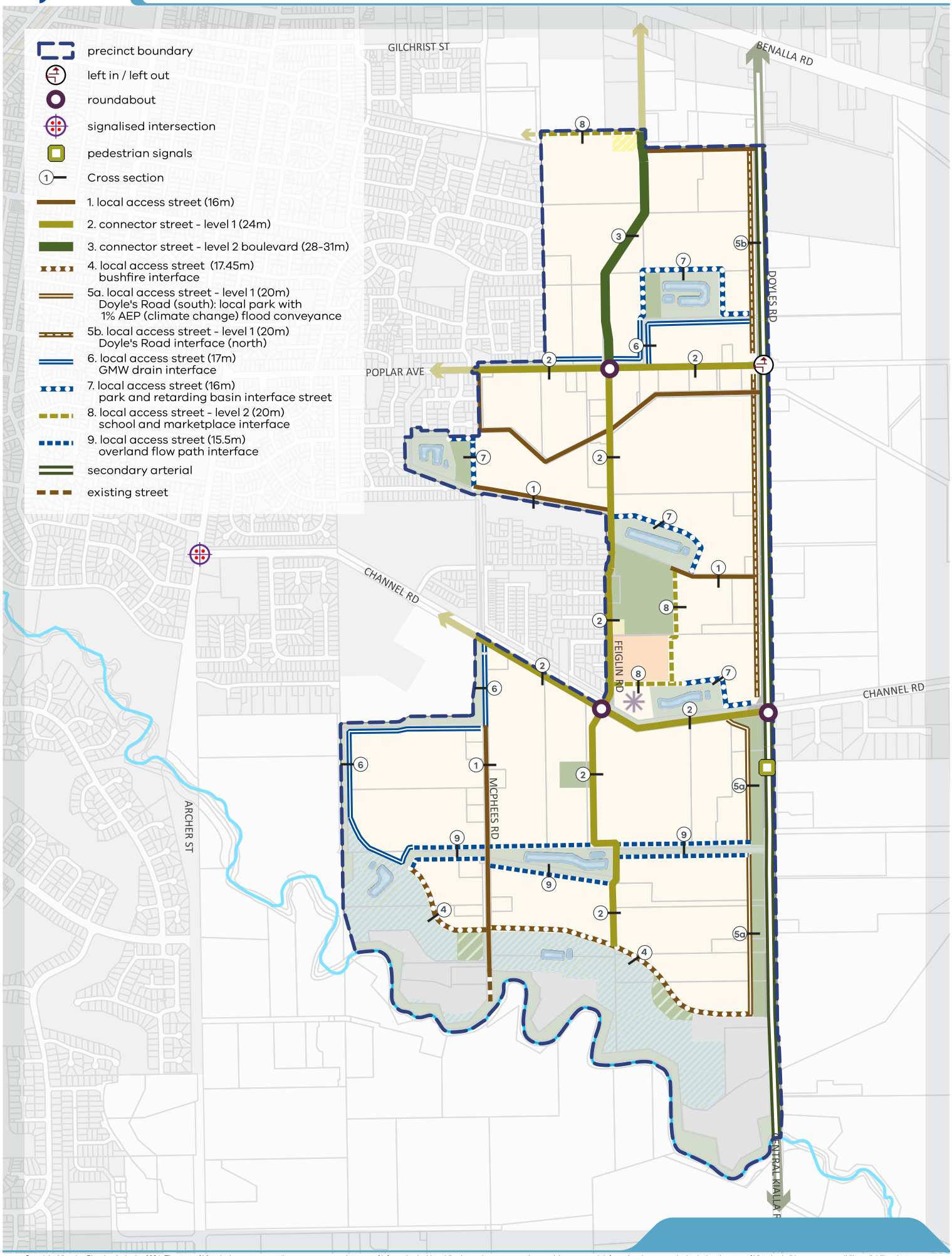

Plan 10
Public Transport & Pathways
Shepparton South East Precinct Structure Plan

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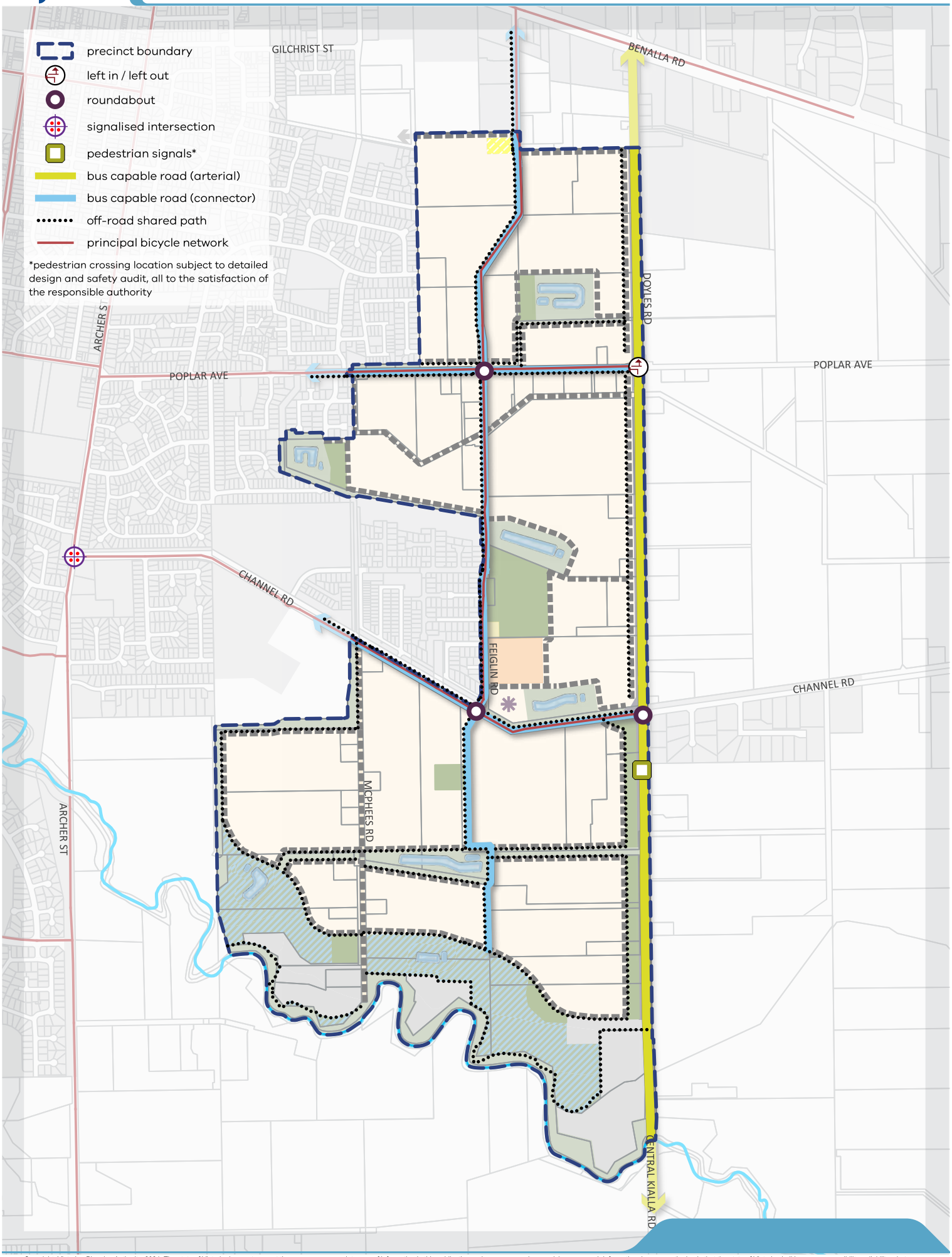


4.5 Transport and Movement

4.5.1 Public Transport

REQUIREMENTS	
R28	Any street nominated in Plan 10 as bus capable must be constructed (including partial construction where relevant) generally in accordance with the corresponding cross section in the PSP and the Public Transport Guidelines for Land Use Development, to the satisfaction of the coordinating road authority and responsible authority.
R29	The street network must be designed to ensure all households are able to directly and conveniently walk to public transport services.
R30	Where a connector street terminates at a local street, the intersection must be designed to allow buses to U-turn safely.
R31	Bus stop facilities must be designed as an integral part of activity generating land uses such as schools, community facilities, sports reserves and the local convenience centre to the satisfaction of the coordinating road authority and responsible authority.

4.5.2 Walking and Cycling

REQUIREMENTS	
R32	All streets must provide for pedestrian and cycle movement through the provision of:: • Footpaths on both sides of all streets (unless otherwise specified by the PSP or as shown on the relevant street cross sections illustrated at Appendix 5.5) • Shared paths or bicycle paths, where illustrated on Plan 10, or as shown on the relevant street cross sections illustrated at Appendix 5.4 or as specified in another requirement in the PSP • Safe, accessible and convenient crossing points of connector roads and local streets at all intersections, key desire lines and locations of high amenity • Lighting installed along shared, pedestrian, and cycle paths linking to key destinations, unless otherwise agreed by the responsible authority. • Pedestrian and cyclist priority crossing on all intersection slip lanes. • Safe and convenient transition between on- and off-road bicycle networks • Safe and convenient transition between shared paths and bicycle paths on arterial roads and connector streets All to the satisfaction of the coordinating road authority and responsible authority.
R33	Connector or local access streets abutting a school must incorporate a shared path and be designed to achieve slow vehicle speeds and provide designated pedestrian crossing points as required by the responsible authority and demonstrated on cross section 2 and cross section 8.
R34	Shared and pedestrian paths along waterways and drainage reserves must be constructed to a standard that satisfies the requirement of the responsible authority and must be: • Delivered by development proponents consistent with the network illustrated on Plan 10. • Positioned above 1:10 year flood levels with a crossing of the waterway designed above 1:100 flood level to maintain hydraulic function of the waterway • Positioned above the 1:100 year flood level where direct access is provided to the dwelling from the waterway
R35	Bicycle parking facilities including way-finding signage must be provided by development proponents in convenient locations at key destinations such as the local convenience centre and across the open space network.

GUIDELINES	
G40	The alignment of off-road bicycle paths should be designed for cyclists travelling up to 30km/hr.

4.5.3 Street Network

REQUIREMENTS	
R36	Subdivision must include location of roads generally in accordance with Plan 9 with designs generally in accordance with the street cross sections outlined in Appendix 5.4, unless otherwise agreed by the responsible authority, and provide: • Connections to the existing road network including Poplar Avenue, Channel Road, Feiglin Road, Fig Avenue, Zurcas Lane, McPhees Road and Paterson Road • A permeable, direct and safe street network prioritising walking and cycling, particularly walking and cycling to school. • Safe and convenient crossing points of connector roads and local streets at all intersections and on key desire lines as well as crossing waterways. • Safe and convenient transition between on and off road bicycle networks • Convenient access to regional and local points of interest and destinations for effective integration with neighbouring properties, parkland and sports reserves • Direct and convenient walking access to public transport services. • Sufficient separation between crossovers to allow for a minimum of one on-street car park for every two residential lots for private lot access to the road network.
R37	Road networks and street types must be designed and developed to an urban standard generally in accordance with the cross sections in Appendix 5.4 unless otherwise agreed by the relevant authority.
R38	Streets must be constructed to property boundaries where an inter-parcel connection is intended or indicated in the structure plan, by any date or stage of development required or as approved by the responsible authority.
R39	Where a single street spans across multiple properties, that street may consist of multiple cross sections so long as a suitable transition has been allowed between each. Where that street has already been constructed or approved for construction to a property boundary, the onus is on the development connecting into that street to adopt a consistent cross-section until that suitable transition can be made.
R40	Vehicle access to lots fronting arterial roads must be provided from a local internal loop road, interface street or service road all with a continuous shared path to the satisfaction of the road authority.
R41	Where a lot is 7.5 metres or less in width, vehicle access must be via rear laneway, unless otherwise approved by the responsible authority.
R42	Any connector road or access street abutting a community facility must be designed to achieve slow vehicle speeds and provide designated pedestrian crossing points in the vicinity of the site to the satisfaction of the responsible authority.
R43	Roundabouts, where determined to be required at cross road intersections, must be designed to slow vehicles, provide for pedestrian visibility and safety and ensure connectivity and continuity of shared paths and bicycle paths.
R44	Street trees must be provided on both sides of all roads and streets at regular intervals appropriate to tree size at maturity and not exceeding (excluding laneways) utilising locally appropriate species and be consistent with any guidance provided in the relevant cross sections in Appendix 5.4: • 8 – 10 metre intervals for trees with a canopy of less than 10 metres • 10 – 12 metre intervals for trees with a canopy of between 10-15 metres • 12 – 15 metre intervals for trees with a canopy greater than 15 metres

GUIDELINES

G41	The street network should:
	• Provide multiple convenient routes to major destinations such as the local convenience centre and the arterial road network.
	• Provide street block lengths should not exceed 240 metres to ensure safe, permeable and low speed environments for pedestrians, cyclists and vehicle.
	• Avoid cul-de-sacs where practical and not detract from convenient pedestrian, cycle and vehicular connections.
	• Minimise the frequency and impact of vehicular crossovers on verges of connector roads through the use of a combination of:
	  ◦ rear loaded lots with laneway access
	  ◦ vehicular access from the side streets
	  ◦ combined or grouped crossovers
	  ◦ increased lot widths
	• Avoid slip lanes in areas of high pedestrian activity and only provided at intersections between connector streets and arterial roads where they are necessitated by high traffic volumes but with pedestrian priority crossings.
	• Utilise a variety of cross sections in subdivision layouts, and in some instances on arterial roads, to create differentiation, placemaking and neighbourhood character. Alternative cross sections should ensure that:
	  ◦ Minimum required carriageway dimensions are maintained to ensure safe and efficient operation of emergency vehicles on all streets as well as buses on connector streets
	  ◦ The performance characteristics of standard cross sections as they relate to pedestrian and cycle use are maintained
	  ◦ Relevant minimum road reserve widths for the type of street are maintained, unless otherwise approved by the responsible authority
	For the purposes of this guideline, changes to street tree species, between or within streets, does not constitute a variation.

G42	All signalised intersections should be designed having regard to the working document '*Guidance for Planning Road Networks in Growth Areas November 2015*' (as updated), to the satisfaction of the Department of Transport and Planning.
G43	Proposed government school sites should have a minimum of two road frontages (three preferred), one of which must be a bus-capable connector road. All roads fronting school sites must be wide enough to simultaneously accommodate safe and efficient: • pedestrian movement • two-way traffic and cycling movement • student drop-off zones, and indented parking of cars and buses.
G44	Drop off/pick up zones for the proposed government primary school and adjacent kindergarten should be located in close proximity where practicable. The amount of on street parking available on roads and streets which abut a proposed government school site should be maximised.

4.5.4 Local Road Upgrade Implementation

The precinct contains the existing rural road network, including McPhees Road, Channel Road, Feiglin Road, and Poplar Avenue. Facilitating urban development within the PSP requires accompanying urban upgrades to the existing rural road network generally in accordance with Plan 9. Table 7 Local Road Upgrade Deliverables, set out the process for delivering upgrades from rural to urbanised roads in the precinct.

Implementation areas

Existing roads within the PSP will require upgrades to meet an urbanised road standard as defined by Plan 9. New subdivision or development abutting the defined roads is responsible for the upgrade to the deliverable section of road to an urbanised standard in line with the cross sections of the PSP. A deliverable section of road includes:

- The road section(s) abutting the parcel boundaries; and
- The road section(s) from the access point of new subdivision or development to an existing urbanised road network

Initial developers and subsequent developers

Generally, local road network requirements will be implemented through subdivision permit conditions as determined by the responsible authority.

Delivery of roads to an ultimate standard, as illustrated in the cross sections of this PSP, will be achieved by requiring interim works to be undertaken by the 'initial developers' and completed in a piecemeal manner by 'subsequent developers.'

Table 7 Local Road Upgrade Deliverables outlines the delivery responsibilities of initial developers and subsequent developers, unless otherwise agreed by the responsibility authority.

A proponent that first initiates development is the initial developer. A proponent that develops land after the initial developer is a subsequent developer. An implementation concept is shown in Figure 1.

Upgrading Poplar Avenue, Zurcas Lane, Feiglin Road and Channel Road to an urbanised standard specified by the cross sections will generally require additional road reserve on each side for widening as part of their ultimate delivery. The additional road reserve must be vested in Council upon the completion of the road upgrade.

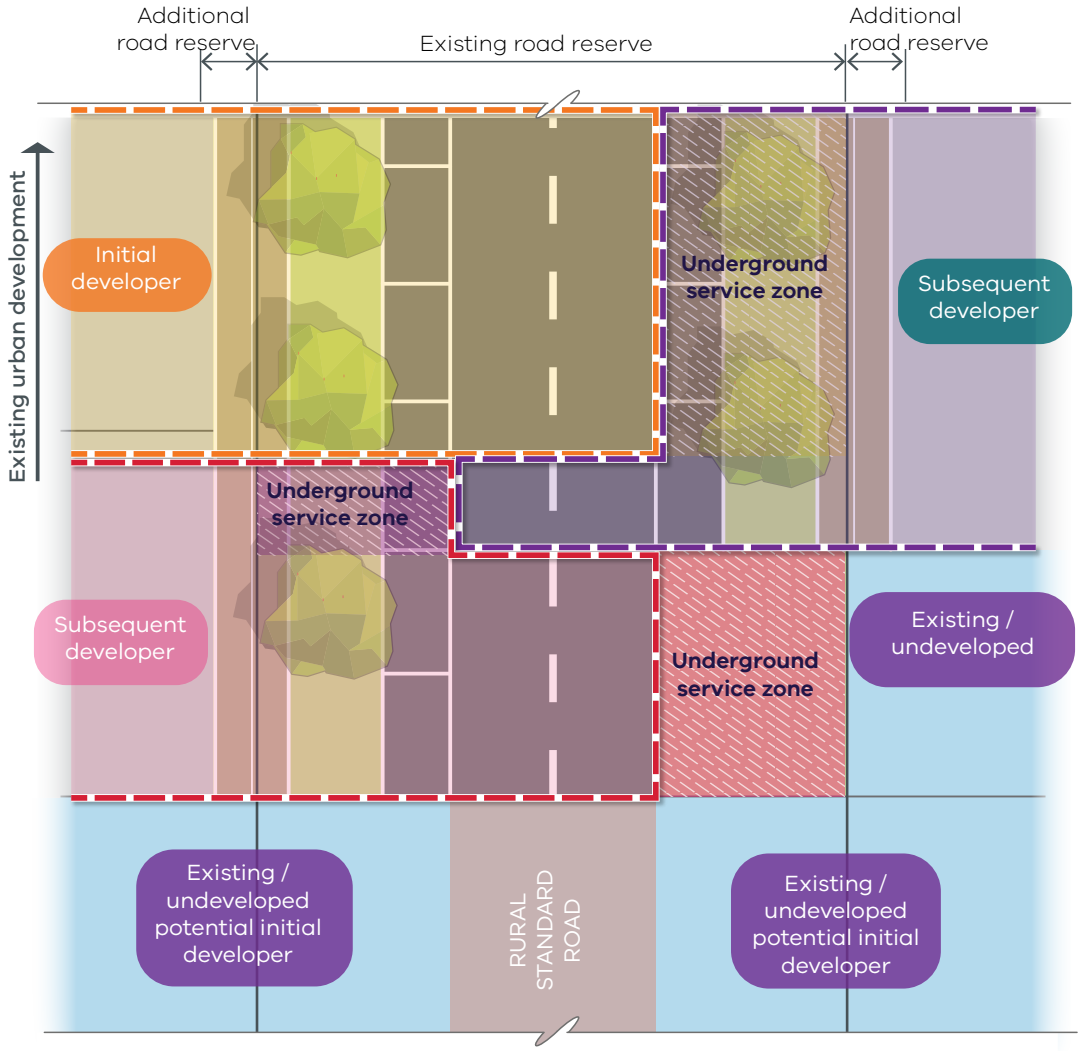
Staging and 'out-of-sequence' development

Road projects must be provided by developers of land within the PSP. 'Out-of-sequence' development occurs when a property is developed outside of the logical sequence. In addition to providing the identified section of road associated with their property, an out-of-sequence developer may be required by the responsibility authority to provide for road infrastructure attributed to the initial developer in the preceding section to ensure continuity of the road's delivery, as detailed in Table 7.

Table 7 Local Road Upgrade Deliverables

Development Proponent	Applicable length	Cross Section
Initial Developer	Full length of deliverable section of road within existing road reserve	• Full width of carriageway
	Full length of deliverable section of road within existing road reserve and additional road reserve (frontage)	• Parking bay • Nature Strip (including landscaping) • Shared path / pedestrian path (to be connected to the existing pedestrian/ cycling network)
	Partial length of deliverable section of road within underground service zone	• Extend/upgrade the underground service to the satisfaction of responsible authority and utility service providers
Subsequent Developer	Remainder of deliverable section of road within existing road reserve and additional road reserve (frontage)	• Carriageway • Parking bay • Nature Strip (including landscaping) • Shared path / pedestrian path (to be connected to the existing pedestrian/ cycling network)
	Partial length of deliverable section of road within underground service zone	• Extend/upgrade the underground service to the satisfaction of responsible authority and utility service providers

Figure 1 Local Road Upgrade Implementation Concept



Plan 11
Interface Impact Areas
Shepparton South East Precinct Structure Plan

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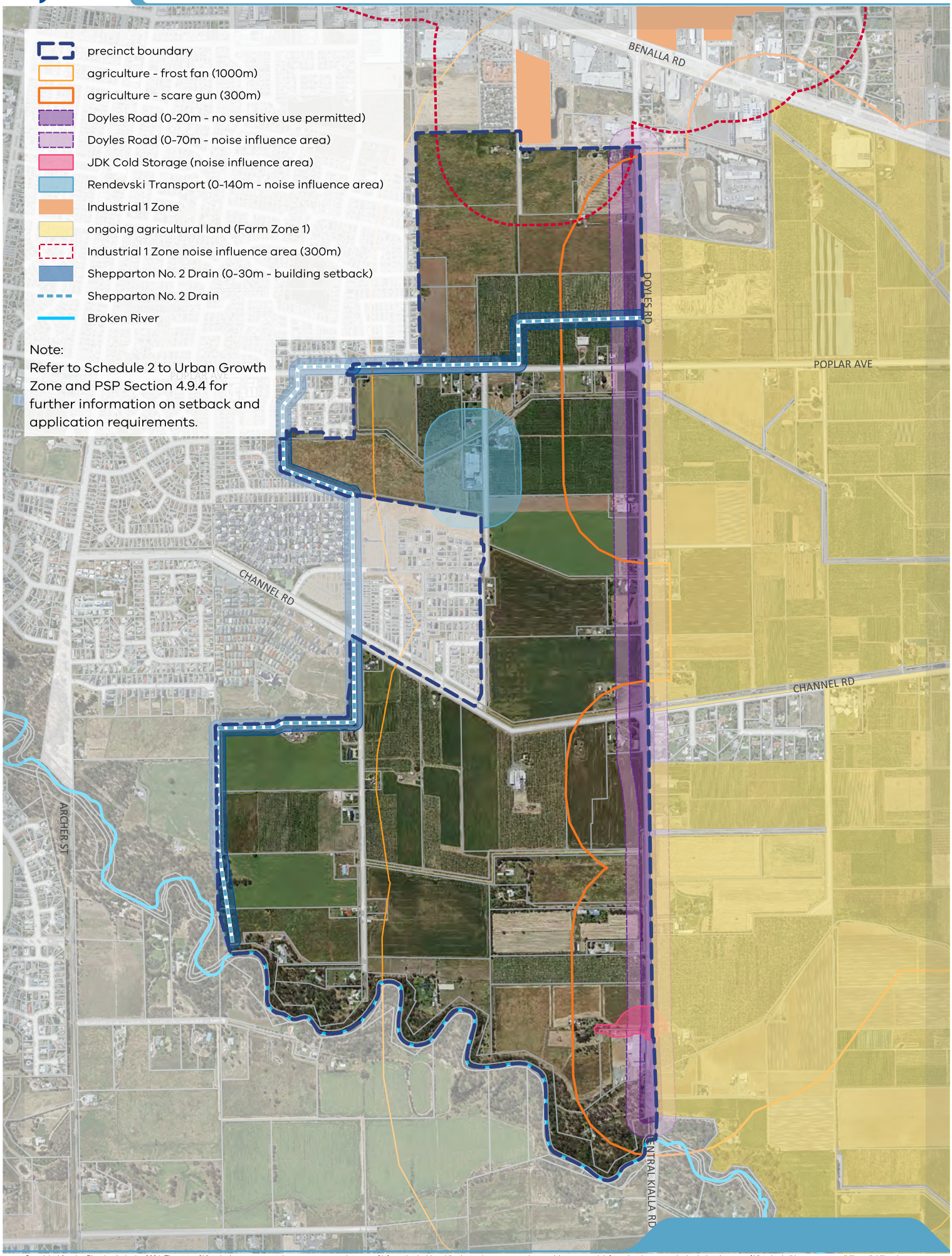

4.6 Interface Areas

REQUIREMENTS	
R45	To manage agricultural, industry and transport related noise impacts, an acoustic assessment must be undertaken for development which results in a 'noise sensitive area' (as defined in Regulation 4 of the *Environment Protection Regulations 2021*) within all areas identified as an Interface Impact Area on Plan 11 in accordance with requirements as outline within Schedule 2 to the UGZ, to the satisfaction of the responsible authority
R46	Sensitive uses must not be permitted within 20m of the future Doyles Road reserve in accordance with PSP cross section 5.

GUIDELINES	
G45	As existing orchard uses transition out of the precinct, a 40m setback from future sensitive uses to the boundary of an active orchards should be delivered, to the satisfaction of the responsible authority.
G46	Lots should interface with GMW drains as per PSP cross section 6 to the satisfaction of the responsible authority.

Plan 12
Integrated Water Management
Shepparton South East Precinct Structure Plan

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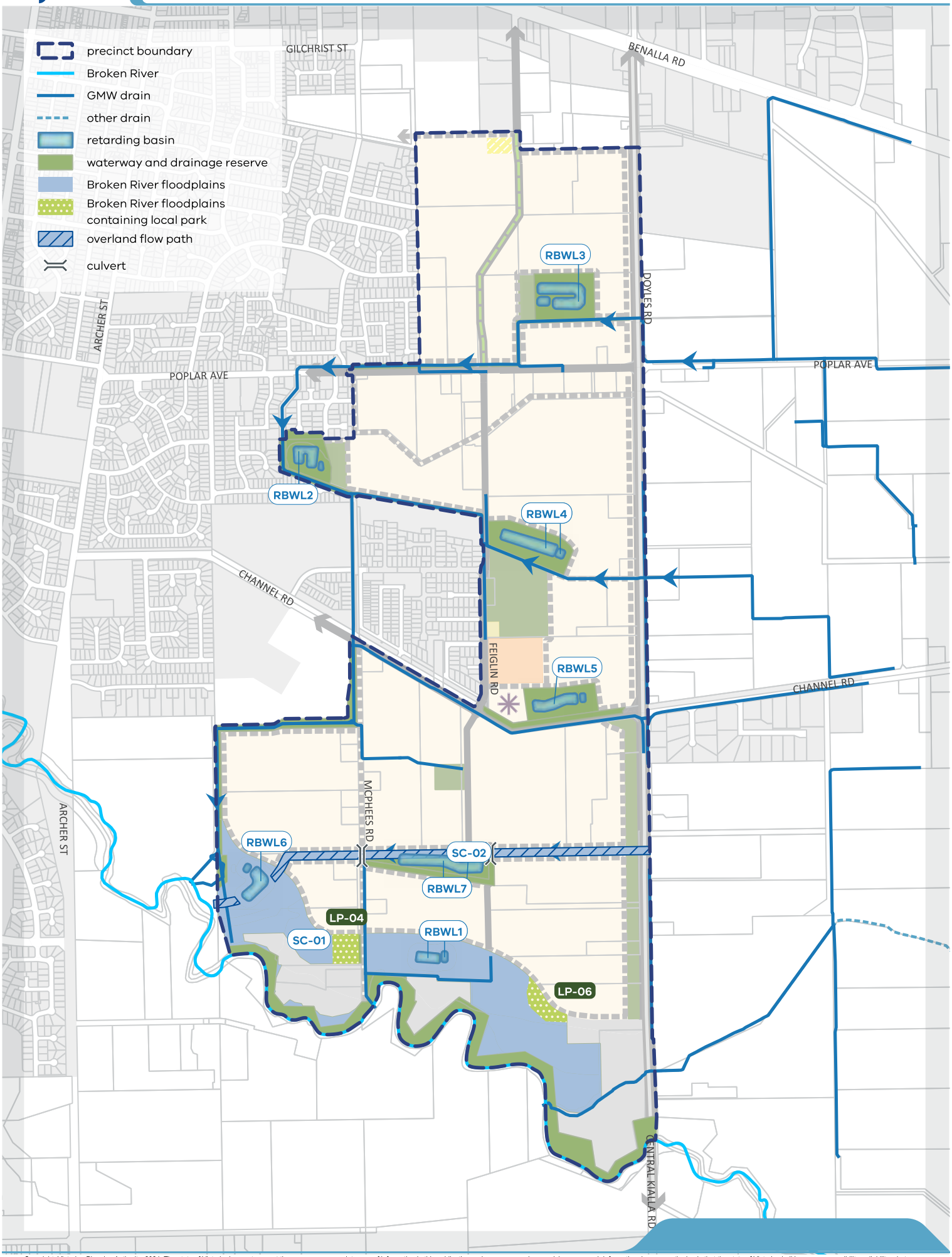

4.7 Integrated Water Management

4.7.1 Stormwater Management

REQUIREMENTS	
R47	Drainage infrastructure must be designed to satisfy the requirements of the responsible authority., including any interim flood mitigation works, to the satisfaction of the Goulburn Broken Catchment Management Authority (GBCMA).
R48	Development must give effect to the relevant policies and strategies being implemented by the GBCMA and GMW, including approved integrated water management plans.
R49	Stormwater conveyance and treatment must provide best practice stormwater quality treatment and must be designed in accordance with the relevant drainage scheme and generally in accordance with Table 8 and Plan 12 to the satisfaction of the responsible authority.
R50	Final designs and boundaries of constructed wetlands, retarding basins, stormwater quality treatment infrastructure, and associated paths, boardwalks, bridges, and planting, must be to the satisfaction the responsible authority.
R51	Development staging must provide for the delivery of the ultimate drainage solution and drainage infrastructure, including stormwater quality treatment. Where this is not possible, development proposals must demonstrate how an interim solution adequately manages and treats stormwater generated from the development and how this will enable delivery of an ultimate drainage solution, to the satisfaction of the responsible authority. Development staging and interim solutions must avoid or mitigate the risk of erosion from sodic and/or dispersive soils.
R52	Stormwater conveyance and treatment must be designed to avoid or mitigate the risk of erosion from sodic and/or dispersive soils to the satisfaction of the responsible authority.
R53	Stormwater runoff from the development must meet the performance objectives of the *CSIRO Best Practice Environmental Management Guidelines* for Urban Stormwater prior to discharge to receiving waterways and as outlined on Plan 12, unless otherwise approved by the responsible authority. Proposals that exceed the performance objectives will be considered to the satisfaction of the relevant authority.
R54	Applications must demonstrate how: • Stormwater drainage assets, waterways and integrated water management design enables land to be used for multiple recreation and environmental purposes. • Overland flow paths and piping within road reserves will be connected and integrated across parcel boundaries. • Relevant Integrated Water Management (IWM) requirements of this PSP are achieved to the satisfaction of the retail water authority, including the supply of recycled water where required by the relevant water authority. All applications must be to the satisfaction of the responsible authority and/or GBCMA, GMW and any retail water authority as required.

GUIDELINES	
G47	The design and layout of roads, road reserves and public open space should maximise water use efficiency and long-term viability of vegetation through the use of overland flow paths, water sensitive urban design initiatives, including use of locally treated stormwater for irrigation purposes, where practical.
G48	Subdivision and development in areas identified as being affected by sodic and/or dispersive soils should be managed to avoid or mitigate the potential risk of erosion, both in the master planned design response to the subdivision, during construction phase, and on an ongoing basis.
G49	Where practical, and where primary waterway or conservation functions are not adversely affected, land required for integrated water management initiatives should be integrated with the precinct open space and recreation network and as depicted on Plan 7.
G50	Development should reduce reliance on potable water by increasing the utilisation of fit-for-purpose alternative water sources such as stormwater, rainwater and recycled water.

GUIDELINES	
G51	Integrated water management systems should be designed to: • Support and enhance habitat values for local flora and fauna species. • Enable future harvesting and/or treatment and re-use of stormwater
G52	Where a stormwater quality treatment asset is shown on Plan 12 as being located within more than one parcel of land, the final location of the asset should, to the extent practicable, facilitate an equitable distribution of the asset across those parcels of land.

4.7.2 Flood Management

REQUIREMENTS	
R55	The Broken River corridor must be protected as a waterway corridor with no drainage assets to be located any closer than 50m from the top of bank and designed to the satisfaction of the responsible authority and GBCMA.
R56	Encroachment or intensification of development must not occur within the Broken River's floodplain as identified upon Plan 12.
R57	Applications must demonstrate: • GBCMA freeboard requirements for finished floor level of buildings to be set at least 300 millimetres above the 1%AEP (climate change), excluding garages, are met • GBCMA balanced cut and fill requirements to ensure lots are filled 300 millimetres above the applicable 1%AEP (climate change) flood level are met. • GBCMA requirement for roads to be no lower than 300 millimetres below the 1%AEP (climate change) are met. All applications must be to the satisfaction of the responsible authority and/or GBCMA, GMW and any retail water authority as required.

Table 8 Integrated Water Management Infrastructure

WATER INFRASTRUCTURE ID	AREA	TYPE	ATTRIBUTES	RESPONSIBILITY	PROPERTY Number
RBWL1	1.67	Retarding basin and landscaping	Southern Retarding Basin	Greater Shepparton City Council	68, 81
RBWL2	2.12	Retarding basin and landscaping	North-Western Retarding Basin	Greater Shepparton City Council	29
RBWL3	3.72	Retarding basin and landscaping	Northern Retarding Basin	Greater Shepparton City Council	10
RBWL4	3.61	Retarding basin and landscaping	North-Eastern Retarding Basin	Greater Shepparton City Council	36
RBWL5	2.89	Retarding basin and landscaping	South-Eastern Retarding Basin	Greater Shepparton City Council	43
RBWL6	1.98	Retarding basin and landscaping	South-Western Retarding Basin	Greater Shepparton City Council	65b
RBWL7	As part of SC-02	Retarding basin and landscaping	Southern Retarding Basin	Greater Shepparton City Council	49, 50, 51
SC-01	27.07	Flood mitigation	Broken River Floodplain	Greater Shepparton City Council	65b,68, 75b,76,81,82,83
SC-02	4.79	Flood mitigation	Overland Flow Path	Greater Shepparton City Council	49, 50, 51, 52, 54, 60, 65a, 65b, 66, 67, 75b

Table note: The areas identified in this table are subject to change/confirmation during the detailed design and delivery stage to the satisfaction of GBCMA and the responsible authority.

4.8 Utilities

REQUIREMENTS	
R58	All existing above ground electricity cables (excluding substations and cables with voltage 66kv or greater) must be placed underground as part of the upgrade of existing roads or subdivision works.
R59	All new electricity supply infrastructure (excluding substations and cables with voltage 66kv or greater) must be provided underground.
R60	Above ground utilities must be identified at the subdivision design stage to ensure effective integration with the surrounding neighbourhood, to minimise amenity impacts and be designed to the satisfaction of the relevant authority. Where that infrastructure is intended to be located in public open space, the land required to accommodate that infrastructure will not be counted as contributing to public open space requirements specified and will be in addition to the areas designated in Table 6.
R61	Before development commences on a property, functional layout plans of the road network must be submitted to the responsible authority for approval that illustrate the location of all: • Underground services • Driveways and crossovers • Intersection devices • Shared, pedestrian and bicycle paths. • Streetlights • Street trees A typical cross section of each street is also to be submitted to the responsible authority for approval showing above and below ground placement of services, street lights and trees. The plans and cross sections must demonstrate how services, driveways and street lights will be placed to achieve the required road reserve width (consistent with the road cross sections outlined in Appendix 5.4) and accommodate the minimum street tree planting requirements. The plans and cross sections must nominate which services will be placed under footpaths or road pavement, as relevant. The plans and cross sections are to be approved by the responsible authority and all relevant service authorities before development commences.
R62	Delivery of underground services must be coordinated, located, and bundled (utilising common trenching) to facilitate the planting of trees and other vegetation within road verges.

GUIDELINES	
G53	Utilities should be placed outside of landscape values areas, natural waterway corridors or on the outer edges of these corridors in the first instance. Where services cannot avoid crossing or being located within a landscape values area or natural waterway corridor, they must be located to avoid disturbance to existing waterway values, native vegetation, significant landform features and heritage sites, to the satisfaction of the responsible authority.
G54	All new above-ground utilities, including temporary utilities, should be located outside of key view lines, and screened with vegetation, as appropriate.
G55	Design and location of underground services should be guided by Appendix 5.6.2.
G56	Utilities should generally be located within the road reserve. Where this is not practical, easements to place utilities within lots may be considered.

Plan 13
Infrastructure & Development Staging
Shepparton South East Precinct Structure Plan

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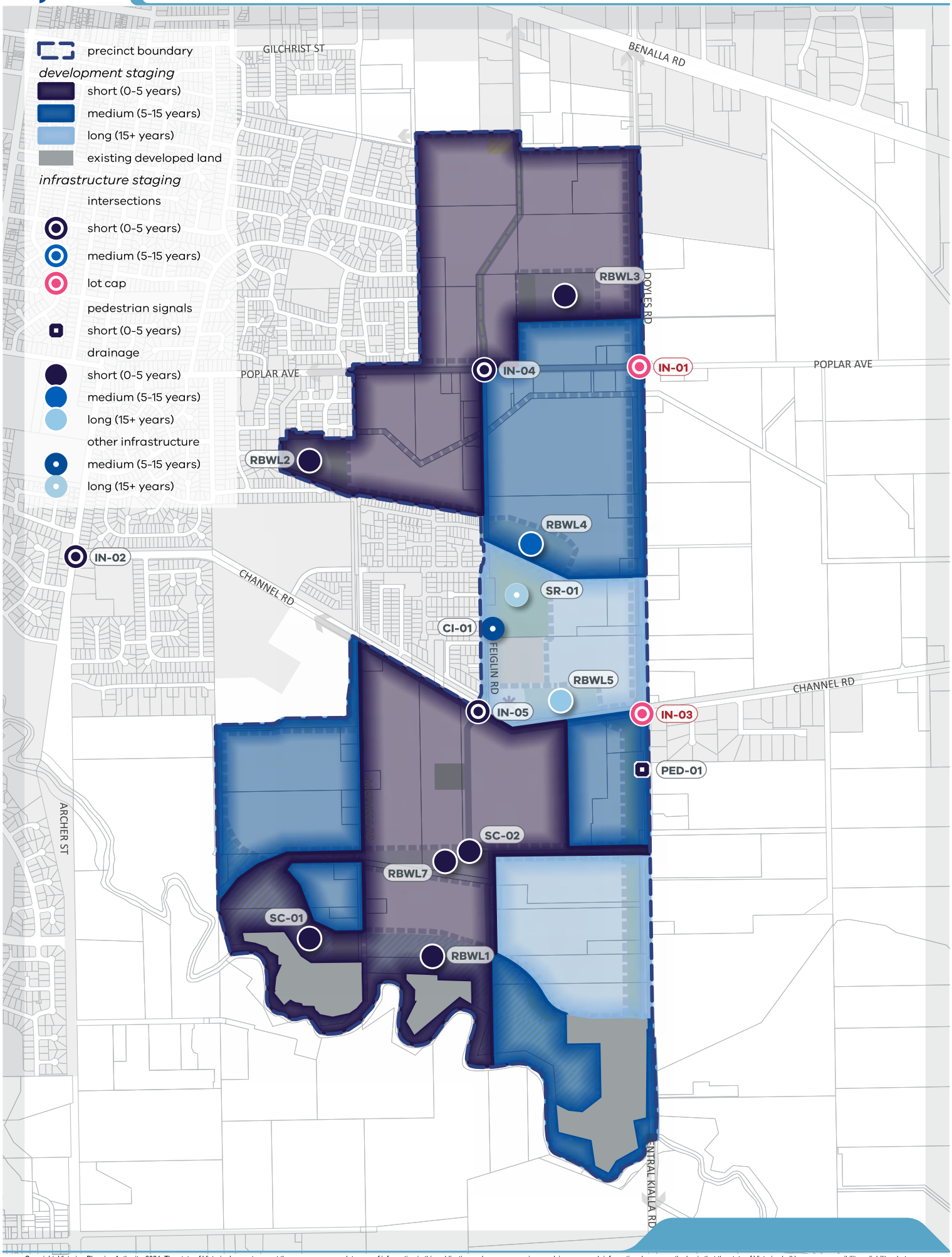

4.9 Infrastructure Delivery and Development Staging

Table 9 Staging Plan Objectives and Strategies

Staging Plan Objectives	Strategies
1. To consolidate the urban edge of the precinct and connect early-stage development to the existing local road network and the services and amenities in Archer Street and Shepparton Marketplace	• Encouraging early development within a 400m walkable catchment from Shepparton Marketplace • Utilising and upgrading existing Channel Road, Poplar Avenue, Zurcas Lane and Feiglin Road to form the connector road skeleton of the precinct at early stage • Facilitating the early delivery of the extension of Zurcas Lane and the roundabout upgrade in Poplar Avenue/Feiglin Road as the central north-south axis of the precinct connecting the precinct to Shepparton Marketplace
1. To recognise and safeguard Doyles Road as part of the Victorian Principal Freight Network (PFN) **2. To align with the overarching objectives of the Victorian Freight Plan and minimise adverse impacts on freight movement and future capacity of Doyles Road**	• Timely modification and upgrade of Doyles Road intersections once the lot cap is triggered • Directing the pressures of early development to Channel Road, Poplar Avenue, Zurcas Lane and Feiglin Road and facilitating the upgrade of the local road network • Providing suitable design and construction of a Signalised Pedestrian Crossing near Doyles Road/Channel Road to provide for pedestrian movements from the precinct to the east (including to the existing Orvale Primary School) and minimising the adverse impact on the function of Doyles Road
4. To facilitate gradually transitioning of existing GMW assets into urban drainage or infrastructure development	• Early development of the downstream reaches of the irrigation channel to facilitate timely decommissioning of the channel and avoid the need for interim works such as piping.
5. To ensure the protection of new development and future residents from the flood hazard of Broken River	• Timely delivery of overland flow paths and floodplain storages to protect the southern precinct from riverine flood risk. • Connection of new development to the road network for emergency services access and site egress during flood events. • Sequencing development in Doyles Road to enable completion of the drainage reserve and its connection to the overland flow path.
6. To ensure orderly, timely and efficient infrastructure delivery to support new development	• Align with the indicative delivery timing of the DCP projects

Table note: Please refer to Appendix 5.6 for the staging plan context.

4.9.1 Development Staging

REQUIREMENTS

R63

Development staging must be generally in accordance with Plan 13 (Infrastructure & Development Staging) and Table 10 (PIP) and must provide for the timely provision and delivery of the following infrastructure to the satisfaction of the responsible authority:

- connection to any arterial road network and seek to co-ordinate the delivery of these roads in conjunction with the timing of the arterial road connections located external to the precinct
- connector streets and connector street bridges
- street connections between properties, constructed to the property boundary
- on- and off-road pedestrian and bicycle network paths
- drainage Infrastructure
- essential infrastructure
- land for community infrastructure, sports fields, local open space including urban agriculture.

Where out of sequence development is sought, new development must enter into an agreement with the responsible authority on resolving the infrastructure deliverables and costs attributed to the earlier stage developments to ensure the continuity of the infrastructure delivery and avoid any costs of the additional burden on a DCP development agent, asset managers, infrastructure providers and respective landowners. New development should also demonstrate benefits in relation to community infrastructure, affordable housing provision and other outcome that may be of interest to Council and the community.

R64

Staging of development must be determined by the development proposals on land within the precinct and the availability of infrastructure services, see reference to Plan 13. Development applications must demonstrate how the development will:

- integrate with adjoining developments, including the timely provision of roads and connections
- provide for the delivery of community facilities, open space, and amenity to new residents to the satisfaction of the responsible authority .
- provide sealed road access to each new allotment
- provide safe pedestrian access to existing pedestrian footpaths
- deliver any necessary trunk service extensions, including confirmation of the agreed approach and timing by the relevant service provider to the satisfaction of the responsible authority
- avoid and minimise impacts to conservation areas with regard to the location of essential and other services to the satisfaction of the responsible authority.

GUIDELINES

G57

All infrastructure projects identified in Section 4.9.3 Precinct Infrastructure Plan should be delivered as per the timing priority identified in the timing column of Table 10.
Where infrastructure is proposed to be delivered outside/ahead of the sequence identified in Plan 13 and Table 10, the onus is on the developer to fund the infrastructure works as 'Works In Kind'.
Note: Project delivery timing outlined in Section 4.9.3 is indicative and subject to periodic review by the relevant responsible authority.

G58

In staged subdivisions, land containing a proposed government school site and adjoining community centre should be included in the same stage where practicable. Staging should ensure that roads and streets abutting a proposed school site will be delivered before or at the same time as the proposed school site is subdivided.

G59

Out of sequence development is only permitted where the developer demonstrates that bringing forward development meets the staging plan objectives in Table 9 and will not impose an unreasonable additional burden on infrastructure providers (or where the developer agrees to be responsible for the costs of the additional burden on infrastructure providers and a DCP development agent or asset manager of existing/planned infrastructure imposed by allowing out of sequence development).
Proposals for out of sequence development are only capable of submission and approval if they are consistent with the above guideline.

4.9.2 Subdivision Works

REQUIREMENTS

R65

Subdivision of land within the precinct must provide and meet the total cost of delivering the following infrastructure (except those included in the DCP):

- Connector roads and local streets
- Local bus stop infrastructure
- Landscaping of all existing and future connector roads and local streets
- Intersection works and traffic management measures along arterial roads, connector streets, and local streets
- Council approved fencing and landscaping (where required) along arterial roads
- Local shared, pedestrian and bicycle paths along local arterial roads, connector roads, utilities easements, local streets, waterways and within local parks including bridges, intersections, and barrier crossing points (except those included in the DCP)
- Bicycle parking as required in this document
- Shared pedestrian and bicycle paths along local arterial roads, connector roads, utilities easements, local streets, waterways and within local parks including bridges, intersections, and barrier crossing points
- Appropriately scaled lighting along all roads, major shared and pedestrian paths, and traversing public open space
- Basic improvements to local parks and open space (refer to open space delivery below)
- Local drainage system and water sensitive urban design (WSUD) features
- Local street or pedestrian path crossings of waterways unless included in the DCP or outlined as the responsibility of another agency in the Precinct Infrastructure Plan
- Construction of shared paths along waterways and open space
- Installation of boundary fencing or interim fencing as required by the responsible authority Infrastructure as required by utility service providers including water, sewerage, drainage, electricity, gas, and telecommunications

R66

All public open space (where not otherwise provided via the DCP) must be finished to a standard that satisfies the requirements of the responsible authority prior to the transfer of the public open space, including:

- Removal of all existing and disused structures, foundations, pipelines, and stockpiles
- Basic levelling including the supply and spread of minimum 75mm topsoil and subsoil if required on the proposed areas of open space to provide a stable free draining surface
- Clearing of rubbish and weeds, levelled, topsoiled and grassed with warm climate grass (unless conservation reserve requirements dictate otherwise)
- Provision of water tapping, potable and recycled water connection points
- Planting of trees and shrubs (with drought tolerant species)
- Adequate protection of existing trees that are to be retained including exclusion zones as appropriate
- Provision of vehicular exclusion devices (fence, bollards, or other suitable method)
- Bicycle parking facilities
- Maintenance access points
- Construction of minimum 1.5-metre-wide pedestrian paths around the perimeter of the reserve, connecting and linking into any other surrounding paths or points of interest, except where shown as a shared path on Plan 10
- Installation of boundary fencing where the public open space abuts private land
- Installation of park furniture including barbeques, water fountains, shelters, furniture, rubbish bins, local scale playground equipment, local scale play areas, and appropriate paving to support these facilities, consistent with the type of public open space listed in the open space delivery guide (Table 6) and relevant open space strategies and landscape guidelines

REQUIREMENTS	
R67	Land identified as sports reserve on Plan 7 and required to be delivered as identified in a DCP or separate agreement must be vested in the relevant authority in the following condition: • Free from all existing disused structures, foundations, pipelines, stockpiles, rubbish, environmental weeds rocks and soil contamination • Reasonably graded and/or topsoiled to create a safe and regular surface with a maximum 1:6 gradient • Seeded and top-dressed with drought-resistant grass in bare, patchy and newly graded areas Additional works consistent with a DCP, where the works are not considered to be temporary works, may be eligible for a works-in-kind credit against a DCP obligation to the satisfaction of the responsible authority. Works associated with adjacent road construction (e.g. earthworks for a road embankment) are not eligible for works-in-kind credit.
R68	Subdivision must allow for off road pedestrian access to key activity nodes in and in the immediate surrounds of the precinct including local employment centres, community centres, primary and secondary schools. Interim pedestrian paths should be provided where the ultimate footpath cannot be provided.

GUIDELINES	
G60	Where an inter-parcel connection is intended or indicated in the PSP, streets should be constructed to property boundaries at the relevant stage of development required or approved by the responsible authority. Provision should be made for temporary vehicle turning until the inter-parcel connection is delivered.

Plan 14
Precinct Infrastructure Plan
Shepparton South East Precinct Structure Plan

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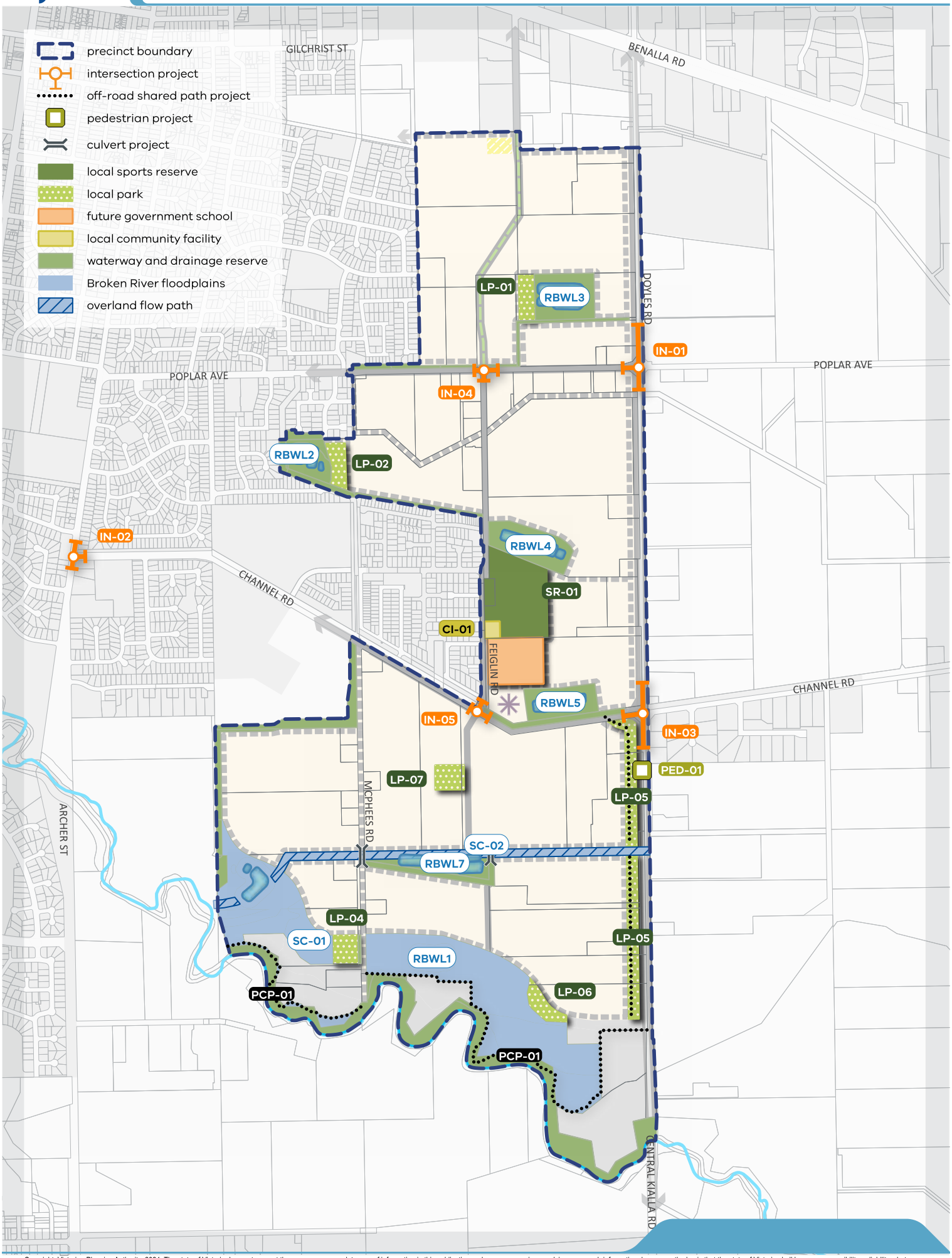

4.9.3 Precinct Infrastructure Plan

The precinct infrastructure plan (PIP) in Table 10 sets out the infrastructure and services required to meet the needs of proposed development within the precinct. The infrastructure items and services are to be provided through a number of mechanisms including:

- Subdivision construction works by developers.
- Agreement under section 173 of the *Planning and Environment Act 1987*
- Utility service provider requirements
- The DCP, including separate charge areas for local items.
- Relevant development contributions from adjoining areas
- Capital works projects by council, state government agencies and non-government organisations.
- Works-in-kind projects undertaken by developers on behalf of council or State government agencies. Precinct infrastructure

Table 10 Precinct Infrastructure Plan

PROJECT ID	TITLE AND PROJECT DESCRIPTION	LEAD AGENCY	INDICATIVE TIMING	INCLUSION IN DCP
TRANSPORT PROJECT				
Intersections				
IN-01	**Doyles Road/Poplar Avenue** Design and modification of an intersection to left-in left-out arrangement	Greater Shepparton City Council	Lot Cap (Approved subdivision of 800 residential lots)	Yes
IN-02	**Channel Road/Archer Street** Design and construction of connector signalised T-intersection	Greater Shepparton City Council	S	Yes
IN-03	**Doyles Road/Channel Road** Land purchase and design & construction of intersection and design and construction of boulevard connector to secondary arterial 4-way roundabout	Greater Shepparton City Council	Lot Cap	Yes
IN-04	**Zurcas Lane/Poplar Avenue/Feiglin Road** Land purchase and design & construction of boulevard connector to connector 4-way roundabout	Greater Shepparton City Council	S	Yes
IN-05	**Feiglin Road/Channel Road** Land purchase and design & construction of a connector to connector 4 way roundabout	Greater Shepparton City Council	S	Yes
Pedestrian Crossing				
PED-01	**Signalised Pedestrian Crossing Doyles Road/Channel Road** Construction of a pedestrian operated signal across Doyles Road, south of the Channel Road intersection.	Greater Shepparton City Council	S (0-2 Years)	Yes
PEDESTRIAN AND CYCLE PATH				
PCP-01	Purchase of land and construction of a 2.57km length and 2.5m wide shared path adjacent the Broken River.	Greater Shepparton City Council	L	Yes
COMMUNITY PROJECTS				
Community Centre				
CI-01	**Multipurpose Children's Centre** Purchase of land and construction of a multipurpose community centre, inclusive of kindergarten facilities	Greater Shepparton City Council	M	Yes
Sporting Facilities				
SR-01	**Multi-Purpose Sports Reserve** Purchase of land and construction of for a sporting reserve including one senior size football and two senior size soccer ovals adjoining school site with lights, pavilion, playground and ancillary facilities	Greater Shepparton City Council	L	Yes

PROJECT ID	TITLE AND PROJECT DESCRIPTION	LEAD AGENCY	INDICATIVE TIMING	INCLUSION IN DCP
Education				
N/A	**Shepparton Aqueduct Proposed P6 (interim name)** Proposed government primary school - purchase of land and construction of government primary school	Department of Education (DE)	Need, timing and allocation of funding for acquisition of land and construction of the proposed school will be considered annually by DE as part of its statewide planning for schools	No
Potential State Government Health Facility				
N/A	**Potential State Government Health Facility** Purchase of land and construction of a potential State Government Health Facility	Department of Health (DH)	Need, timing and allocation of funding for acquisition of land and construction of the potential State Health Facility will be considered annually by DH as part of its statewide planning for health facilities.	No
Local Park				
LP-01	**Local Park** Purchase of land and construction of a local park adjoining RBWL-3	Greater Shepparton City Council	S	Yes
LP-02	**Local Park** Purchase of land and construction of a local park adjoining RBWL-2	Greater Shepparton City Council	S	Yes
LP-04	**Local Park** Purchase of land and construction of a local park adjacent Broken River Note - Purchase of land to construct LP-04 adjacent the Broken River is included as part of purchase of land for SC-01	Greater Shepparton City Council	M	Yes

PROJECT ID	TITLE AND PROJECT DESCRIPTION	LEAD AGENCY	INDICATIVE TIMING	INCLUSION IN DCP
LP-05	**Local Park** Purchase of land and construction of a linear park	Greater Shepparton City Council	M-L	Yes
LP-06	**Local Park** Purchase of land and construction of a local park adjacent Broken River Note - Purchase of land to construct LP-06 adjacent the Broken River is included as part of purchase of land for SC-01	Greater Shepparton City Council	M	Yes
LP-07	**Local Park** Purchase of land and construction of a local park to the north of the overland flow path	Greater Shepparton City Council	S	Yes
DRAINAGE PROJECTS				
Retarding Basins				
RWBL-1	**Southern (Broken River) Retarding Basin** Construction of retarding basin, wetland and sediment basin including landscaping.	Greater Shepparton City Council	S	Yes
RWBL-2	**North-Western Retarding Basin** Purchase of land and construction of retarding basin, wetland and sediment basin including landscaping.	Greater Shepparton City Council	S	Yes
RWBL-3	**Northern Retarding Basin** Purchase of land and construction of retarding basin, wetland and sediment basin including landscaping.	Greater Shepparton City Council	S	Yes
RWBL-4	**Feiglin Road Retarding Basin** Purchase of land and construction of retarding basin, wetland and sediment basin including landscaping.	Greater Shepparton City Council	M	Yes
RWBL-5	**Channel Road Retarding Basin** Purchase of land and construction of retarding basin, wetland and sediment basin including landscaping.	Greater Shepparton City Council	M	Yes
RWBL-6	**South Western Retarding Basin** Construction of retarding basin, wetland and sediment basin including landscaping.	Greater Shepparton City Council	M	Yes
RWBL-7	**Southern Retarding Basin** Purchase of land and construction of retarding basin, wetland and sediment basin including landscaping.	Greater Shepparton City Council	S	Yes
Flood Mitigation				
SC-01	**Broken River Floodplain** Purchase of land adjacent Broken River for the purposes of flood mitigation.	Greater Shepparton City Council	S-M	Yes
SC-02	**Overland Flow Path** Purchase of land and construction of an overland flow path for flood mitigation purposes, including landscaping within the hydraulic channel, decommissioning/reconfiguring GMW channel and construction of culvert crossings, excluding land and construction of adjoining local road and their associated landscaping and embellishments	Greater Shepparton City Council	S	Yes

PROJECT ID	TITLE AND PROJECT DESCRIPTION	LEAD AGENCY	INDICATIVE TIMING	INCLUSION IN DCP
STRATEGIC PLANNING				
PP-01	VPA plan preparation costs	Greater Shepparton City Council	S-L* *Subject to the agreement between the collecting agency and the planning authority, reimbursement of plan preparation costs should occur as soon as practicable.	Yes
PP-02	Council plan preparation costs	Greater Shepparton City Council	L	Yes
EARLY DEVELOPER WORKS				
EDW- 01 (IN-01 and **IN-03)**	Financing delivery of Interim intersections at Poplar Avenue/Doyles Road and Channel Road/Doyles Road in line with lot cap trigger.	Greater Shepparton City Council	Lot Cap	Yes

* TIMING: S = Short (0–5 years)
M = Medium (5–10 years)
L = Long (10 years and beyond)

Plan 15
Existing GMW Assets
Shepparton South East Precinct Structure Plan

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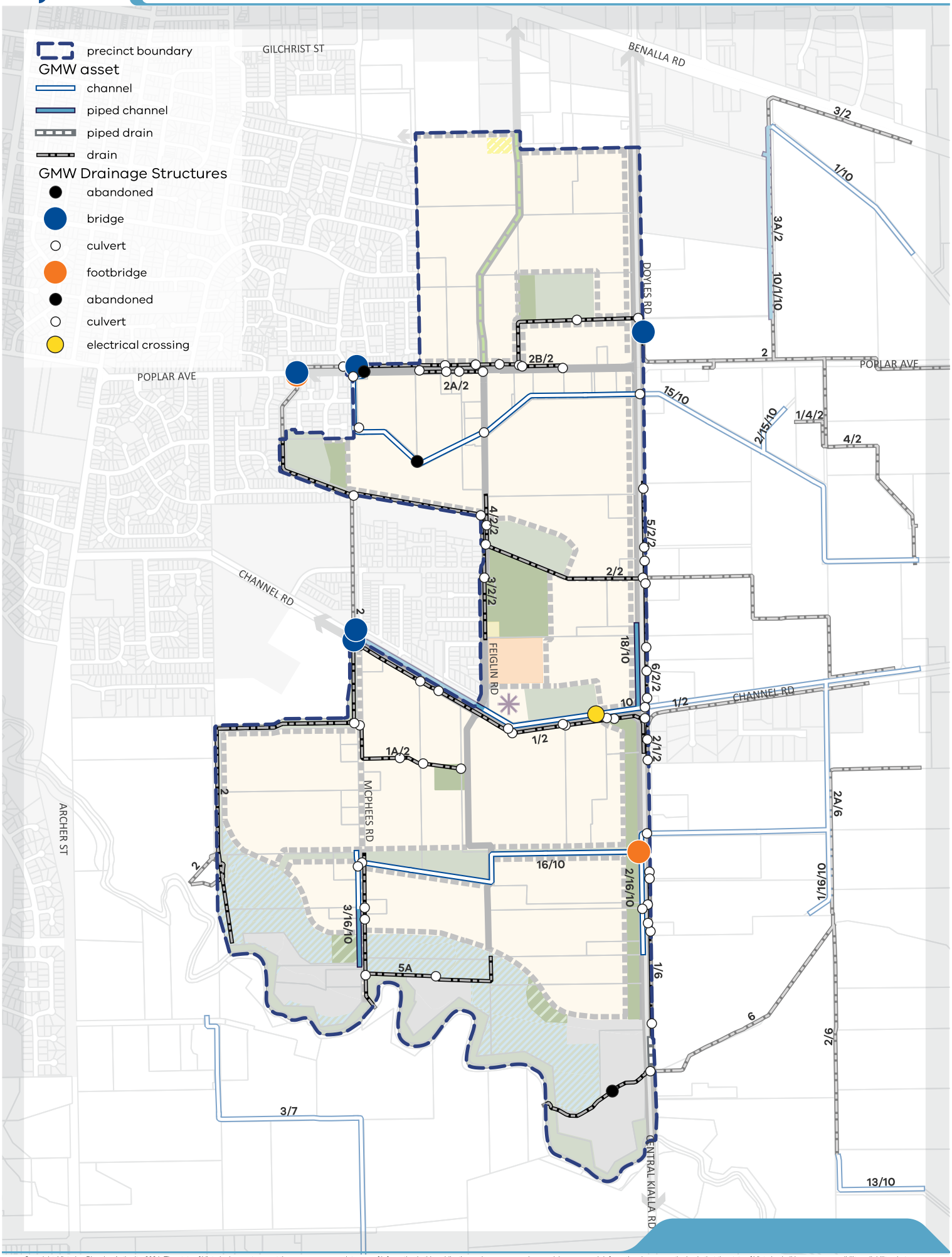


4.9.4 GMW Asset Transitioning Implementation

Plan 15 identifies the existing GMW channels and drains within the precinct. The precinct contains key surface and underground infrastructure owned/managed by GMW including the Shepparton No. 10, 15/10, 16/10, 2/16/10 and 3/16/10 Channels, Shepparton No. 10, 16/10, 3/16/10 and 18/10 Pipelines, and Shepparton No. 1/6, 2, 1A/2, 2A/2, 2B/2, 1/2, 2/2, 2/1/2, 3/2/2, 4/2/2, 5/2/2, 6/2/2, 5, 5A, 6 and 1/6 Drains.

A majority of the land within the Precinct is currently supplied with rural water supply from GMW and therefore holds water delivery shares. It is not appropriate for urban lots within the precinct to be connected to a rural water supply. The presence of rural water supply infrastructure will no longer appropriate where channels and pipelines will be gradually decommissioning and maintain temporary supply until all the lands holding water delivery shares become urban.

Existing GMW rural drains will gradually transition into GSCC's ownership as part of their urban drainage system and integrate with the Precinct drainage infrastructure.

The treatment of GMW assets and lands including the relevant timing of asset conversion, decommissioning or transfer of management responsibility within the Precinct must consider any relevant legal agreement between GSCC and GMW.

Drain Conversion

All GMW drains either on easement, private lands, road reserve or GMW freehold lands within the precinct will be converted or decommissioned for urban development and transferred to GSCC for ongoing management and maintenance. GMW is amenable to collaboration with GSCC in relation to drainage flows and pipeline design.

The following assets will be converted to serve the precinct urban development and drainage:

- Shepparton No. 2 Drain will remain as an open drain but be upgraded to cater for urban stormwater;
- Shepparton No. 1/2 and 2/2 Drains will be converted to pipeline;
- Shepparton No. 5 Drain will be converted to pipeline; and
- Shepparton No. 5A Drain will be converted to pipeline.

Each property containing or abutting the drains is responsible for the conversion of the attributed length of drain and transfer the assets to GSCC to the satisfaction of responsible authority and GMW.

Some existing drains fall within private lands or easements which will be no longer required if the land is developed. Decommissioning of drains and removal of easements will be assessed and completed as part of subdivision subject to the application assessment and any permit conditions.

Channel Conversion, Decommissioning and Backfilling

Existing channels within the precinct, i.e. Shepparton No. 10, 15/10 and 3/16/10 Channels will require decommissioning when the abutting property is subdivided for new development. The land tenures of these channels vary, and are located within easement on private land, on GMW Crown Land or on GMW freehold land. Each property abutting the channels is responsible for decommissioning and backfilling the attributed length of channel and transferring/terminating any respective delivery shares to the satisfaction of GMW at the developer cost at the development stage.

Early engagement and consultation between GSCC and GMW in relation to layout of subdivisions and infrastructure provision must occur.

For subdivision of property holding delivery shares, the property must make application to Goulburn Murray Water pursuant to Sections 224 and 229 of the *Water Act* 1989 to terminate or transfer the delivery shares in relation to the property; and make a declaration that the property cease to be a serviced property (to effect excision from the district).

The development agency or the transferred agent of the DCP projects will be responsible for the relevant GMW asset decommissioning/conversion (including piping and maintaining the relevant water delivery shares). The DCP projects include:

- Shepparton No. 16/10 and 2/16/10 Channels will be decommissioned at the time of the DCP Project SC-02 is delivered. The decommissioning and piping of Shepparton No. 16/10 and 2/16/10 Channels are fully funded by the DCP; and
- Shepparton No. 10 Channel (section at the Channel Road/Doyles Road intersection) will be converted to pipeline at the time of the DCP Project IN-03c is delivered. The conversion will be fully funded by the DCP.

Conversion of Shepparton No. 15/10 Channel Land

The land of decommissioned Shepparton No. 15/10 Channel should be converted to a local access road and integrated with the precinct's road network, unless otherwise alternative treatment approved by the responsible authority.

Each property containing or abutting the land is responsible for the conversion of the attributed length of the land and complete the road or alternative treatment to the satisfaction of responsible authority and GMW. The delivery of the road must be generally in accordance with the process and sequencing as set out in Table 7, 'Connector Road Upgrade Deliverables' of the PSP.

Transfer of GMW Land

Some of the GMW assets are located within GMW managed Crown Land or GMW freehold land where GMW are governed by the Victorian Government Land Monitor Policy. The policy will be considered during any proposal to transfer any interest in the relevant land.

A legal agreement between GSCC and GMW will endeavour to ensure the transfer of any interest in the GMW managed Crown Land in a timely manner for the delivery of the DCP projects including SC-02 and IN-03c.

Should any proposal to transfer GMW managed Crown Land or GMW freehold land to private ownership for new development, the applicant must enter into an agreement with GMW and GSCC to ensure that any land transfer is in accordance with GMW's requirements under the policy.

Setback of New Development

As the Precinct is developed, GMW open drain and channel assets will cease to exist. GMW drains will be transferred to GSCC and transformed into waterways/wetlands. The following setbacks will be required in new development:

- 5m building setback from existing GMW pipeline reserve/easement boundary; and
- 30m building setback from existing waterways (including constructed waterways);

unless otherwise approved by the relevant authority.

Permit Conditions

Generally, the asset decommissioning, conversion and transfer associated with GMW assets will be implemented through subdivision permit conditions as determined by the responsible authority.

5.0 APPENDICES

5.1 Local Convenience Centre Performance Criteria

LOCAL CONVENIENCE CENTRE	
Principle 1 Provide a range of local services and facilities which are appropriate to the Local Convenience Centre location and the catchment that it serves	• The design of the Local Convenience Centre should facilitate development with a high degree of community interaction and provide an appropriate mix of retail, commercial and community facilities to suit the catchment that the Local Convenience Centre serves • The design of the Local Convenience Centre should also encourage a pattern of smaller scale individual tenancies and land ownership patterns within the Local Convenience Centre to attract investment and encourage greater diversity and opportunities for local business investment • Active building frontages should address the primary street frontage to maximise exposure to passing trade and promote pedestrian interaction
Principle 2 Design the Local Convenience Centre to be pedestrian friendly and accessible by all modes including public transport, while enabling private vehicle access Any Local Convenience Centre should be easily, directly and safely accessible for pedestrians, cyclists, public transport modes, private vehicles, service and delivery vehicles with priority given to pedestrian movement, amenity, convenience and safety	• Public transport infrastructure/facilities should be planned for commuter friendly/convenient locations adjacent to the Local Convenience Centre • Bus stops should be provided in generally in accordance with the Public Transport Victoria Public Transport Guidelines for Land Use and Development, to the satisfaction of Public Transport Victoria • Bicycle parking should be provided within the street network and public spaces in highly visible locations and close to pedestrian desire lines and key destinations • The design of buildings within the Local Convenience Centre should have a relationship with and should interface to the public street network • Car parking areas should be located centrally to the site and to the rear and or side of street-based retail frontages • Car parking areas should be designated to ensure passive surveillance and public safety through adequate positioning and lighting • Car parking areas should be designed to provide dedicated pedestrian routes and areas of landscaping • On street car parking should be provided either as parallel or angle parking to encourage short stay parking • Car parking ingress and egress crossovers should be grouped and limited • Car parking ingress or egress and car parking areas accommodating heavy vehicle movements should be designed to limit the pedestrian/vehicle conflict • Streets, public spaces and car parks should be well lit to Australian Standards and with pedestrian friendly (generally white) light. Lighting should be designed to avoid unnecessary spill to the side or above

5.2 Local Convenience Centre Design Principles

LOCAL CONVENIENCE CENTRE	
Principle 1 Provide smaller neighbourhoods with a viable local convenience centre which offers accessible services to the surrounding community	• Local convenience centres should be planned in conjunction with local town centres in order to deliver a fine grain distribution of town centres within the region • Local convenience centres should be planned for neighbourhoods that contain less than 8,000 people and are located more than 1 kilometre away from a local town centre or higher order town centre • Locate local convenience centres in locations which are central to the residential community they serve and that provide exposure to passing traffic • Where appropriate, locate local convenience centres in attractive settings and incorporate natural or cultural landscape features such creeks and waterways, linear open space, pedestrian and cycle links and areas of high aesthetic value
Principle 2 Provide a range of local services and facilities that are appropriate to the local convenience centre location and the catchment that it serves	• Land uses should be located generally in accordance with the locations and general land use terms identified in the local convenience centre Concept Plan • The design of the local convenience centre should facilitate development with a high degree of community interaction and provide an appropriate mix of retail, commercial and community facilities to suit the catchment that the local convenience centre serves • The design of the local convenience centre should also encourage a pattern of smaller scale individual tenancies and land ownership patterns within the Local Convenience Centre to attract investment and encourage greater diversity and opportunities for local business investment • Active building frontages should address the primary street frontage to maximise exposure to passing trade and promote pedestrian interaction
Principle 3 Design the local convenience centre to be pedestrian friendly and accessible by all modes including public transport, while enabling private vehicle access. The local convenience centre should be easily, directly and safely accessible for pedestrians, cyclists, public transport modes, private vehicles, service and delivery vehicles with priority given to pedestrian movement, amenity, convenience and safety.	• Public transport infrastructure/facilities should be planned for commuter friendly/convenient locations adjacent to the local convenience centre • Bus stops should be provided in accordance with the *Public Transport Victoria Public Transport Guidelines for Land Use and Development*, to the satisfaction of Public Transport Victoria • Bicycle parking should be provided within the street network and public spaces in highly visible locations and close to pedestrian desire lines and key destinations • The design of buildings within the local convenience centre should have a relationship with and should interface to the public street network • Car parking areas should be located centrally to the site and to the rear and or side of street-based retail frontages • Car parking areas should be designed to ensure passive surveillance and public safety through adequate positioning and lighting • Car parking areas should be designed to provide dedicated pedestrian routes and areas of landscaping • On street car parking should be provided either as parallel or angle parking to encourage short stay parking • Car parking ingress and egress crossovers should be grouped and limited • Car parking ingress or egress and car parking areas accommodating heavy vehicle movements should be designed to limit the pedestrian/vehicle conflict • Streets, public spaces and car parks should be well lit to Australian standards and with pedestrian friendly (generally white) light, and lighting should be designed to avoid unnecessary spill to the side or above

LOCAL CONVENIENCE CENTRE	
Principle 4 Create a sense of place with high quality engaging urban design	• Development should complement and enhance the character of the surrounding area by responding appropriately to key visual cues associated with the topography of the local convenience centre location and its surrounds • The local convenience centre design should seek to minimise amenity and noise impacts resulting from the mix of uses by maintaining separation and transitional areas between retail and housing activities, such as open space, road networks and community facilities • The design of each building should contribute to a cohesive and legible character for the local convenience centre as a whole • Sites in prominent locations (such as at key intersections, surrounding public spaces and terminating key view lines and vistas) should be identified for significant buildings or landmark structures • The design of building frontages should incorporate the use of a consistent covered walkway or verandah to provide for weather protection • The built form should define the primary street frontage and be aligned with the parcel boundary • Street façades and all visible side or rear façades should be visually rich, interesting and well-articulated and be finished in suitable materials and colours that contribute to the character of the local convenience centre • Materials and design elements should be compatible with the environment and landscape character of the broader precinct • If a supermarket is proposed, the supermarket should have a frontage that directly address the primary street frontage so that the use integrates with and promotes activity within the public realm • Supermarkets with a frontage to the primary street frontage should use clear glazing to allow view lines into the store from the street (planning permits for buildings and works should condition against the use of white washed windows, excessive window advertising and obtrusive internal shelving or 'false walls' offset from the glazing) • Secondary access to a supermarket from car parking areas should be considered where it facilitates convenient trolley access and does not diminish the role of the primary access from the primary street frontage • The design and siting of supermarkets should provide an appropriate response to the entire public domain. This includes but is not limited to car parking areas, predominantly routes and streets • Retail uses along street frontages should generally include access points at regular intervals to encourage activity along the length of the street • Retail and commercial buildings within the local convenience centre should generally be built to the parcel line • Public spaces should be oriented to capture northern sunlight and protect from prevailing winds and weather • Landscaping of all interface areas should be of a high standard as an important element to complement the built form design Urban art should be incorporated into the design of the public realm • Street furniture should be located in areas that are highly visible and close to or adjoining pedestrian desire lines/gathering spaces and designed to add visual interest to the local convenience centre • Wrapping of car parking edges with built form, to improve street interface, should be maximised • Car parking areas should provide for appropriate landscaping with planting of canopy trees and dedicated pedestrian thoroughfares • Screening of centralised waste collection points should minimise amenity impacts with adjoining areas and users of the centre • Where service areas are accessible from car parks, they should present a well-designed and secure facade to public areas • Mechanical plant and service structure roofs should be included within roof lines or otherwise hidden from view

LOCAL CONVENIENCE CENTRE	
Principle 5 Promote localisation, sustainability and adaptability	• The local convenience centre should promote the localisation of services that will contribute to a reduction of travel distance to access local services and less car dependence. The local convenience centre should be designed to be sympathetic to its natural surrounds by: ◦ Investigating the use of energy efficient design and construction methods for all buildings ◦ Including Water Sensitive Urban Design principles such as integrated stormwater retention and reuse (e.g. toilet flushing and landscape irrigation) ◦ Promoting safe and direct accessibility and mobility within and to and from the local convenience centre ◦ Including options for shade and shelter through a combination of landscape and built form treatments ◦ Ensuring buildings are naturally ventilated to reduce the reliance on plant equipment for heating and cooling ◦ Promoting passive solar orientation in the configuration and distribution of built form and public spaces ◦ Grouping waste collection points to maximise opportunities for recycling and reuse ◦ Promoting solar energy for water and space heating, electricity generation and internal and external lighting ◦ Investigating other opportunities for the built form to reduce greenhouse gas emissions associated with the occupation and the ongoing use of buildings ◦ Encouraging building design that can be adapted to accommodate a variety of uses over time

5.3 Open Space Delivery Guide

5.3.1 Passive Recreation Park

A park that provides opportunities for a variety of recreational and social activities in a green space setting. Passive recreation parks come in a variety of landforms, and in many cases provide opportunities to protect and enhance landscape amenity.

5.3.2 Local Park (Less than one hectare)

- Passive recreation park suitable for local recreation/social activities
- Junior play emphasis
- Attracts users from the local area (i.e. 400 metre catchment)
- Recreational/social facilities suitable for local activities/events
- Minimal support facilities (e.g. seats, bin, etc.)
- Footpath/bikeway links

5.3.3 Local Park (One hectare or greater)

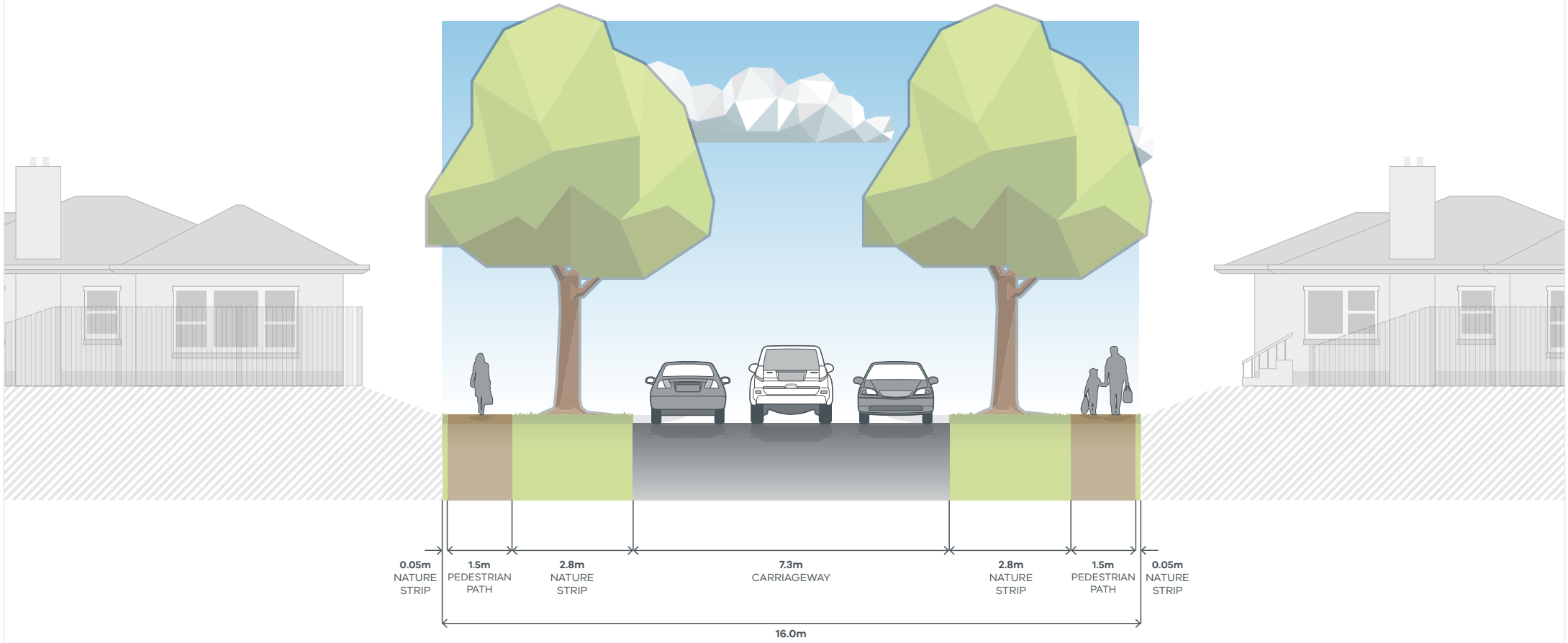
- Passive recreation park suitable for district-level recreation/social activities
- Junior and youth play emphasis
- Attracts users from the district (i.e. two kilometre catchment)
- Recreational/social facilities suitable for district activities/events
- Basic support facilities (e.g. amenities, barbecue, picnic tables, shelters, seats, etc.)
- Footpath/bikeway links

5.3.4 Linear Park

Linear Parks are parks that are developed and used for pedestrian and cyclist access, both recreational and commuter, between residential areas and key community destinations such as recreational facilities, schools and other community facilities, public transport and places of work. Linear Reserves are generally linear in nature and follow existing corridors such as water courses and roads. They usually contain paths or tracks (either formal or informal) that form part of the wider path/track network. While the primary function of Linear Reserve is pedestrian and cyclist access, these parks may serve additional purpose such as storm water conveyance, fauna movement and ecological/ biodiversity protection.

5.4 Street Cross Sections

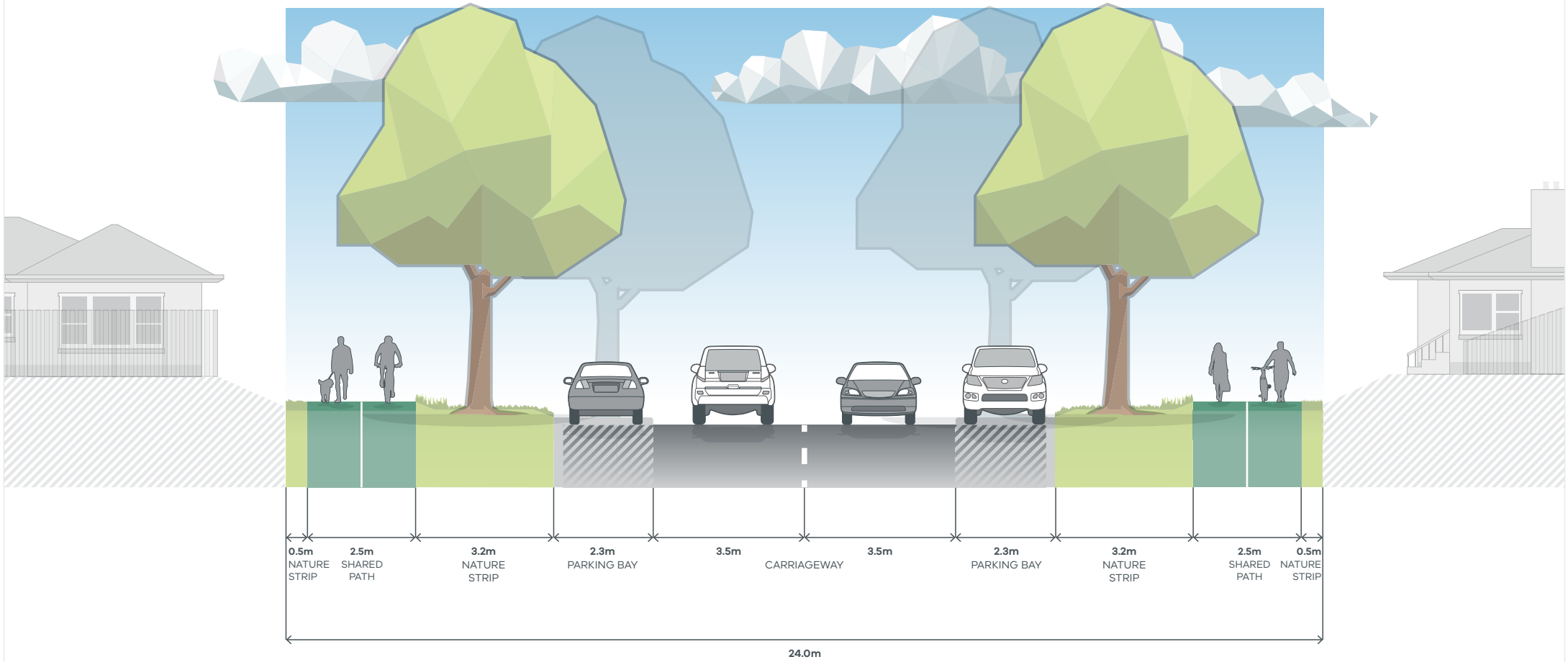
Cross Section 1
Local Access Street (16m)



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be SM modified (refer to the Infrastructure Design Manual).

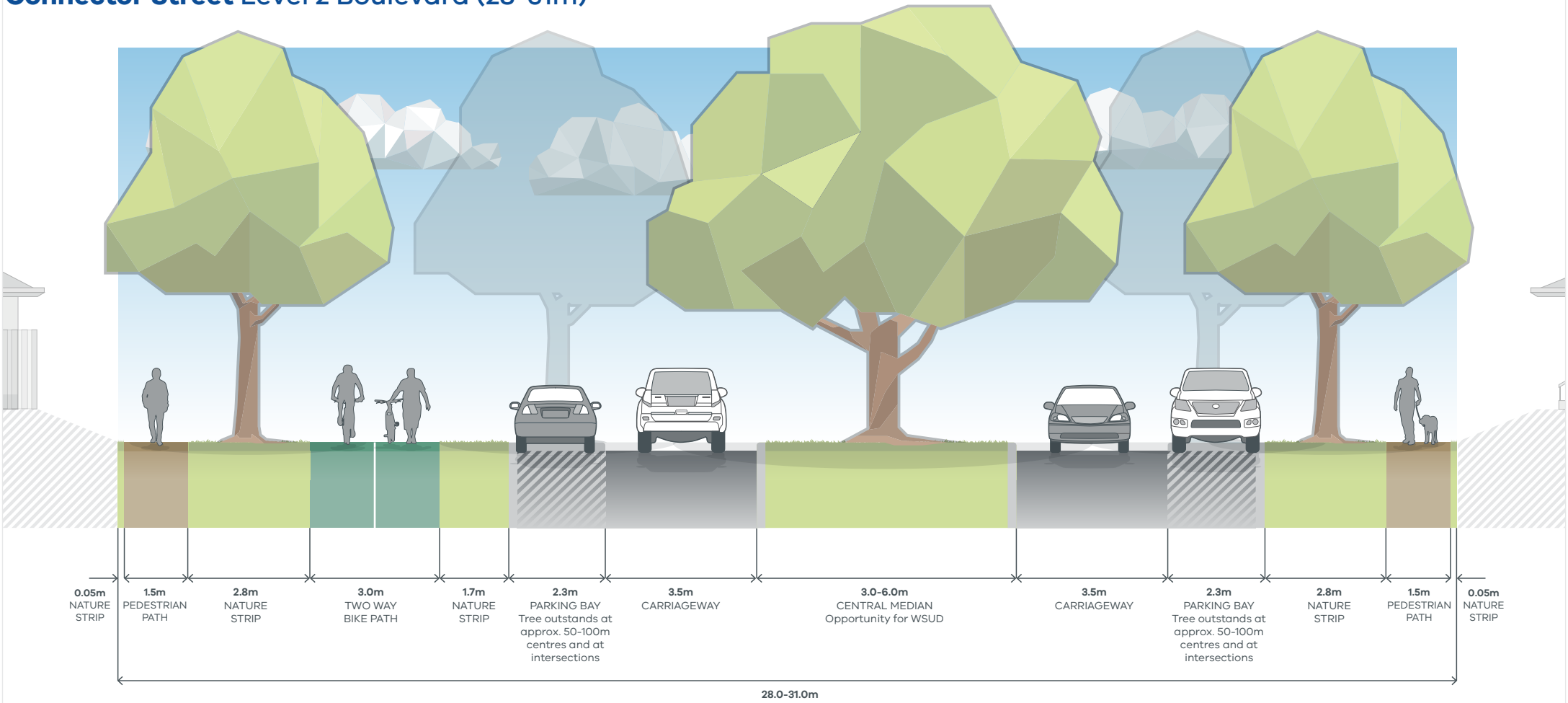
Cross Section 2
Connector Street level 1 (24m)



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be B2 Barrier Kerb as per the Infrastructure Design Manual.
- Where roads abut school drop-off zones and thoroughfares, grassed nature strip should be replaced with pavement. Canopy tree planting must be incorporated into any additional pavement.
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority.

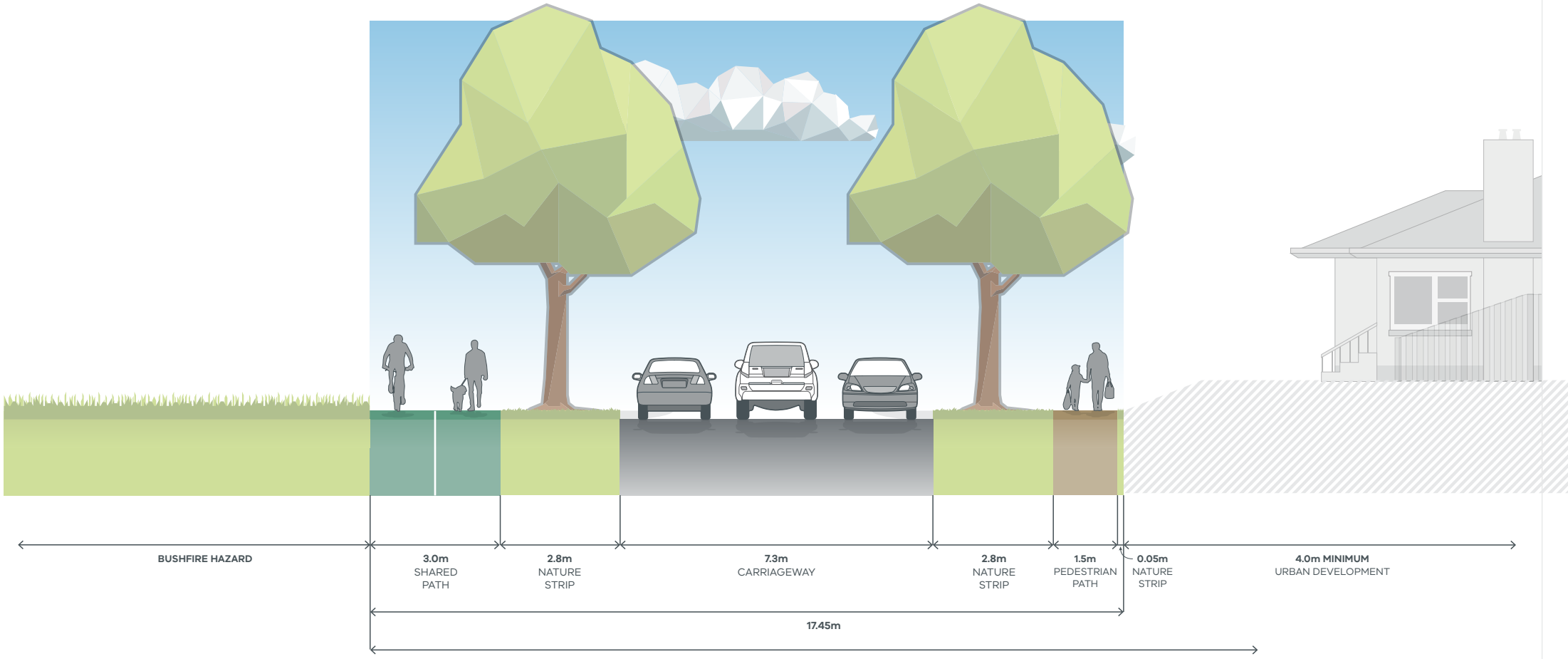
Cross Section 3
Connector Street Level 2 Boulevard (28-31m)



NOTES:

- Include a central median with large canopy trees to create a boulevard effect. Trees are to be centrally planted in median.
- Topsoil used in central medians is to be sandy loam, with a minimum depth of 200mm. The surface of medians is to be free-draining with a minimum cross fall of 2%, and is to be planted with warm season grasses.
- In areas where high pedestrian volumes are expected (e.g. around schools and town centres), central medians should be paved with harder wearing surfaces such as granitic sand or other pavements. Canopy tree planting must be incorporated into additional paved area.
- Any garden beds in central medians are to be offset 1.5m from back of kerb.
- Kerb to central median is to be SM2 semi-mountable kerb.
- Depending on the location of breaks in the median, provide intermediate pedestrian crossing points to accommodate mid-block crossings.
- An alternative boulevard treatment can be achieved through a wider verge on one side capable of accommodating a double row of canopy trees.
- Variations to indicative cross-section may include water sensitive urban design (WSUD) outcome. These could includebut are not limited to bioretention tree planter systems and/or median bioretention swales. Such variations must be to the satisfaction of the responsible authority.
- Parking bay widths are flexible and may be adjusted depending on need.
- Cross section may need to be adjusted to accommodate existing and future drainage reserves/service infrastructure to the satisfaction of the responsible authority.

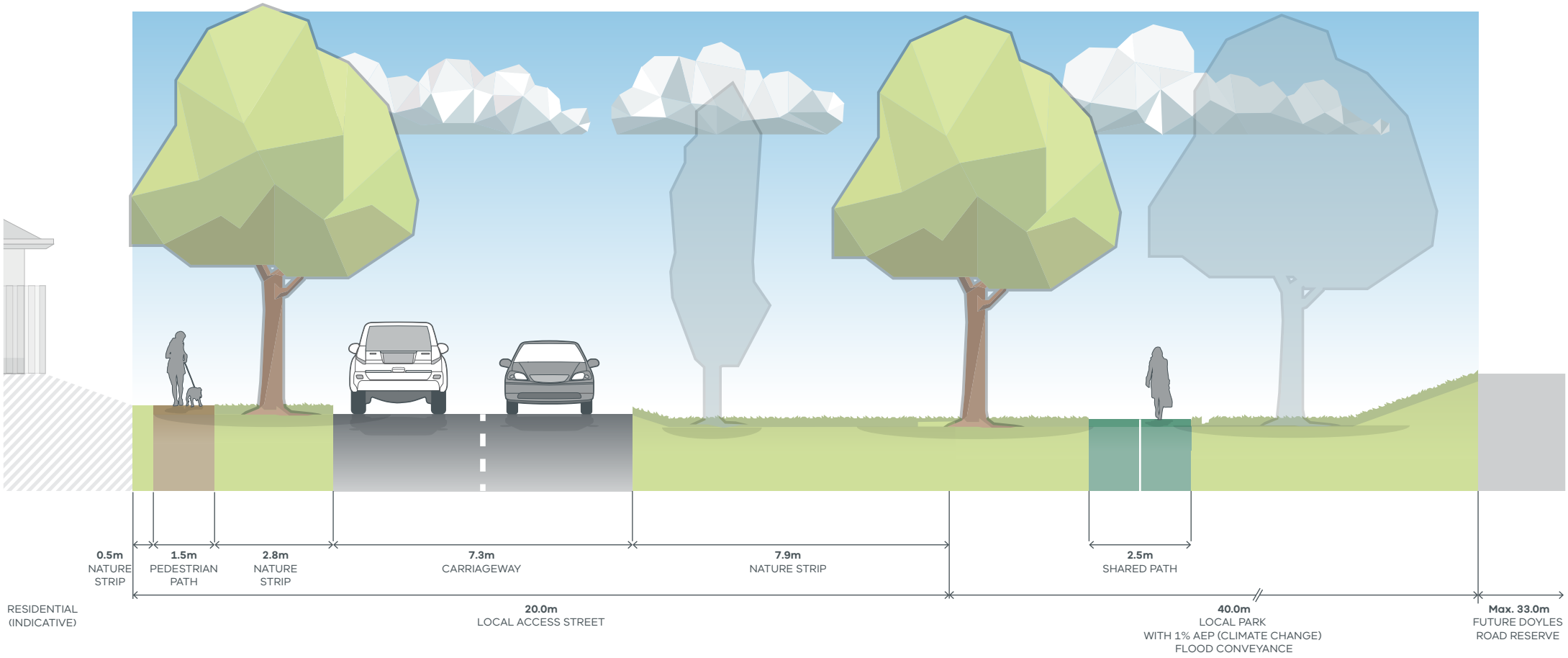
Cross Section 4
Local Access Street (17.45m) Bushfire Interface



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be SM modified (refer to the Infrastructure Design Manual).
- All dwellings will be separated at least 19 metres from the bushfire hazard.

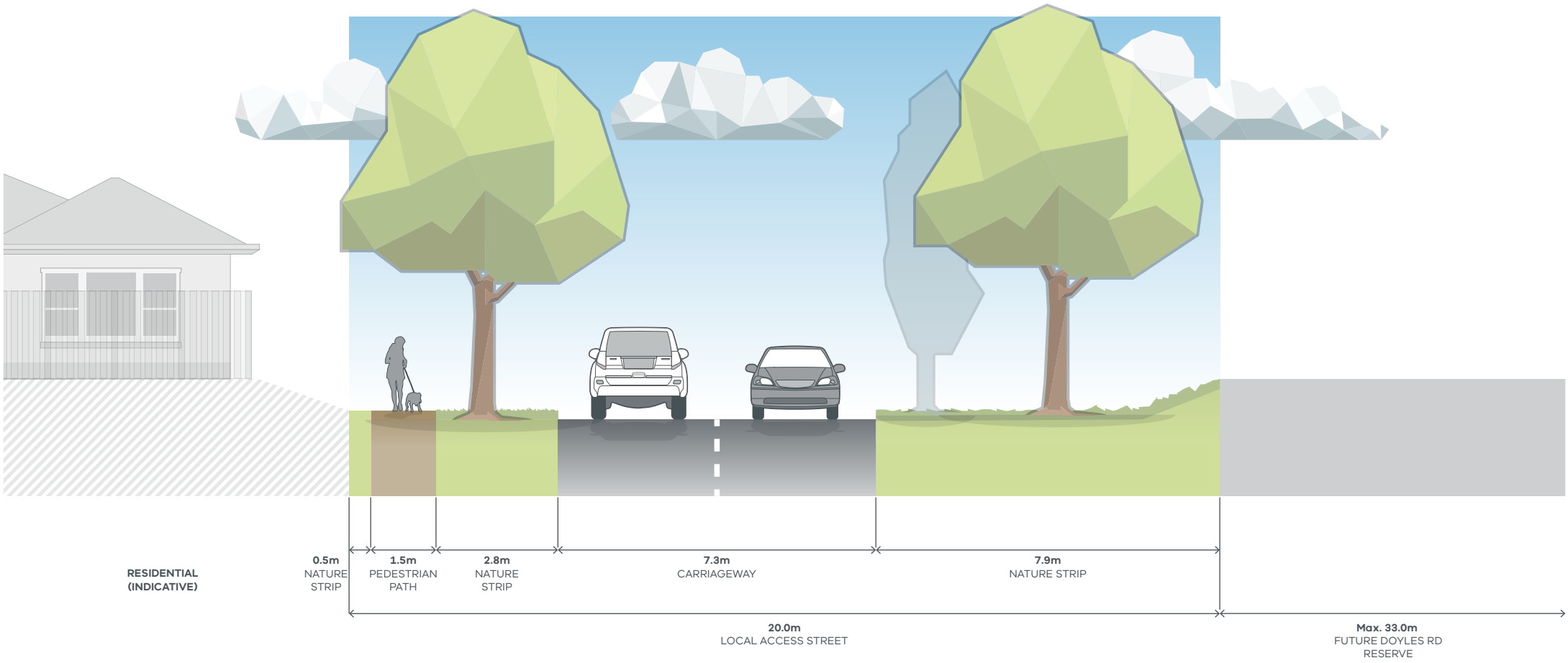
Cross Section 5a
Local Access Street Level 1 (20m) Doyles Road (South of Channel Road): Drainage reserve



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be SM modified (refer to the Infrastructure Design Manual).
- Delivery of a cycling route with regional function possible as part of Doyles Road duplication.
- Vehicular movement and access to residential properties abutting Doyles Road must be from internal local access roads, either loop roads and/or continuous frontage roads, provided that street lengths are limited to approximately 240 metres to control traffic speeds.
- Verge widths may be reduced where roads about open space within the consent of the responsible authority.
- Future road reserve widths may be reduced subject to the consent of the road authority.

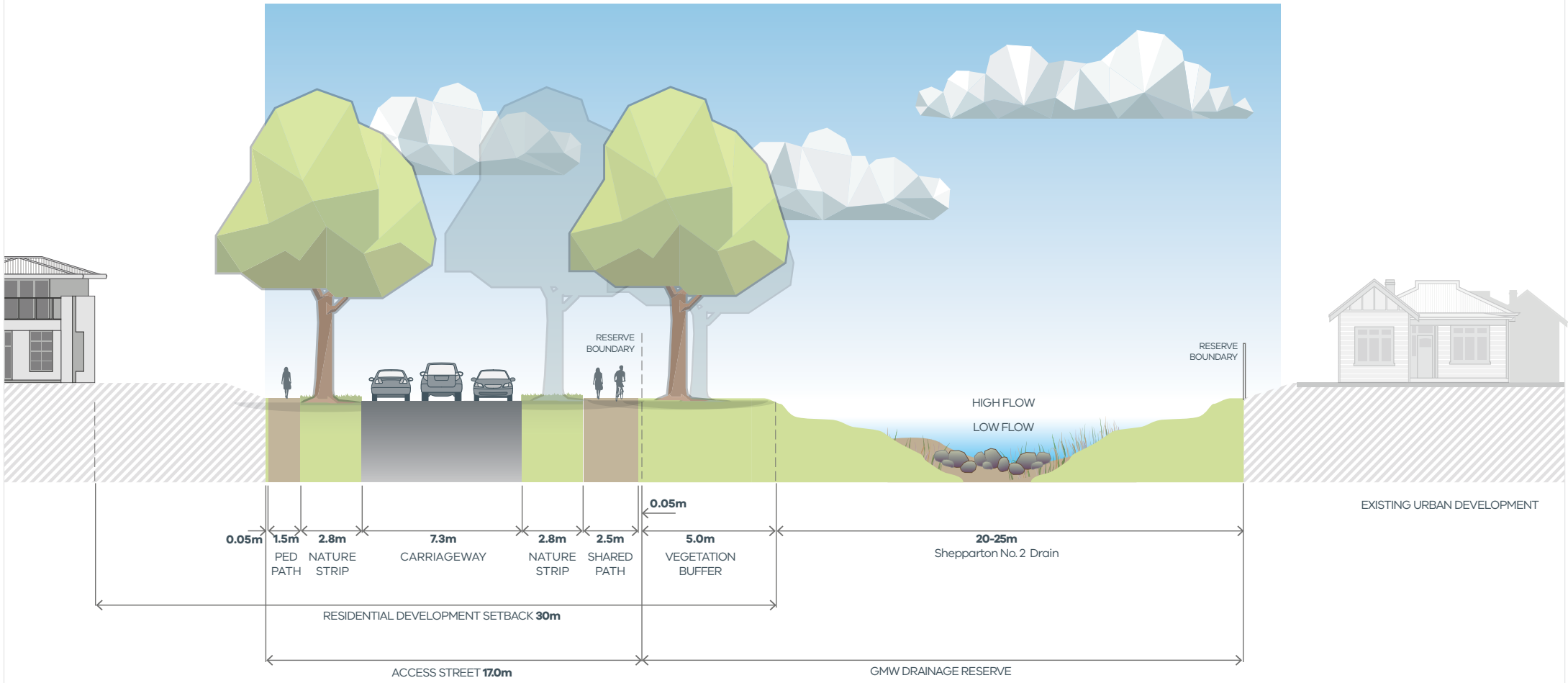
Cross Section 5b
Local Access Street Level 1 (20m) Doyles Road (North of Channel Road)



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be SM modified (refer to the Infrastructure Design Manual).
- Delivery of a cycling route with regional function possible as part of Doyles Road duplication.
- Vehicular movement and access to residential properties abutting Doyles Road must be from internal local access roads, either loop roads and/or continuous frontage roads, provided that street lengths are limited to approximately 240 metres to control traffic speeds.
- Verge widths may be reduced where roads about open space within the consent of the responsible authority.
- Future road reserve widths may be reduced subject to the consent of the road authority.

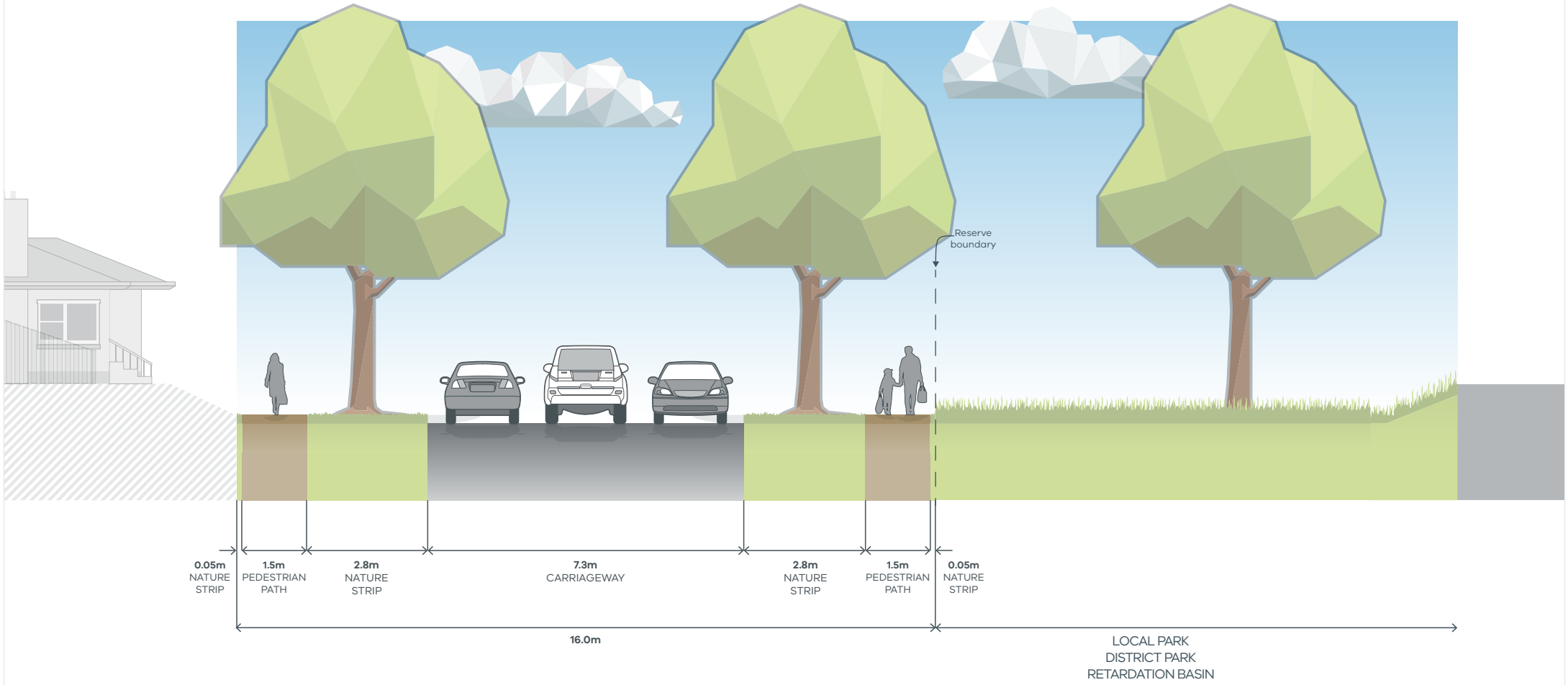
Cross Section 6
Local Access Street (17m) GMW Drain Interface



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be B2 Barrier Kerb.
- Verge widths may be reduced where roads about open space within the consent of the responsible authority.
- The distance required for the Shepparton No. 2 Drain will be in accordance with the PSP unless further agreed upon with the relevant authority.

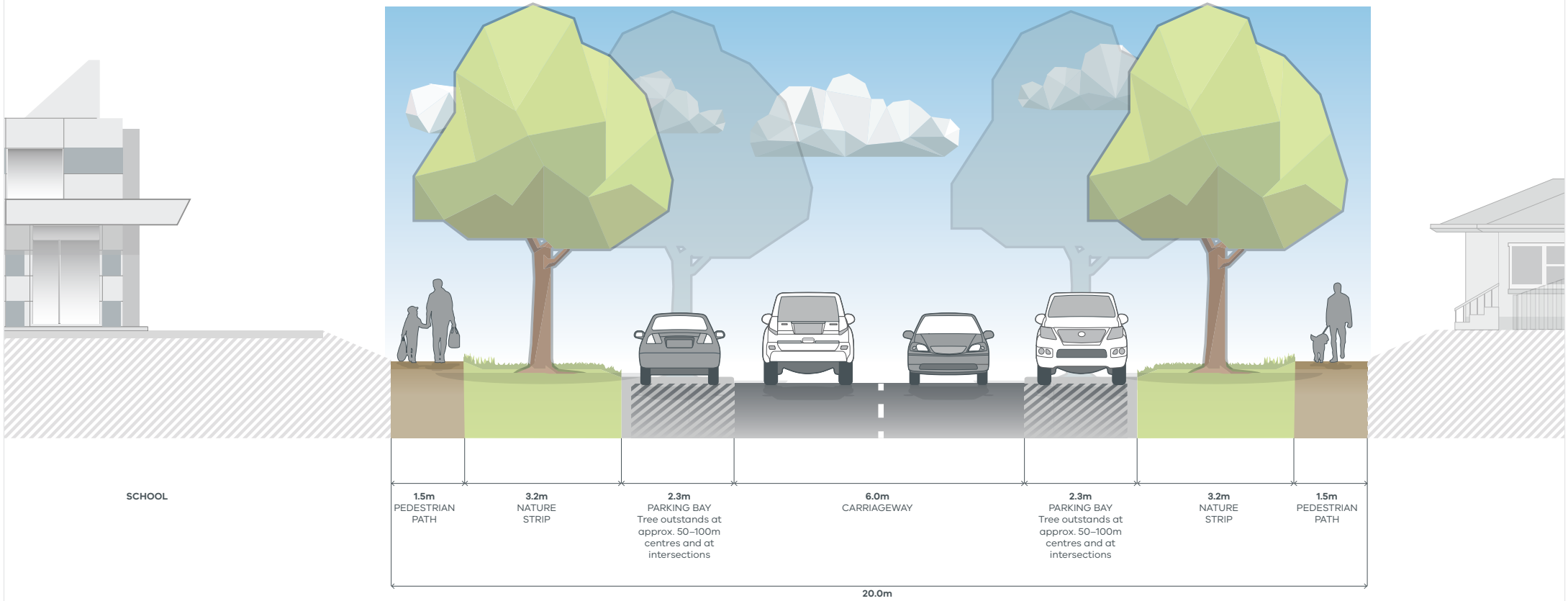
Cross Section 7
Local Access Street (16m) - Park and Retardation Basin Interface Street



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs abutting park to be B2 Barrier kerb and SM modified elsewhere (refer to the Infrastructure Design Manual).
- Verge widths maybe reduced where roads abut open space with the consent of the responsible authority.

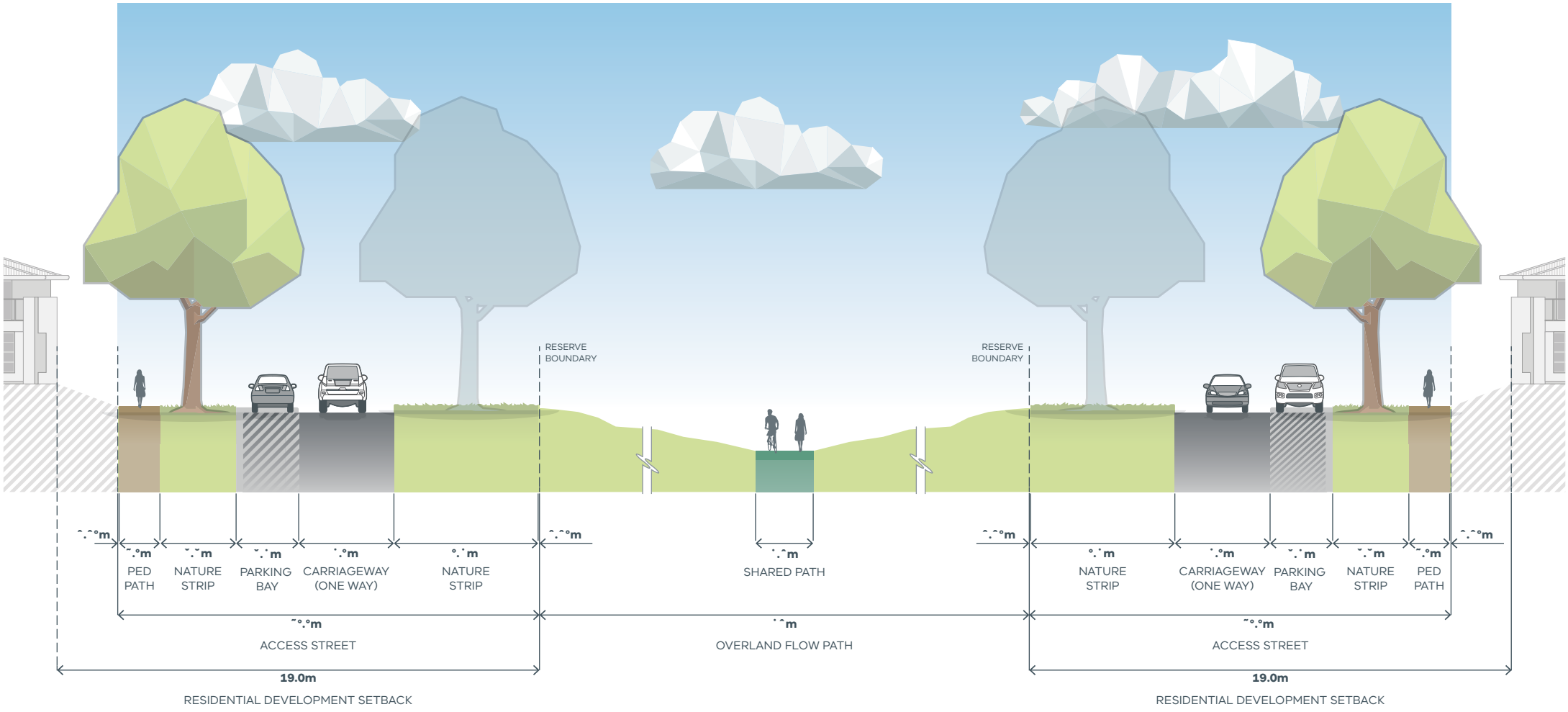
Cross Section 8
Local Access Street Level 2 (20m) School and Marketplace Interface



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be B2 Barrier Kerb.
- Verge widths may be reduced where roads about open space within the consent of the responsible authority.

Cross Section 9
Local Access Street (15.5m) Overland flow path Interface



NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be B2 Barrier Kerb.
- Verge widths may be reduced where roads about open space within the consent of the responsible authority.

5.5 Service Placement Guidelines

5.5.1 Standard road cross sections

The Infrastructure Design Manual outlines placement of services for a typical residential street environment. This approach is appropriate for the majority of the 'standard' road cross sections outlined in Appendix 5.4 containing grassed nature strips, footpaths, and road pavements.

5.5.2 Non-standard road cross sections

To achieve greater diversity of streetscape outcomes, which enhances character and amenity of these new urban areas, non-standard road cross sections are required. Non-standard road cross sections will also be necessary to address local needs, such as fully sealed verges for high pedestrian traffic areas in town centres and opposite existing and proposed school sites are encouraged.

For non-standard road cross sections, where service placement guidance outlined in The Infrastructure Design Manual are not applicable, the following service placement guidelines will apply:

Table 11 Service Placement Guide

	UNDER PEDESTRIAN PAVEMENT	UNDER NATURE STRIPS	DIRECTLY UNDER TREES[1]	UNDER KERB	UNDER ROAD PAVEMENT	WITHIN ALLOTMENTS	NOTES
SEWER	Possible	Preferred	Possible	No	Possible	Possible	
POTABLE WATER	Possible	Preferred	Preferred	No	Possible	No	Can be placed in combined trench with gas
RECYCLED WATER	Possible	Preferred	Preferred	No	Possible	No	
GAS	Possible	Preferred	Preferred	No	No	No	Can be placed in combined trench with potable water
ELECTRICITY	Preferred	Possible	Possible	No	No	No	Pits to be placed either fully in footpath or nature strip
FTTH/TELCO	Preferred	Possible	Possible	No	No	No	Pits to be placed either fully in footpath or nature strip
DRAINAGE	Possible	Possible	Possible	Preferred	Preferred	Possible	
TRUNK SERVICES	Possible	Possible	Possible	Possible	Preferred	No	

NOTES

1. Trees are not to be placed directly over property service connections
2. Placement of services under road pavement is to be considered when service cannot be accommodated elsewhere in road reserve. Placement of services beneath edge of road pavement/parking bays is preferable to within traffic lanes
3. Where allotment size/frontage width allows adequate room to access and work on a pipe
4. Where connections to properties are within a pit in the pedestrian pavement/footpath

5.6 Staging Plan Context

5.6.1 Development Setting

The *Shepparton South East Background Report* (Chapter 15) sets out the broader strategic and local context that have underpinned the VPA's consideration of precinct staging.

Detailed analysis further reveals that existing development fronts are approaching Shepparton South East from the north and northwest. Whilst extension into the precinct from any of the surrounding fronts would achieve the contiguous development patterns that distinguish orderly planning, the analysis reveals that it is the capacity of internal precinct landowners/developers that will be the key drivers of precinct development.

On balance, the precinct's arrangement of large land holdings and the capability of some key developers combine to establish active developer readiness to the north of Poplar Avenue, and the south of Channel Road.

5.6.2 Utility Servicing

The Shepparton South East Background Report details the precinct's servicing and utilities environment and capabilities. From the findings of the relevant background technical report, it was concluded that no servicing constraints that cannot be rectified via the standard processes at the time of development were identified.

From consultation, utility servicing providers did not identify constraints that would impact development staging. Relevant details are as follows:

- **Gas** – high pressure gas mains exist and can be connected to the PSP from Zurcas, Poplar, Feiglin, Channel and Doyles Roads.
- **Electricity** – high voltage lines and cables exist and can be connected to the PSP from Zurcas, Poplar, Feiglin, Channel and Doyles Roads with multiple substations along the existing network.
- **Telecommunications** – Telstra and NBN assists exist nearby and can be connected to the PSP from Zurcas, Poplar, Feiglin, Channel and Doyles Roads. Optus assets also exist within the northern section of Doyles Road.
- **Sewer** – sewer mains exist and can be connected to the PSP from Poplar, Channel, Feiglin and Doyles Roads as well as within a range of undetermined local roads within the western extent of the PSP.
- **Potable water** – water mains exist and can be connected into the PSP from Poplar, Channel, Feiglin and Doyles Roads as well as within a range of undetermined local roads within the western extent of the PSP.

The utility servicing analysis indicates that services could reasonably be extended into the precinct from any of the adjoining development areas to the north and the northwest of the precinct.

5.6.3 Overarching Drainage and Water Catchments

There is no urbanised stormwater system available in the precinct. Currently, the PSP features many Goulburn Murray Water (GMW) irrigation and rural water supply assets, including open drains and channels.

GMW supports transitioning all GMW assets within the precinct as development proceeds. Drain 2 will be required to remain in-situ due to the function it has in conveying runoff from residential development west of the precinct.

The precinct will be serviced by a system of seven retarding basins, each servicing a distinct sub-catchment. This means that the drainage strategy is not contingent on downstream works to support development, rather each sub-catchment can operate independently from others.

Public Acquisition Overlays (PAO) are proposed to be applied to all drainage land identified within the PSP, ensuring coordinated land transfer. This is useful in supporting development staging, as broadly, logical delivery of drainage infrastructure will support the progression of stages.

5.6.4 Community Infrastructure and other facilities

The Shepparton South East Background Report (Chapter 12) details the precinct's community facilities environment and future requirements. The following findings are relevant to precinct staging:

- Proximity to the existing Shepparton urban centre;
- Proximity to existing external primary and secondary schools;
- Proximity to existing external sports facilities and school sports facilities;
- Proximity to existing external community facilities including East Shepparton Bowling Club and several retirement villages;
- Identified need for a potential State Health Facility within the PSP; and
- Identification of a co-located town centre, primary school and multi-purpose children's centre at the corner of Channel Road and Feiglin Road.

The community infrastructure analysis indicates that early stages of precinct development should consider:

- prioritising the ability of the state government to deliver the health facility at the northern end of the precinct;
- facilitating reasonable access to the future community hub located in the central portion of the precinct; and
- facilitating reasonable access to existing commercial and community facilities located to the north and northwest of the precinct within established Shepparton.

5.6.5 Transport

Broader Transport System Objectives

Through consultation with DTP, whole of government goals and objectives have been established to guide precinct planning in line with state priorities and broader strategic directions. The following summarises the agreed state level objective:

To recognise and safeguard Doyles Road as part of the Victorian Principal Freight Network (PFN) and thereby align with the overarching objectives of the Victorian Freight Plan, including:

- Reducing the cost of doing business
- Improving the efficiency of moving freight while minimising adverse impacts
- Better connecting Victorian businesses with their local, interstate and export markets
- Providing sufficient future capacity

Existing and Future Network Conditions

There is an existing local road network that can service the precinct, including Channel Road, Poplar Avenue, Zurcas Lane and the existing section of Feiglin Road located along the central north-south axis of the precinct. These roads will be retained and form the connector road skeleton of the PSP, thereby facilitating access to surrounding local and arterial roads, including Archer Street to the west, Zurcas Lane to the north and Doyles Road to the east.

Doyles Road forms the eastern boundary of the PSP and includes existing cross intersections with Poplar Avenue and Channel Road. No additional access intersections into the PSP are proposed along Doyles Road as part of the Shepparton South East PSP.

Doyles Road is a declared arterial road and part of the Principal Freight Network. It is part of the Shepparton Alternative Route, which the Department of Transport and Planning (DTP) classifies as an important north-south alternative to the Goulburn Valley Highway, particularly for heavy freight movements.

The PSP road network and key internal and external intersections have been assessed by transport consultants Stantec to determine future traffic conditions at ultimate development. The findings from the transport modelling undertaken by Stantec and presented in their August 2023 Transport Impact Assessment Report (TIAR), indicate that a number of locations within, and connecting to the PSP require new or upgraded transport infrastructure to safely accommodate the forecast levels of traffic. These projects were identified to be:

- **IN-01** – Poplar Avenue and Doyles Road
- **IN-02** – Channel Road and Archer Street
- **IN-03** – Channel Road and Doyles Road
- **IN-04** – Poplar Avenue and Feiglin Road/Zurcus Lane
- **IN-05** – Channel Road and Feiglin Road

Additionally, a safe pedestrian crossing point was requested by Council and Department of Education to provide for pedestrian movements from the PSP to the east (including to the existing Orvale Primary School):

- **PED-01** – Signalised Pedestrian Crossing Doyles Road/Channel Road

As described above, Doyles Road is classified as a state significant freight route, therefore a more detailed interrogation of future safety and performance of the Poplar Avenue and Channel Road intersections was undertaken by Stantec at the request of DTP. The additional analysis tested the number of residential lots that would be able to be developed prior to the need for the identified intersection upgrades. The analysis is referred to as a 'trigger point analysis' and used Degree of Saturation (DOS) as its traffic engineering measure of intersection performance. For this trigger point analysis, DTP requested a maximum DOS of 0.8. The findings are summarised as follows:

- The existing priority-controlled intersections will be able to accommodate between four (4) to five (5) years of development, or a little more than 780 lots, whilst operating at a DOS of less than 0.8 in all of the peak periods respectively. By year six (6), or 1,165 lots, the Doyles Road / Poplar Avenue intersection will exceed this figure and reach a DOS of 0.92, which is the point that queues and delays would start to increase.
- The analysis also shows that the Doyles Road / Channel Road intersection is able to operate in its current form up to year 9, however this assumes that there will be no redistribution of traffic from the Doyles Road / Poplar Avenue intersection as a result of congestion and / or its conversion to a left in / left out arrangement. Indeed, any redistribution of traffic through other parts of the PSP and network will reduce demand and increase the number of lots for each respective year that have been assessed at the two intersections.
- Having consideration of the trigger analysis, and the potential for redistribution of trips from Poplar Avenue when it reaches a DOS of 0.8, it can be concluded that in the order of 800 lots should be applied as a cap or trigger for when the Doyles Road / Poplar Avenue intersection is required to be converted to a left in / left out intersection, and the Doyles Road / Channel Road intersection be converted to a roundabout controlled intersection.

The findings of the Doyles Road trigger point analysis have been used to inform the transport infrastructure components of the IDSP. Additionally, they have been used in the development of Schedule 2 to the Urban Growth Zone (Specific provisions – Subdivision).

At the local network level, Archer Street is identified in the TIAR as an important external connector street that will function as a key distributer of PSP traffic to/from the Shepparton urban centre. Channel Road will function as a key east-west connection to Archer Street and will link the proposed Doyles Road roundabout to the Archer Street intersection. The Archer Street/Channel Road intersection upgrade from a give-way control to traffic signals (IN-02) is required to complete this important east-west connector access route in the early stages of precinct development.

On the north-south axis, the Feiglin Road-Zurcas Lane route will function as the central spine of the precinct and will ultimately provide access to the precinct's local town centre. Prior to establishment of the internal town centre, early stages of precinct development can be linked to the nearby Shepparton urban centre by leveraging the existing section of Zurcas Lane and its intersection with Midland Highway.

VICTORIA
State Government

Shepparton South East
Precinct Structure Plan

December 2024

Victorian Planning Authority