

# Shepparton North East

## Precinct Structure Plan

February 2019



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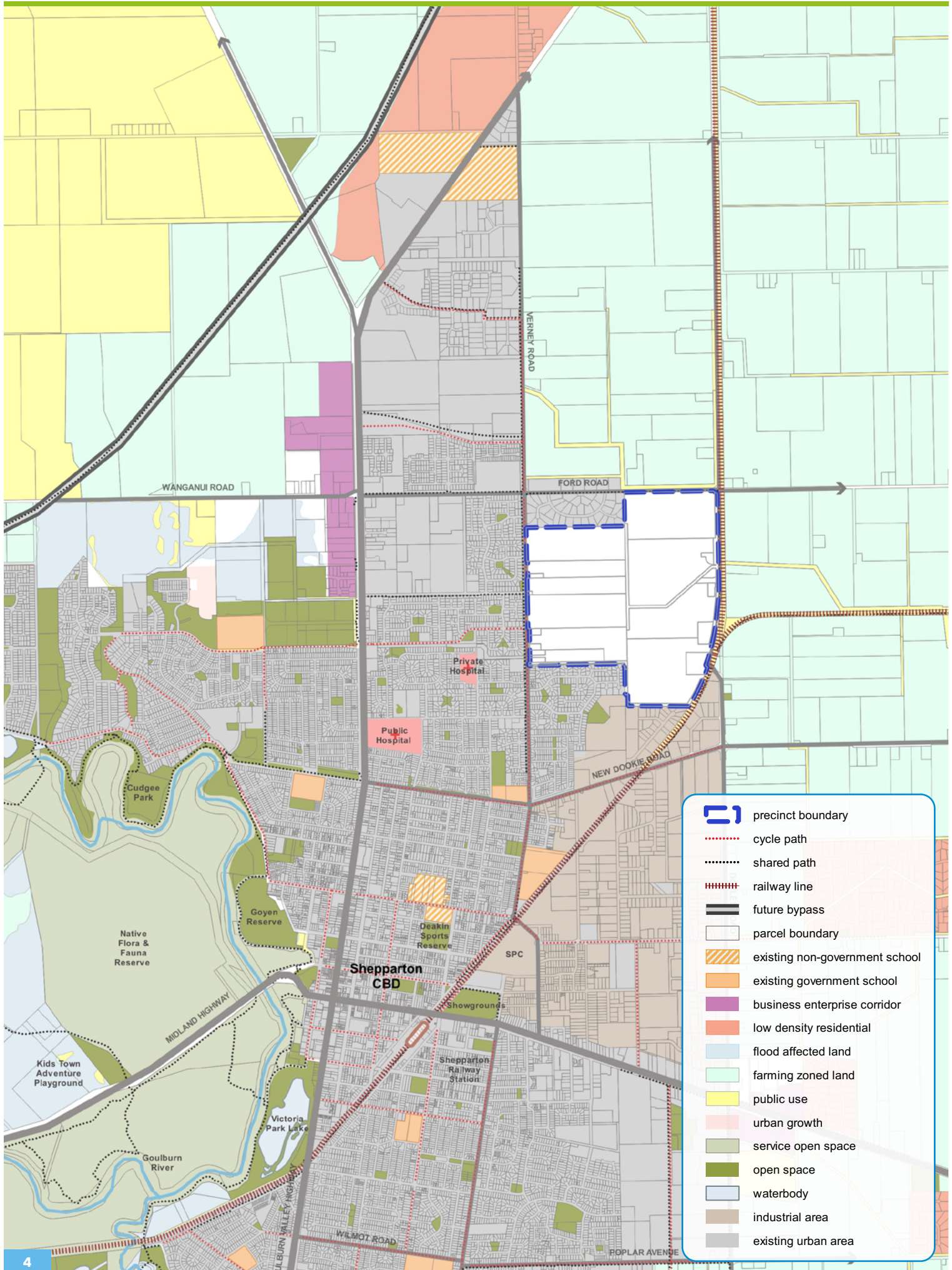
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## 1.0 INTRODUCTION

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The Shepparton North East Precinct Structure Plan (PSP) has been prepared by the Victorian Planning Authority (VPA) in partnership with Greater Shepparton City Council (council) and with the assistance of government agencies, service authorities and major stakeholders.

The PSP is a long-term plan for urban development. It describes how the land is to be developed as well as how and where services are planned to support development.

Generally the PSP:

- Sets out plans to guide the delivery of quality urban environments in accordance with relevant local and Victorian Government guidelines listed below
- Enables the transition of non-urban to urban land
- Sets the vision for how land should be developed and the outcomes achieved
- 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, affordable lifestyle
- Sets out objectives, guidelines, and requirements for land use, development and subdivision
- Provides government agencies, the council, developers, investors and local communities with certainty about future development.

The PSP is informed by:

- State and Local Planning Policy Framework as set out in the Greater Shepparton Planning Scheme
- *Plan Melbourne 2017–2050* (DELWP, 2017)
- *Hume Regional Growth Plan* (Department of Transport, Planning and Local Infrastructure, 2014)
- *Greater Shepparton 2030 Strategy Plan* (Greater Shepparton City Council, 2006)
- *Precinct Structure Planning Guidelines* (Growth Areas Authority, 2008)
- *Greater Shepparton Housing Strategy* (David Lock Associates Pty Ltd, 2011)
- *Infrastructure Design Manual* (Local Government Infrastructure Design Association).

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

- *Shepparton North East Background Report*, as described in section 1.3 of the PSP
- *Shepparton North East Development Contributions Plan*, as described in section 1.4 of the PSP.

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## 1.1 How to read this document

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

A planning application and planning permit must implement the outcomes of the PSP. The outcomes are expressed as the vision and objectives of the PSP.

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 this precinct structure plan. A requirement may reference a plan, table or figure in the PSP.

**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 reference a plan, table or figure in the PSP.

**CONDITIONS** that must be included in a planning permit are outlined in Schedule 1 to Clause 37.07 Urban Growth Zone in the *Greater Shepparton Planning Scheme*.

Meeting these requirements, guidelines and conditions will implement the outcomes of the PSP. Development must also comply with other Acts and approvals, where relevant (e.g. the *Aboriginal Heritage Act 2006* in the case of cultural heritage, among others).

Not every aspect of the land's use and development is addressed in the PSP and a responsible authority may manage development and issue permits as relevant under its general discretion.

## 1.2 Land to which this precinct structure plan applies

The PSP applies to approximately 177 hectares of land located to the north east of the Shepparton CBD and is generally bound by Ford Road to the north, Grahamvale Road to the east, a drainage reserve to the south and Verney Road to the west.

The PSP is one of five major growth corridors in the Shepparton–Mooroopna urban area. The precinct is topographically flat and historically has supported horticultural land uses, including fruit orchards; as such existing irrigation channels and drainage assets adjoin and transverse the precinct. The PSP will support an existing government primary school and an existing non-government primary school with adjoining place of worship.

## 1.3 Background information

Detailed background information on the precinct is available, including the local and municipality context, history, biodiversity, visual character, landform and topography, land contamination, cultural heritage, integrated water management, transport, economic and retail provision, and community infrastructure. This information is summarised in the *Shepparton North East Background Report* and has informed the preparation of the PSP.

## 1.4 Shepparton North East Development Contributions Plan

The Shepparton North East Development Contributions Plan (DCP) has been developed in parallel with the PSP to inform and direct the future planning and development of the precinct. The DCP requires development proponents to make a contribution toward infrastructure required to support the future community.

The DCP sets out the requirements for infrastructure funding across the precinct. The DCP will be a separate document incorporated into the *Greater Shepparton Planning Scheme* and is implemented through Schedule 4 to Clause 45.06 Development Contributions Plan Overlay (DCPO).

	precinct boundary		retardation basin
	local convenience centre		railway line
	proposed land for roundabout		connector street
	government school - existing and potential expansion		connector street - boulevard
	non-government school - existing and potential expansion		local access street
	community facility		existing urban area
	drainage reserve		existing industrial area
	open space		non-urban area
	residential		





## 2.0 OUTCOMES

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### 2.1 Vision

The PSP will offer the Shepparton community a new residential neighbourhood in close proximity to the Shepparton city centre. The new neighbourhood will seamlessly integrate with the surrounding urban framework of Shepparton. The precinct will ultimately support approximately 1,500 homes and 4,000 residents.

The precinct will feature abundant open space, including four distinct retarding basins that integrate with a variety of adjoining parks. Reserves associated with the existing Goulburn–Murray Water (GMW) drains will be converted into landscaped waterway corridors with shared path links, connecting the precinct with the city's open space network.

An anticipated local convenience centre will allow residents to shop locally for basic conveniences whilst capitalising on its Verney Road frontage for exposure to surrounding neighbourhoods. The local convenience centre is positioned to integrate directly with a planned community centre and town square, creating a vibrant community hub for local residents.

The precinct will build on the structure of the existing road network and include safe and convenient access to Verney Road, Ford Road and Grahamvale Road to connect the precinct with the wider Shepparton area. Tree-lined connector streets will cater to local bus routes within the precinct and feature shared bicycle and pedestrian paths that directly link residents to schools, community facilities and the open space network.

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.

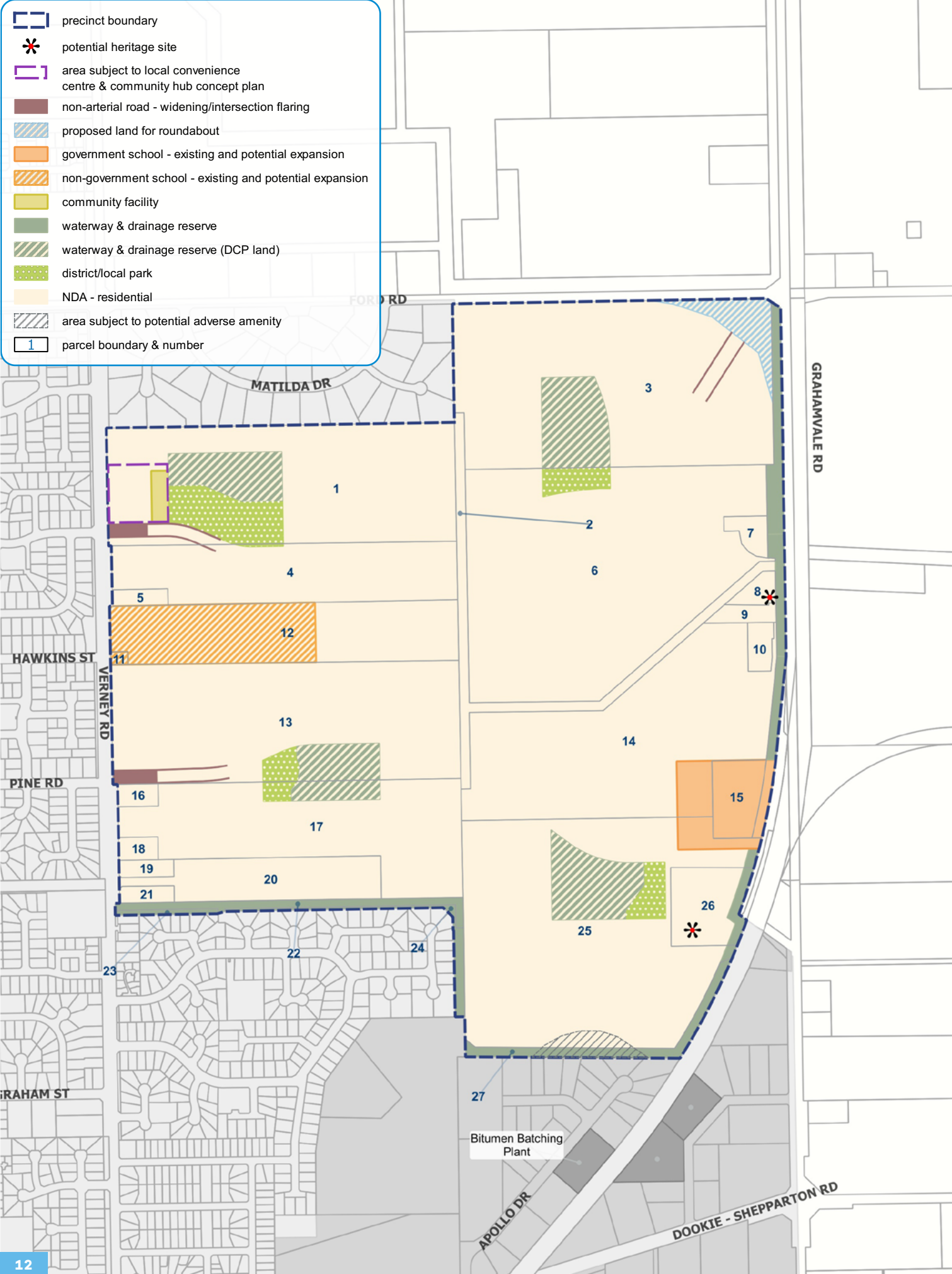
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## 2.2 Objectives

The development of the PSP is guided by a set of key objectives.

OBJECTIVES	
IMAGE, CHARACTER & HOUSING	
<b>O1</b>	Create an attractive urban environment that features tree-lined streets and a diversity of open spaces with high-amenity landscaping.
<b>O2</b>	Provide urban design outcomes which recognise the history of the site, its relationship to horticulture and its relationship to neighbouring farmland to provide an appropriate transition from rural to urban landscapes.
<b>O3</b>	Promote a diversity of dwellings to meet the needs of the future resident population.
EMPLOYMENT & LOCAL CONVENIENCE CENTRES	
<b>O4</b>	Encourage the provision of local retail and community services, to meet the daily needs of residents within the precinct, without compromising the function and role of nearby activity centres.
OPEN SPACE, NATURAL SYSTEMS & COMMUNITY FACILITIES	
<b>O5</b>	Establish generous public open space assets that are visually and physically linked via the local road network and associated pedestrian and cycling trails.
<b>O6</b>	Promote local self-sufficiency by encouraging private and public community facilities to establish in the precinct.
<b>O7</b>	Establish appropriate waterway setback widths to achieve a balance between water quality, biodiversity, recreation and visual amenity while maximising developable land.
TRANSPORT & MOVEMENT	
<b>O8</b>	Create a road network that is permeable and facilitates efficient and direct pedestrian, cyclist and vehicle movement.
<b>O9</b>	Provide alternatives to the use of private vehicles through the creation of direct links to commercial areas, schools and community assets for pedestrians, cyclists and public transport users.
INTEGRATED WATER MANAGEMENT & UTILITIES	
<b>O10</b>	Deliver an integrated and resilient water system that supports liveable and sustainable communities, protects the environmental health of urban waterways and the Goulburn River and delivers affordable, efficient and safe water services.
PRECINCT INFRASTRUCTURE PLAN & STAGING	
<b>O11</b>	Ensure that development staging is co-ordinated with the delivery of key local and State infrastructure.
<b>O12</b>	Ensure that development responds to the staged decommissioning of GMW channels.

- precinct boundary
- potential heritage site
- area subject to local convenience centre & community hub concept plan
- non-arterial road - widening/intersection flaring
- proposed land for roundabout
- government school - existing and potential expansion
- non-government school - existing and potential expansion
- community facility
- waterway & drainage reserve
- waterway & drainage reserve (DCP land)
- district/local park
- NDA - residential
- area subject to potential adverse amenity
- parcel boundary & number



## 2.3 Land use budget

The land use budget in Table 1 provides a summary of the land required for transport, community facilities, education facilities, and open space and identifies the total amount of land available for development in the precinct.

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 of the Shepparton North East precinct is 176.87 hectares. The NDA is 145.74 hectares, meaning approximately 83% of the land within the precinct is available for development.

Based on a residential development yield average of 10 dwellings per net developable hectare, the PSP will generate approximately 1,500 dwellings to accommodate more than 4,000 new local residents.

Table 1 Summary land use budget

DESCRIPTION	SHEPPARTON NORTH EAST PSP		
	HECTARES	% OF TOTAL	% OF NDA
<b>TOTAL PRECINCT AREA (HA)</b>	<b>176.87</b>		
<b>TRANSPORT</b>			
Non-arterial road widening and intersection flaring (DCP land)	0.79	0.45%	0.54%
<b>Sub-total transport</b>	<b>0.79</b>	<b>0.45%</b>	<b>0.54%</b>
<b>COMMUNITY &amp; EDUCATION</b>			
Government school – existing & potential expansion	3.56	2.01%	2.44%
Non-government school – existing & potential expansion	5.35	3.03%	3.67%
Local community facility (DCP land)	0.40	0.23%	0.28%
<b>Sub-total community &amp; education</b>	<b>9.31</b>	<b>5.26%</b>	<b>6.39%</b>
<b>OPEN SPACE</b>			
<b>DRAINAGE RESERVE</b>			
Waterway & drainage reserve	6.19	3.50%	4.25%
Waterway & drainage reserve (DCP land)	9.12	5.16%	6.26%
<b>Sub-total drainage reserve</b>	<b>15.31</b>	<b>8.66%</b>	<b>10.51%</b>
<b>PARKS</b>			
District/local park (DCP land)	4.32	2.44%	2.97%
<b>Sub-total parks</b>	<b>4.32</b>	<b>2.44%</b>	<b>2.97%</b>
<b>TOTAL ALL OPEN SPACE</b>	<b>19.63</b>	<b>11.10%</b>	<b>13.48%</b>
<b>OTHER</b>			
Proposed land for roundabout	1.40	0.79%	0.96%
<b>Sub-total other</b>	<b>1.40</b>	<b>0.79%</b>	<b>0.96%</b>
<b>TOTAL NET DEVELOPABLE AREA – (NDA) HA</b>	<b>145.74</b>	<b>82.40%</b>	

*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.*

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

### 3.0 IMPLEMENTATION

#### 3.1 Image, character, heritage & housing

##### 3.1.1 Image & character

REQUIREMENTS	
<b>R1</b>	Street trees must be planted on both sides of all roads and streets (excluding laneways) at regular intervals appropriate to tree size at maturity, in accordance with relevant council landscaping policy unless otherwise agreed by the responsible authority.
<b>R2</b>	All public landscape areas must be planted and designed to the satisfaction of the responsible authority.
<b>R3</b>	Street tree planting must use locally appropriate species and be consistent with any guidance provided by cross sections in Appendix B, unless otherwise approved by the responsible authority.
<b>R4</b>	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.
<b>R5</b>	Subdivision applications that include the local convenience centre and community hub concept illustrated on Figure 1 must reflect the character of the intended land use and not detract from neighbouring residential amenity.
GUIDELINES	
<b>G1</b>	Street networks within subdivisions should be designed to maximise the number of connections and direct views to the open space network, community facilities and the local convenience centre.
<b>G2</b>	High quality and cohesive landscape treatments should be provided throughout the precinct, most particularly in streetscapes and along waterway corridors.
<b>G3</b>	Built form on corner lots should positively address both frontages through the use of architectural treatments and landscaping.
<b>G4</b>	A consistent suite of lighting and furniture should be used across neighbourhoods, appropriate to the type and role of street or public space.
<b>G5</b>	Hard landscaped areas within open space should incorporate local materials, natural colours and finishes to complement the landscape heritage.
<b>G6</b>	Materials salvaged from decommissioned farming operations in the precinct should be incorporated into landscape features, where appropriate.
<b>G7</b>	Planting of locally appropriate indigenous trees is encouraged along streets fronting the open space network.

##### 3.1.2 Heritage

REQUIREMENTS	
<b>R6</b>	Development of land adjoining a heritage site identified on Plan 3 and under the Heritage Overlay must be respectful of the scale, form, siting and heritage significance of the place or building.
GUIDELINES	
<b>G8</b>	Development of land adjoining a potential heritage site identified on Plan 3, should enhance where possible the cultural landscape and irrigation farming heritage of the area.

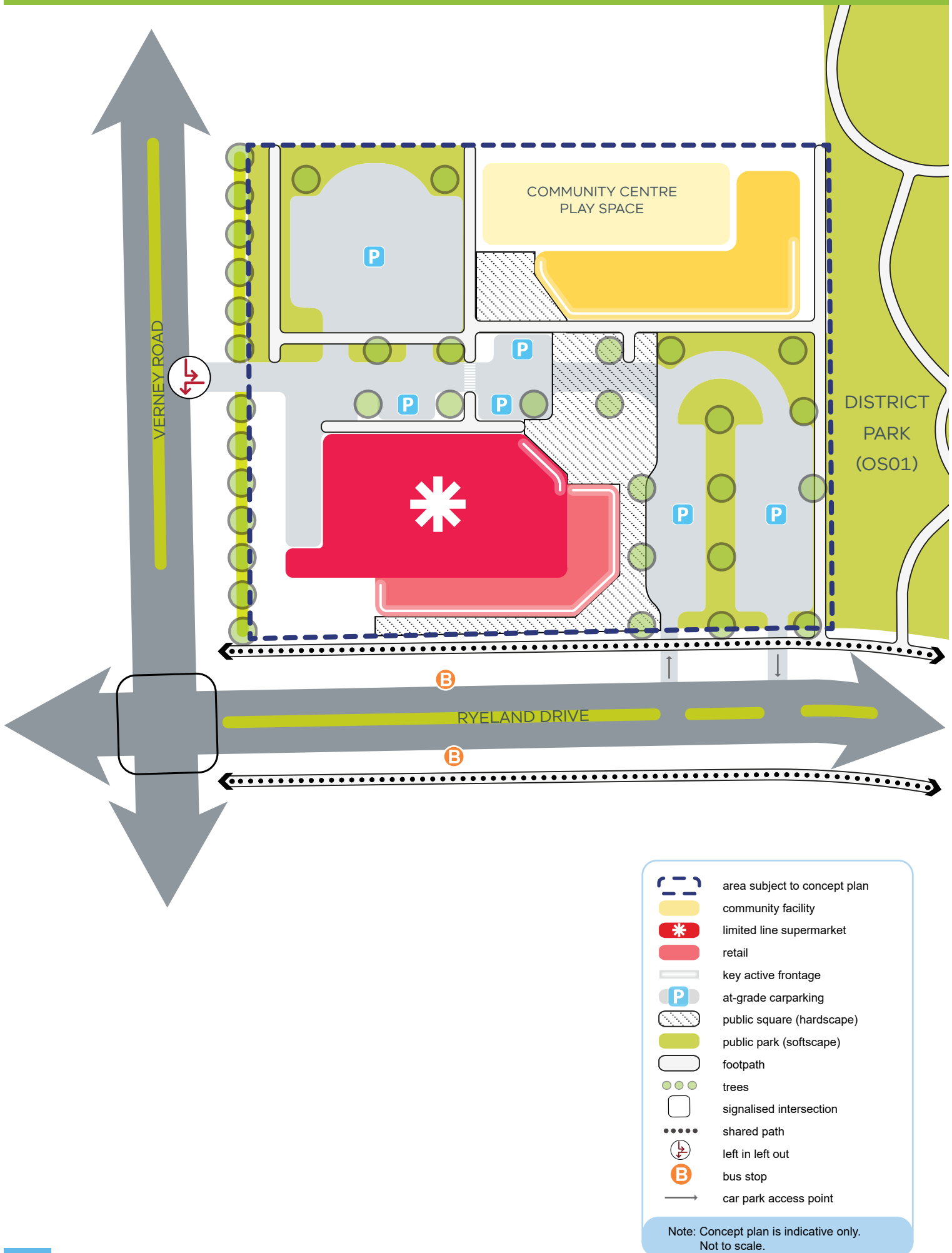
### 3.1.3 Housing

REQUIREMENTS	
<b>R7</b>	Subdivision of land must deliver an overall minimum average density of 10 dwellings per net developable hectare. Where a subdivision proposal represents a single stage or limited number of stages, development proponents must demonstrate how the subdivision will contribute to the eventual satisfaction of this requirement through further stages of development.
<b>R8</b>	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 should be used as a guide to demonstrate this requirement has been met.
<b>R9</b>	Dwellings must front or side: <ul style="list-style-type: none"> <li>• Waterway, drainage reserve and the open space network (including local parks)</li> <li>• Arterial roads, connector and local streets</li> <li>• The rail corridor, unless otherwise agreed by the responsible authority.</li> </ul> The siting of lots to waterways, open space and primary street frontages must be kept to a minimum.
<b>R10</b>	Subdivision applications must include indicative layouts for any lots identified for future development of medium density or integrated housing that suitably demonstrate: <ul style="list-style-type: none"> <li>• Potential dwelling yield</li> <li>• Active interfaces with adjacent street, open space and waterways</li> <li>• Safe and effective internal vehicle and pedestrian circulation</li> <li>• Delivery of dwelling diversity and lot size diversity</li> <li>• Servicing arrangements.</li> </ul>
<b>R11</b>	Residential subdivision applications must demonstrate how the subdivision has been designed to minimise adverse amenity impacts on any existing low density lots directly abutting the development, where appropriate.
GUIDELINES	
<b>G9</b>	Specialised housing forms such as lifestyle communities, retirement living or aged care facilities should be located in close proximity to the local convenience centre and community facilities and easily accessible by public transport.
<b>G10</b>	Subdivision of land within a 200 metre walkable distance of the community facilities and designated public transport routes illustrated on Plan 5 should create a range of lot sizes suitable for the delivery of medium density housing.

Table 2 provides an example of the typical housing types that might be provided on a range of lot sizes that support the housing diversity objective.

Table 2 Housing type by lot size guide

HOUSING TYPES THAT MAY BE SUPPORTED	LOT SIZE CATEGORY (M <sup>2</sup> )		
	LESS THAN 300M <sup>2</sup>	301–600M <sup>2</sup>	MORE THAN 600M <sup>2</sup>
Small lot housing (including townhouses 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)			✓





### 3.2 Local convenience centre & employment

The Shepparton Central Business District (CBD) is classified as a Central Activities District (CAD) in the *Commercial Activity Centres Strategy* (Essential Economics Pty Ltd, 2015). The Shepparton CBD is the primary focus for public and private investment in retail, commercial, administrative and community facilities. As a result, other commercial centres within Shepparton are used to complement the services provided by the Shepparton CBD rather than compete with it.

The Shepparton North activity centre is located to the west of the precinct and is classified as a Sub-Regional Centre which comprises an IGA and a small number of shops. The current retail floorspace is well-below the allowable shop floorspace in the planning scheme and it's anticipated this centre will grow. This centre occupies a prominent position as a 'gateway' location to the northern edge of the Shepparton urban area.

The proposed convenience centre within the PSP is considered a 'local centre' in the *Commercial Activity Centre Strategy* (Essential Economics Pty Ltd, 2015) and is intended to meet local convenience needs only. The convenience centre will not include uses such as a full-line supermarket that would be more appropriately located in the Shepparton North activity centre. A local centre is defined as a small activity centre that serves a localised 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.

#### 3.2.1 Local convenience centre

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 Verney Road. The design of the centre will directly integrate with the neighbouring community facilities and open space to form a vibrant community hub.

#### REQUIREMENTS

- R12** Buildings as part of the local convenience centre must provide:
- Primary vehicle access to tenancies via car parking from Verney Road
  - Secondary vehicle access to short-term car parking from the connector street
  - Active and articulated frontages that are orientated to address the connector street and interface with surrounding uses, including the community facilities
  - Sensitive design and location of any loading zone must ensure it does not adversely impact on the surrounding residential uses or detract from the design of the centre and its presentation to any street frontage.

#### GUIDELINES

- G11** The key design elements of the local convenience centre should have regard to the indicative concept plan (Figure 1 and Appendix C), including:
- Integration and connectivity of the local convenience centre with the community centre and district open space through design, landscape and connectivity of paths and access roads
  - Consideration for pedestrian and cyclist access to the site, including opportunities for pedestrian crossings in proximity to bus stop locations
  - Incorporation of shared infrastructure (e.g., seating, car parking and landscaping)
  - Landscaping, screening and shading of car park areas and, in addition, large trees along the Verney Road interface
  - A central square or plaza area.
- G12** The delivery of any local convenience centre should:
- 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 within the centre are easily accessible to pedestrians
  - 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.

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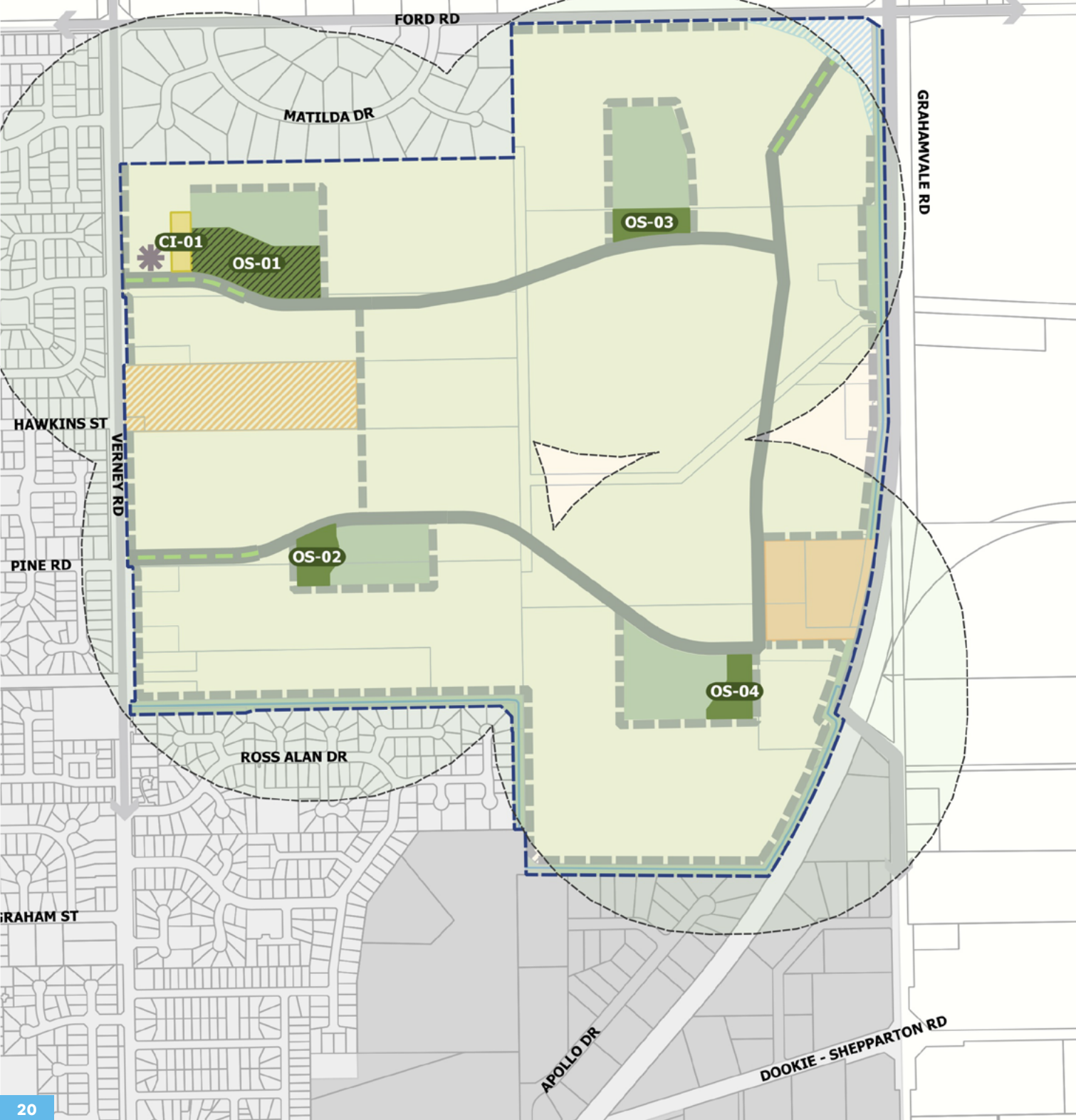
### 3.2.2 Employment

REQUIREMENTS	
<b>R13</b>	Subdivision applications that include the local convenience centre and community hub concept illustrated on Figure 1 must demonstrate how the subdivision has been designed to minimise adverse amenity for any surrounding residential neighbourhoods.
<b>R14</b>	The local convenience centre and community hub concept must relate to and respond positively to the adjacent residential land through high quality urban design treatments and avoid long blank walls or fence lines with minimal visual interest along road frontages.
GUIDELINES	
<b>G13</b>	Land surrounding the local convenience centre should facilitate flexible mixed uses compatible with job creation and residential neighbourhoods.

Table 3 Anticipated precinct employment creation guide

LAND USE	EMPLOYMENT MEASURE	JOBS PER EMPLOYMENT MEASURE	ANTICIPATED QUANTITY IN PRECINCT	ANTICIPATED QUANTITY OF JOBS
Local convenience centre	Jobs / 30m <sup>2</sup>	1	53	53
Community centre	Jobs / centre	10	1	10
Existing government primary school	Jobs / school	40	1	40
Existing non-government primary school	Jobs / school	40	1	40
Home based business	Jobs / dwelling	0.05	1,500	75
<b>TOTAL ESTIMATED</b>				<b>218</b>

- precinct boundary
- district/local park walkable catchment (400m)
- government school - existing and potential expansion
- non-government school - existing and potential expansion
- community facility
- local park
- district park
- proposed land for roundabout
- connector street
- connector street - boulevard
- local access street



### 3.3 Open space, community facilities & education

#### 3.3.1 Open space

REQUIREMENTS	
<b>R15</b>	Parks and open spaces must contain extensive planting of large-canopy trees that are suitable to the urban environment, local climate and soil conditions to the satisfaction of the responsible authority.
<b>R16</b>	All parks must be located, designed and developed to the satisfaction of the responsible authority in accordance with Plan 4 and Table 4, unless otherwise approved by the responsible authority. An alternative provision of land for a local park is considered to be generally in accordance with that illustrated on Plan 4 provided: <ul style="list-style-type: none"> <li>• The location does not reduce the walkable access to local parks demonstrated on Plan 4</li> <li>• The design does not diminish the quality or usability of the space for passive recreation</li> <li>• The land area is equal to or more than the park provision outlined in Table 4.</li> </ul>
<b>R17</b>	Where a local park shown on Plan 4 spans across multiple properties, the first development proponent to lodge a permit application must undertake a master plan for the entire park unless otherwise agreed by the responsible authority.
<b>R18</b>	Design and layout of waterway corridors, retarding basins, wetlands and any other encumbered open space must maximise the biodiversity, amenity values and potential for integration of recreation uses where this does not conflict with the primary function of the land to the satisfaction of the responsible authority.
<b>R19</b>	Fencing of open space where required, whether encumbered or unencumbered, must be: <ul style="list-style-type: none"> <li>• Low-scale and visually permeable to facilitate public safety and surveillance</li> <li>• Designed to guide appropriate movement and access</li> <li>• Constructed using materials that complement the park setting.</li> </ul>
GUIDELINES	
<b>G14</b>	Local parks should cater for a broad range of users by providing a mix of spaces and planting to support both structured and unstructured recreational activities and play opportunities for all ages and abilities.
<b>G15</b>	Open spaces should have a road frontage to all edges except when adjoining the drainage network, abutting community facilities or where housing fronts open space with a paper road.
<b>G16</b>	A proponent delivering a master plan for a local park that traverses multiple parcel ownerships should consult with the landowners of parcels covered by the park to ensure an integrated design.

Table 4 sets out the open space provision expected within the PSP area. The table is linked to Appendix E – open space delivery guide.

Table 4 Open space delivery guide

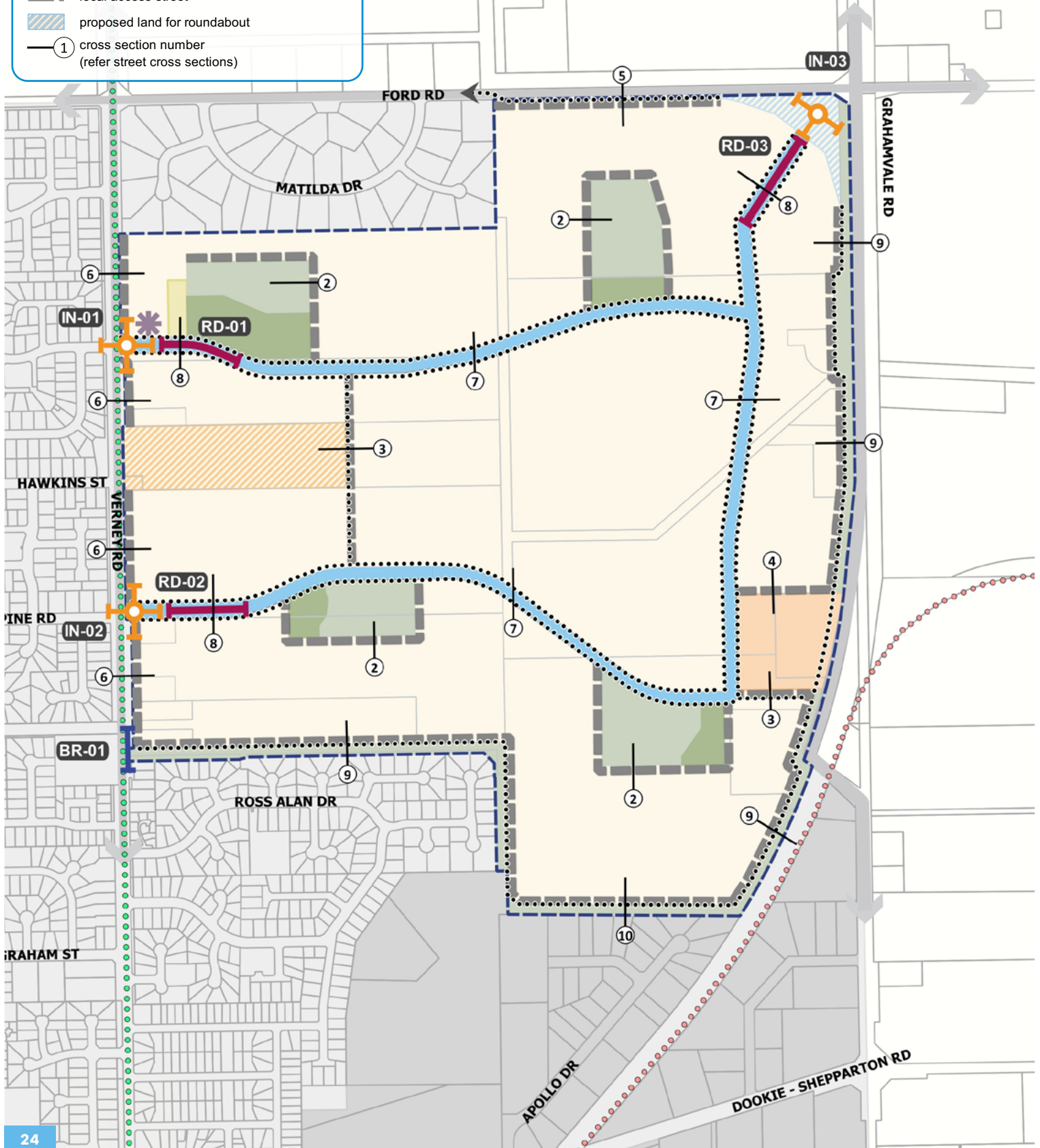
OPEN SPACE ID	TYPE	PARCEL NUMBER	AREA (HECTARES)	ATTRIBUTES	RESPONSIBILITY
OS-01	District park	1	2.22	District, adjoining local convenience centre, community centre and drainage network	Greater Shepparton City Council
OS-02	Local park	13, 17	0.70	Neighbourhood, adjoining drainage network	Greater Shepparton City Council
OS-03	Local park	6	0.70	Neighbourhood, adjoining drainage network	Greater Shepparton City Council
OS-04	Local park	25	0.70	Neighbourhood, adjoining drainage network	Greater Shepparton City Council

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### 3.3.2 Community facilities & education

REQUIREMENTS	
	Where the responsible authority is satisfied that land shown as a non-government school site is unlikely to be used for a school, that land may be used for an alternative purpose which is generally consistent with the surrounding land used and the provisions of the applied zone. In order to satisfy the responsible authority that a site is unlikely to be used for a non-government school, it is necessary to demonstrate that: <ul style="list-style-type: none"> <li>• The application for an alternative use is not premature having regard to the extent of development in the surrounding residential area</li> <li>• The non-government school site is no longer strategically justified having regard to the provision of schools in the locality, including land not within the PSP as appropriate</li> <li>• The landowner provides the responsible authority with evidence that:               <ul style="list-style-type: none"> <li>• Genuine negotiations have been had with a range of education providers regarding the use of the site as a school and the sale of the site to the education provider/s, and</li> <li>• The education provider/s do not intend to purchase the site and use the site as a school.</li> </ul> </li> </ul>
<b>R20</b>	
<b>R21</b>	Community facilities must be co-located with the local convenience centre and provide an active interface with nearby open space, as illustrated in Figure 1.
<b>R22</b>	The location of key entries to community facilities must allow for safe and convenient pedestrian and cyclist access for all ages and abilities.
<b>R23</b>	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.
GUIDELINES	
<b>G17</b>	School sites should be provided with three street frontages, where practicable.
<b>G18</b>	Schools and community facilities should be designed to front and be directly accessed from a public street with car parking located away from the main entry.
<b>G19</b>	Community facilities should be planned and designed to have the flexibility and capacity to meet the changing needs of the community and provide for a range of uses.

- precinct boundary
- bridge project
- road project
- intersection project
- shared path
- existing on-road bike path & shared path
- proposed shared path
- connector street (bus capable)
- local access street
- proposed land for roundabout
- cross section number (refer street cross sections)





### 3.4 Transport & movement

#### 3.4.1 Public transport

REQUIREMENTS	
<b>R24</b>	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.
<b>R25</b>	Roads and intersections shown as bus capable on Plan 5 must be constructed to accommodate ultra-low-floor buses to the satisfaction of Public Transport Victoria and the responsible authority.
<b>R26</b>	The street network must be designed to ensure all households are able to directly and conveniently walk to public transport services.
<b>R27</b>	Subdivision design must provide active interfaces to the rail corridor by provision of a local access street with landscape buffers and continuous shared path to the satisfaction of the responsible authority.
<b>R28</b>	Bus stops must be provided in accordance with the Department of Transport's <i>Public Transport Guidelines for Land Use and Development</i> to the satisfaction of Public Transport Victoria.

#### 3.4.2 Walking & cycling

REQUIREMENTS	
<b>R29</b>	<p>Design of all streets and arterial roads must give priority to the requirements of pedestrians and cyclists by providing:</p> <ul style="list-style-type: none"> <li>• Footpaths on both sides of all streets and roads (unless otherwise specified by the PSP)</li> <li>• Shared paths or bicycle paths where illustrated on Plan 5 or as shown on the relevant street cross sections illustrated at Appendix B or as specified in another requirement in the PSP</li> <li>• Safe, accessible and convenient crossing points of connector roads and local streets at all intersections, key desire lines and locations of high amenity</li> <li>• Pedestrian and cyclist priority crossings on all slip lanes</li> <li>• Safe and convenient transition between on- and off-road bicycle networks</li> <li>• Safe and convenient transition between shared paths and bicycle paths on arterial roads and connector streets</li> </ul> <p>All to the satisfaction of the coordinating road authority and the responsible authority.</p>
<b>R30</b>	<p>Shared and pedestrian paths along waterways and drainage reserves must be constructed to a standard that satisfies the requirements of the responsible authority, and must be:</p> <ul style="list-style-type: none"> <li>• Delivered by development proponents consistent with the network illustrated on Plan 5</li> <li>• Positioned above 1:10 year flood levels with a crossing of the waterway designed above 1:100 year flood level to maintain hydraulic function of the waterway</li> <li>• Positioned above the 1:100 year flood level where direct access is provided to the dwelling from the waterway.</li> </ul>
<b>R31</b>	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	
<b>G20</b>	Lighting should be installed along shared, pedestrian, and cycle paths linking to key destinations.

### 3.4.3 Street network

REQUIREMENTS	
	Subdivision layouts must provide: <ul style="list-style-type: none"> <li>• A permeable and safe street network for walking and cycling</li> <li>• A safe and low speed street network that encourages walking and cycling</li> <li>• Convenient access to local points of interest and destinations for the effective integration with neighbouring properties.</li> </ul>
<b>R32</b>	
<b>R33</b>	Streets must be constructed to parcel boundaries where an inter-parcel connection is intended or indicated in the PSP by any date or stage of development required by the responsible authority.
<b>R34</b>	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 for between each. Where that street has already been constructed or approved for construction to a parcel boundary, the onus is on the development connecting into that street to adopt a consistent cross-section until that suitable transition can be made.
<b>R35</b>	Vehicle access to lots fronting arterial roads must be provided from a local internal loop road, service road or interface street all with shared paths to the satisfaction of the road authority.
<b>R36</b>	Configuration of vehicle access to lots from public streets must ensure there is sufficient separation between crossovers to allow for a minimum of one on-street car park for every two residential lots.
<b>R37</b>	Where a lot is 7.5 metres or less in width, vehicle access must be via a rear laneway, unless otherwise approved by the responsible authority.
<b>R38</b>	Any connector street or local access street abutting a school must be designed to achieve slow vehicle speeds and provide designated pedestrian crossing points as required by the responsible authority.
<b>R39</b>	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.
<b>R40</b>	Residential subdivision applications adjoining Verney Road, Ford Road, Grahamvale Road and the railway line must demonstrate that lots front the road or rail reserve with appropriate buffers and adhere to the relevant street cross section in Appendix B.
<b>R41</b>	Residential subdivision applications adjoining GMW Drain 3 (identified on Plan 6) must front or side onto the reservation with appropriate buffers and adhere to the relevant street cross section in Appendix B.
<b>R42</b>	Development must positively address all waterway and drainage reserve land through the use of interface streets outlined in Appendix B to the satisfaction of the responsible authority.
<b>R43</b>	Road networks and street types must be designed and developed in accordance with the street cross sections outlined in Appendix B unless otherwise agreed by the responsible authority.
<b>R44</b>	Any application for development fronting Grahamvale Road must meet the requirements of the road authority and VicTrack. Any application for development fronting Ford Road must meet the requirements of the road authority.

**GUIDELINES**

<b>G21</b>	Street layouts should provide multiple convenient routes to major destinations such as the local convenience centre and the arterial road network.
<b>G22</b>	Street block lengths should not exceed 240 metres to ensure a safe, permeable and low-speed environment for pedestrians, cycle and vehicles is achieved.
<b>G23</b>	Culs-de-sac should not detract from convenient pedestrian, cycle and vehicular connections.
<b>G24</b>	Slip lanes should be avoided in areas of high pedestrian activity and only be provided at any other intersection between connector roads and arterial roads where they are necessitated by high traffic volumes, to the satisfaction of the road authority.
<b>G25</b>	<p>The frequency of vehicular crossovers on widened verges (a verge in excess of six metres) should be minimised through the use of a combination of:</p> <ul style="list-style-type: none"> <li>• Rear loaded lots with laneway access</li> <li>• Vehicular access from the side of a lot</li> <li>• Combined or grouped crossovers</li> <li>• Increased lot widths.</li> </ul>
<b>G26</b>	<p>Approximately 30% of streets (including connector streets) within a subdivision should apply an alternative cross section to the standard street cross sections outlined in Appendix B. Examples of potential variations are provided in Appendix D; however, other non-standard variations are encouraged but not limited to:</p> <ul style="list-style-type: none"> <li>• Varied street tree placement</li> <li>• Varied footpath or carriageway placement</li> <li>• Varied carriageway or parking bay pavement material</li> <li>• Introduction of elements to create a boulevard effect</li> <li>• Differing tree outstand treatments.</li> </ul>

- precinct boundary
- retardation basin
- G-MW drain 3
- G-MW irrigation channel
- stormwater drainage pipe with discharge point
- Drainage infrastructure ID (refer table 5)
- proposed land for roundabout

*Note: The location and design of the stormwater quality treatment assets shown on this plan is indicative, are subject to confirmation through the preparation of detailed design to be undertaken as part of the future subdivision process to the satisfaction of the responsible authority.*



### 3.5 Integrated water management & utilities

#### 3.5.1 Integrated water management

REQUIREMENTS	
<b>R45</b>	Stormwater conveyance and treatment must provide best practice stormwater quality treatment and must be designed in accordance with the relevant drainage scheme in accordance with Table 5 and Plan 6 to the satisfaction of the responsible authority.
<b>R46</b>	Final design and boundary of constructed waterways, waterway corridors, retarding basins, wetlands, water sensitive urban design features and associated paths, boardwalks, bridges, and planting, must be to the satisfaction of the responsible authority.
<b>R47</b>	Development staging must provide for the delivery of ultimate waterway and drainage infrastructure, including stormwater quality treatment. Where this is not possible, development proponents must demonstrate how any interim solution adequately manages and treats stormwater generated from the development and how this will enable delivery of an ultimate drainage solution, all to the satisfaction of the responsible authority.
<b>R48</b>	<p>Applications must demonstrate how:</p> <ul style="list-style-type: none"> <li>Waterways and integrated water management design enables land to be used for multiple recreation and environmental purposes</li> <li>Overland flow paths and piping within road reserves will be connected and integrated across parcel boundaries</li> <li>Council freeboard requirements for overland flow paths will be adequately contained within road reserves</li> </ul> <p>All to the satisfaction of the responsible authority.</p>

GUIDELINES	
<b>G27</b>	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.
<b>G28</b>	Development should reduce reliance on potable water by increasing the utilisation of fit-for-purpose alternative water sources such as stormwater, rain water and recycled water.
<b>G29</b>	Development should have regard to relevant policies and strategies being implemented by the responsible authority, the Goulburn Broken Catchment Management Authority (GBCMA) and GMW, including any approved integrated water management plan.
<b>G30</b>	<p>Integrated water management systems should be designed to:</p> <ul style="list-style-type: none"> <li>Support and enhance habitat values for local flora and fauna species</li> <li>Enable future harvesting and/or treatment and re-use of stormwater.</li> </ul>
<b>G31</b>	Where a stormwater quality treatment asset is shown on Plan 6 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.

Table 5 sets out the stormwater drainage expected within the PSP area.

Table 5 Stormwater drainage infrastructure delivery guide

WATER INFRASTRUCTURE ID	LAND USE	PARCEL NUMBER	AREA (HECTARES)	RESPONSIBILITY
RB-01	Retarding basin & piped drains	1	2.03	Greater Shepparton City Council
RB-02	Retarding basin & piped drains	13, 17	2.05	Greater Shepparton City Council
RB-03	Retarding basin & piped drains	3	2.55	Greater Shepparton City Council
RB-04	Retarding basin & piped drains	25	2.49	Greater Shepparton City Council

### 3.5.2 Utilities

REQUIREMENTS	
<b>R49</b>	<p>Before development commences on a parcel, functional layout plans of the road network must be submitted that illustrate the location of all:</p> <ul style="list-style-type: none"> <li>• Underground services</li> <li>• Driveways and crossovers</li> <li>• Intersection devices</li> <li>• Shared, pedestrian and bicycle paths</li> <li>• Street lights</li> <li>• Street trees.</li> </ul> <p>A typical street cross section of each street is also to be submitted showing above- and below-ground placement of services, street lights and trees.</p> <p>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 street cross sections outlined in Appendix B) and accommodate the minimum street tree planting requirements. The plans and street cross sections are to be approved by the responsible authority and all relevant service authorities before development commences.</p>
<b>R50</b>	Trunk services are to be placed along the general alignments illustrated on Plan 5, subject to any refinements as advised by the relevant servicing authorities.
<b>R51</b>	Delivery of underground services must be coordinated, located, and bundled (using common trenching) to facilitate tree and other planting within road verges.
<b>R52</b>	All new electricity supply infrastructure (excluding substations and cables of a voltage greater than 66kV) must be provided underground.
<b>R53</b>	Where existing above-ground electricity cables of 66kV voltage are retained along road ways, underground conduits are to be provided as part of the upgrade of these roads to allow for future undergrounding of the electricity supply.
<b>R54</b>	Above-ground utilities must be identified at the subdivision design stage to ensure effective integration with the surrounding neighbourhood and to minimise amenity impacts, and be designed to the satisfaction of the relevant authority. Where that infrastructure is intended to be located in the open space network, land required to accommodate the infrastructure will not be counted as contributing to open space requirements specified in Table 1.
GUIDELINES	
<b>G32</b>	Above-ground utilities should be located outside of key view lines and screened with vegetation, as appropriate.
<b>G33</b>	Existing above-ground 66kV electricity cables should be removed and re-routed underground as part of subdivision (excluding cables greater than 66kV).
<b>G34</b>	Design and placement of underground services in new or upgraded streets should use the service placement guidelines outlined in Appendix D.
<b>G35</b>	Utility easements to the rear of lots should only be provided where there is no practical alternative.
<b>G36</b>	Landscape screening should be established or maintained where existing, adjacent to nearby industrial uses such as the storage sheds to the south-west of the precinct.

### 3.6 Infrastructure delivery & development staging

#### 3.6.1 Infrastructure delivery (subdivision works by developers)

REQUIREMENTS	
<b>R55</b>	<p>Subdivision of land within the precinct must provide and meet the total cost of delivering the following infrastructure (except those included in the DCP):</p> <ul style="list-style-type: none"> <li>• Connector roads and local streets</li> <li>• Local bus stop infrastructure</li> <li>• Landscaping of all existing and future roads and local streets</li> <li>• Intersection works and traffic management measures along arterial roads, connector streets, and local streets</li> <li>• Council-approved fencing and landscaping (where required) along arterial roads and waterway and drainage reserve land</li> <li>• 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</li> <li>• Bicycle parking</li> <li>• Appropriately scaled lighting along all roads, major shared and pedestrian paths, and traversing public open space</li> <li>• Basic improvements to local parks and open space (refer open space delivery below)</li> <li>• Local drainage system</li> <li>• Local street or pedestrian path crossings of waterways unless outlined as the responsibility of another agency in the precinct infrastructure plan</li> <li>• Infrastructure as required by utility service providers including water, sewerage, drainage, electricity, gas and telecommunications.</li> </ul>
<b>R56</b>	<p>All public open space (where not otherwise provided via a DCP or separate agreement) must be finished to a standard that satisfies the requirements of the responsible authority prior to the transfer of the public open space, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Removal of all existing disused structures, foundations, pipelines, stockpiles and soil contamination</li> <li>• Clearing of rubbish, environmental weeds and rocks, and levelling, topsoiling and sowing with warm climate grass</li> <li>• Provision of water tapping, potable and recycled water connection points</li> <li>• Sewer, gas and electricity connection points to land identified as sports reserves and community facilities</li> <li>• Trees and other plantings</li> <li>• Vehicle exclusion devices (fence, bollards or other suitable methods) and maintenance access points</li> <li>• Construction of pedestrian paths to a minimum 2.5 metres in width circulating the perimeter of the reserve and connecting to the surrounding path network</li> <li>• Installation of park furniture, including barbecues, shelters, furniture, rubbish bins, local-scale play areas, and appropriate paving to support these facilities, consistent with the type of open space listed in Appendix E and relevant council open space strategies and landscape guidelines.</li> </ul>

### 3.6.2 Development staging

REQUIREMENTS	
<b>R57</b>	<p>Development staging must provide for the timely provision and delivery of:</p> <ul style="list-style-type: none"> <li>• Drainage infrastructure</li> <li>• Road links and intersections to the connector and arterial road network</li> <li>• Street links between properties, constructed to the parcel boundary</li> <li>• Connection of the on- and off-road pedestrian and bicycle network.</li> </ul>
<b>R58</b>	<p>Staging will be determined largely by the development proposals on land within the precinct and the availability of infrastructure services. Development applications must demonstrate how the development will:</p> <ul style="list-style-type: none"> <li>• Integrate with adjoining developments, including the timely provision of road and path connections, to a practical extent</li> <li>• Provide open space and amenity to new residents in the early stages of the development, where relevant</li> <li>• Provide sealed road access to each new allotment</li> <li>• Deliver any necessary trunk services extensions, including confirmation of the agreed approach and timing by the relevant service provider.</li> </ul>
<b>R59</b>	<p>Development stages adjoining any decommissioned, or future decommissioned GMW channel must respond to, or incorporate the land as part of the subdivision process to the satisfaction of GMW and the responsible authority. Where this land is located on public or Crown land, the future of this land must be resolved with GMW, the current land manager and the Department of Environment, Land, Water and Planning (DELWP) prior to development taking place.</p>
<b>R60</b>	<p>The area identified on Plan 3 as the 'area subject to potential adverse amenity' may be used or developed for a sensitive use to the satisfaction of the responsible authority provided the location within the buffer area is noted as a restriction on a plan of subdivision.</p>

GUIDELINES	
<b>G37</b>	<p>Early delivery of community facilities, local parks and playgrounds is encouraged within each neighbourhood and may be delivered in stages, to the satisfaction of the responsible authority.</p>

### 3.6.3 Precinct infrastructure plan

The precinct infrastructure plan (PIP) in Table 6 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.

The roads authority has identified a future roundabout to be constructed on the corner of Ford and Grahamvale Roads. This roundabout is part of the broader network planning for Shepparton, but is proposed to provide access to the PSP. IN-03 in Table 6 will deliver the connection from the precinct to this proposed roundabout.

Drainage for the precinct is covered by the DCP as the relevant drainage authority for outfall drainage is Greater Shepparton City Council. The drainage assets have been costed as follows:

- Civil works are based on engineering estimates of the costs of the various drainage works
- Civil works will be adjusted by the adjustment methodology explained in the DCP to keep pace with rising construction costs and land values.

Alternative stormwater quality treatment arrangements may be provided subject to agreement with council.



Table 6 Precinct infrastructure plan

\* Note: S= Short term; M= Medium term; L= Long term.

PSP/DCP PROJECT	TITLE & PROJECT DESCRIPTION	LEAD AGENCY	INDICATIVE TIMING*	INCLUDED IN DCP
<b>TRANSPORT PROJECTS</b>				
<b>ROADS</b>				
RD-01	<b>Ryeland Drive: Connector Street Level 2</b> Land and construction costs for the upgrade of a Connector Street Level 1 (24 metre) to a Connector Street Level 2 (30 metre) (ultimate standard).	Greater Shepparton City Council	S	Yes (ultimate)
RD-02	<b>Pine Road: Connector Street Level 2</b> Land and construction costs for the upgrade of a Connector Street Level 1 (24 metre) to a Connector Street Level 2 (30 metre) (ultimate standard).	Greater Shepparton City Council	M	Yes (ultimate)
RD-03	<b>Ford Road and Grahamvale Road: Connector Street Level 2</b> Land and construction costs for the upgrade of a Connector Street Level 1 (24 metre) to a Connector Street Level 2 (30 metre) (ultimate standard).	Greater Shepparton City Council	S	Yes (ultimate)
<b>BRIDGE PROJECT</b>				
<b>SHARED PATH BRIDGE</b>				
BR-01	<b>Shared path bridge</b> Construction of shared path bridge over GMW Drain 3 at Verney Road (east side) outside of PSP boundary (ultimate standard).	Greater Shepparton City Council	M	Yes (ultimate)
<b>INTERSECTION PROJECTS</b>				
IN-01	<b>Ryeland Drive and Verney Road</b> Purchase of land for intersection and construction of 4-way signalised intersection (ultimate standard).	Greater Shepparton City Council	S	Yes (ultimate)
IN-02	<b>Pine Road and Verney Road</b> Purchase of land for intersection and construction of 4-way signalised intersection (ultimate standard).	Greater Shepparton City Council	M	Yes (ultimate)
IN-03	<b>Ford Road and Grahamvale Road</b> Construction of the connection to the roundabout, the crossing structure over the GMW irrigation channel and the left turning lane (ultimate standard).	Greater Shepparton City Council	L	Yes (ultimate)

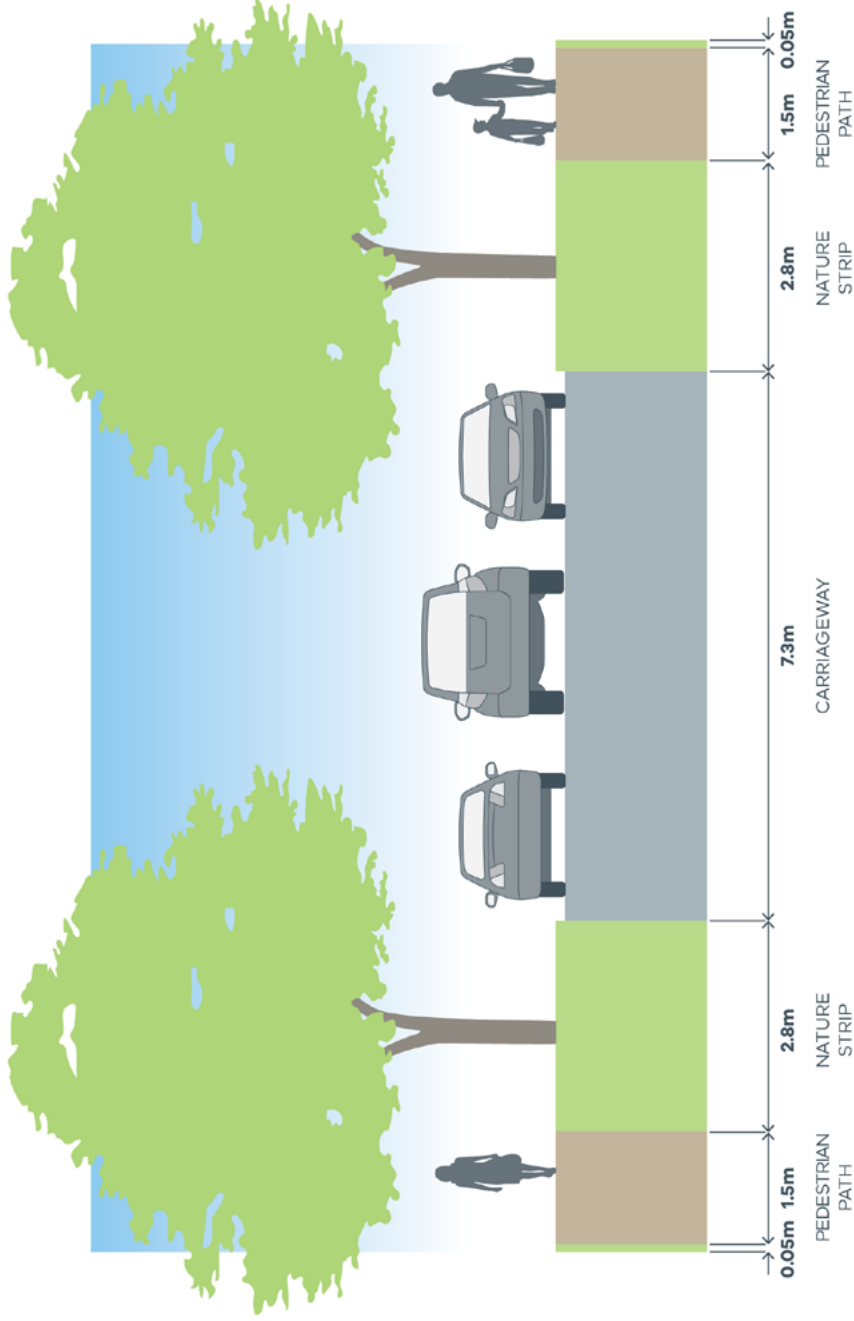
PSP/DCP PROJECT	TITLE & PROJECT DESCRIPTION	LEAD AGENCY	INDICATIVE TIMING*	INCLUDED IN DCP
<b>DRAINAGE PROJECTS</b>				
RETARDING BASIN & PIPED DRAIN				
RB-01	<b>North-west retarding basin adjoining OS-01</b> Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain 3 (ultimate standard).	Greater Shepparton City Council	S	Yes (ultimate)
RB-02	<b>South-west retarding basin adjoining OS-02</b> Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain 3 (ultimate standard).	Greater Shepparton City Council	L	Yes (ultimate)
RB-03	<b>North-east retarding basin adjoining OS-03</b> Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain 3 (ultimate standard).	Greater Shepparton City Council	M	Yes (ultimate)
RB-04	<b>South-east retarding basin adjoining OS-04</b> Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain 3 (ultimate standard).	Greater Shepparton City Council	M-L	Yes (ultimate)
<b>COMMUNITY FACILITIES</b>				
COMMUNITY CENTRE				
CI-01	<b>Shepparton North East community centre</b> Purchase of land for a multi-purpose community centre (level 1) located on Verney Road.	Greater Shepparton City Council	S	Yes (ultimate)
CI-01c	<b>Shepparton North East community centre</b> Construction of a multi-purpose community centre (level 1) located on Verney Road.	Greater Shepparton City Council	S	Yes (ultimate)
<b>OPEN SPACE</b>				
DISTRICT PARK				
OS-01	<b>North-west district park adjoining RB-01</b> Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	S-M	Yes (ultimate)
LOCAL PARK				
OS-02	<b>South-west local park adjoining RB-02</b> Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	M-L	Yes (ultimate)
OS-03	<b>North-east local park adjoining RB-03</b> Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	M	Yes (ultimate)
OS-04	<b>South-east local park adjoining RB-04</b> Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	M-L	Yes (ultimate)

## 4.0 APPENDICES

### 4.1 Appendix A: Detailed land use budget (parcel specific)

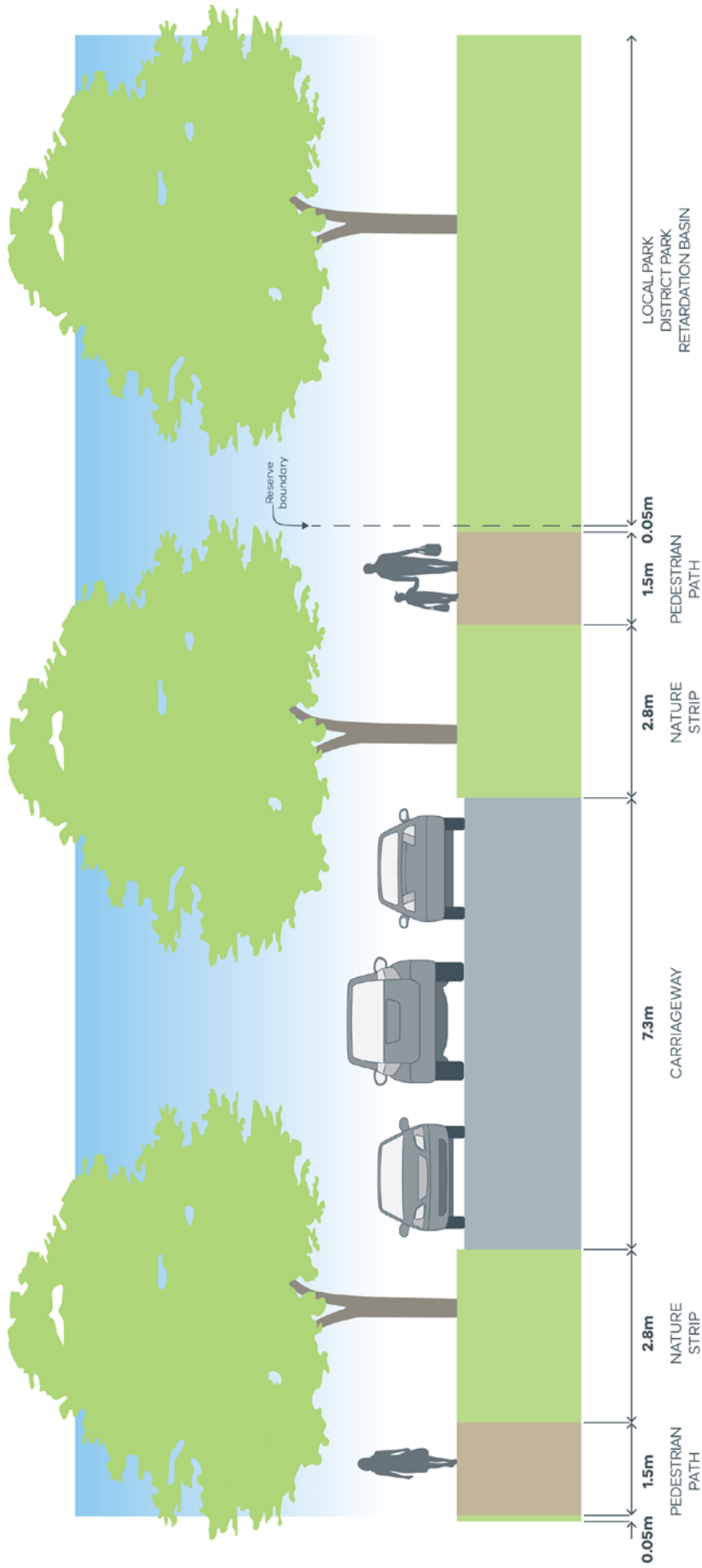
PSP PARCEL ID	TOTAL AREA (HECTARES)	TRANSPORT	COMMUNITY & EDUCATION			DRAINAGE RESERVE		PARKS	OTHER	TOTAL NET DEVELOPABLE AREA (HECTARES)
		NON-ARTERIAL ROAD WIDENING & INTERSECTION FLARING (DCP LAND)	GOVERNMENT SCHOOL – EXISTING & POTENTIAL EXPANSION	NON-GOVERNMENT SCHOOL – EXISTING & POTENTIAL EXPANSION	LOCAL COMMUNITY FACILITY (DCP LAND)	WATERWAY AND DRAINAGE RESERVE	WATERWAY AND DRAINAGE RESERVE (DCP LAND)	DISTRICT/LOCAL PARK (DCP LAND)	PROPOSED LAND FOR ROUNDABOUT	
1	18.16	0.33	-	-	0.40	-	2.03	2.17	-	13.23
2	5.63	-	0.34	-	-	2.17	-	-	-	3.12
3	23.04	0.09	-	-	-	-	2.55	-	1.40	19.01
4	8.63	0.01	-	-	-	-	-	0.05	-	8.57
5	0.40	-	-	-	-	-	-	-	-	0.40
6	25.04	-	-	-	-	-	-	0.70	-	24.34
7	0.55	-	-	-	-	-	-	-	-	0.55
8	0.47	-	-	-	-	-	-	-	-	0.47
9	0.49	-	-	-	-	-	-	-	-	0.49
10	0.53	-	-	-	-	-	-	-	-	0.53
11	0.10	-	-	0.10	-	-	-	-	-	-
12	9.04	-	-	5.25	-	-	-	-	-	3.79
13	18.23	0.37	-	-	-	-	1.31	0.45	-	16.10
14	17.01	-	0.87	-	-	-	-	-	-	16.14
15	1.62	-	1.62	-	-	-	-	-	-	-
16	0.40	-	-	-	-	-	-	-	-	0.40
17	12.22	-	-	-	-	-	0.74	0.25	-	11.23
18	0.40	-	-	-	-	-	-	-	-	0.40
19	0.41	-	-	-	-	-	-	-	-	0.41
20	4.13	-	-	-	-	-	-	-	-	4.13
21	0.40	-	-	-	-	-	-	-	-	0.40
22	1.21	-	-	-	-	1.21	-	-	-	-
23	0.23	-	-	-	-	0.23	-	-	-	-
24	0.72	-	-	-	-	0.72	-	-	-	-
25	23.91	-	0.73	-	-	0.15	2.49	0.70	-	19.84
26	2.54	-	-	-	-	0.36	-	-	-	2.18
27	1.36	-	-	-	-	1.36	-	-	-	-
<b>TOTAL</b>	<b>176.87</b>	<b>0.79</b>	<b>3.56</b>	<b>5.35</b>	<b>0.40</b>	<b>6.19</b>	<b>9.12</b>	<b>4.32</b>	<b>1.40</b>	<b>145.74</b>

## 4.2 Appendix B: Street cross sections (standard)



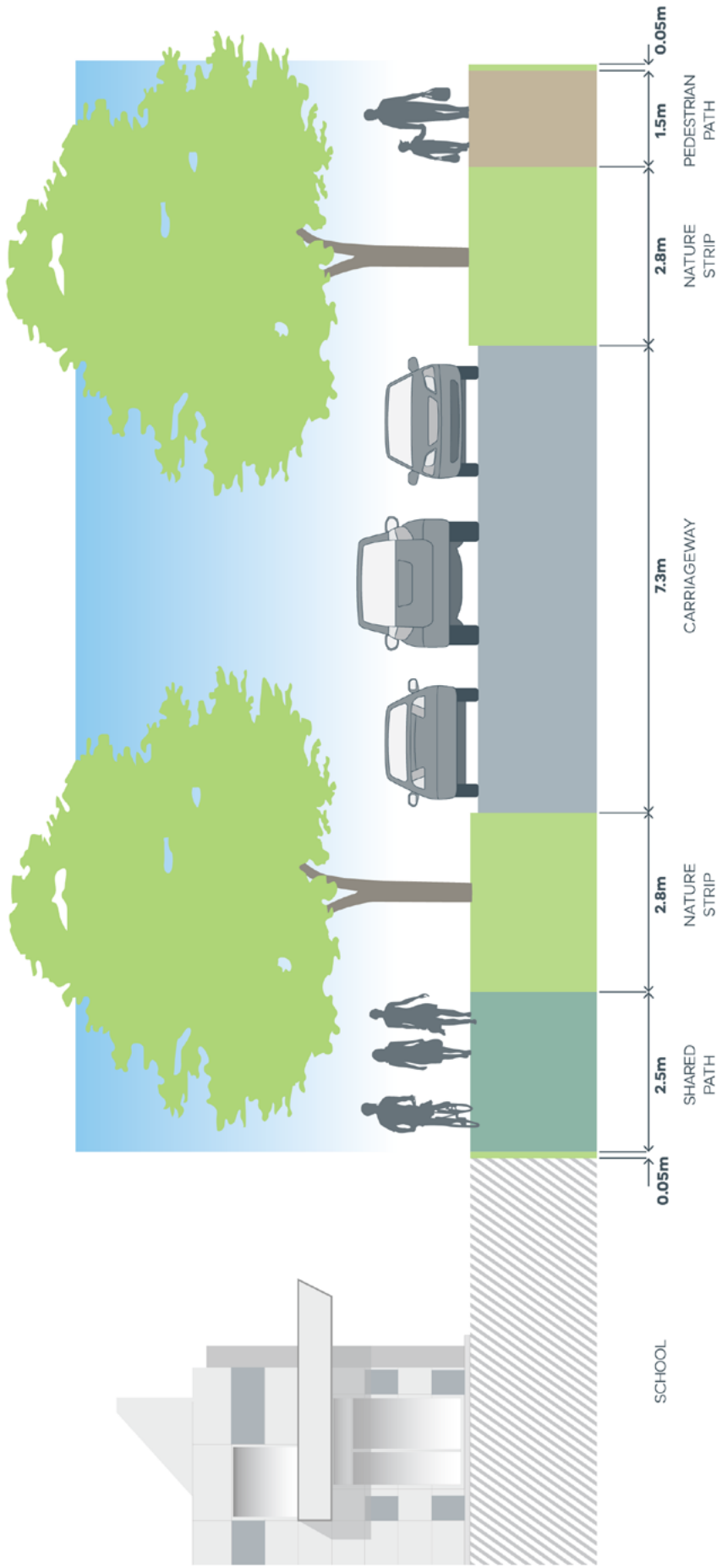
**NOTES:**

- Minimum street tree mature height 12 metres
- All kerbs are to be SM modified (refer to the Infrastructure Design Manual)



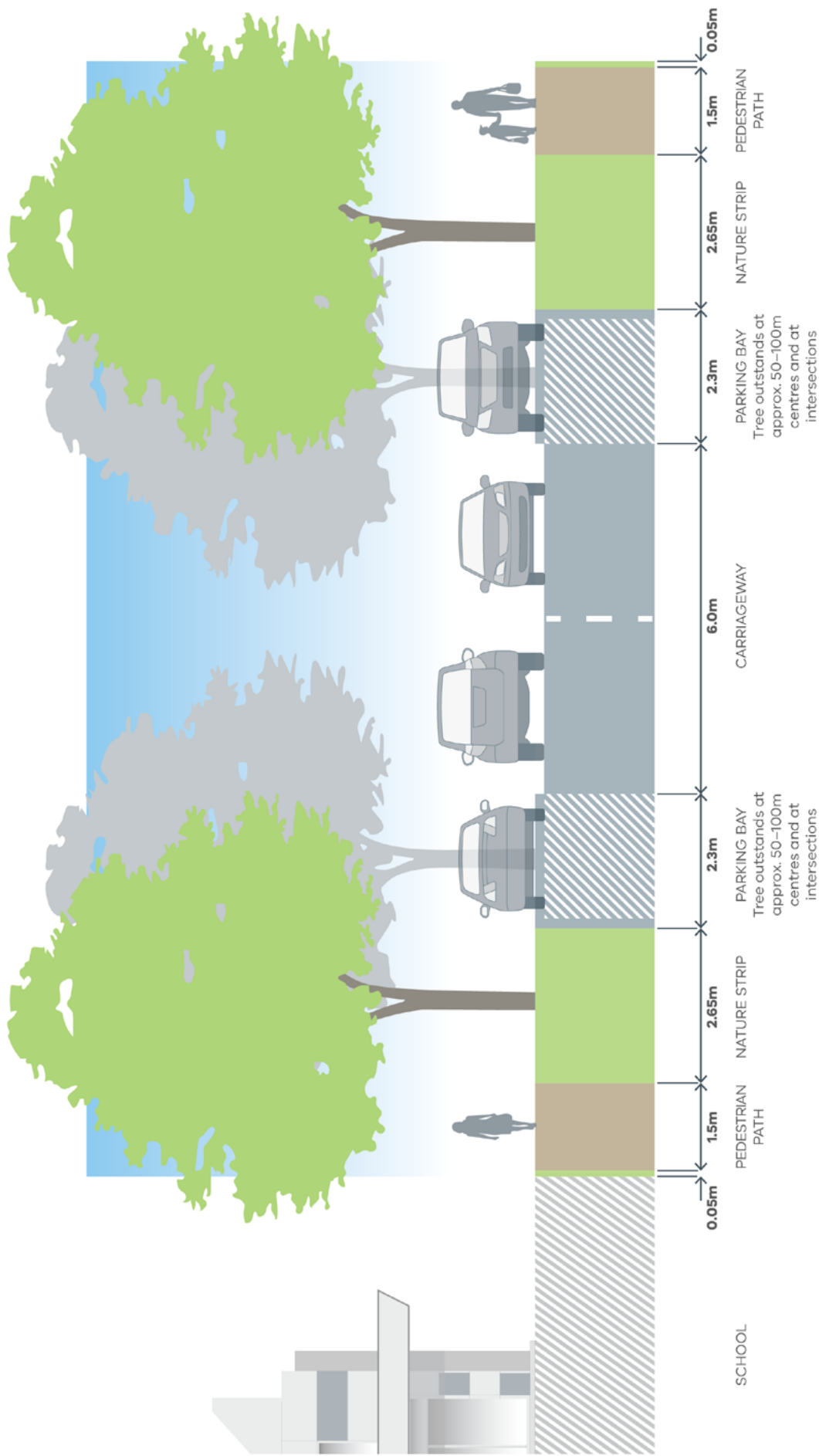
**NOTES:**

- Minimum street tree mature height 12 metres.
- All kerbs abutting park to be B2 Barrier kerb and SM modified elsewhere (refer to the Infrastructure Design Manual).
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority.



**NOTES:**

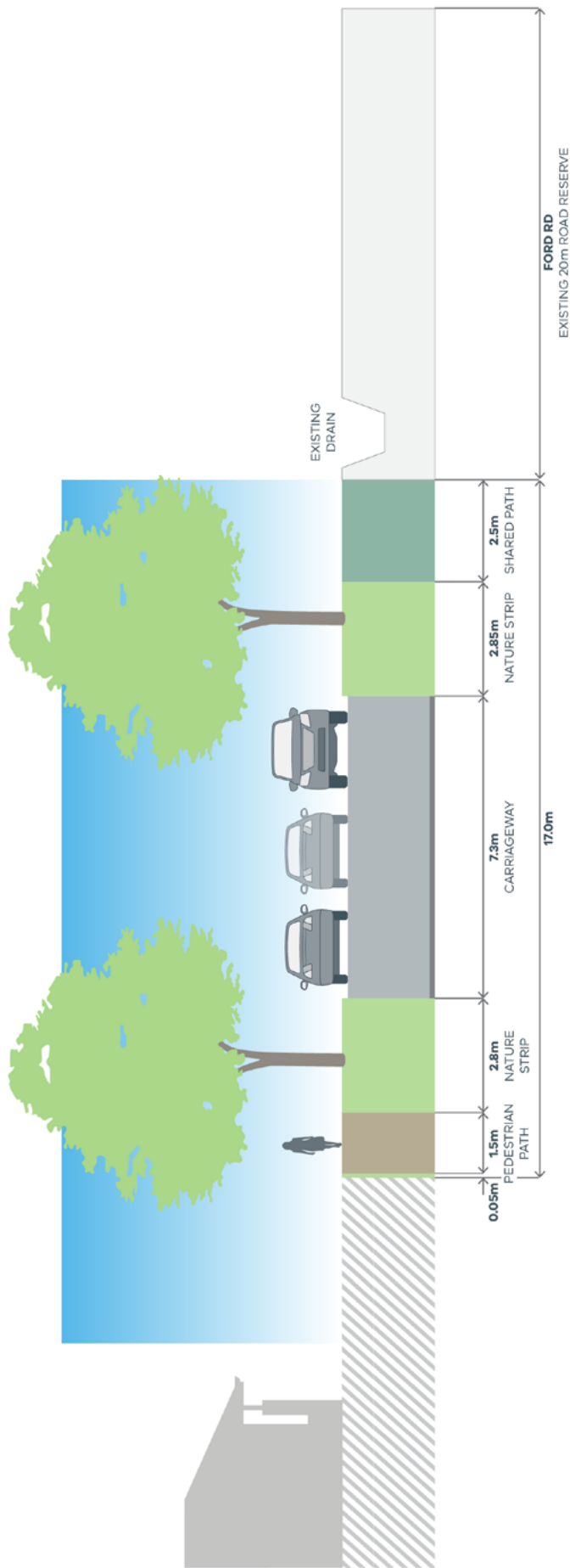
- Minimum street tree mature height 12 metres
- All kerbs fronting school to be B2 Barrier kerb and SM modified elsewhere (refer to the Infrastructure Design Manual)



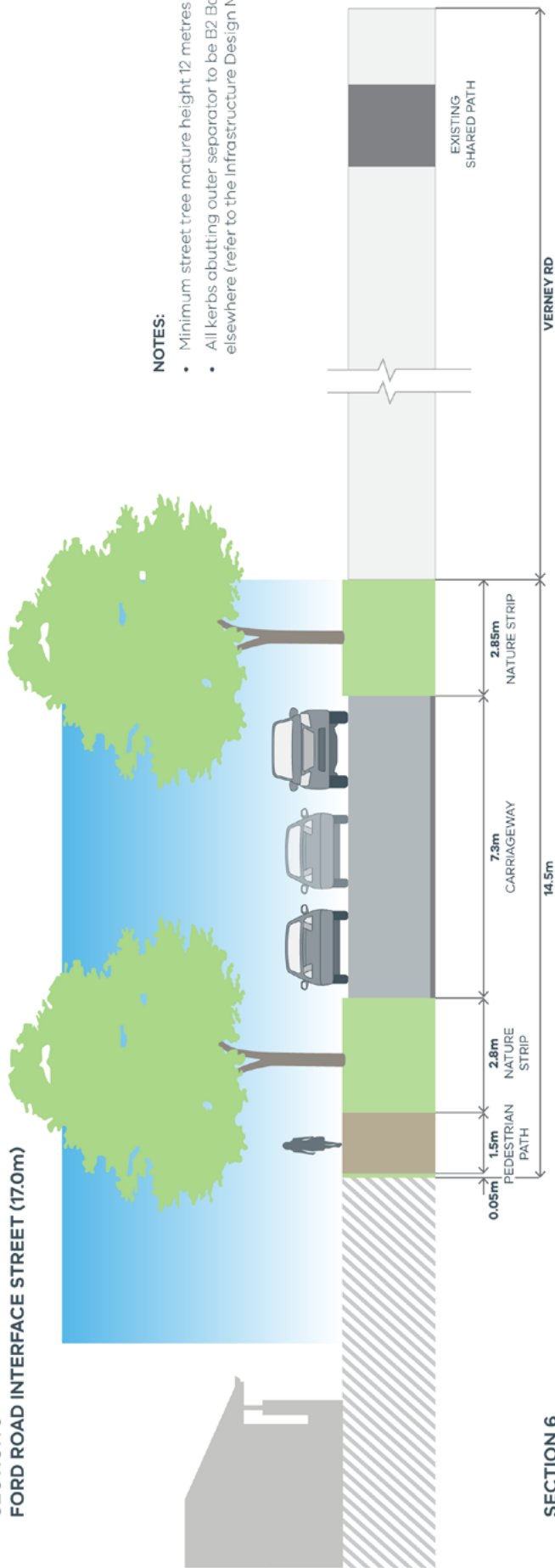
**NOTES:**

- Minimum street tree mature height 12 metres
- All kerbs fronting school to be B2 Barrier kerb and SM modified elsewhere (refer to the Infrastructure Design Manual)





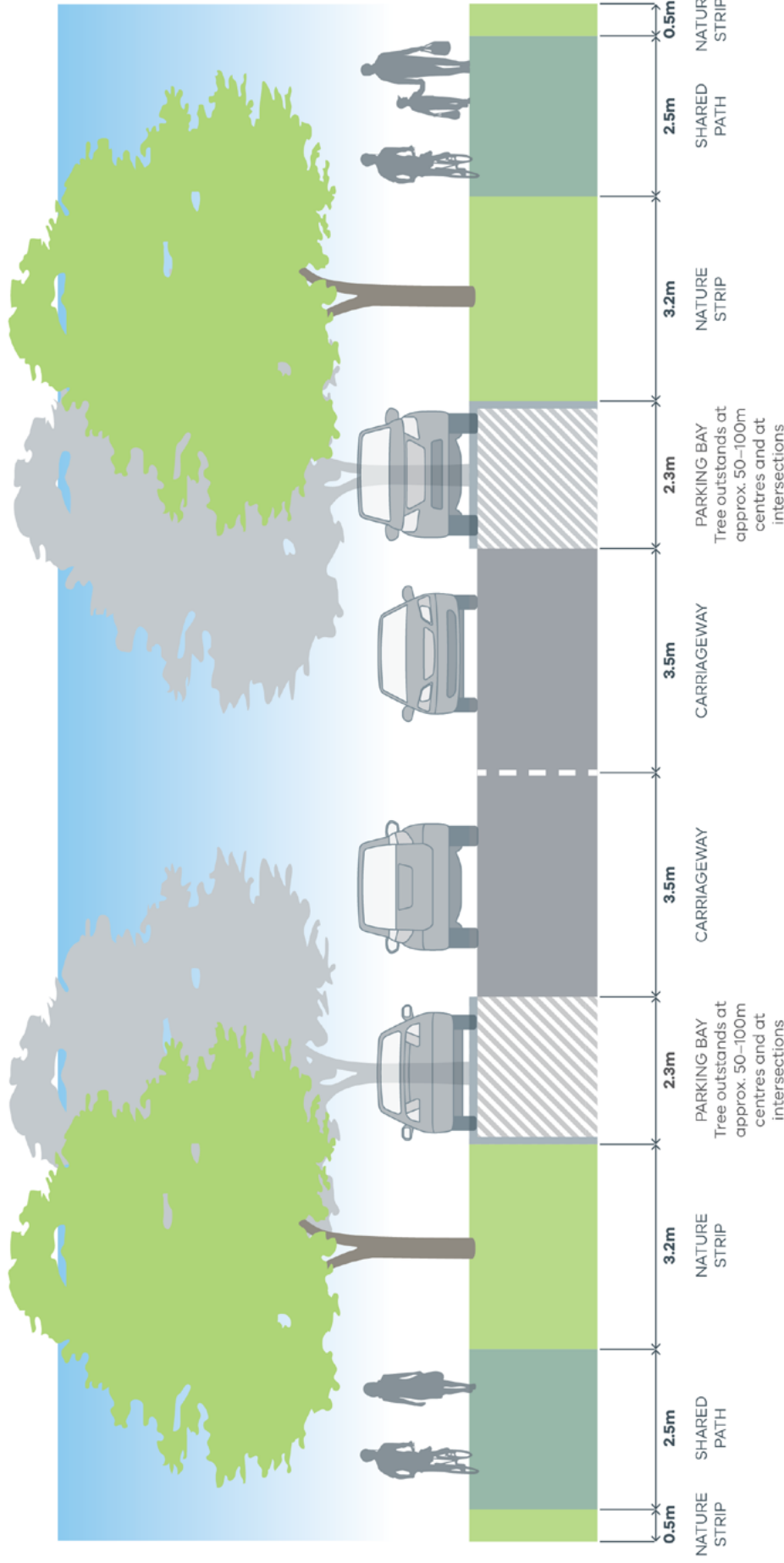
**SECTION 5  
FORD ROAD INTERFACE STREET (17.0m)**



**SECTION 6  
VERNEY ROAD INTERFACE STREET (14.5m)**

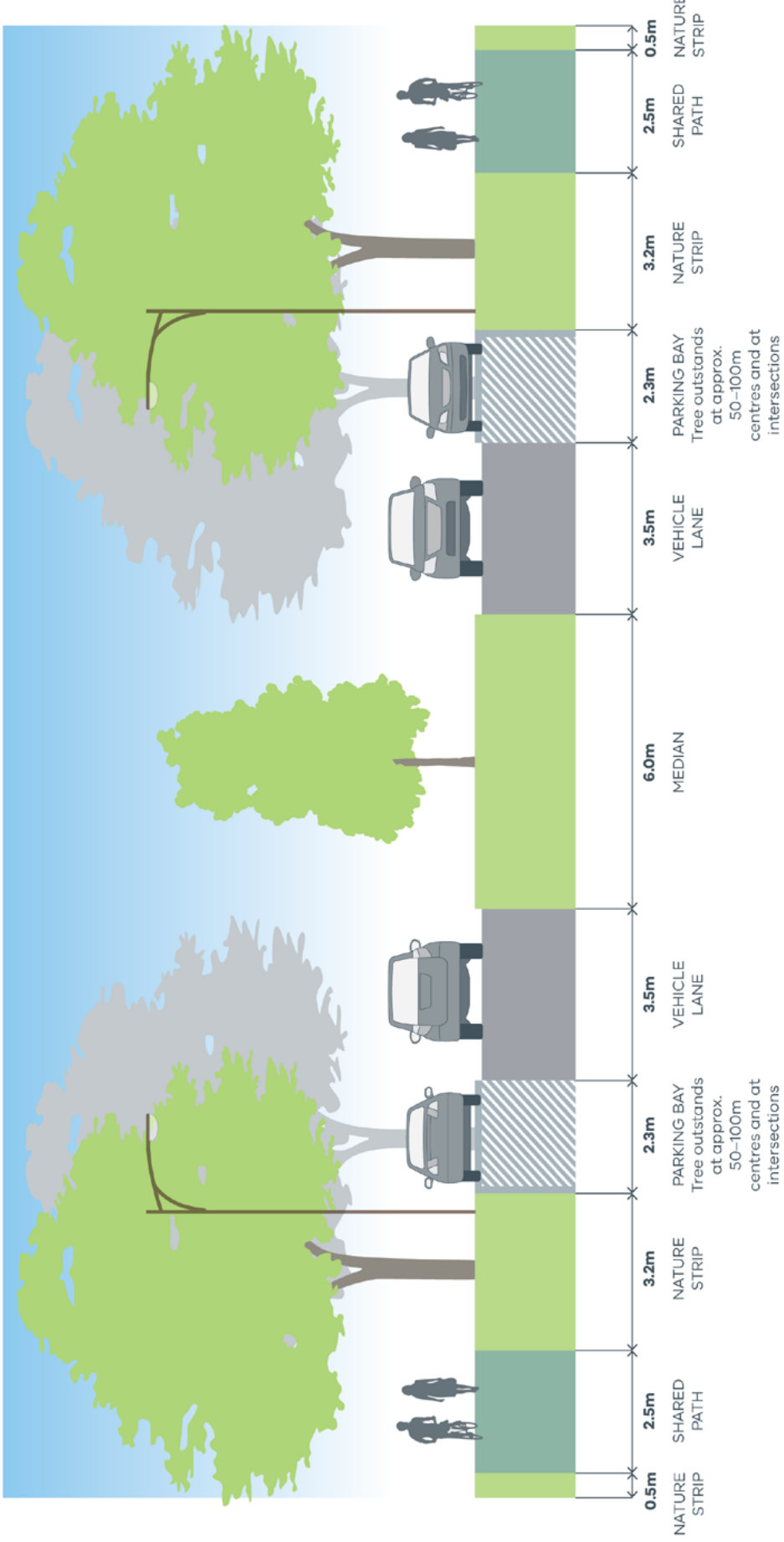
**NOTES:**

- Minimum street tree mature height 12 metres
- All kerbs abutting outer separator to be B2 Barrier kerb and SM modified elsewhere (refer to the Infrastructure Design Manual)



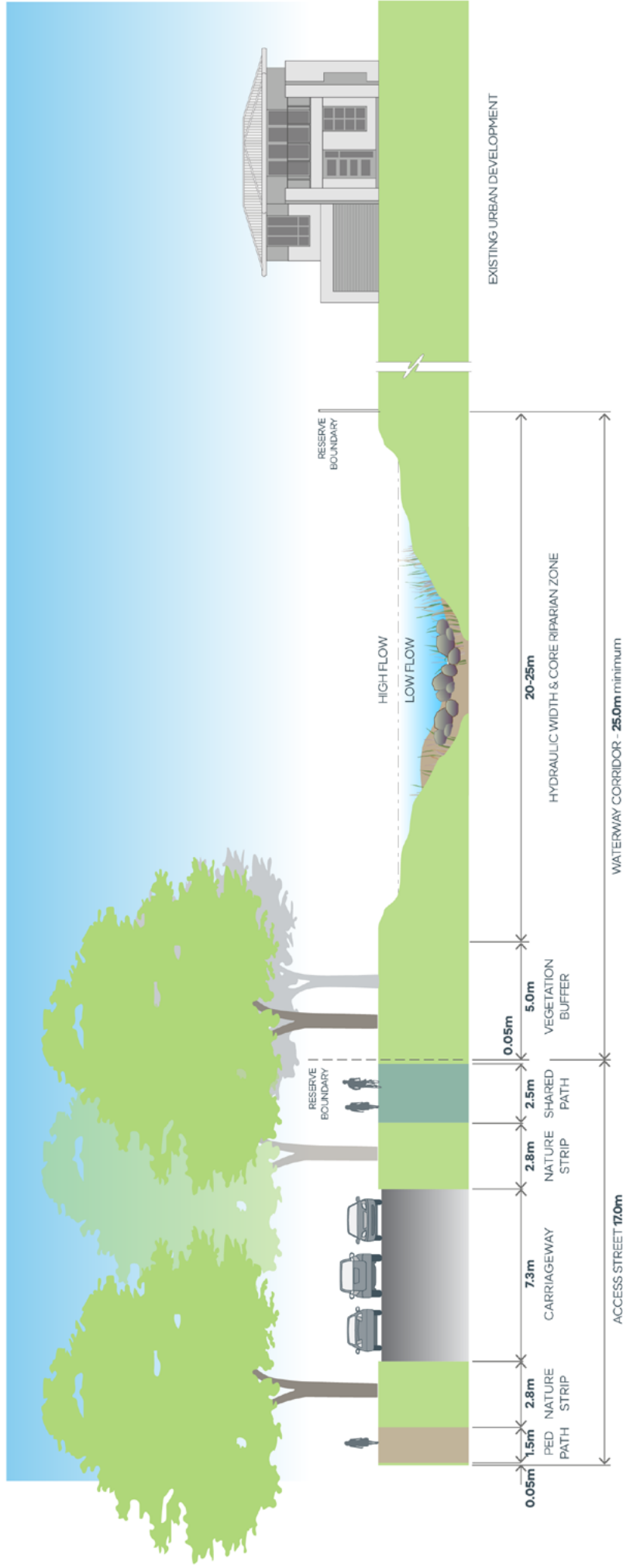
**NOTES:**

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



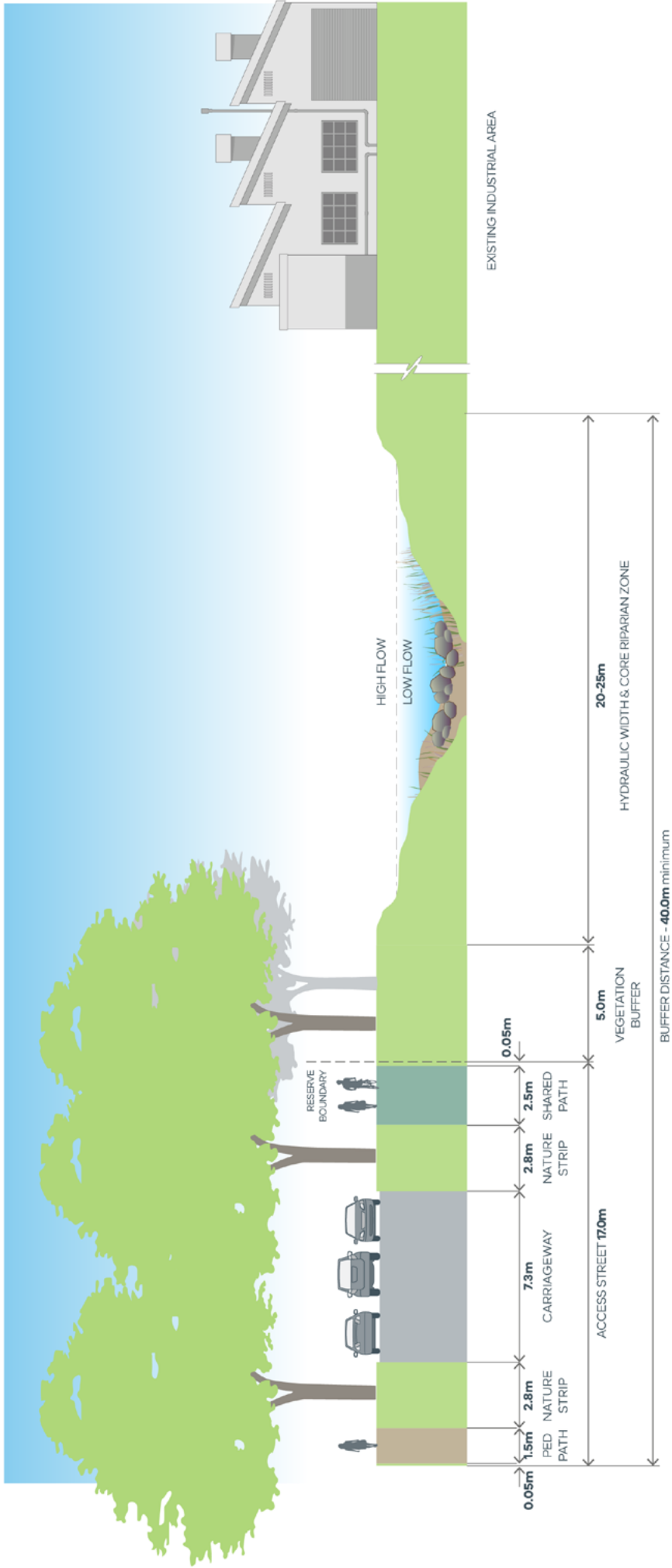
**NOTES:**

- Minimum street tree mature height 15 metres
- All kerbs are to be B2 Barrier Kerb (refer to the Infrastructure Design Manual)
- Where roads about 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 about open space with the consent of the responsible authority



**NOTES:**

- Waterway widths are to be consistent with Plan 6 and subject to G-MW and Council approval
- Minimum street tree mature height 12 metres
- All kerbs abutting industrial land interface to be B2 Barrier kerb and SM modified elsewhere (refer to the Infrastructure Design Manual)



**NOTES:**

- Waterway widths are to be consistent with Plan 6 and subject to G-MW and Council approval
- Minimum street tree mature height 12 metres
- All kerbs abutting industrial land interface to be B2 Barrier kerb and SM modified elsewhere (refer to the Infrastructure Design Manual)

### 4.3 Appendix C: Local convenience centre key design principles

PRINCIPLES	GUIDELINES
<p><b>Principle 1</b> Provide smaller neighbourhoods with a viable local convenience centre which offers accessible services to the surrounding community.</p>	<ul style="list-style-type: none"> <li>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</li> <li>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</li> <li>Locate local convenience centres in locations which are central to the residential community they serve and that provide exposure to passing traffic</li> <li>Where appropriate, locate local convenience centres in attractive settings and incorporate natural or cultural landscape features such as creeks and waterways, linear open space, pedestrian and cycle links and areas of high aesthetic value.</li> </ul>
<p><b>Principle 2</b> Provide a range of local services and facilities that are appropriate to the local convenience centre location and the catchment that it serves.</p>	<ul style="list-style-type: none"> <li>Land uses should be located generally in accordance with the locations and general land use terms identified on the local convenience centre concept plan</li> <li>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</li> <li>The design of the local convenience centre should also encourage a pattern of smaller scale individual tenancies and land ownership patterns within the local town centre to attract investment and encourage greater diversity and opportunities for local business investment</li> <li>Active building frontages should address the primary street frontage to maximise exposure to passing trade, and promote pedestrian interaction.</li> </ul>
<p><b>Principle 3</b> 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.</p>	<ul style="list-style-type: none"> <li>Public transport infrastructure/facilities should be planned for commuter friendly/ convenient locations adjacent to the local convenience centre</li> <li>Bus stops should be provided in accordance with the <i>Public Transport Victoria Public Transport Guidelines for Land Use and Development</i>, to the satisfaction of Public Transport Victoria</li> <li>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</li> <li>The design of buildings within the local convenience centre should have a relationship with and should interface to the public street network</li> <li>Car parking areas should be located centrally to the site and to the rear and or side of street based retail frontages</li> <li>Car parking areas should be designed to ensure passive surveillance and public safety through adequate positioning and lighting</li> <li>Car parking areas should be designed to provide dedicated pedestrian routes and areas of landscaping</li> <li>On street car parking should be provided either as parallel or angle parking to encourage short stay parking</li> <li>Car parking ingress and egress crossovers should be grouped and limited</li> <li>Car parking ingress or egress and car parking areas accommodating heavy vehicle movements should be designed to limit the pedestrian/vehicle conflict</li> <li>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.</li> </ul>

PRINCIPLES	GUIDELINES
<p><b>Principle 4</b> Provide smaller neighbourhoods with a viable local convenience centre which offers accessible services to the surrounding community.</p>	<ul style="list-style-type: none"> <li>• 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</li> <li>• 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</li> <li>• The design of each building should contribute to a cohesive and legible character for the local convenience centre as a whole</li> <li>• 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</li> <li>• The design of building frontages should incorporate the use of a consistent covered walkway or verandah to provide for weather protection</li> <li>• The built form should define the primary street frontage and be aligned with the parcel boundary</li> <li>• 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</li> <li>• Materials and design elements should be compatible with the environment and landscape character of the broader precinct</li> <li>• 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</li> <li>• 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 whitewashed windows, excessive window advertising and obtrusive internal shelving or 'false walls' offset from the glazing)</li> <li>• 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</li> <li>• 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</li> <li>• Retail uses along street frontages should generally include access points at regular intervals to encourage activity along the length of the street</li> <li>• Retail and commercial buildings within the local convenience centre should generally be built to the parcel line</li> <li>• Public spaces should be oriented to capture north sun and protect from prevailing winds and weather</li> <li>• Landscaping of all interface areas should be of a high standard as an important element to complement the built form design</li> <li>• Urban art should be incorporated into the design of the public realm</li> <li>• 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</li> <li>• Wrapping of car parking edges with built form, to improve street interface, should be maximised</li> <li>• Car parking areas should provide for appropriate landscaping with planting of canopy trees and dedicated pedestrian thoroughfares</li> <li>• Screening of centralised waste collection points should minimise amenity impacts with adjoining areas and users of the centre</li> <li>• Where service areas are accessible from car parks, they should present a well designed and secure facade to public areas</li> <li>• Mechanical plant and service structure roofs should be included within roof lines or otherwise hidden from view.</li> </ul>

PRINCIPLES	GUIDELINES
<p><b>Principle 5</b> Promote localisation, sustainability and adaptability.</p>	<p>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 dependence on the car.</p> <p>The local convenience centre should be designed to be sympathetic to its natural surrounds by:</p> <ul style="list-style-type: none"> <li>• Investigating the use of energy efficient design and construction methods for all buildings</li> <li>• Including Water Sensitive Urban Design principles such as integrated stormwater retention and reuse (e.g. toilet flushing and landscape irrigation)</li> <li>• Promoting safe and direct accessibility and mobility within and to and from the local convenience centre</li> <li>• Including options for shade and shelter through a combination of landscape and built form treatments</li> <li>• Ensuring buildings are naturally ventilated to reduce the reliance on plant equipment for heating and cooling</li> <li>• Promoting passive solar orientation in the configuration and distribution of built form and public spaces</li> <li>• Grouping waste collection points to maximise opportunities for recycling and reuse</li> <li>• Promoting solar energy for water and space heating, electricity generation and internal and external lighting</li> <li>• Investigating other opportunities for the built form to reduce greenhouse gas emissions associated with the occupation and the ongoing use of buildings</li> <li>• Encouraging building design that can be adapted to accommodate a variety of uses over time.</li> </ul>



## 4.4 Appendix D: Service placement guidelines

### 4.4.1 Standard street cross sections

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

### 4.4.2 Non-standard street cross sections

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

For non-standard street cross sections where service placement guidance outlined in the Infrastructure Design Manual is not applicable, the following service placement guidelines will apply.

	UNDER PEDESTRIAN PAVEMENT	UNDER NATURE STRIPS	DIRECTLY UNDER TREES <sup>1</sup>	UNDER KERB	UNDER ROAD PAVEMENT <sup>2</sup>	WITHIN ALLOTMENTS	NOTES
SEWER	Possible	Preferred	Possible	No	Possible	Possible <sup>3</sup>	
POTABLE WATER	Possible <sup>4</sup>	Preferred	Preferred	No	Possible	No	Can be placed in combined trench with gas
RECYCLED WATER	Possible <sup>4</sup>	Preferred	Preferred	No	Possible	No	
GAS	Possible <sup>4</sup>	Preferred	Preferred	No	No	No	Can be placed in combined trench with potable water
ELECTRICITY	Preferred <sup>4</sup>	Possible	Possible	No	No	No	Pits to be placed either fully in footpath or nature strip
FTTH/TELCO	Preferred <sup>4</sup>	Possible	Possible	No	No	No	Pits to be placed either fully in footpath or nature strip
DRAINAGE	Possible	Possible	Possible	Preferred	Preferred	Possible <sup>3</sup>	
TRUNK SERVICES	Possible	Possible	Possible	Possible	Preferred	No	

#### Notes:

- 1 Trees are not to be placed directly over parcel 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.

### 4.4.3 General principles for service placement

- Place gas and water on one side of road, electricity on the opposite side
- Place water supply on the high side of road
- Place services that need connection to adjacent properties closer to these properties
- Place trunk services further away from adjacent properties
- Place services that relate to the road carriageway (e.g. drainage, street light electricity supply) closer to the road carriageway
- Maintain appropriate services clearances and overlap these clearances wherever possible
- Services must be placed outside of natural waterway corridors or on the outer edges of these corridors to avoid disturbance to existing waterway values.

## 4.5 Appendix E: Open space delivery guidelines

### 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.

### Local park

- 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.

### District 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.



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