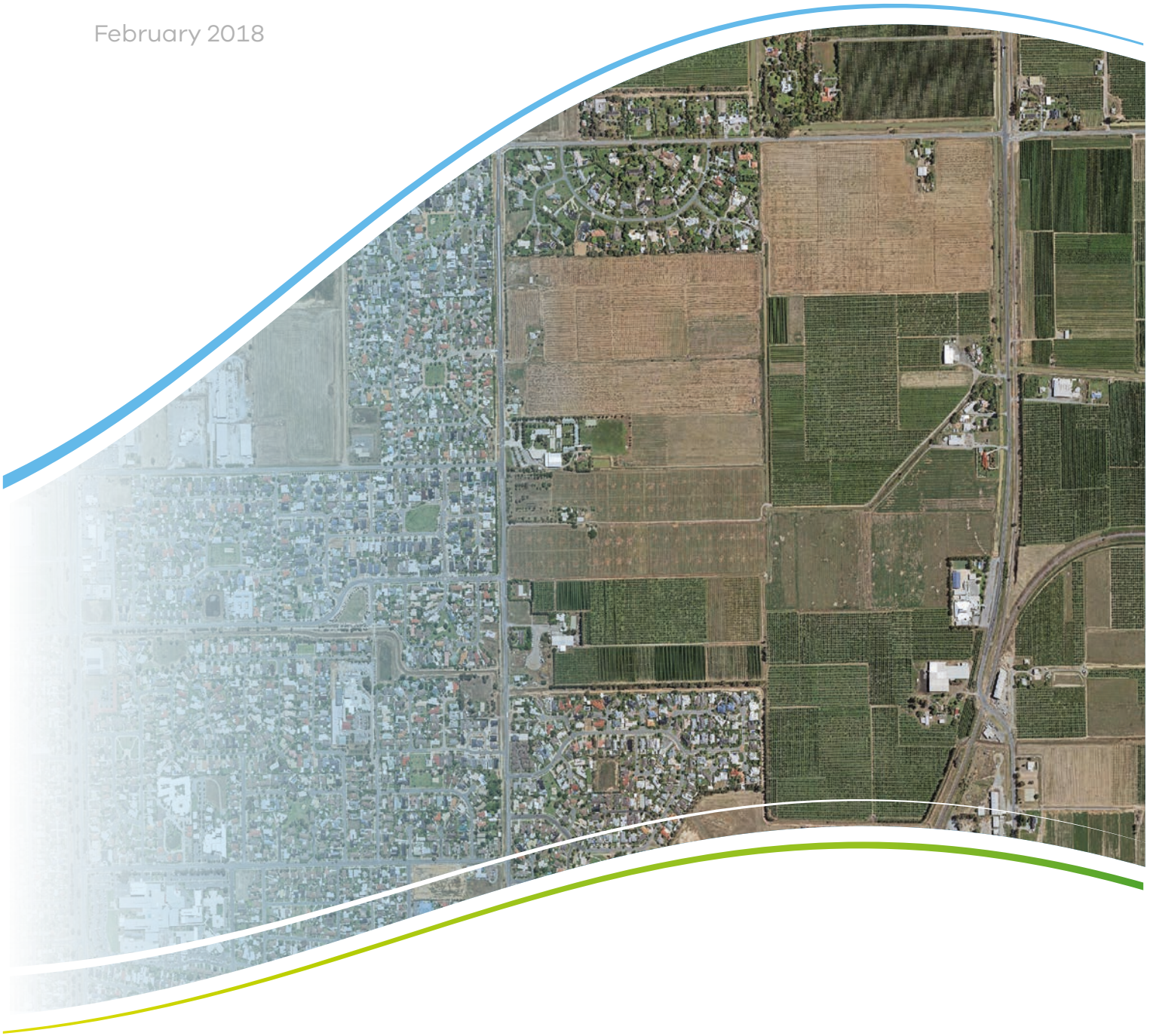
Shepparton North East

Precinct Structure Plan

February 2018



GREATER SHEPPARTON

Victorian Planning Authority

VICTORIA State Government

Contents

PLANS

TABLES

FIGURES

THIS PAGE IS INTENTIONALLY BLANK

1.0 INTRODUCTION

The Shepparton North East Precinct Structure Plan ("the PSP") has been prepared by the Victorian Planning Authority in partnership with Greater Shepparton City 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 expected to be developed, and how and where services are planned to support development.

The PSP guides proposed development within the Shepparton North East precinct.

Generally the PSP:

- Sets out plans to guide the delivery of quality urban environments in accordance with relevant local and Victorian Government guidelines listed in this section
- 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 and development
- Provides Government agencies, the Council, developers, investors and local communities with certainty about future development.

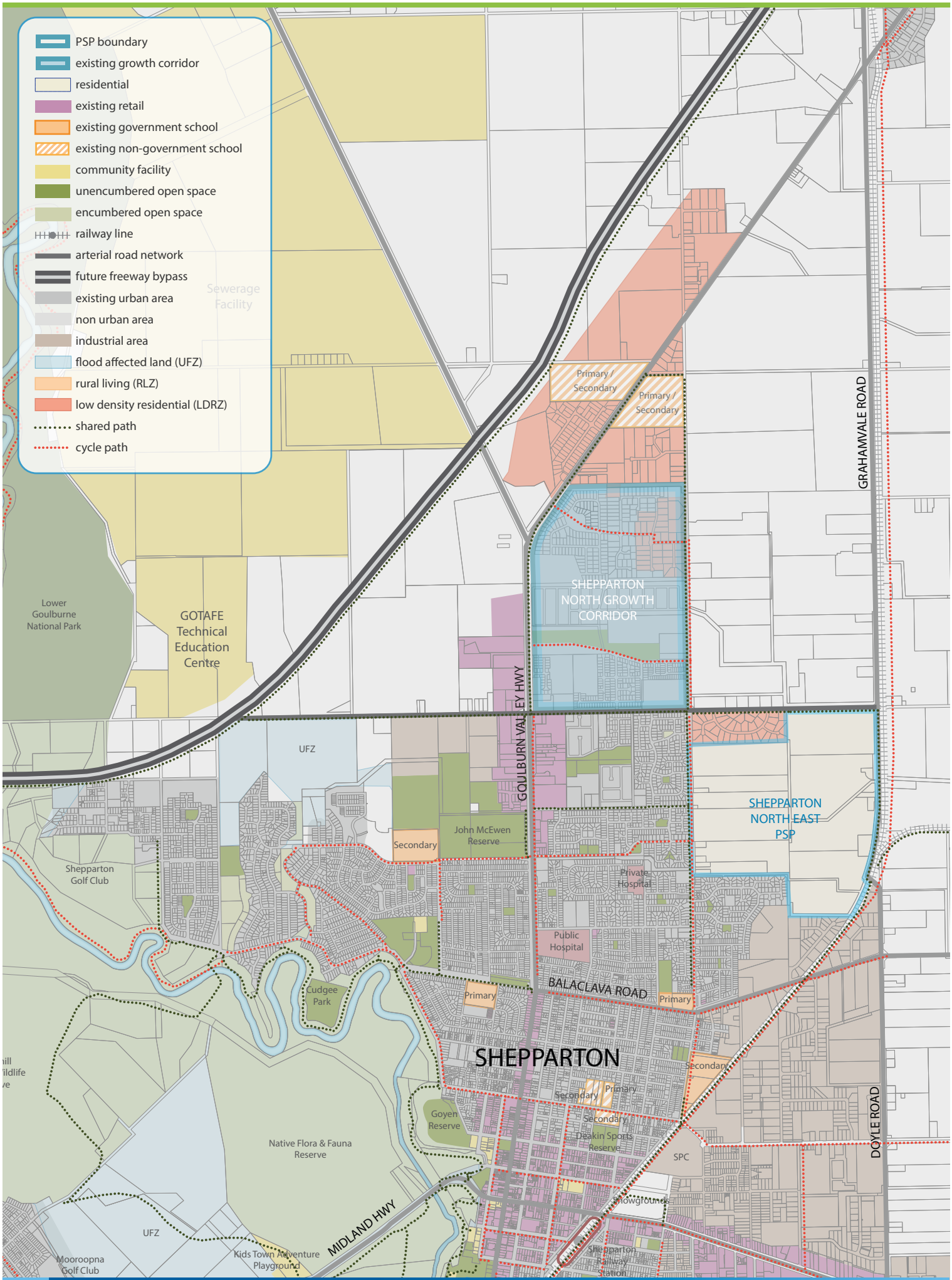
The PSP is informed by:

- State and Local Planning Policy Framework set out in the Greater Shepparton Planning Scheme
- *Plan Melbourne* (Victorian Government, 2014)
- *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, 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.

Plan 1 – Local Context
Shepparton North East



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 or another zone where that zone references this precinct structure plan.

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

Shepparton North East PSP is one of five major growth corridors in the Shepparton-Mooroopna urban area. The precinct is located in the north-east of Shepparton and is within the settlement boundary of the city. It is topographically flat and has historically 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.

The precinct applies to approximately 177 hectares of land and is bounded by Verney Road to the west, Ford Road to the north, Grahamvale Road to the east and a drainage reserve to the south.

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 Precinct Background Report and has informed the preparation of the PSP.

1.4 Shepparton North East Development Contributions Plan

Development proponents within the Shepparton North East precinct will be bound by the Shepparton North East Development Contributions Plan (the DCP). The DCP sets out requirements for infrastructure funding across the Shepparton North East precinct. The DCP is a separate document incorporated into the Greater Shepparton Planning Scheme and implemented through Schedule 4 to Clause 45.06 Development Contributions Plan Overlay (DCPO4) in the Greater Shepparton Planning Scheme.

Plan 2 - Future Urban Structure

Shepparton North East

1:10,000 @ A4

0 100 200 300 400 500 m

2.0 OUTCOMES

2.1 Vision

Shepparton North East will offer the Greater Shepparton community a new residential neighbourhood in close proximity to the city centre. It will be characterised by attractive open spaces and tree-lined streets.

The Shepparton North East Precinct Structure Plan outlines the development of a new neighbourhood that seamlessly integrates with the surrounding urban framework of Shepparton. The precinct will ultimately support approximately 1,500 new homes for a population of approximately 4,000 residents.

The precinct will feature abundant open space, including five distinct retarding basins that integrate with a variety of adjoining parks. Reserves associated with the existing Goulburn–Murray Water 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.

Shepparton North East Precinct Structure Plan will embrace 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.

2.2 Objectives

The development of the Shepparton North East PSP area is guided by a set of key objectives.

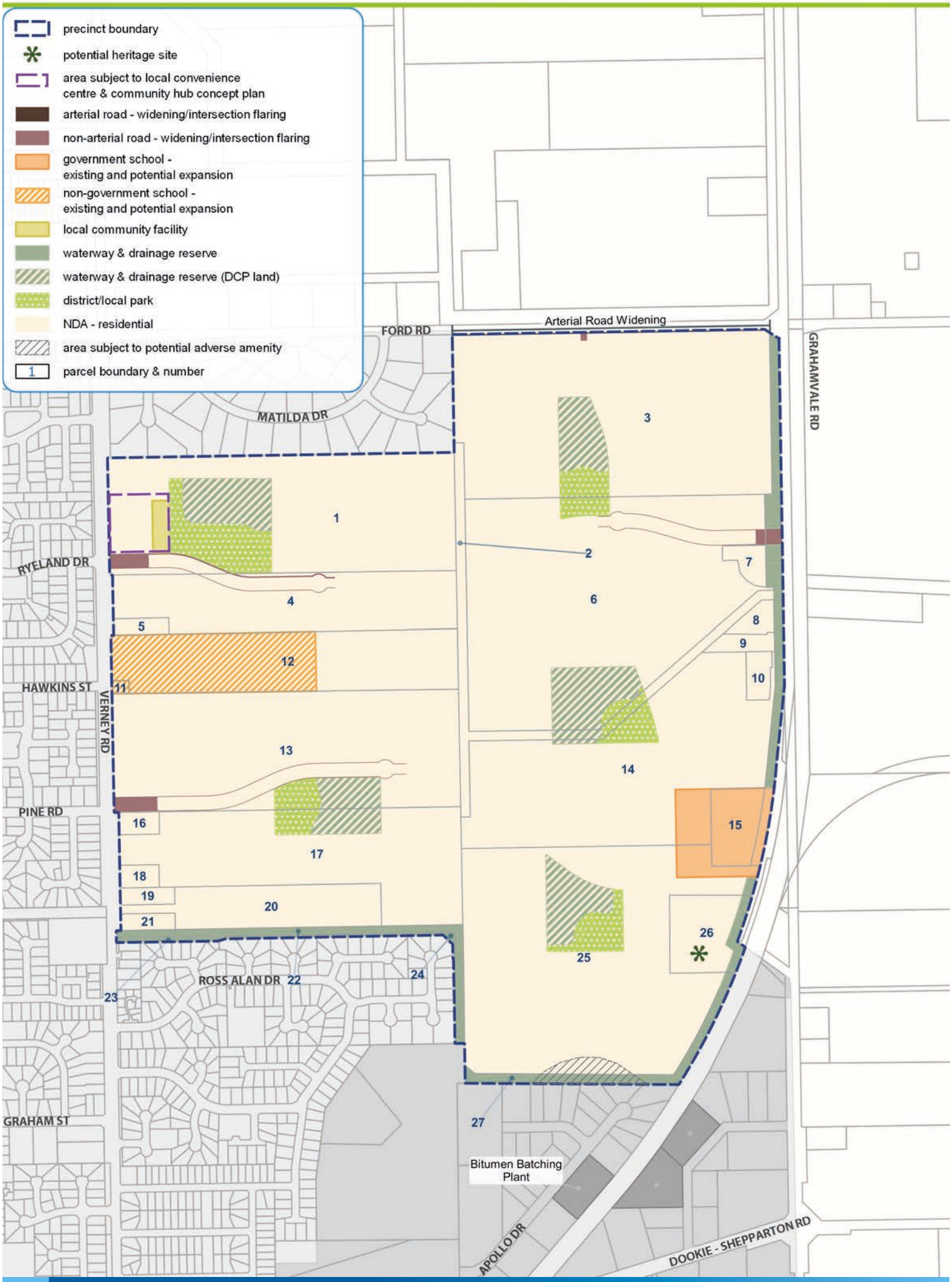
OBJECTIVES	
IMAGE, CHARACTER AND HOUSING	
O1	Create an attractive urban environment that features tree-lined streets and attractive open spaces with high-amenity landscaping.
O2	Provide urban design outcomes which recognise the history of the site, its relationship to horticulture, its relationship to neighbouring farmland and provide an appropriate transition from rural to urban landscapes.
O3	Promote a diversity of dwellings built in the precinct to meet the needs of the future resident population.
EMPLOYMENT & LOCAL CONVENIENCE CENTRES	
O4	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	
O5	Establish generous public open space assets that are visually and physically linked via the local road network and associated pedestrian and cycling trails.
O6	Promote local self-sufficiency by encouraging private and public community facilities to establish in the precinct.
O7	Establish appropriate waterway setback widths to achieve a balance between water quality, biodiversity, recreation and visual amenity while maximising developable land.
TRANSPORT & MOVEMENT	
O8	Create a road network that is permeable and facilitates efficient and direct pedestrian, cyclist and vehicle movement.
O9	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	
O10	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	
O11	Ensure that development staging is co-ordinated with the delivery of key local and State infrastructure.
O12	Ensure that development responds to the staged decommissioning of Goulburn–Murray Water channels.

Plan 3 - Land Use Budget
Shepparton North East

1:10,000 @ A4

0 100 200 300 400 500 m

N



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 144.83 hectares, meaning approximately 82% 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		
	AREA (HECTARES)	% OF GDA	% OF NDA
GROSS DEVELOPABLE AREA (GDA)	**176.87**		
Transport			
Arterial Road Widening and Intersection Flaring (DCP land)	0.27	0.15%	0.19%
Non-Arterial Road Widening and Intersection Flaring (DCP land)	1.86	1.05%	1.28%
Sub-total Transport	**2.13**	**1.2%**	**1.47%**
Community & Education			
Government School–Existing & Potential Expansion	3.56	2.01%	2.46%
Non-Government School–Existing & Potential Expansion	5.35	3.03%	3.70%
Local Community Facility (DCP land)	0.40	0.23%	0.28%
Sub-total Community & Education	**9.31**	**5.3%**	**6.4%**
Open Space			
UNCREDITED Open Space			
Waterway and Drainage Reserve	6.07	3.43%	4.19%
Waterway and Drainage Reserve (DCP Land)	8.41	4.76%	5.81%
Sub-total Uncredited Open Space	**14.48**	**8.19%**	**10.00%**
Credited Open Space			
District/Local Park (DCP Land)	6.12	3.5%	4.23%
Sub-total Credited Open Space	**6.12**	**3.5%**	**4.23%**
Total All Open Space	**20.60**	**11.6%**	**14.23%**
TOTAL NET DEVELOPABLE AREA–Residential (NDAR)	**144.83**	**81.88%**	
TOTAL NET DEVELOPABLE AREA (NDA)	**144.83**	**81.88%**	

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 Greater Shepparton City 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	
R1	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.
R2	All public landscape areas must be planted and designed to the satisfaction of the responsible authority.
R3	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.
R4	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.
R5	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.
R6	Planting of locally appropriate indigenous trees is encouraged along streets fronting the open space network.
GUIDELINES	
G1	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.
G2	High quality and cohesive landscape treatments should be provided throughout the precinct, most particularly in streetscapes and along waterway corridors.
G3	Built form on corner lots should provide a positive address to both frontages through the use of architectural treatments.
G4	A consistent suite of lighting and furniture should be used across neighbourhoods, appropriate to the type and role of street or public space, unless otherwise agreed by the responsible authority.
G5	Hard landscaped areas within open space should incorporate local materials, natural colours and finishes to complement the landscape heritage.
G6	Materials salvaged from decommissioned farming operations in the precinct should be incorporated into landscape features, where appropriate.

3.1.2 Heritage

REQUIREMENTS	
R7	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	
G7	Development of land adjoining HS1 identified on Plan 3, should enhance where possible the cultural landscape and irrigation farming heritage of the area.

3.1.4 Housing

REQUIREMENTS	
R8	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.
R9	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.
R10	Dwellings must front or side: • Waterway, drainage reserve and the open space network (including local parks) • Arterial roads, connector and local streets • The rail corridor, unless otherwise agreed by the responsible authority. The siding of lots to waterways, open space and primary street frontages must be kept to a minimum.
R11	Subdivision applications must include indicative layouts for any lots identified for future development of medium density or integrated housing that suitably demonstrate: • Potential dwelling yield • Active interfaces with adjacent street, open space and waterways • Safe and effective internal vehicle and pedestrian circulation • Delivery of dwelling diversity and lot size diversity • Servicing arrangements.
R12	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	
G8	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.
G9	Subdivision of land within a 400-metre walkable distance of the community facilities and designated public transport routes illustrated on Plan 5 must create a range of lot sizes suitable for the delivery of medium density housing.

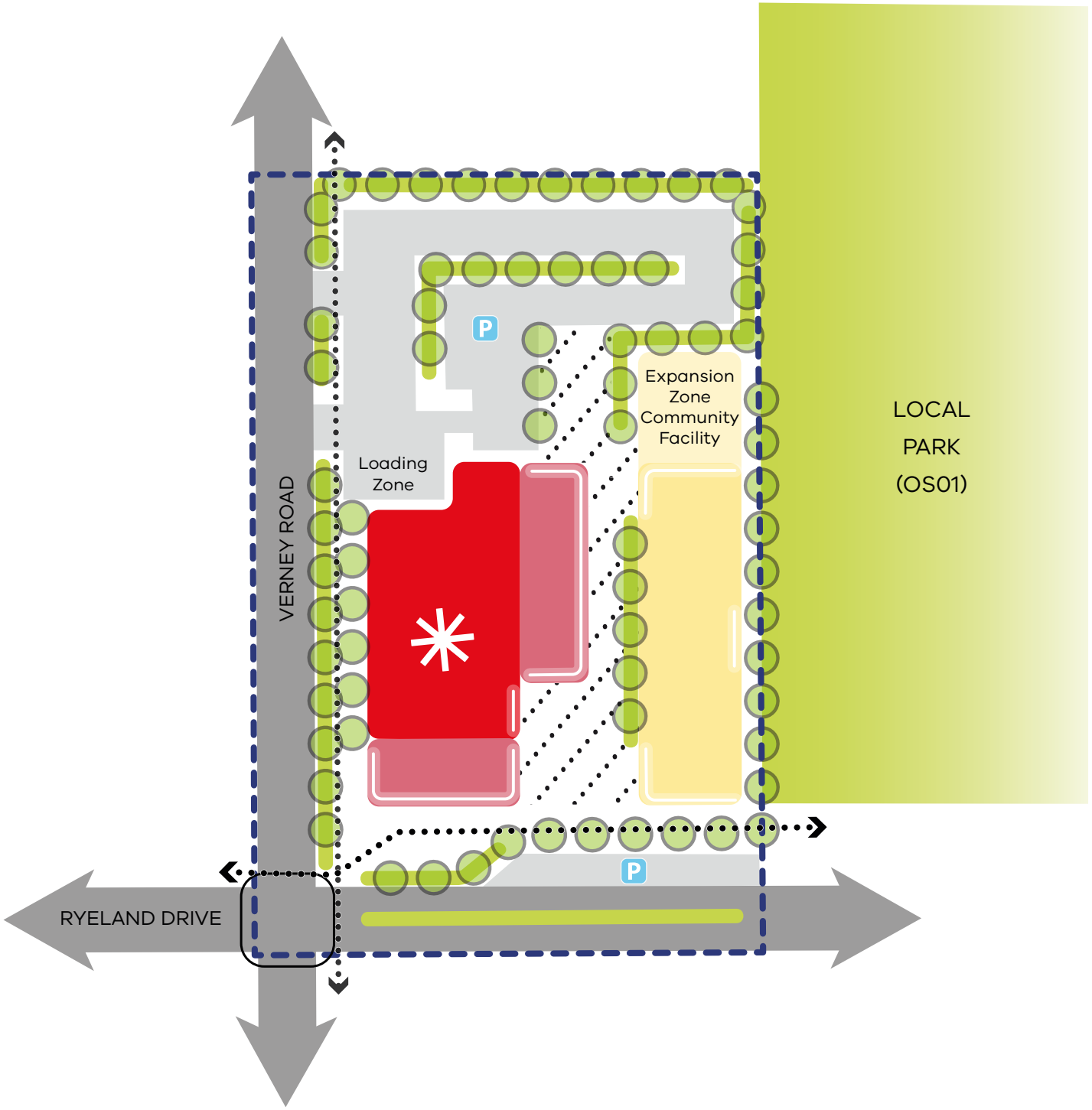
The following table provides an example of the typical housing types that might be provided on a range of lot sizes that support the housing diversity objectives.

Table 2 Housing type by lot size guide

HOUSING TYPES THAT MAY BE SUPPORTED	LOT SIZE CATEGORY (m^2)		
	LESS THAN 300	301–600	MORE THAN 600
Small lot housing (including town houses and attached, semi-detached and detached houses)	✓		
Dual occupancies, including duplex	✓	✓	✓
Detached housing		✓	✓
Multi-unit housing sites (including terraces, row houses and villas)		✓	✓
Stacked housing (including apartments and walk-up flats)			✓

Figure 1 - Local convenience centre & community hub concept

Shepparton North East



- area subject to concept plan
- community facility
- anchor retail
- retail
- key active frontage
- at-grade carparking
- public square (hardscape)
- public park (softscape)
- footpath
- trees
- signalised intersection
- shared path

Note: concept not to scale

3.2 Local convenience centre & employment

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	
R13	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 of loading requirements that does not impact the surrounding uses or detract from the design of the centre.
R14	The key design elements of the local convenience centre must have regard to the relevant concept plan illustrated in Figure 1 and Appendix C, including: • Consideration for pedestrian access to the site, including opportunities for pedestrian crossing in proximity to bus stop locations • Integration of retail and community uses • Incorporation of shared infrastructure (e.g. seating, car parking, landscaping) • Landscaping and screening of car parking • Landscaping and screening, including large trees, along the Verney Road interface • A central town square or plaza.
GUIDELINES	
G10	The local convenience centre should be located as illustrated on Plan 2, unless otherwise agreed by the responsible authority.
G11	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.

THIS PAGE IS INTENTIONALLY BLANK

3.2.2 Employment

REQUIREMENTS	
R15	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.
R16	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	
G12	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

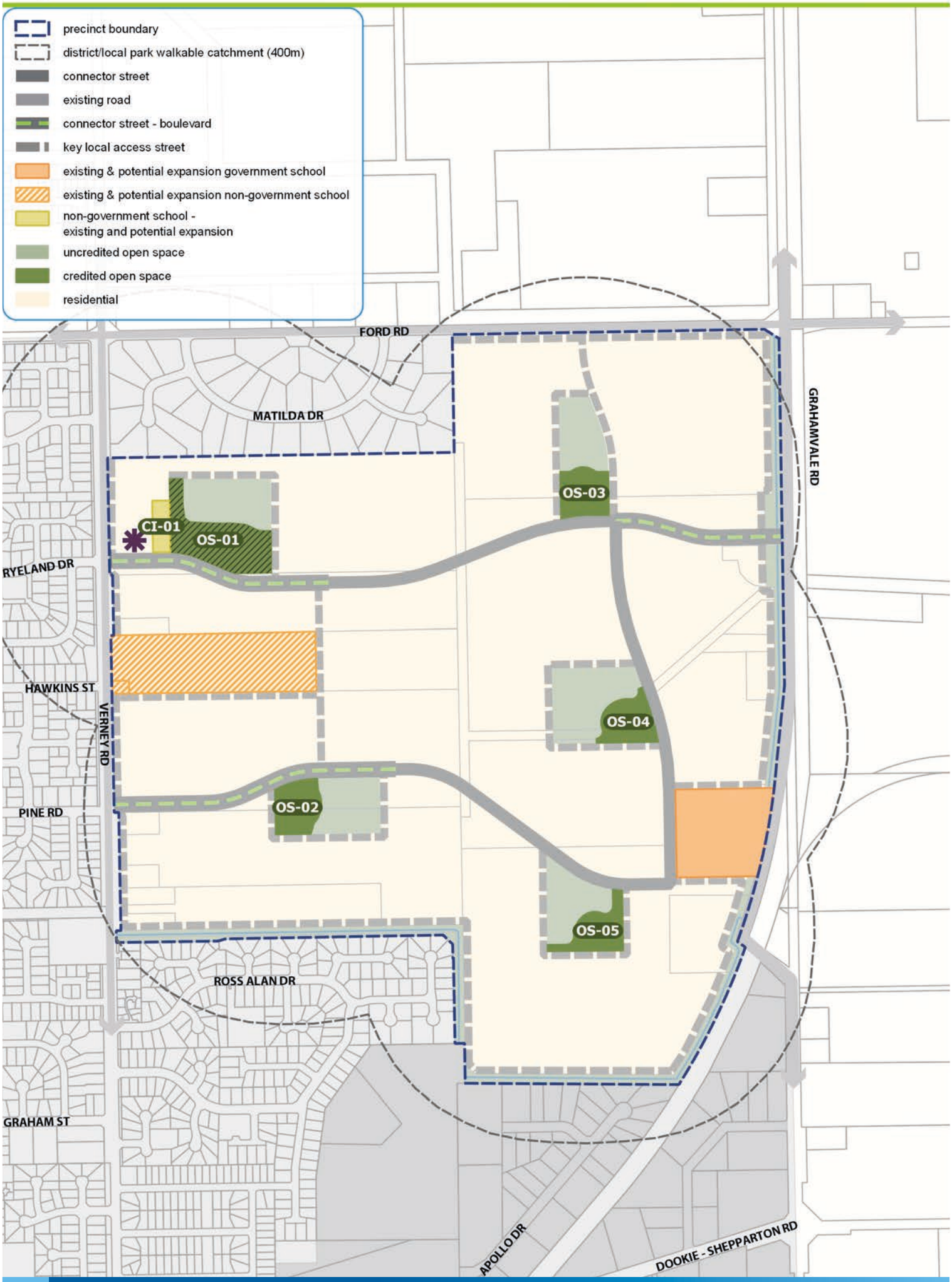
LAND USE	EMPLOYMENT MEASURE	JOBS PER EMPLOYMENT MEASURE	ANTICIPATED QUANTITY IN PRECINCT	ANTICIPATED QUANTITY OF JOBS
Local convenience centre	Jobs / 30m²	1	53	53
Community centre	Jobs / centre	10	1	10
Existing government primary school	Jobs / school	40	1	40
Existing non-government primary school	Jobs / school	40	1	40
Home based business	Jobs / dwelling	0.05	1,500	75
Total estimated				**218**

Plan 4 - Community & Open Space

Shepparton North East

1:10,000 @ A4

0 100 200 300 400 500 m



3.3 Open space, community facilities & education

3.3.1 Open space

REQUIREMENTS	
R17	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.
R18	All parks must be located, designed and developed to the satisfaction of the responsible authority in accordance with Plan 4 and Table 5, 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: • The location does not reduce the walkable access to local parks demonstrated on Plan 4 • The design does not diminish the quality or usability of the space for passive recreation • The land area is equal to or more than the park provision outlined in Table 5.
R19	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.
R20	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.
R21	Fencing of open space where required, whether encumbered or unencumbered, must be: • Low-scale and visually permeable to facilitate public safety and surveillance • Designed to guide appropriate movement and access • Constructed using materials that complement the park setting.
GUIDELINES	
G13	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.
G14	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 to the satisfaction of the responsible authority.
G15	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.

The following table sets out the open space provision expected to be delivered 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
OS01	District park	1	2.12	District, adjoining local convenience centre, community centre and drainage network	Greater Shepparton City Council
OS02	Local park	13, 17	1.00	Neighbourhood, adjoining drainage network	Greater Shepparton City Council
OS03	Local park	3, 6	1.00	Neighbourhood, adjoining drainage network	Greater Shepparton City Council
OS04	Local park	2, 6, 14	1.00	Neighbourhood, adjoining drainage network	Greater Shepparton City Council
OS05	Local park	25	1.00	Neighbourhood, adjoining drainage network	Greater Shepparton City Council

THIS PAGE IS INTENTIONALLY BLANK

3.3.2 Community facilities & education

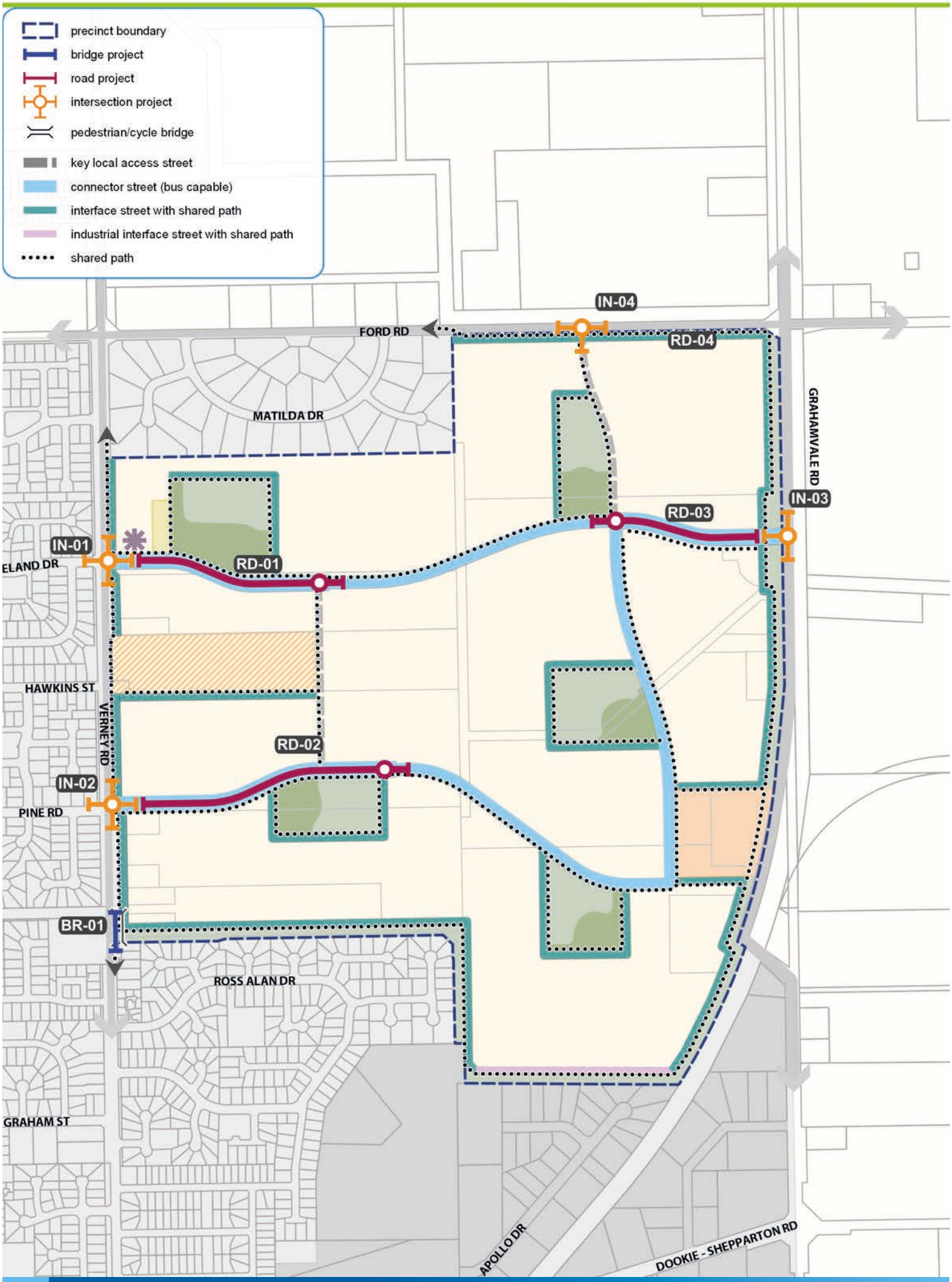
REQUIREMENTS	
R22	Where the responsible authority is satisfied that land shown as a school site is unlikely to be used for that purpose, that land may be used for an alternative purpose which is generally consistent with the surrounding land uses and the provisions of the applied zone.
R23	Community facilities must be co-located with the local convenience centre and provide an active interface with nearby open space, as illustrated in Figure 1.
R24	The location of key entries to community facilities must allow for safe and convenient pedestrian and cyclist access for all ages and abilities.
R25	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	
G16	School sites should be provided with three street frontages, where practicable.
G17	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.
G18	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.

Plan 5 - Transport & Movement
Shepparton North East

1:10,000 @ A4

0 100 200 300 400 500 m

N



3.4 Transport & movement

3.4.1 Public transport

REQUIREMENTS	
R26	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.
R27	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.
R28	The street network must be designed to ensure all households are able to directly and conveniently walk to public transport services.
R29	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.
R30	Subdivision design must show the location of all bus stops to the satisfaction of Public Transport Victoria.

3.4.2 Walking & cycling

REQUIREMENTS	
R31	Design of all streets and arterial roads must give priority to the requirements of pedestrians and cyclists by providing: • Footpaths on both sides of all streets and roads (unless otherwise specified by the PSP) • 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 • Safe, accessible and convenient crossing points of connector roads and local streets at all intersections, key desire lines and locations of high amenity • Pedestrian and cyclist priority crossings on all 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 the responsible authority.
R32	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: • Delivered by development proponents consistent with the network illustrated on Plan 5 • 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 • Positioned above the 1:100 year flood level where direct access is provided to the dwelling from the waterway.
R33	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	
G19	Lighting should be installed along shared, pedestrian, and cycle paths linking to key destinations, unless otherwise agreed by the responsible authority.

THIS PAGE IS INTENTIONALLY BLANK

3.4.3 Street network

REQUIREMENTS	
R34	Subdivision layouts must provide: • A permeable and safe street network for walking and cycling • A safe and low speed street network that encourages walking and cycling • Convenient access to local points of interest and destinations for the effective integration with neighbouring properties.
R35	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.
R36	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.
R37	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.
R38	Configuration of vehicle access to lots from public streets must ensure that there is sufficient separation between crossovers to allow for a minimum of one on-street car park for every two residential lots.
R39	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.
R40	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.
R41	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.
R42	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.
R43	Residential subdivision applications adjoining G-MW Drain 3 must front or side onto the reservation with appropriate buffers and adhere to the relevant street cross section in Appendix B.
R44	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.
R45	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.
GUIDELINES	
G20	Street layouts should provide multiple convenient routes to major destinations such as the local convenience centre and the arterial road network.
G21	Street block lengths should not exceed 240 metres to ensure a safe, permeable and low speed environment for pedestrians, cycle and vehicles is achieved.
G22	Culs-de-sac should not detract from convenient pedestrian, cycle and vehicular connections.
G23	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 coordinating roads authority.
G24	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: • Rear loaded lots with laneway access • Vehicular access from the side of a lot • Combined or grouped crossovers • Increased lot widths.
G25	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 C; however, other non-standard variations are encouraged but not limited to: • Varied street tree placement • Varied footpath or carriageway placement • Varied carriageway or parking bay pavement material • Introduction of elements to create a boulevard effect • Differing tree outstand treatments.

Plan 6 - Integrated Water Management & Utilities

Shepparton North East

1:10,000 @ A4

0 100 200 300 400 500 m

N

precinct boundary

constructed waterway corridor /drainage asset

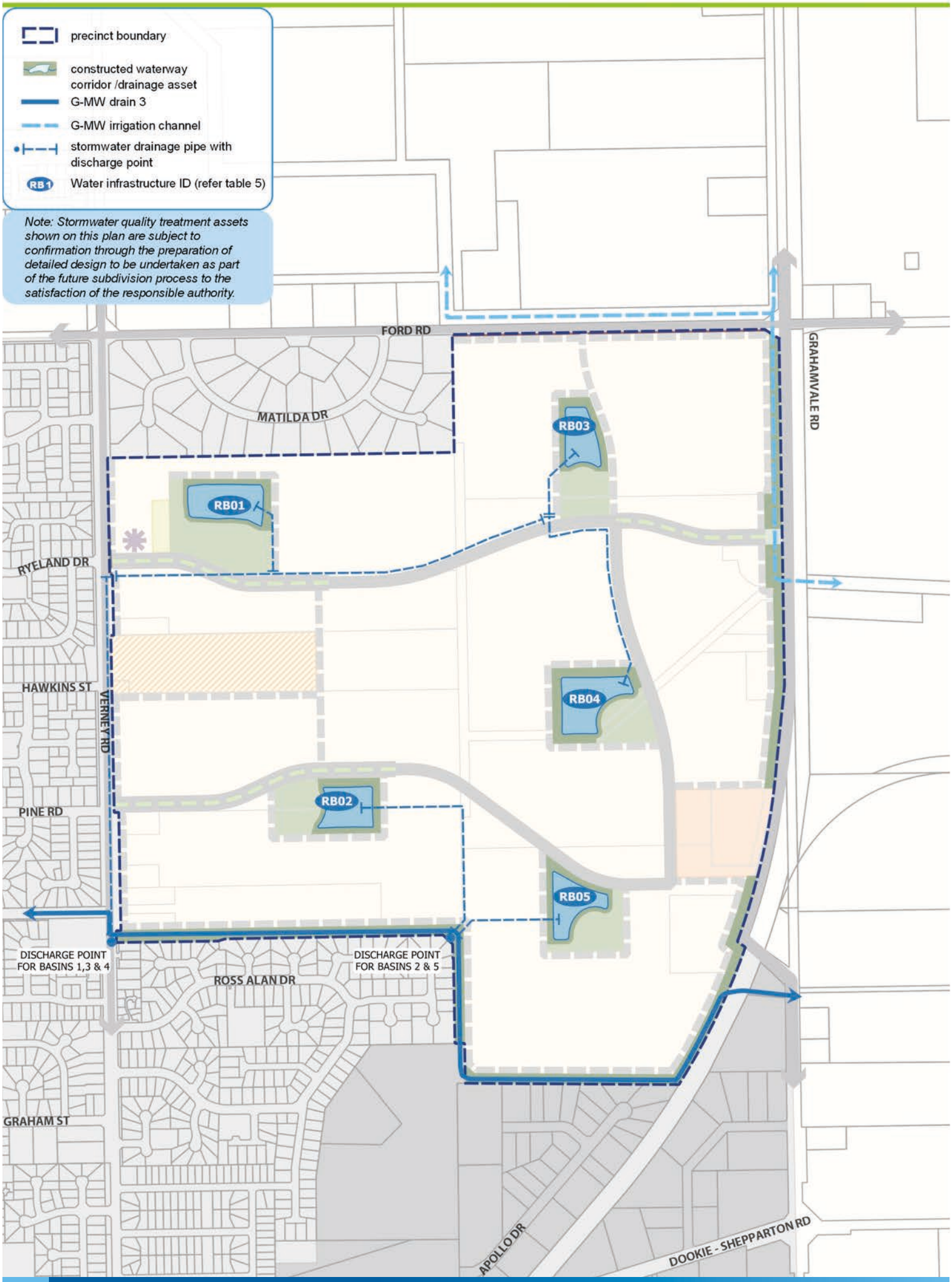
G-MW drain 3

G-MW irrigation channel

stormwater drainage pipe with discharge point

RB1 Water infrastructure ID (refer table 5)

Note: Stormwater quality treatment assets shown on this plan 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	
R46	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 Plan 6 to the satisfaction of the responsible authority.
R47	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.
R48	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.
R49	Applications must demonstrate how: • 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 • Council freeboard requirements for overland flow paths will be adequately contained within road reserves. All to the satisfaction of the responsible authority.
GUIDELINES	
G26	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.
G27	Development should reduce reliance on potable water by increasing the utilisation of fit-for-purpose alternative water sources such as storm water, rain water and recycled water.
G28	Development should have regard to relevant policies and strategies being implemented by the responsible authority, the Goulburn Broken Catchment Management Authority and Goulburn–Murray Water, including any approved integrated water management plan.
G29	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.

3.5.2 Utilities

REQUIREMENTS	
R50	Before development commences on a parcel, functional layout plans of the road network must be submitted that illustrate the location of all: • Underground services • Driveways and crossovers • Intersection devices • Shared, pedestrian and bicycle paths • Street lights • Street trees. 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. 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.
R51	Trunk services are to be placed along the general alignments illustrated on Plan 6, subject to any refinements as advised by the relevant servicing authorities.
R52	Delivery of underground services must be coordinated, located, and bundled (utilising common trenching) to facilitate tree and other planting within road verges.
R53	All new electricity supply infrastructure (excluding substations and cables of a voltage greater than 66kV) must be provided underground.
R54	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.
R55	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	
G30	Above-ground utilities should be located outside of key view lines and screened with vegetation, as appropriate.
G31	Existing above ground 66kV electricity cables should be removed and re-routed underground as part of subdivision (excluding cables greater than 66kv).
G32	Design and placement of underground services in new or upgraded streets should utilise the service placement guidelines outlined in Appendix D.
G33	Utility easements to the rear of lots should only be provided where there is no practical alternative.
G34	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.

Table 5 Stormwater drainage & water quality treatment infrastructure delivery guide

WATER INFRASTRUCTURE ID	LAND USE	PARCEL NUMBER	AREA (HECTARES)	ATTRIBUTES	RESPONSIBILITY
RB01	Retarding basin & piped drains	1	1.79	Shepparton North East Development Services Scheme	Greater Shepparton City Council
RB02	Retarding basin & piped drains	13, 17	1.54	Shepparton North East Development Services Scheme	Greater Shepparton City Council
RB03	Retarding basin & piped drains	3	1.37	Shepparton North East Development Services Scheme	Greater Shepparton City Council
RB04	Retarding basin & piped drains	2, 6, 14	2.22	Shepparton North East Development Services Scheme	Greater Shepparton City Council
RB05	Retarding basin & piped drains	25	1.49	Shepparton North East Development Services Scheme	Greater Shepparton City Council

3.6 Infrastructure delivery & development staging

3.6.1 Infrastructure delivery (subdivision works by developers)

REQUIREMENTS	
R56	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 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 and waterway and drainage reserve land • 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 • Bicycle parking • 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 open space delivery below) • Local drainage system • Local street or pedestrian path crossings of waterways unless outlined as the responsibility of another agency in the Precinct Infrastructure Plan • Infrastructure as required by utility service providers including water, sewerage, drainage, electricity, gas and telecommunications.
R57	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: • Removal of all existing disused structures, foundations, pipelines, stockpiles and soil contamination • Clearing of rubbish, environmental weeds and rocks, and levelling, topsoiling and sowing with warm climate grass • Provision of water tapping, potable and recycled water connection points • Sewer, gas and electricity connection points to land identified as sports reserves and community facilities • Trees and other plantings • Vehicle exclusion devices (fence, bollards or other suitable methods) and maintenance access points • 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 • 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.

3.6.2 Development staging

REQUIREMENTS	
R58	Development staging must provide for the timely provision and delivery of: • Drainage infrastructure • Road links and intersections to the connector and arterial road network • Street links between properties, constructed to the parcel boundary • Connection of the on- and off-road pedestrian and bicycle network.
R59	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: • Integrate with adjoining developments, including the timely provision of road and path connections, to a practical extent • Provide open space and amenity to new residents in the early stages of the development, where relevant • Provide sealed road access to each new allotment • Deliver any necessary trunk services extensions, including confirmation of the agreed approach and timing by the relevant service provider.
R60	Development stages adjoining any decommissioned, or future decommissioned Goulburn–Murray Water channel must respond to, or incorporate the land as part of the subdivision process to the satisfaction of Goulburn–Murray Water and the responsible authority.
R61	Any application for development within the noise amenity areas shown on plan 3 and fronting Verney Road, Ford Road and the railway line must adhere to *Shepparton North East PSP Noise Assessment* (Marshall Day Acoustics Pty Ltd, July 2017).
GUIDELINES	
G35	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.

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.

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

PROJECT CATEGORY	PSP/DCP PROJECT	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	INDICATIVE TIMING*	INCLUDED IN DCP
Transport projects						
Road	RD-01	Ryeland Drive (West)	**Boulevard connector street:** Construction of a 2-lane boulevard connector street and roundabout (ultimate standard contribution only). Additional purchase of land (8 metre width) to facilitate construction within a 34 metre road reserve (ultimate standard contribution only).	Greater Shepparton City Council	S	Yes (ultimate) / No (interim)
Road	RD-02	Pine Road	**Boulevard connector street:** Construction of a 2-lane boulevard connector street and roundabout (ultimate standard contribution only). Additional purchase of land (8 metre width) to facilitate construction within a 34 metre road reserve (ultimate standard contribution only).	Greater Shepparton City Council	M	Yes (ultimate) / No (interim)
Road	RD-03	Ryeland Drive (East)	**Boulevard connector street:** Construction of a 2-lane boulevard connector street and roundabout (ultimate standard contribution only). Additional purchase of land (8 metre width) to facilitate construction within a 34 metre road reserve (ultimate standard contribution only).	Greater Shepparton City Council	S	Yes (ultimate) / No (interim)
Road	RD-04	Ford Road (widening)	**Widening:** Purchase of land to facilitate the widening of the existing Ford Road reserve to the south.	Greater Shepparton City Council	S	Yes
Bridge Project						
Shared path bridge	BR-01	Verney Road shared path bridge	Construction of shared path bridge over G-MW Drain 3 at Verney Road (east side) outside of PSP boundary (ultimate standard).	Greater Shepparton City Council	M	Yes
Intersection Projects						
Intersection	IT-01	Ryeland Drive and Verney Road (Access A)	Purchase of land for intersection and construction of 4-way signalised intersection (ultimate standard).	Greater Shepparton City Council	S	Yes
Intersection	IT-02	Pine and Verney Road (Access D)	Purchase of land for intersection and construction of 4-way signalised intersection (ultimate standard).	Greater Shepparton City Council	M	Yes
Intersection	IT-03	Ryeland Drive and Gramhamvale Road (Access C)	Purchase of land for intersection and construction of 4-way signalised intersection (ultimate standard).	Greater Shepparton City Council	L	Yes
Intersection	IT-04	Ford Road and North-South Local Access Street (Access B)	Purchase of land for intersection and construction of arterial to local acess steet T-intersection (ultimate standard).	Greater Shepparton City Council	L	Yes

PROJECT CATEGORY	PSP/DCP PROJECT	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	INDICATIVE TIMING*	INCLUDED IN DCP
Drainage Projects						
Retarding basin & piped drain	RB-01	North-western basin adjoining a local park	North-west retarding basin adjoining OS-01. Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain No.3 (ultimate standard).	Greater Shepparton City Council	S	Yes
Retarding basin & piped drain	RB-02	South-western basin adjoining a local park	South-west retarding basin adjoining OS-02. Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain No.3 (ultimate standard).	Greater Shepparton City Council	L	Yes
Retarding basin & piped drain	RB-03	North-eastern basin adjoining a local park	North-east retarding basin adjoining OS-03. Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain No.3 (ultimate standard).	Greater Shepparton City Council	M	Yes
Retarding basin & piped drain	RB-04	Eastern basin adjoining a local park	East retarding basin adjoining OS-04. Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain No.3 (ultimate standard).	Greater Shepparton City Council	M	Yes
Retarding basin & piped drain	RB-05	South-eastern basin adjoining a local park	South-east retarding basin adjoining OS-05. Purchase of land and construction of retarding basin and construction of piped drains connecting retarding basin to discharge point at Drain No.3 (ultimate standard).	Greater Shepparton City Council	M–L	Yes
Community Facilities						
Community centre	CI-01	Shepparton North East community centre	Land purchase for a multi-purpose community centre (Level 1) located on Verney Road.	Greater Shepparton City Council	S	Yes
Community centre	CI-02	Shepparton North East community centre	Construction of the community facility components and maternal and child health components of a multi-purpose community centre (Level 1) located on Verney Road.	Greater Shepparton City Council	M	Yes
Open Space						
District park	OS-01	North-west park adjoining the local convenience centre and linked to RB-01.	Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	S–M	Yes
Local park	OS-02	South-west park adjoining RB-02.	Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	M–L	Yes
Local park	OS-03	North-east park adjoining RB-03.	Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	M	Yes
Local park	OS-04	East park adjoining RB-04.	Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	M	Yes
Local park	OS-05	South-east park adjoining RB-05.	Purchase of land and construction of park (ultimate standard).	Greater Shepparton City Council	M–L	Yes

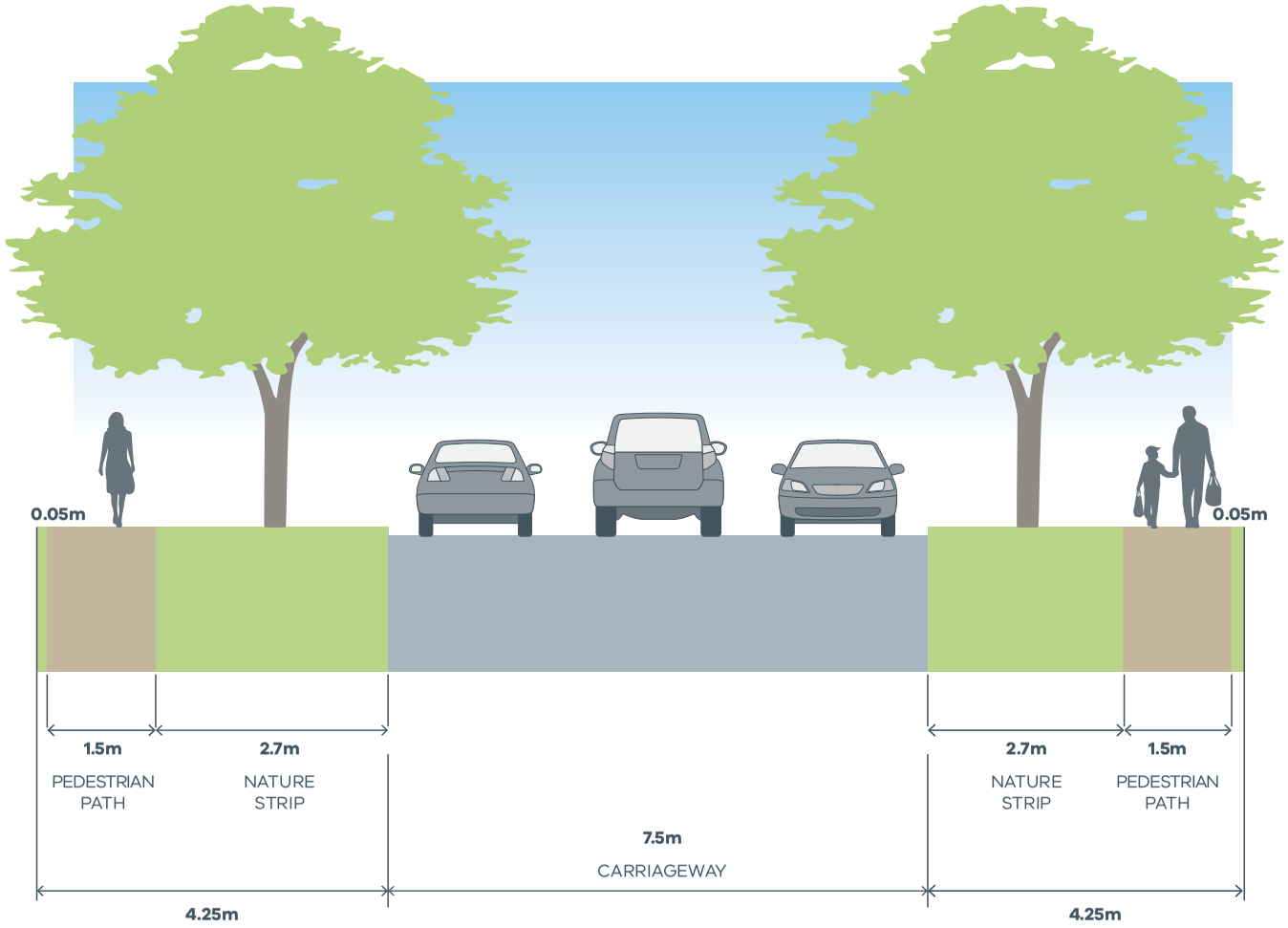
* Note: S= Short term; M= Medium term; L= Long term.

4.0 APPENDICES

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

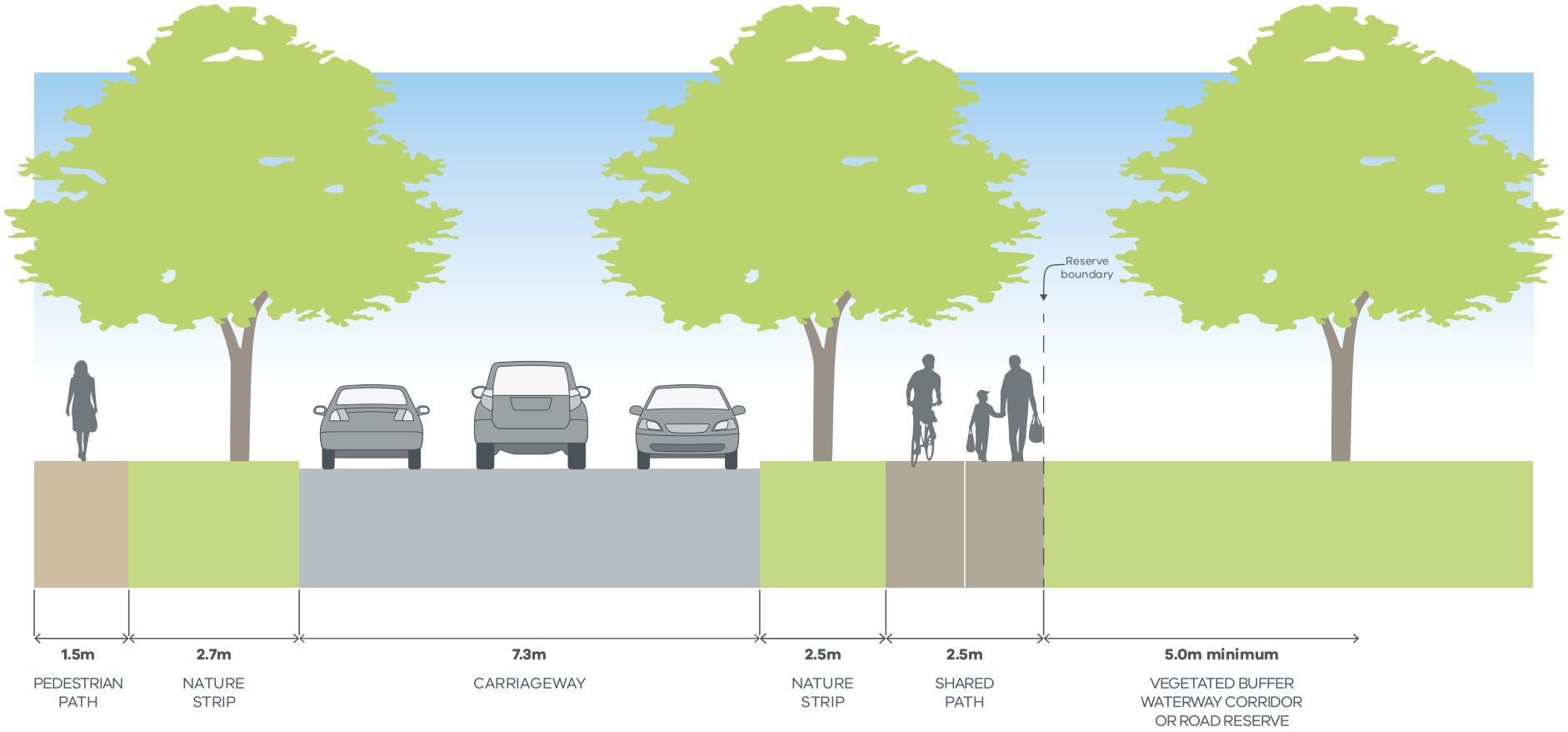
PARCEL ID	TOTAL AREA (HECTARES)	TRANSPORT		COMMUNITY FACILITIES			UNCREDITED OPEN SPACE		CREDITED OPEN SPACE	TOTAL NET DEVELOPABLE AREA (HECTARES)	NET DEVELOPABLE AREA % OF PARCEL
		ARTERIAL ROAD WIDENING AND INTERSECTION FLARING (DCP LAND)	NON-ARTERIAL ROAD WIDENING AND INTERSECTION FLARING (DCP LAND)	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)		
1	18.16	–	0.40	–	–	0.40	–	1.79	2.12	13.46	74.09%
2	5.63	–	0.12	0.34	–	–	2.05	0.21	0.25	2.67	47.40%
3	23.04	0.27	0.03	–	–	–	–	1.37	0.59	20.78	90.18%
4	8.63	–	0.21	–	–	–	–	–	–	8.42	97.56%
5	0.40	–	–	–	–	–	–	–	–	0.40	100.00%
6	25.04	–	0.35	–	–	–	–	1.94	0.58	22.18	88.57%
7	0.55	–	–	–	–	–	–	–	–	0.55	100.00%
8	0.47	–	–	–	–	–	–	–	–	0.47	100.00%
9	0.49	–	–	–	–	–	–	–	–	0.49	100.00%
10	0.53	–	–	–	–	–	–	–	–	0.00	0.00%
11	0.10	–	–	–	0.10	–	–	–	–	0.53	100.00%
12	9.04	–	–	–	5.25	–	–	–	–	3.79	41.89%
13	18.23	–	0.75	–	–	–	–	0.82	0.55	16.11	88.37%
14	17.01	–	–	0.87	–	–	–	0.08	0.58	15.48	91.00%
15	1.62	–	–	1.62	–	–	–	–	–	0.00	0.00%
16	0.40	–	–	–	–	–	–	–	–	0.40	100.00%
17	12.22	–	–	–	–	–	–	0.72	0.45	11.05	90.41%
18	0.40	–	–	–	–	–	–	–	–	0.40	100.00%
19	0.41	–	–	–	–	–	–	–	–	0.41	100.00%
20	4.13	–	–	–	–	–	–	–	–	4.13	100.00%
21	0.40	–	–	–	–	–	–	–	–	0.40	100.00%
22	1.21	–	–	–	–	–	1.21	–	–	0.00	0.00%
23	0.23	–	–	–	–	–	0.23	–	–	0.00	0.00%
24	0.72	–	–	–	–	–	0.71	–	–	0.00	0.07%
25	23.91	–	–	0.73	–	–	0.15	1.49	1.00	20.54	85.90%
26	2.54	–	–	–	–	–	0.36	–	–	2.18	85.68%
27	1.36	–	–	–	–	–	1.36	–	–	0.00	0.00%
28	–	–	–	–	–	–	–	–	–	2.18	85.68%
29	–	–	–	–	–	–	–	–	–	0.00	0.00%
TOTAL	176.87	0.27	1.86	3.56	5.35	0.40	6.07	8.41	6.12	144.83	81.88%

4.2 Appendix B: Street cross sections (standard)



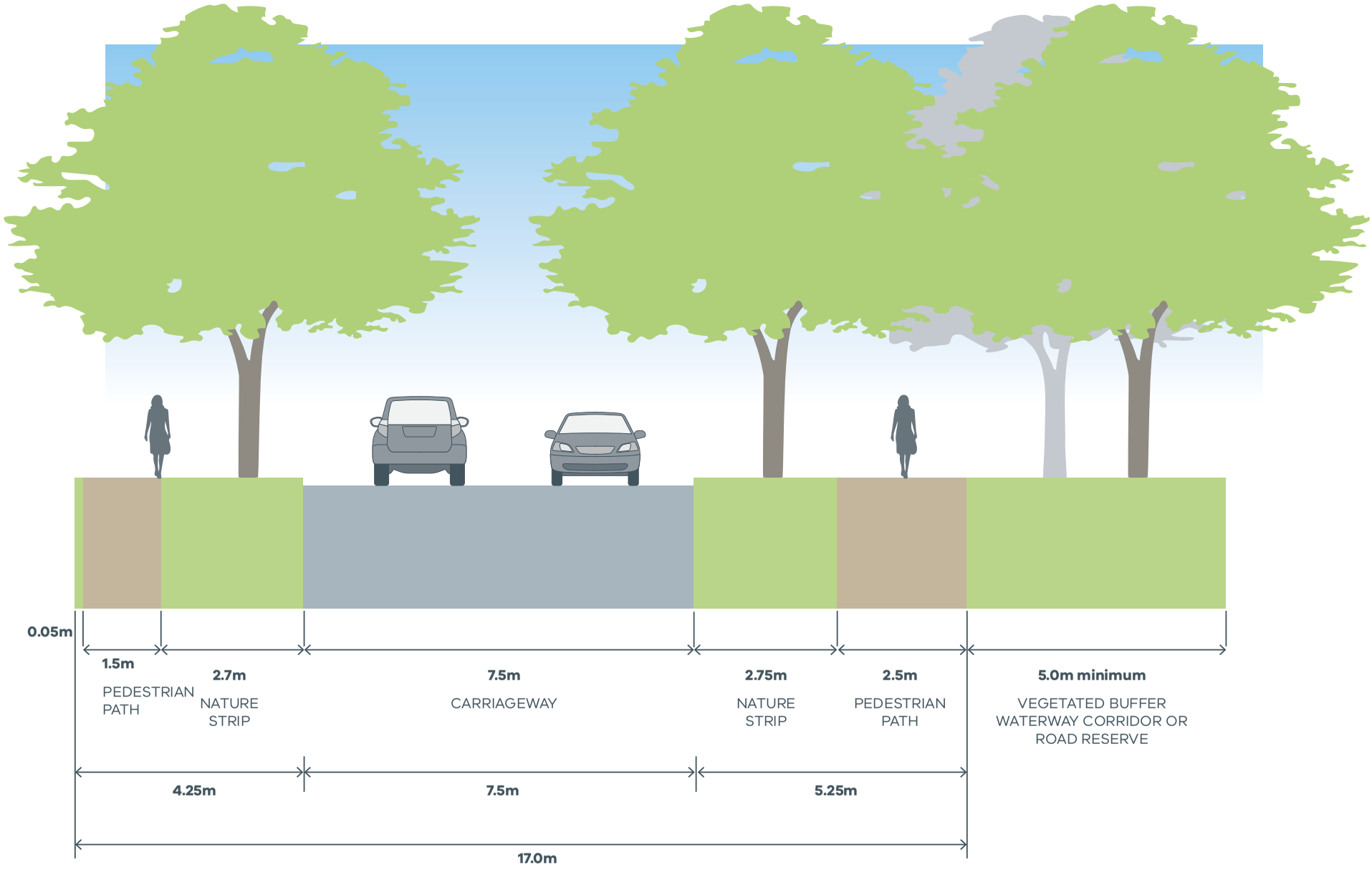
NOTES:

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



NOTES:

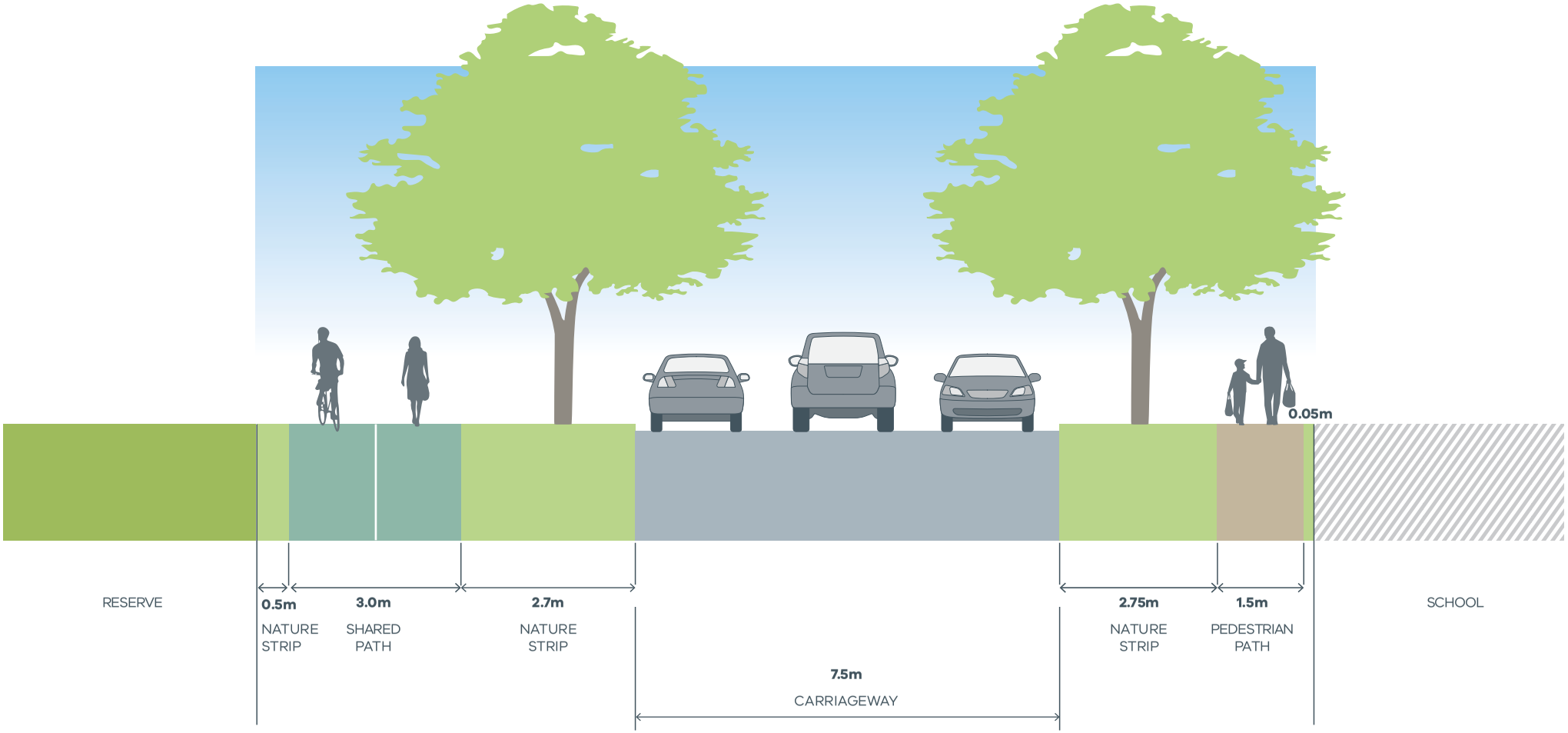
- Waterway widths are to be consistent with Plan 6 and subject to G-MW and council approval.
- Shared path placement is shown for indicative purposes. The shared path network is shown on Plan 5.



NOTES:

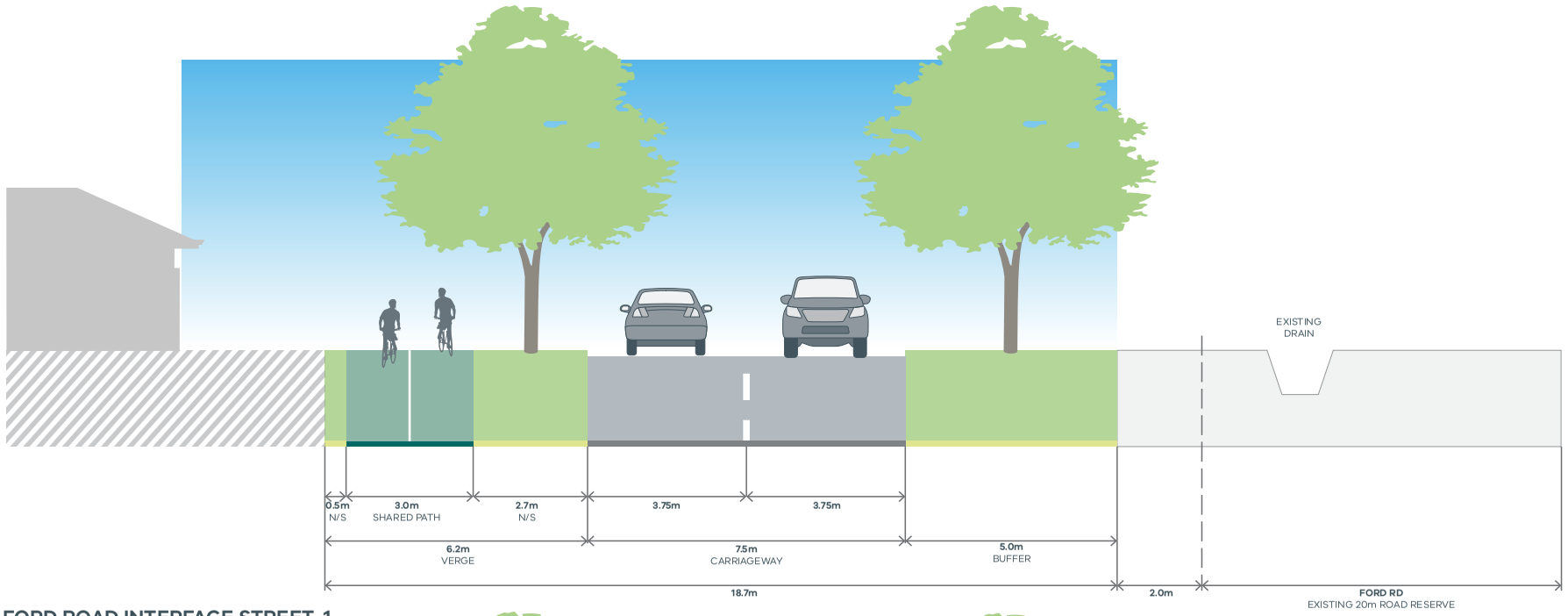
- Waterway widths are to be consistent with Plan 6 and subject to G-MW and Council approval
- Where road runs adjacent to park or reserve, the kerb is to be Type B (SM Modified elsewhere)

Interface Street 3 (17.0m)

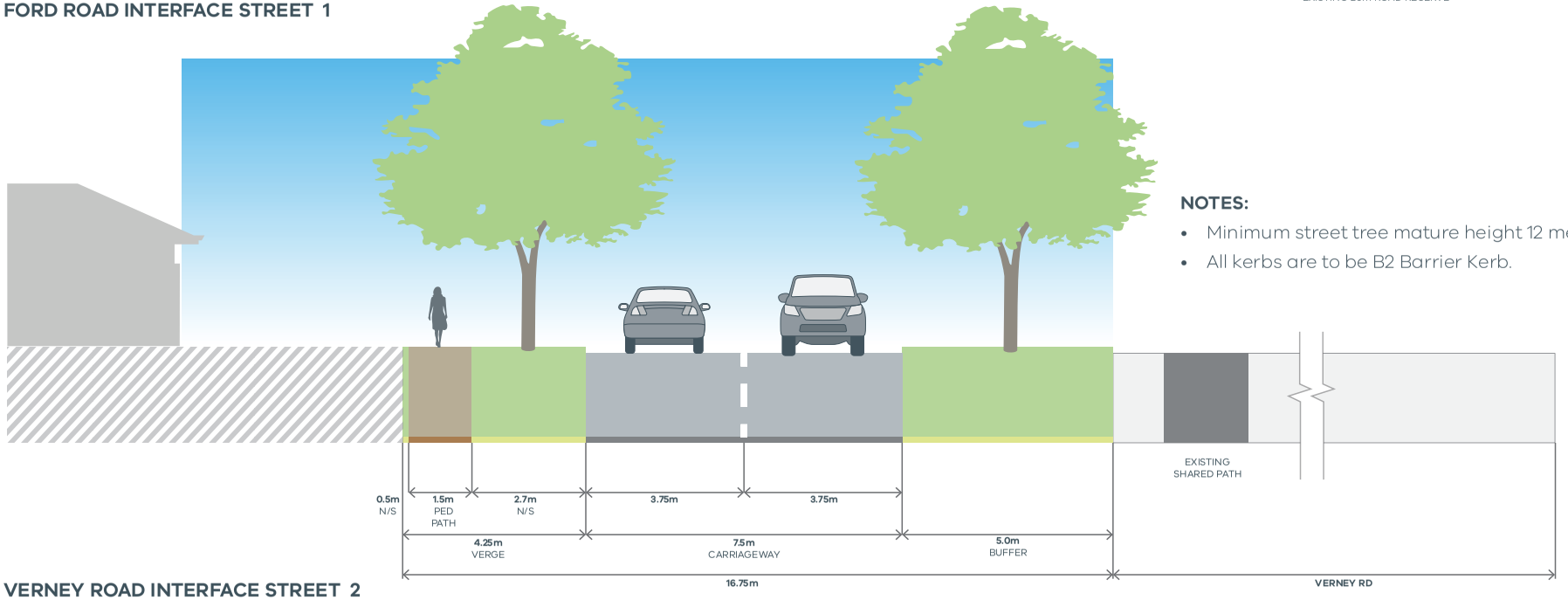


NOTES:

- Minimum street tree mature height 12 metres
- All kerbs are to be B2 Barrier Kerb (fronting school or reserve SM Modified elsewhere)



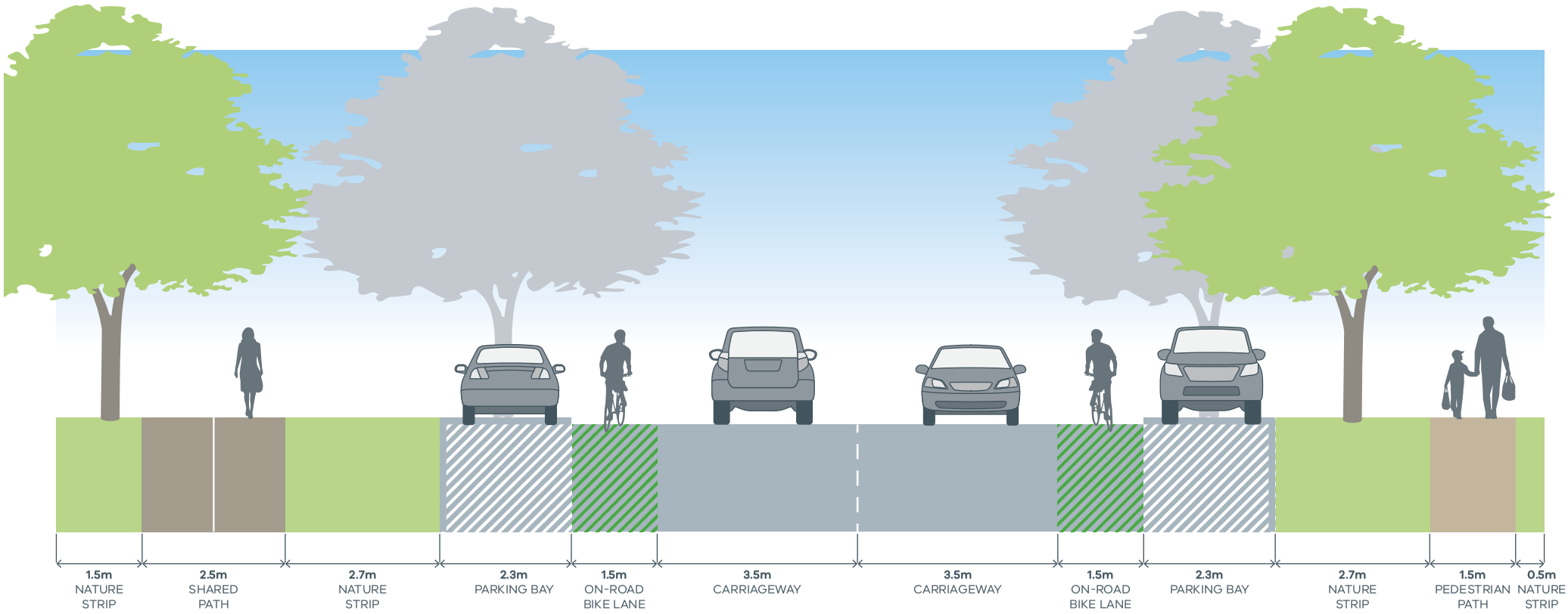
FORD ROAD INTERFACE STREET 1



VERNEY ROAD INTERFACE STREET 2

NOTES:

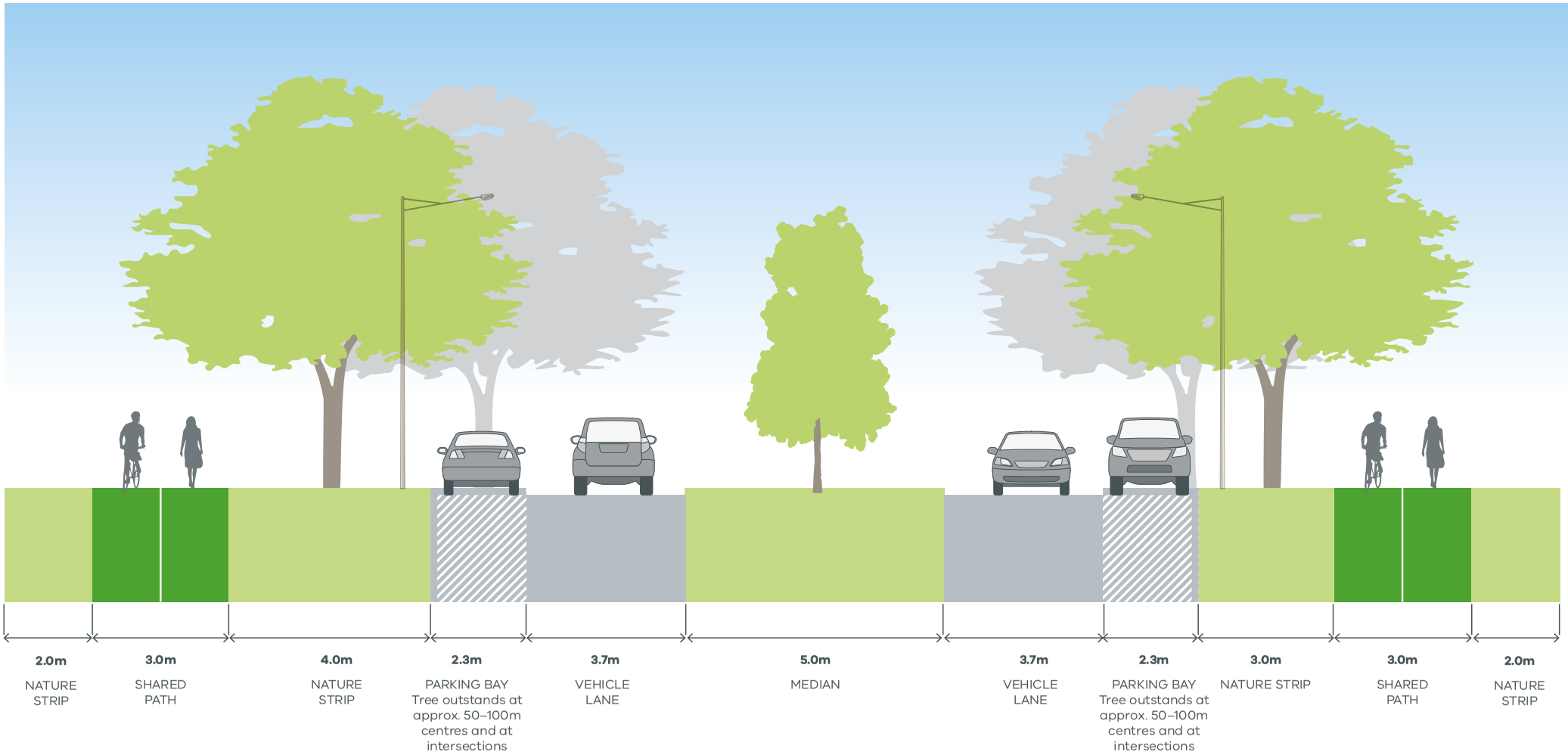
- Minimum street tree mature height 12 metres
- All kerbs are to be B2 Barrier Kerb.



NOTES:

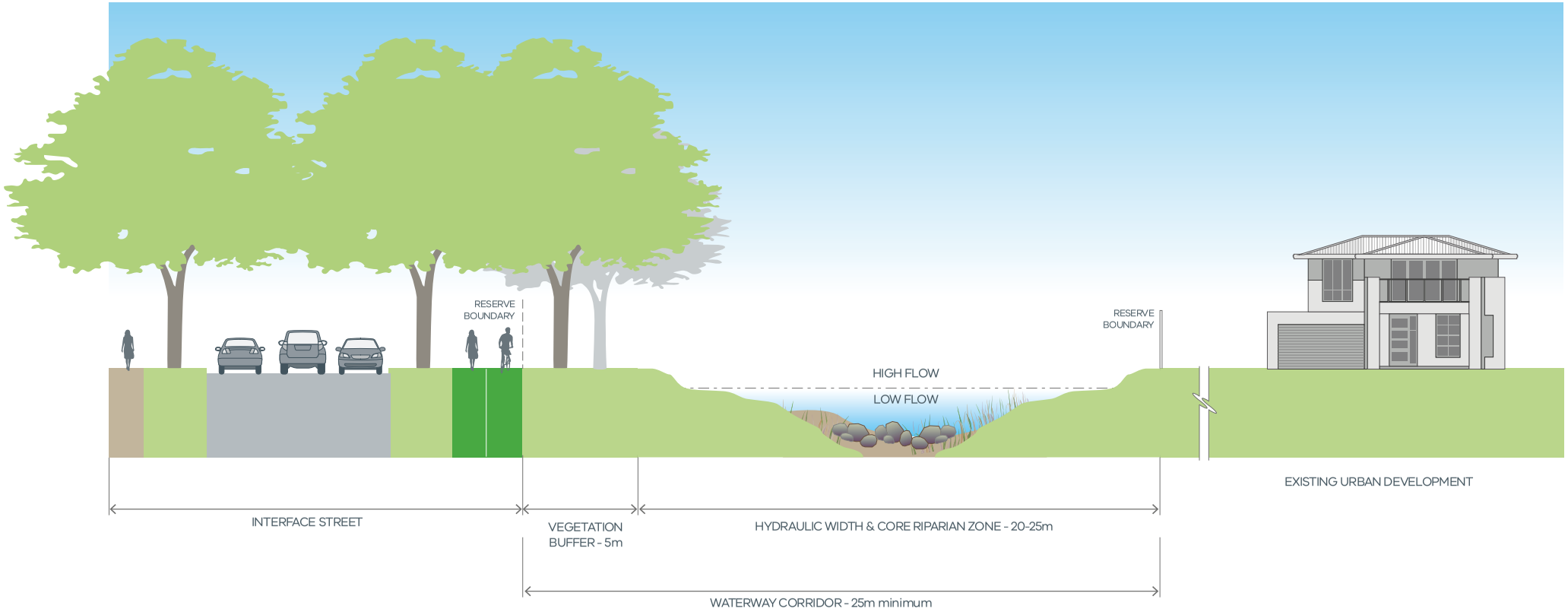
- Minimum street tree mature height 15 metres.
- All kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Infrastructure Design Manual.
- Where roads abut school drop-off zones and thoroughfares, grassed nature strip should be replaced with pavement. Canopy tree planting must be incorporated into any additional pavement.
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority.

Connector Street Level 1 (26.0m)



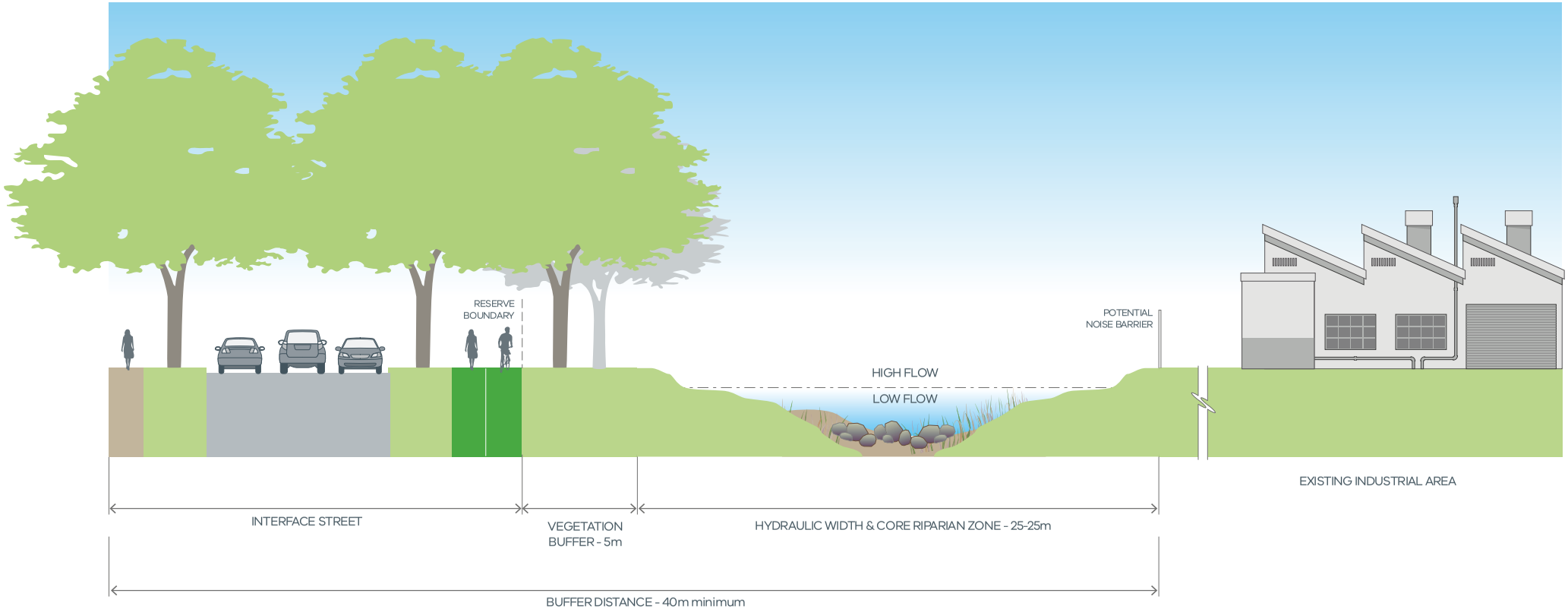
NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and 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.



NOTES:

- Waterway widths are to be consistent with Plan 6 and subject to G-MW and Council approval
- Shared path placement is shown for indicative purposes. The shared path network is shown on Plan 5.



NOTES:

- Waterway widths are to be consistent with Plan 6 and subject to G-MW and Council approval
- Shared path placement is shown for indicative purposes. The shared path network is shown on Plan 5.

4.3 Appendix C: Local convenience centre key design principles

PRINCIPLES	GUIDELINES
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 on 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 Town 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.
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.

PRINCIPLES	GUIDELINES
Principle 4 *cont'd...*	• 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 north sun 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.
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 dependence on the car. 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.

4.4 Appendix D: Service placement guidelines

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.

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[1]	UNDER KERB	UNDER ROAD PAVEMENT[2]	WITHIN ALLOTMENTS	NOTES
SEWER	Possible	Preferred	Possible	No	Possible	Possible[3]	
POTABLE WATER	Possible[4]	Preferred	Preferred	No	Possible	No	Can be placed in combined trench with gas
RECYCLED WATER	Possible[4]	Preferred	Preferred	No	Possible	No	
GAS	Possible[4]	Preferred	Preferred	No	No	No	Can be placed in combined trench with potable water
ELECTRICITY	Preferred[4]	Possible	Possible	No	No	No	Pits to be placed either fully in footpath or nature strip
FTTH/TELCO	Preferred[4]	Possible	Possible	No	No	No	Pits to be placed either fully in footpath or nature strip
DRAINAGE	Possible	Possible	Possible	Preferred	Preferred	Possible[3]	
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

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

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.


Victorian Planning Authority