

Lindum Vale

Precinct Structure Plan



September 2018

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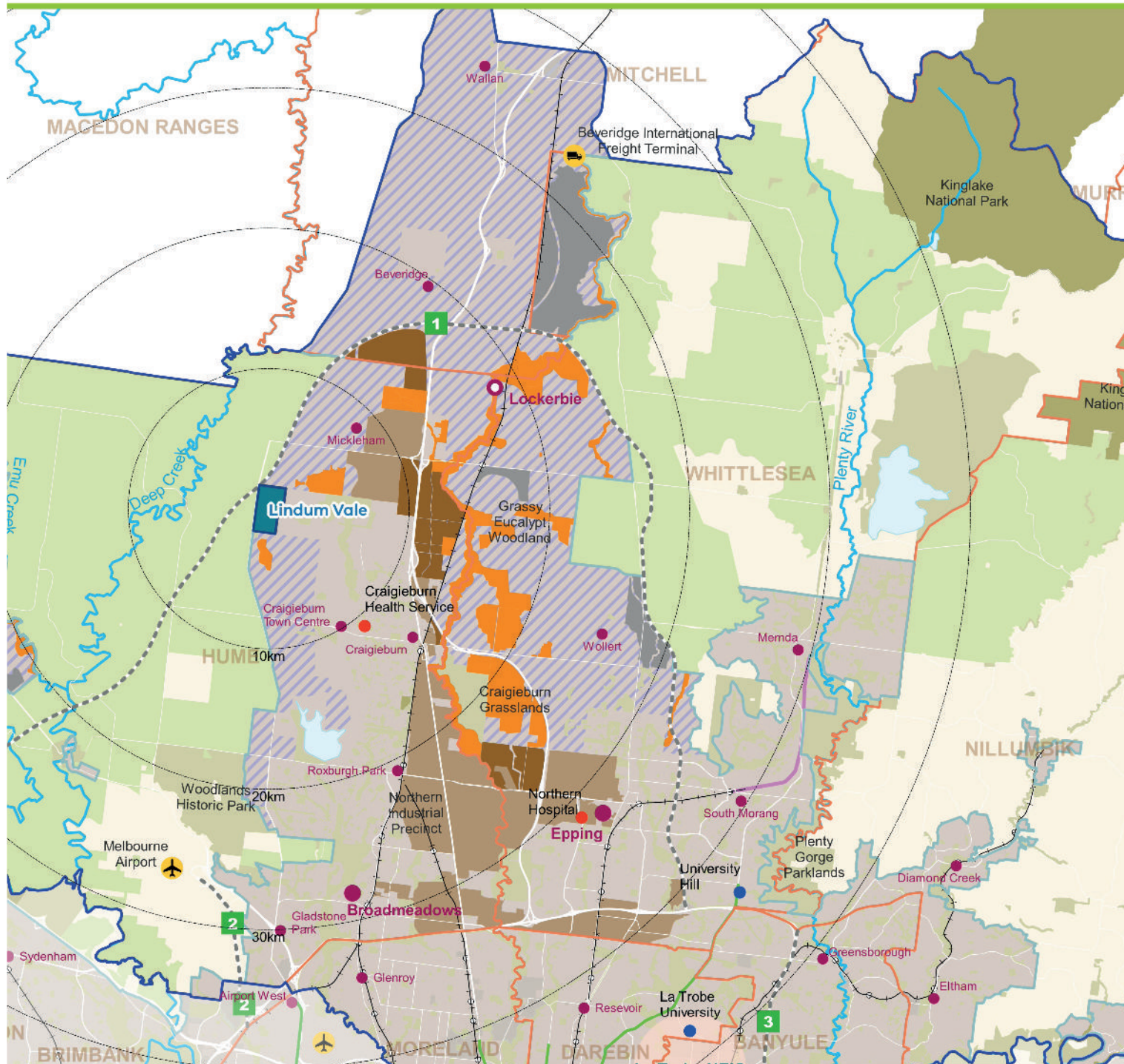
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Precincts and Activity Centres

- precinct area
- national employment and innovation cluster
- Metropolitan Activity Centre - existing
- Metropolitan Activity Centre - future
- Activity Centre - existing and future
- education precinct
- health precinct
- industrial precinct - existing
- industrial precinct - future
- state-significant industrial precinct - existing
- state-significant industrial precinct - future

Transport

- transport gateway - major airport
- interstate freight terminal (indicative)
- rail network
- train station
- tram network
- transport projects - potential future
- 1 Outer Metropolitan Ring/E6 reservation
- 2 Airport Rail Link
- 3 North East Link (alignment subject to investigation)
- transport projects committed
- Mernda rail extension
- Heidelberg - Rosanna rail duplication

Environment

- waterway
- conservation area (as identified in the Biodiversity Conservation Strategy for Melbourne's growth area)
- waterbody
- national park / state park
- public open space
- green wedge

Administration

- urban growth boundary
- subregion boundary
- local government area boundary
- growth area
- urban area

Source: Northern Subregion, Department of Environment, Land, Water and Planning, 2017 (adapted)

1.0 INTRODUCTION

The Lindum Vale Precinct Structure Plan (the PSP) has been prepared by the Victorian Planning Authority (VPA) with the assistance of Hume City Council (Council), 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 has been designed to achieve the relevant standards set out in the Growth Areas Authority (GAA) Precinct Structure Planning Guidelines (Guidelines) as well as requirements from State and Local planning frameworks. The Guidelines are available for download from the VPA website:

www.vpa.vic.gov.au/.

The PSP guides proposed development within the Lindum Vale precinct.

Generally, the PSP:

- Sets out plans to guide the delivery of quality urban environments in accordance with relevant Victorian Government guidelines, including the GAA *Precinct Structure Planning Guidelines*, the *Victorian Planning Authority Act 2017*, the *Victorian Planning and Environment Act 1987* and the State Planning Policy Framework;
- Enables the transition of non-urban land to urban land;
- Sets the vision for how the land should be developed and the outcomes to be 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 and affordable lifestyle;
- Sets out objectives, requirements and guidelines for land use, development and subdivision; and
- Provides Government agencies, the Hume City Council, developers, investors and local communities with certainty about future development.

The PSP is informed by:

- The *State Planning Policy Framework* set out in the Hume Planning Scheme;
- The *Growth Corridor Plans: Managing Melbourne's Growth* (Growth Areas Authority, June 2012);
- The *Local Planning Policy Framework of the Hume Planning Scheme*; and
- The *Precinct Structure Planning Guidelines* (Growth Areas Authority, 2008).

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

- The *Lindum Vale Infrastructure Contributions Plan* (ICP);
- The *Lindum Vale Native Vegetation Precinct Plan* (NVPP); and
- The *Lindum Vale Precinct Structure Plan Background Report*.



1.1 How to read this document

The PSP guides land use and development where a planning permit is required under the Urban Growth Zone (Clause 37.07 of the Hume Planning Scheme), or any other provision of the planning scheme that references this structure plan.

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

Each element of the PSP contains Requirements and Guidelines as relevant.

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

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

Meeting these Requirements and Guidelines will implement the outcomes of the PSP.

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

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

1.2 Land to which this PSP applies

The PSP applies to 144 hectares of land located approximately 28 kilometres north of Melbourne's Central Business District. The PSP area is bound by Mickleham Road and green wedge land to the west, the Merrifield West PSP and Outer Metropolitan Ring (OMR) reservation to the north, the Mount Ridley rural-residential community to the east, Mt Ridley Road and the future Craigieburn West PSP area to the south.

The rural-residential community to the east of the precinct is an outcome of the Hume City Council Inter-Urban Break Policy (IUBP), which seeks to maintain the rural character of land along the north side of Mt Ridley Road, between Mickleham Road and the Hume Highway.

The future community of Lindum Vale will have access to a range of employment, retail and community facilities. Easily accessible from the precinct are local town centres in Merrifield West, the Mickleham Town Centre and employment precinct on Donnybrook Road, the future Craigieburn West PSP to the south and the Craigieburn Major Town Centre to the south-east.

Plan 1 shows the Lindum Vale PSP within the context of the North Growth Corridor.

The site is on the north-eastern margin of the Victorian Volcanic Plain bioregion. It is relatively flat, sloping gently west to east towards the Malcolm Creek catchment.

The majority of the precinct has been grazed and these pastoral activities have removed most of the site's native understory vegetation. However, the land supports a significant patch of the Grassy Eucalypt Woodland ecological community in the south-east corner and includes the presence of nationally significant Golden Sun Moth habitat in a number of areas across the precinct. The land also contains Plains Grassy Woodland as well as several Grey Box Gums and a significant number of mature River Red Gums, which form part of a broader population of River Red Gums that extends across the Mount Ridley Woodlands conservation area in the Merrifield West PSP to the north and the Biodiversity Conservation Strategy (BCS) conservation area in the future Craigieburn West PSP to the south. These trees are a key feature of the precinct.

The precinct supports several structures associated with its former agricultural use including dwellings, outbuildings and dry stone walls. The historic 'Parnell's Inn' is situated close to the corner of Mt Ridley and Mickleham Road and is currently being used as a private residence. The building was constructed during the 1850s and was used for a number of purposes. It was initially the homestead of early pioneering land owners and later supported the surrounding rural community, most notably as the Mickleham Post Office and hotel. The land also contains a number of areas of Aboriginal Cultural Heritage sensitivity. Plan 2 shows the existing features of the Lindum Vale precinct.

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1.3 Infrastructure Contributions Plan

Development proponents within the Lindum Vale Precinct will be bound by the Lindum Vale Infrastructure Contributions Plan (the ICP). The ICP will set out requirements for infrastructure funding across the Lindum Vale Precinct.

The ICP will be a separate document incorporated in the *Hume Planning Scheme* via a separate amendment process.

1.4 Native Vegetation Precinct Plan

The Lindum Vale NVPP has been prepared concurrently with the PSP. The NVPP identifies:

- Native vegetation which may be removed without a planning permit; and
- The offsets that must be provided by landowners wishing to commence works prior to removing the native vegetation which can be removed. The NVPP is a separate document, incorporated under the *Hume Planning Scheme*.

1.5 Background Information

Detailed background information on the precinct is available, including the local and metropolitan context, history, biodiversity, heritage, landform and topography, land contamination, drainage (Alluvium Surface/Storm Water Management Strategy: 1960 & 2040 Mickleham Road, Mickleham Lindum Vale Satterley Group – May 2018), transport, economic and retail provision, and community infrastructure. This information is summarised in the Lindum Vale Background Report and has informed the preparation of the PSP. In addition, background information including retail, economics and community infrastructure prepared during the planning for the approved Merrifield West PSP considered the future population of Lindum Vale.



- | | | | | | |
|--|------------------------------|--|-----------------------------------|--|------------------------------------|
| | precinct boundary | | urban area | | credited open space |
| | local convenience centre | | heritage overlay interface area | | landscape values (encumbered) |
| | arterial road (6 lane) | | public acquisition overlay | | net developable area - residential |
| | connector street - boulevard | | conservation reserve | | heritage overlay |
| | local access street | | heritage reserve - Aboriginal | | waterway & drainage reserve |
| | access street (level 1) | | electricity transmission easement | | |

2.0 OUTCOMES

2.1 Vision

Lindum Vale will provide residents with a distinctive urban environment influenced by its unique natural, cultural and heritage features. The precinct will accommodate approximately 1,700 dwellings on a range of lot sizes. Future residents will have access to large areas of open space and convenient access to education and community facilities in the adjacent approved Merrifield West PSP and the future Craigieburn West PSP areas.

Development will respond to the area's landscape values by integrating the mature indigenous trees across the precinct and the native grasslands in the south-east corner of the precinct. The Aboriginal history of the area is celebrated through the protection of significant places and through signage and information relating to this history. The heritage value of the former Parnell's Inn and the existing dry stone walls will also contribute to the creation of a strong neighbourhood character. Development within the precinct will incorporate the Parnell's Inn site and complement its heritage values in accordance with the existing Heritage Overlay applicable to the site. Development within Lindum Vale will sensitively address the rural residential character of existing development adjacent to the eastern boundary of the precinct.

A network of local parks and landscape value areas incorporate the majority of indigenous trees to create a strong neighbourhood character with links to the broader open space network, including Mount Ridley Woodland Reserve, Malcolm Creek and Merri Creek. A system of three stormwater treatment areas along the eastern boundary link the open space network within the precinct and connect to the drainage corridor in the rural-residential neighbourhood to the east.

A conservation area in the south-east corner protects and enhances native grasses and Golden Sun Moth habitat, protected by the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act).

Planned regional and district scale recreation opportunities are located nearby at the Mount Ridley Woodland Reserve and further north within the Merrifield Park precinct. District level playing fields and indoor recreation facilities in the Merrifield West PSP and the future Craigieburn West PSP will be easily accessible from Lindum Vale via Mickleham Road and the internal street network connecting Mt Ridley Road to the future Merrifield Park.

The future community at Lindum Vale and those living adjacent to the precinct will have access to a centrally located local convenience centre, providing small scale retail options. Residents will also be able to access services and facilities within the local town centre in Merrifield West and the Mickleham (Merrifield) Major Town Centre, which will include a range of local and regional employment land, retail, commercial, education and community facilities.

Plan 3 shows the Lindum Vale precinct Future Urban Structure.

2.2 Key Objectives

The development of the Lindum Vale PSP area is guided by a set of key development objectives. Development within Lindum Vale will seek to:

OBJECTIVES

Identity, Character and Heritage

01	Create a high amenity urban environment through the provision of well-designed and integrated housing, pedestrian and cycle friendly streets, attractive open space, conservation and park networks, and protection of indigenous trees (identified for retention in the NVPP) and high value cultural heritage.
02	<p>Create a strong 'sense of place' through the design of subdivisions, developments, streets and open spaces that celebrate, conserve and integrate key natural and cultural heritage elements. These elements include:</p> <ul style="list-style-type: none"> • A network of local parks and conservation areas that link to the broader open space network; • Retained and protected native grasslands and indigenous trees, predominantly River Red Gums and Grey Box Gums; • Dry stone walls; • Retained and protected Aboriginal scarred trees and other important cultural places; • The Avenue of Honour along Mickleham Road; and • The former Parnell's Inn.
03	<p>Ensure subdivision and development sensitively integrates into the broader urban context. Important interface objectives include:</p> <ul style="list-style-type: none"> • Protect the privacy and minimise visual impact on the existing rural-residential lots along the eastern boundary of the precinct; • Create an appropriate landscape character along Mt Ridley Road that softens the visual prominence of development from Mt Ridley Road; and • Enhancement of the existing native vegetation landscape along Mickleham Road that defines the extent of the Urban Growth Boundary.

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04	Ensure a sensitive urban interface to the historic former Parnell's Inn that responds to the heritage values of the site as identified in the Heritage Overlay in the <i>Hume Planning Scheme</i> .
Housing	
05	Provide a diverse range of housing options that meet the needs of the future community.
06	Provide a range of lot sizes that respond appropriately to the surrounding rural context of the precinct.
07	Encourage housing that demonstrates environmentally sustainable design principles.
Open Space and Natural Systems	
08	Create a passive recreation network, potentially including the high voltage electricity transmission easement, and series of local parks linking the Mount Ridley Woodland Nature Conservation Reserve to the north and the <i>Biodiversity Conservation Strategy for Melbourne's Growth Corridors</i> conservation areas to the south of the PSP area.
09	Provide an integrated and accessible public open space network of attractive passive recreation opportunities for people of all ages and abilities.
010	Retain indigenous trees, where possible, to preserve the ecological, landscape and cultural values of the precinct through sensitive subdivision and street layout design.
011	Provide protection for areas of native vegetation through provision of encumbered open spaces.
012	Conserve and enhance the biodiversity values of Grassy Eucalypt Woodland ecological community in the south-east corner of the precinct.
Local Convenience Centre	
013	Create an attractive local convenience centre to meet the daily convenience needs of the community.
Connectivity and Accessibility	
014	Establish an integrated and permeable transport network to encourage walking and cycling and public transport use, reduce car dependency and maximise connectivity.
015	Establish a street network which provides opportunities to: <ul style="list-style-type: none"> • Link to the road network in adjacent residential areas in an appropriate manner; and • Link to key destinations located outside of the precinct via a north-south boulevard connector.
016	Prioritise the north-south boulevard connector as an important element of the broader public transport network.
Integrated Water Management and Utilities	
017	Deliver an integrated water management system that reduces reliance on reticulated potable water, increases the re-use of alternative water, minimises flood risk, ensures waterway health, and contributes towards a liveable, sustainable and green urban environment.
018	Provide, where practicable, passive irrigation of parks and open space that sustain the health of retained biodiversity values, particularly River Red Gums, through subdivision design and innovative Water Sensitive Urban Design (WSUD) practices.
019	Divert stormwater, including the current catchment, through the open space network to maximise the retention of natural flow paths where practicable.
Precinct Infrastructure Plan and Staging	
020	Ensure all lots have timely access to potable water, electricity, reticulated sewerage, drainage, gas and telecommunications.
021	Design street cross-sections to ensure that the installation of essential services do not impede the ability to plant canopy trees.
022	Ensure that development is coordinated with the delivery of key local and state infrastructure.



- | | | |
|--|--|------------------------------------|
| precinct boundary | public acquisition overlay | local park (ICP land) |
| parcel boundary | conservation reserve | landscape values |
| parcel number | waterway & drainage reserve | net developable area - residential |
| arterial road - existing road reserve | heritage reserve - Aboriginal | |
| arterial road - widening/intersection flaring (ICP land) | high voltage electricity transmission easement | |

2.3 Summary Land Budget

Table 1 provides an overview of the allocation of land uses throughout the precinct and summarises the areas of land required for transport, community and recreation infrastructure. A property specific land budget is attached at **Appendix A**.

The area of Net Developable Area (NDA) is established by deducting the land requirements for major roads, drainage, easements, community facilities and open space from the overall precinct area. The estimated NDA for the precinct is presented in Table 1.

Table 1 Summary Land Use Budget

DESCRIPTION	PSP 1202 LINDUM VALE		
	HECTARES	% OF TOTAL	% OF NDA
TOTAL PRECINCT AREA (HA)	144.36		
TRANSPORT			
Arterial Road - Existing Road Reserve	1.52	1.05%	1.49%
Arterial Road - Public Acquisition Overlay	1.61	1.12%	1.58%
Arterial Road - New / Widening / Intersection Flaring (ICP land)	2.24	1.55%	2.19%
Sub-total Transport	5.37	3.7%	5.26%
OPEN SPACE			
SERVICE OPEN SPACE			
Conservation Reserve	7.21	4.99%	7.06%
Waterway and Drainage Reserve	6.87	4.76%	6.73%
Heritage Reserve - Aboriginal	0.36	0.25%	0.35%
Heritage Reserve - Post Contact	0.00	0.00%	0.00%
Utilities Easements	4.56	3.16%	4.47%
Other	12.10	8.38%	11.85%
Sub-total Service Open Space	31.10	21.54%	30.46%
CREDITED OPEN SPACE			
Local Network Park (ICP land)	5.80	4.0%	5.68%
Sub-total Credited Open Space	5.80	4.0%	5.68%
Total All Open Space	36.90	25.6%	36.14%
TOTAL NET DEVELOPABLE AREA - (NDA) HA	102.09	70.72%	
NET DEVELOPABLE AREA - RESIDENTIAL (NDAR) HA	102.09	70.72%	

Note:
The land within the PSP area is partly affected by the Melbourne Airport N-Contours.

The effect of aircraft noise and the boundaries of the Melbourne Airport N-Contours can vary over time with changes to Melbourne Airport's operations, traffic volumes and types of aircraft using Melbourne Airport.

The most up-to-date information should be sought concerning aircraft noise and can be obtained from Melbourne Airport and its website, which can be accessed at: <https://www.melbourneairport.com.au/>.



- | | | |
|---|--|------------------------------|
| precinct boundary | conservation reserve | arterial road (6 lane) |
| trees to be retained | waterway & drainage reserve | connector street - boulevard |
| PSP key local street interface | heritage reserve - Aboriginal | local access street |
| sensitive interface areas | high voltage electricity transmission easement | access street (level 1) |
| Dry stone wall remnants and single course walls able to be removed - rating 1 (low value) | local park | local convenience centre |
| Dry stone walls to be retained and repaired rating 2-3 (moderate-high value) | landscape values | Avenue of Honour |
| public acquisition overlay | net developable area - residential | |

3.0 IMPLEMENTATION

3.1 Image, Character, Housing and Heritage

3.1.1 Landscape Character

REQUIREMENTS	
R1	All public areas, including streets, local parks and drainage areas must be landscaped and planted to reflect the unique open woodland landscape of the precinct.
R2	Open space and local streets must be designed to retain and enhance the landscape and heritage character of the precinct, particularly the existing mature indigenous trees within the site and along Mickleham Road, and the historic former Parnell's Inn.
R3	Street trees must be provided on both sides of all roads and streets (excluding laneways) in accordance with Council's Street and Reserve Tree Policy and at regular intervals appropriate to tree size at maturity and not exceeding: <ul style="list-style-type: none"> 8 – 10 metre intervals for trees with a canopy of less than 10 metres; 10 – 12 metre intervals for trees with a canopy of between 10-15 metres; or 12 – 15 metre intervals for trees with a canopy greater than 15 metres
R4	Planting of streetscapes, parks and other public spaces must include a mix of native, indigenous and other locally appropriate species.
R5	Retained River Red Gums and Grey Box Trees must be located within the public domain, including parks and street reserves, unless otherwise agreed by the responsible authority.
GUIDELINES	
G1	A consistent suite of public lighting and furniture should be used across the precinct appropriate to the type and role of the street or public space.
G2	Trees in streets and parks should be the largest canopy appropriate for the space to create a woodland character and provide maximum shading.
G3	Open space and local streets should be designed to retain and enhance the landscape and heritage character of the precinct, particularly the existing mature indigenous trees (within the site and along Mickleham Road), the historic former Parnell's Inn and significant dry stone walls.

Table 2 Sensitive Interface Areas

DESCRIPTION	SENSITIVE INTERFACE AREA		
	A MT RIDLEY ROAD	B MICKLEHAM ROAD	C EASTERN INTERFACE
Depth of interface	Two rows of dwellings	Two rows of dwellings	Single row of dwellings
General	Must be a single dwelling on a lot and allow for the planting of canopy trees on each lot		
Dwelling Setbacks*	10m to all sides	5m to front, rear and one-side	10m from PSP boundary and, where the rear of the lot abuts the PSP boundary, 3-metre setbacks from each side
Lot Size	<ul style="list-style-type: none"> Min. lot size of 1400m² Min. average lot size of 1600m² Min. lot depth 40m 	Not applicable	Not applicable

* Includes outbuildings

3.1.2 Integration and Interfaces

REQUIREMENTS

R6	Development along the sensitive interface areas identified in Plan 5 must achieve the outcomes identified in Table 2.
R7	Landscaping, including nature strip planting, along Mickleham Road must respond to the Avenue of Honour, existing native vegetation within the road reserve and the relationship of this interface with key views into and across the site.
R8	Development along the eastern boundary of the precinct must have regard to the privacy and amenity of the adjacent rural living lots and minimise visual impact on the adjacent rural living lots through the use of a consistent landscaping treatment using screening vegetation, fencing and landscape buffers that accommodates canopy trees and understorey species (none of which are poisonous to horses and other domestic animals) to screen new dwellings from adjoining rural residential lots, to be provided by the developer.
R9	Ensure the subdivision design creates neighbourhoods that are integrated across property boundaries.
R10	<p>Ensure a sensitive interface to the former Parnell's Inn site to enhance the heritage significance of the site as identified in the Heritage Overlay in the <i>Hume Planning Scheme</i>. In particular the road layout, subdivision design and development must;</p> <ul style="list-style-type: none"> • Ensure the heritage site becomes a feature of the precinct; • Provide a buffer between the southern façade and the building and new dwellings; • Ensure the building is contained on a parcel that provides an appropriate curtilage to the building; • Maintain convenient access to the site via the existing front entrance from the Mickleham Road reserve; and • Ensure the parcel containing heritage building has access to the internal subdivision street network. <p>All to the satisfaction of the responsible authority.</p>

GUIDELINES

G4	Road layout and landscaping adjoining Mickleham Road and Mt Ridley Road should be consistent with Figure 1 and Figure 2.
G5	<p>Visual impact of development with a direct interface to Mt Ridley Road should be minimised by:</p> <ul style="list-style-type: none"> • Landscaping that replicates the open woodland features of the precinct; • Ensuring all dwelling address the open space and create opportunities for passive surveillance; and • Avoiding side or rear fences facing Mt Ridley Road.
G6	The street layout, subdivision and development adjoining local parks adjacent to Mt Ridley Road should reduce the visual prominence of development from Mt Ridley Road. Visual impacts should be minimised through the consideration of building heights, setbacks, location of garages and boundary fencing.
G7	Privacy and visual impacts on adjacent rural living lots should be minimised through the design and consideration of fencing, building heights and setbacks.

3.1.3 Heritage

REQUIREMENTS	
R11	The proponent must consult the Registered Aboriginal Party and Council to ascertain how development can protect significant cultural sites and whether the heritage interpretation is appropriate in the identified areas of Aboriginal cultural heritage sensitivity in Plan 2.
R12	Plan 5 Image, Character and Housing identifies dry stone walls to be retained and repaired (rating 2-3: moderate-high value) unless otherwise agreed by the relevant authority. Any reinstatement or repair of these dry stone walls must be undertaken by a suitably qualified dry stone waller and is to be consistent with the construction style of the original wall.
R13	Reinstatement or repair of dry stone walls identified on Plan 5 Image, Character and Housing as "Dry stone walls to be retained and repaired – rating 2-3 (moderate-high value)" must use stone from (in order of priority): <ul style="list-style-type: none"> • The original wall in that location (including fallen stone adjacent to the wall). • A nearby section of the wall approved to be removed and identified as 'Dry stone wall remnants and single course walls able to be removed – rating 1 (low value)' on Plan 5 Image, Character and Housing. • Any adjacent paddock containing wall parts which can be recovered. • Walls approved to be removed in the nearby area (including any stone which has been stockpiled by Council).
R14	Installation of services across the alignment of retained dry stone walls must be undertaken by boring rather than open trenching. If open trenching or disturbance to the wall is unavoidable, a minimum section of wall may be temporarily removed and then reinstated to original condition under the supervision of a suitably qualified dry stone waller to the satisfaction of the responsible authority.
R15	Dry stone walls identified on Plan 5 Image, Character and Housing as "Dry stone walls to be retained and repaired – rating 2-3 (moderate to high value)" must be retained in open space and road reserves where possible and must: <ul style="list-style-type: none"> • Have a suitable landscape interface; • Be checked by a suitably qualified dry stone waller for any loose stones and risk to public safety. Any loose stones are to be reinstated in the wall in secure positions; • Retain post and wire or post and rail fences situated within the walls, with any wire protruding beyond the vertical face of the wall reinstated to its original position or removed; and • Be incorporated into subdivision design to minimise disturbance to the walls (e.g. utilisation of existing openings for vehicle and pedestrian access).
R16	Land uses abutting retained dry stone walls must enhance public visibility of the walls. Relevant uses include open space, conservation reserve or road verge.
GUIDELINES	
G8	The historic former Parnell's Inn should be considered for adaptive reuse for public or commercial uses.
G9	Where it has been agreed with the responsible authority that an existing dry stone wall is to be removed, land owners should consult with Council to determine whether the material can be retained for use elsewhere.
G10	Where it is not practicable to retain all elements of a dry stone wall identified on Plan 5 (Image, Character and Housing) as 'Dry stone walls to be retained and repaired – rating 2-3 (moderate to high value)' the portion of the wall to be removed should be reinstated in an alternate location with the agreement of the responsible authority.

3.1.4 Earthworks, Embankments & Retaining Structure

REQUIREMENTS	
R17	Subdivision, engineering, landscape design and buildings and works must provide a sensitive response to current landforms and minimise the need for excavation and cut and fill earthworks.
R18	No earthworks are permitted within a Tree Protection Zone (TPZ) of a tree shown to be retained on Plan 5, unless approved by the responsible authority.

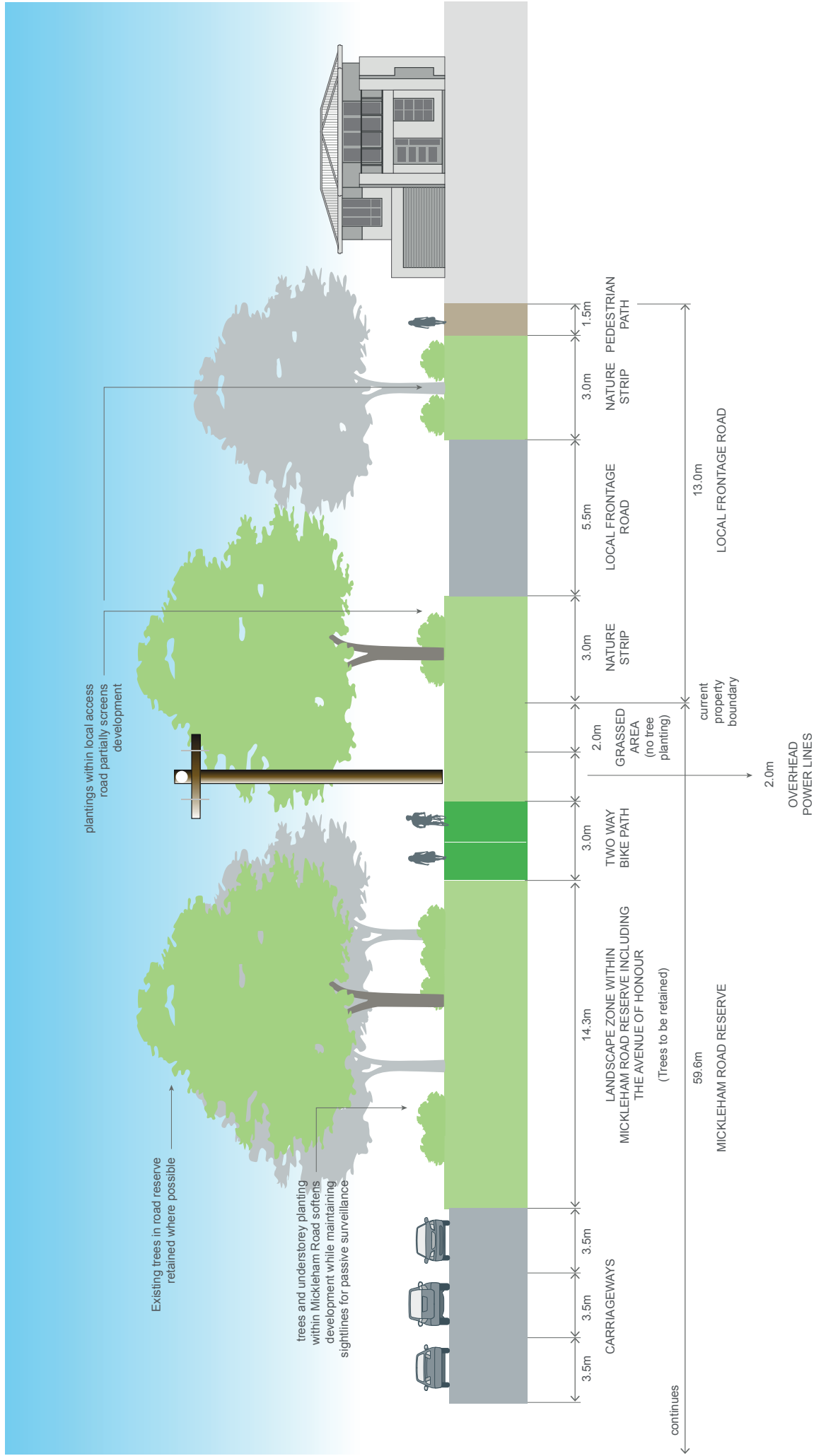


Figure 1

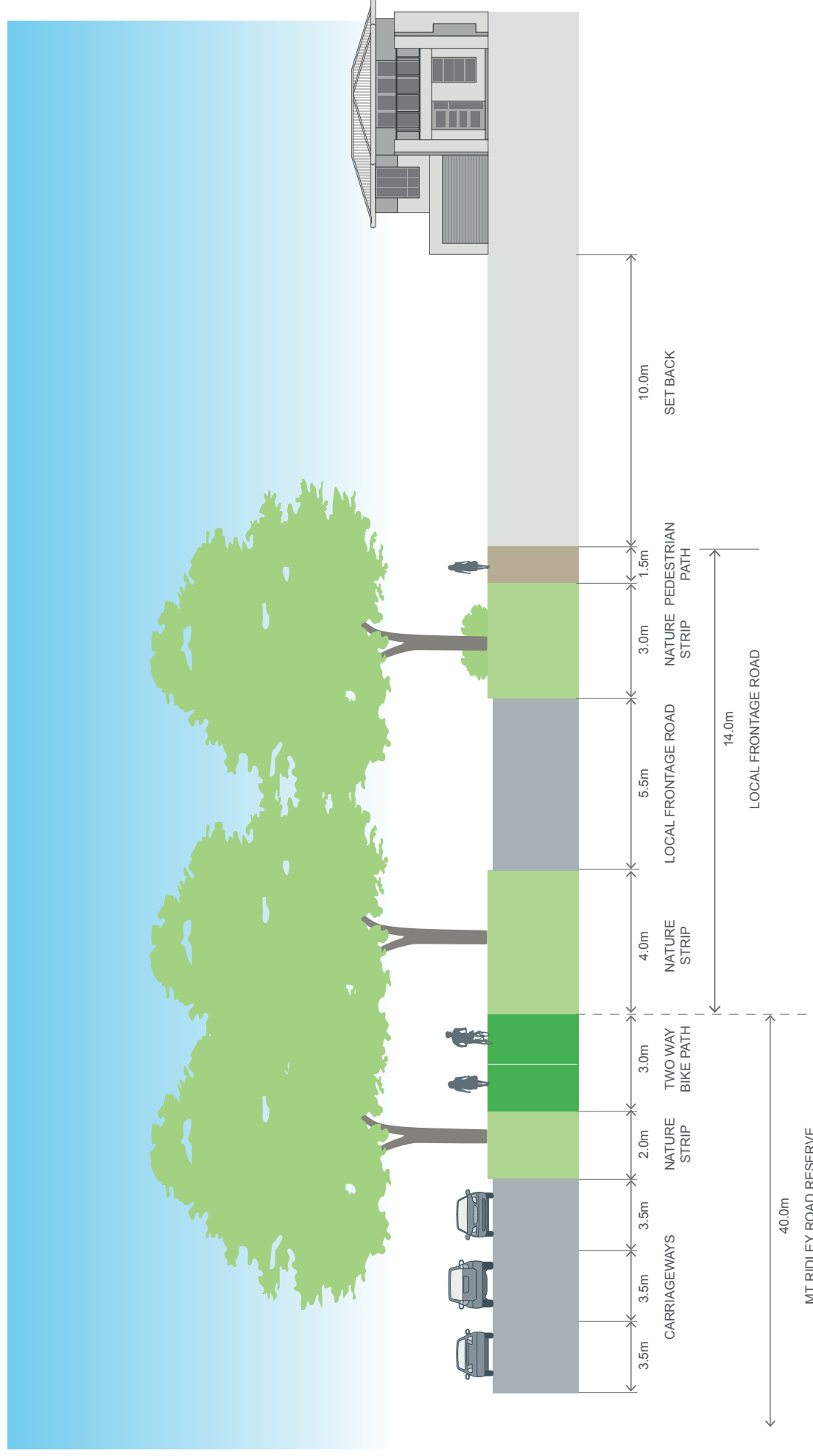


Figure 2

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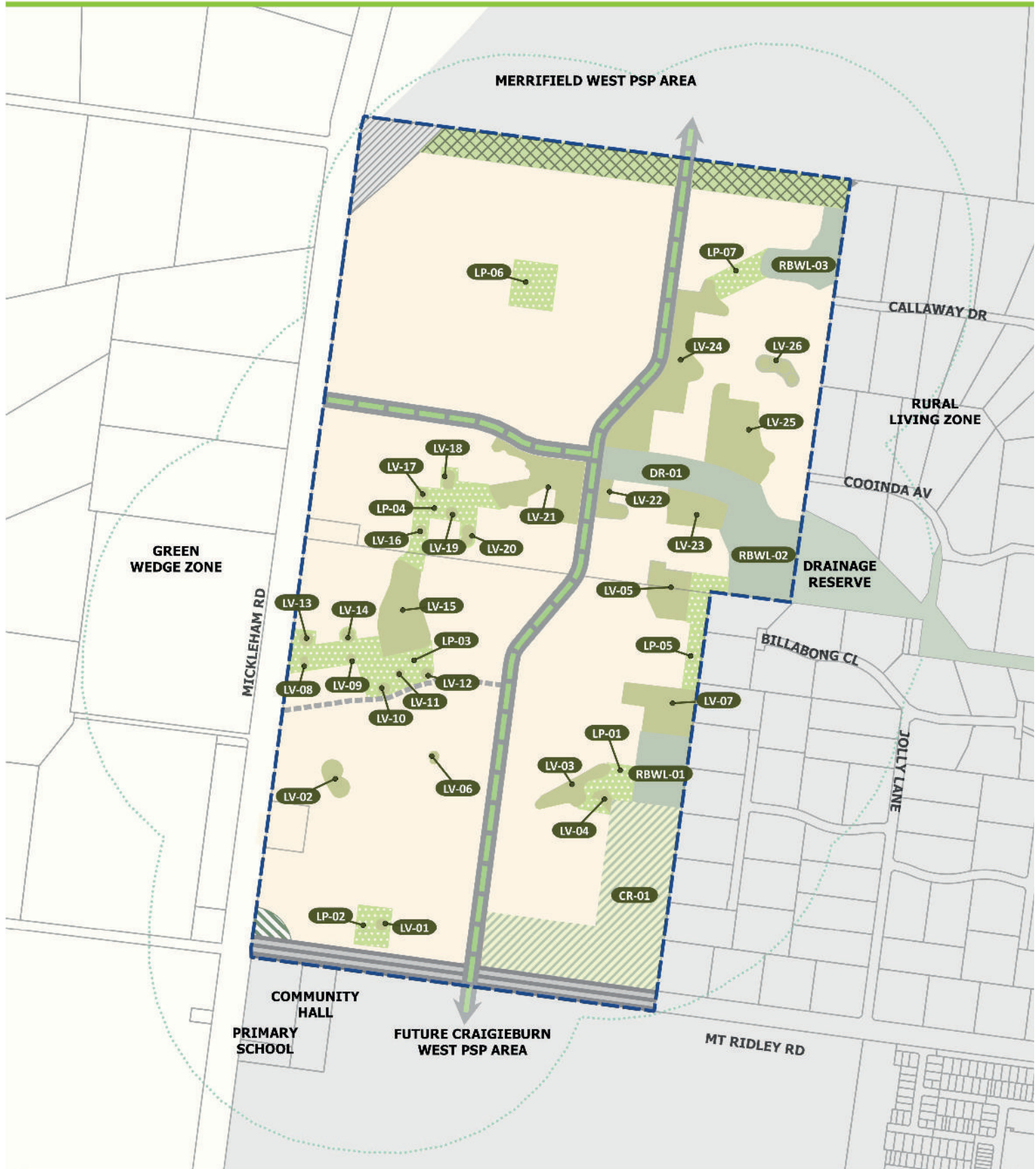
3.2 Housing

REQUIREMENTS	
R19	Residential subdivision must achieve dwelling diversity through the delivery of a range of lot sizes. This must include the provision of larger lots along the eastern interface with existing rural living lots and the southern interface with Mt Ridley Road.
R20	<p>Subdivision must deliver a minimum average dwelling density of 16.5 dwellings per Net Developable Hectare. Where a subdivision proposal represents a single stage or limited number of stages, proponents should demonstrate how the subdivision will contribute to the eventual satisfaction of the minimum average density through further stages of development.</p> <p>Lots must front where possible, and where not possible side:</p> <ul style="list-style-type: none"> • Local parks, conservation area, drainage waterways and large easements; and • Arterial and connector roads.
R21	<p>Subdivision applications must include design considerations for any lots identified for future development of medium density, high density or integrated housing that suitably demonstrate:</p> <ul style="list-style-type: none"> • Potential dwelling yield; • Active interfaces with adjacent street, open space and waterways; • Safe and effective internal vehicle, cycle and pedestrian circulation; • The delivery of dwelling diversity and lot sizes; and • Servicing arrangements.
GUIDELINES	
G11	Residential subdivisions should deliver a broad range of lot sizes capable of accommodating a variety of housing types. Table 3 should be used as a guide to demonstrate this guideline has been met.
G12	Front fences should be avoided. If unavoidable, front fences should be no less than 50% transparent and no higher than 1.2 metres.
G13	<p>Where there are opportunities for specialised housing forms such as lifestyle communities, retirement living or aged care facilities they should be:</p> <ul style="list-style-type: none"> • Integrated into the wider urban structure; and • Accessible by public transport.

Table 3 Housing Type by Lot Size

The following table is intended to provide guidance on the achievement of housing diversity objectives by providing an example of how variation in lot sizes supports the delivery of a broad range of housing types.

INDICATIVE HOUSING TYPE	TYPICAL LOT SIZE (m ²)		
	0-300	301-600	601+
Small lot housing including townhouses and attached semi-detached and detached houses	✓		
Dual occupancies, duplexes	✓	✓	✓
Detached houses		✓	✓
Multi-unit housing sites including terraces, row houses and villas		✓	✓



- | | | |
|-----------------------------|-------------------------------|--|
| precinct boundary | heritage reserve - Aboriginal | local park catchment (400m) |
| conservation reserve | utilities easement | local park, land value & conservation reserve ID |
| waterway & drainage reserve | local park | |
| | landscape values | |

3.3 Open Space and Natural Systems

Table 4 identifies classifications for local parks and reserves identified in Plan 6. Following the delivery of these open spaces, council is responsible for their management.

Table 4 Open Space Delivery Guide

PARK ID	AREA	TYPE	ATTRIBUTES
LP-01	0.52	Local Park	Central to surrounding community
LP-02	0.44	Local Park	Central to surrounding community
LP-03	1.61	Local Park	Central to surrounding community and protects scattered trees
LP-04	1.14	Local Park	Central to surrounding community and protects scattered trees
LP-05	0.86	Local Park	Central to surrounding community
LP-06	0.75	Local Park	Central to surrounding community
LP-07	0.47	Local Park	Central to surrounding community
LV-01	0.06	Scattered Tree	Retained tree within local park
LV-02	0.31	Tree Reserve	Area for tree retention (encumbered open space)
LV-03	0.55	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-04	0.11	Landscape Values	Encumbered open space
LV-05	0.80	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-06	0.05	Tree Reserve	Area for tree retention (encumbered open space)
LV-07	1.13	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-08	0.04	Scattered Tree	Retained tree within local park
LV-09	0.04	Scattered Tree	Retained tree within local park
LV-10	0.06	Scattered Tree	Retained tree within local park
LV-11	0.03	Scattered Tree	Retained tree within local park
LV-12	0.05	Scattered Tree	Retained tree within local park
LV-13	0.07	Scattered Tree	Retained tree within local park
LV-14	0.07	Scattered Tree	Retained tree within local park
LV-15	1.40	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-16	0.05	Scattered Tree	Retained tree within local park
LV-17	0.05	Scattered Tree	Retained tree within local park
LV-18	0.09	Scattered Tree	Retained tree within local park
LV-19	0.06	Scattered Tree	Retained tree within local park
LV-20	0.10	Scattered Tree	Retained tree within local park
LV-21	1.59	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-22	0.29	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-23	0.76	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-24	2.36	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-25	1.73	Tree Reserve	Shared and pedestrian paths. Area for tree retention (encumbered open space)
LV-26	0.27	Tree Reserve	Area for tree retention (encumbered open space)
CR-01	7.21	Conservation Reserve	Native vegetation retention
HR-01	0.36	Heritage Reserve	Open space protecting an area of Aboriginal cultural heritage significance. Possible low impact signage and pathways to be developed in consultation with the Wurundjeri Council.

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3.3.1 Open Space

REQUIREMENTS

	The open space network must:
R22	<ul style="list-style-type: none"> Provide flexible recreational opportunities that allow for the range of recreational needs of the community; and Maximise the amenity and value of encumbered open space through the provision of shared paths and other appropriate recreation elements.
R23	<p>Open space must be provided generally in accordance with Plan 6 and Table 4, unless otherwise approved by the responsible authority. An alternative provision of land for passive open space to that illustrated on Plan 6 is considered to be generally in accordance with this plan, provided the passive open space:</p> <ul style="list-style-type: none"> Ensures all trees identified as being retained for their landscape value in Plan 5 are retained; Is located so as to not reduce the walkable access to local parks demonstrated on Plan 6; Does not diminish the quality or usability of the space for passive recreation; and Is equal to or more than the passive open space provision within the ICP.
R24	Design of open space on encumbered land including drainage areas, utilities easements, land with remnant native vegetation and any other encumbered open space must maximise the amenity value of that open space and provide for flexible recreational opportunities, particularly when such land also abuts local parks.
R25	Where a local park interfaces a conservation area or encompasses remnant native vegetation, the design of that park must respond to, and integrate with, these environmental features.
R26	Parks and open spaces must contain extensive planting of large canopy scale native, indigenous and exotic trees that are suitable for urban environments, the local climate and soil conditions, to the satisfaction of the responsible authority.
R27	Appropriate lighting must be installed along all major pedestrian thoroughfares traversing public open space and along the cycling network to the satisfaction of the responsible authority.
R28	Fencing around open spaces is to be avoided, other than vehicle exclusion bollards or pedestrian exclusion fencing to prevent access to conservation areas or tree reserves. Where fencing is required it must be low scale and/or visually permeable to facilitate public safety and surveillance.
R29	The open space network must link into surrounding existing and proposed open space through the use of pedestrian and cyclist paths.

GUIDELINES

G14	Open spaces should have a road frontage to the majority of edges and where a road is not provided a paper road should be provided between lots and open spaces, as illustrated in Figure 4.
G15	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.
G16	Path networks associated with open space located inside and outside of the precinct should include way-finding signage which clearly identifies key destinations.
G17	Where landscaping in the power transmission easement is required as part of subdivision, treatment should include provision of a shared path and extensive planting of indigenous grasses and shrubs to the satisfaction of the responsible authority and in accordance with Appendix D - Service Placement Guidelines and the SP Ausnet – A Guide to Living with Transmission Easements.
G18	Development of land in the power transmission easement should be utilised for open space and recreation activities as permitted by the relevant electricity authority.

3.3.2 Stormwater management

REQUIREMENTS

R30	A vegetation survey and assessment of trees to be retained across the site, particularly River Red Gums, must be undertaken by an ecological expert to identify measures to protect and enhance the long term viability of the trees including any specific individual watering requirements.
R31	Design and layout of retarding basins, wetlands and any other encumbered open space must maximise the 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 and any relevant servicing authorities.
R32	Design of drainage infrastructure must minimise earthworks and impact on the retained River Red Gums.
R33	The design and construction of drainage infrastructure including wetlands, retarding basins, swales and drainage pits and pipes must, where practical, include provision for watering of the trees to be retained based on the outcomes of the vegetation survey assessment and be generally in accordance with the background report "Surface Stormwater Management Strategy – February 2018" prepared by Alluvium.

Figure 3 Powerline Easement Concept

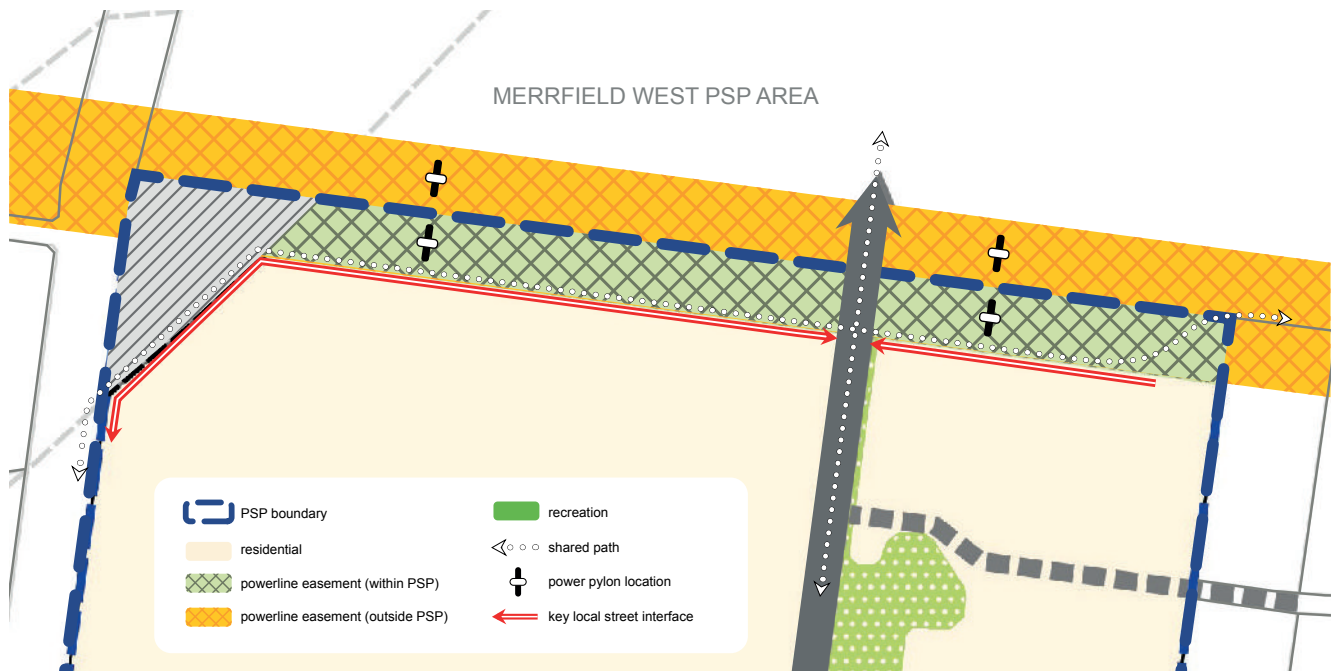
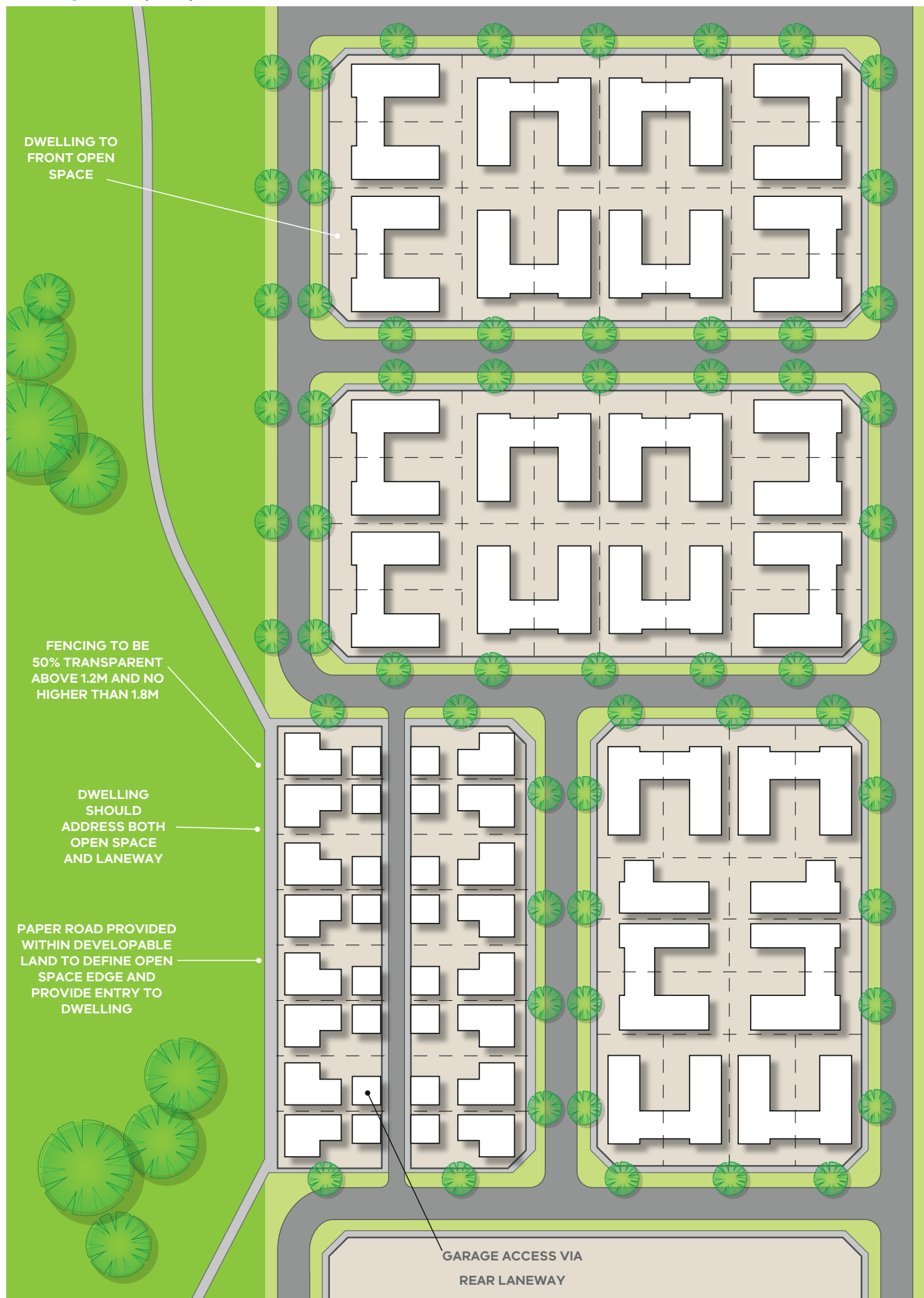


Figure 4 Open Space Interface



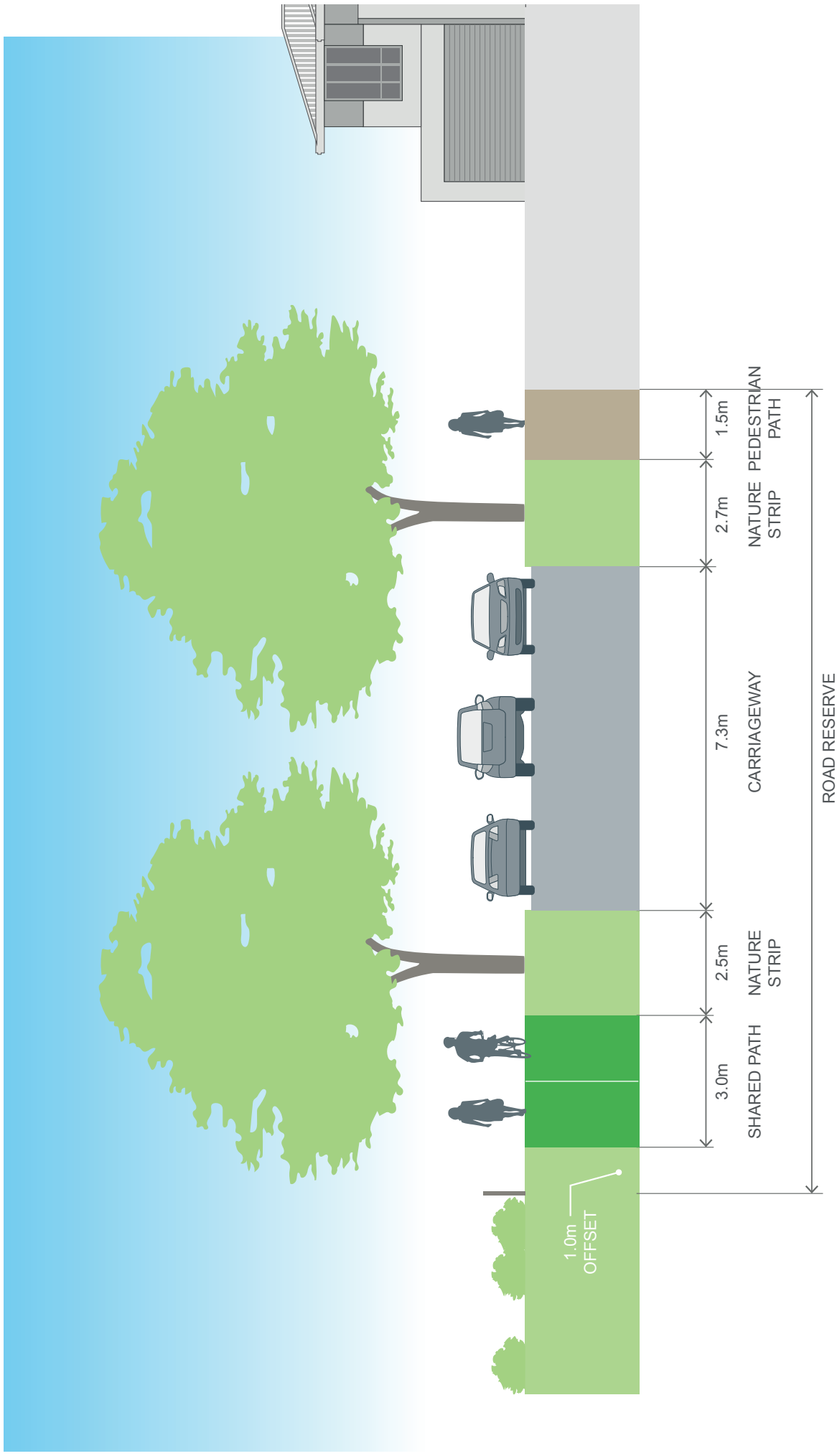


Figure 5

3.3.3 Biodiversity conservation and native vegetation retention

BIODIVERSITY CONSERVATION AND NATIVE VEGETATION RETENTION REQUIREMENTS

R34	Conservation areas must be provided in accordance with Plan 6 and Table 4, unless otherwise approved by the responsible authority.
R35	No public paths or infrastructure resulting in significant ground disturbance are to be located within conservation areas.
R36	Subdivision and development abutting a conservation area, including roads and dwellings, must be generally in accordance with Figure 4.
R37	Where trees are retained, applications for subdivision and/or development must apply Tree Protection Zones to these trees.
R38	Existing indigenous trees shown for retention in local parks, drainage areas and conservation areas on Plan 5 and Table 4 must be retained, except where agreed by the responsible authority.
R39	Water Sensitive Urban Design (WSUD) principles must be used so that stormwater, where practicable, is directed to support retained vegetation and park planting to the satisfaction of the responsible authority and be informed by an ecological assessment of individual tree moisture needs. Any WSUD must complement the open space function and quality.

BIODIVERSITY CONSERVATION AND NATIVE VEGETATION RETENTION GUIDELINES

G19	Existing indigenous trees retained outside of local parks or conservation areas should be located in public tree reserves in accordance with the Australian Standard (AS4970 – 2009 Protection of Trees on Development Sites).
G20	Plantings in local parks and open spaces should enhance the ecological value of the open space.
G21	Drainage infrastructure including wetlands and retarding basins, should be designed to maximise health and longevity of River Red Gums and other habitat values for local flora and fauna species.
G22	Planting in streetscapes and parks abutting waterways should make use of indigenous species to the satisfaction of Melbourne Water and the responsible authority.
G23	Street trees and public open space landscaping should contribute to habitat for indigenous fauna species, in particular arboreal animals and birds, where practical.

3.4 Local Convenience Centre

REQUIREMENTS

R40	A Local Convenience Centre is to be developed proximate to the location shown on Plan 3.
R41	The Local Convenience Centre must have direct vehicular access to a connector road and must be well connected to the walking, cycling and public transport network.
R42	Subdivision, use and/or development within Local Convenience Centres must have regard to the relevant design criteria for Local Conveniences Centres outlined in Appendix E, as appropriate.
R43	<p>The design of the Local Convenience Centre must:</p> <ul style="list-style-type: none"> • Provide primary access to tenancies from the main access street; • Provide a mix of tenancies; • Provide active and articulated frontages to the connector roads and local access streets; and • Locate any servicing infrastructure, loading areas and/or car parking to the rear or centre of the allotment in a manner that protects the visual amenity of the precinct.



3.5 Connectivity and accessibility

3.5.1 Street Network

REQUIREMENTS	
R44	<p>Street layouts must:</p> <ul style="list-style-type: none"> • Be generally in accordance with the network shown in Plan 8; • Form a coherent movement network across the wider precinct; • Ensure views across the site to open space and to significant trees are maintained; • Ensure equity of access to open space and facilities is provided; • Provide a permeable and safe network for walking and cycling; and • Be designed to facilitate diversion of stormwater to the open space network.
R45	The connector street network must provide a safe low speed environment.
R46	<p>Staging of subdivisions must provide for the timely connection of:</p> <ul style="list-style-type: none"> • Essential infrastructure (services/utilities); • Road links between properties; • Road links to the connector and arterial road network; and • Pedestrian and cyclist links to the off-road pedestrian and bicycle network.
R47	<p>Approximately 30% of local streets (including connector streets) within a subdivision must apply an alternative cross section to the 'standard' cross section for these streets outlined in Appendix B.</p> <p>Examples of potential variations are provided in Appendix C, however others are encouraged, including but not limited to:</p> <ul style="list-style-type: none"> • Varied street tree placement; • Varied footpath or carriageway placement; • Introduction of elements to create a boulevard effect; • Varied carriageway or parking bay pavement material; and • Differing tree outstand treatments. • For the purposes of this requirement, changes to street tree species between or within streets does not constitute a variation. • Alternative cross sections must ensure that: <ul style="list-style-type: none"> • Minimum required carriageway dimensions are maintained to ensure safe and efficient operation of emergency vehicles on all streets as well as buses on connector streets; • The performance characteristics of standard cross sections as they relate to pedestrian and cycle use are maintained; and • Relevant minimum road reserve widths for the type of street (maintaining the widths illustrated in Appendix B).
R48	Streets must be constructed to property boundaries where an inter-parcel connection is intended or indicated in the structure plan, by any date or stage of development required or approved by the responsible authority.
R49	Vehicle access to lots fronting arterial roads must be provided from a service road, local internal road or rear lane only, to the satisfaction of the coordinating road authority.
R50	Configuration of vehicle access to lots 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.
R51	Vehicle access to a lot that is six (6) metres or less in width must be via rear laneway.
R52	The subdivision layout must create a movement network that connects with Merrifield West to the north, the future Craigieburn West PSP to the south and the adjoining rural-residential area to the east.
R53	Where determined that roundabouts are required at road intersections, they must be designed to slow vehicles, provide for pedestrian visibility and safety, and ensure connectivity/continuity of shared paths and bicycle paths.
R54	Development must positively address all waterways through the use of frontage roads or lots with direct frontage to the satisfaction of Melbourne Water and the responsible authority.
R55	The extension of roads from the Rural Living Zone into the PSP must not connect directly to the north-south boulevard connector but should connect to other local access streets which provide a connection to the boulevard.
R56	The street network must provide the potential for a future road connection to Billabong Close.



precinct boundary



left in / left out



signalised intersection



arterial road (6 lane)



connector street - boulevard



local access street



access street (level 1)

GUIDELINES	
G24	Street block lengths should not exceed 240 metres to ensure a permeable and low speed environment for pedestrians, cyclists and vehicles is achieved.
G25	Where streets bisect the open space network, they should be designed to allow for the continuation of stormwater to pass through open space areas to the satisfaction of the responsible authority.
G26	Street layouts should provide multiple convenient routes to major destinations such as walking trails, parks, sporting reserves, local convenience centres, local town centre and the arterial road network.
G27	Cul-de-sacs should not detract from convenient pedestrian and cycle connections.
G28	All signalised intersections should be designed in accordance with the <i>VicRoads Growth Area Road Network Planning Guidance & Policy Principles Handbook</i> .
G29	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: <ul style="list-style-type: none"> • Rear loaded lots with laneway access; • Vehicular access from the side of a lot; • Combined or grouped crossovers; and • Increased lot widths.
G30	Where streets bisect the open space network, they should be designed to slow traffic with regard to pedestrian safety.

3.5.2 Public Transport

REQUIREMENTS	
R57	Bus stop facilities must be designed to the satisfaction of Public Transport Victoria and be located in close proximity to the Local Convenience Centre.
R58	Any roundabouts on roads shown as 'bus capable' on Plan 7 must be constructed to accommodate ultra-low-floor buses in accordance with the Austroads guidelines as well as <i>Public Transport Guidelines for Land Use and Development</i> .
R59	The street network must be designed to ensure all households are able to directly and conveniently walk to transport services.

3.5.3 Walking and cycling

REQUIREMENTS	
R60	Design of all streets must give priority to the requirements of pedestrians and cyclists by providing: <ul style="list-style-type: none"> • Footpaths of at least 1.5 metres wide on both sides of all streets and roads unless otherwise specified by the PSP; • Shared paths or bicycle paths of 3.0 metres in width where shown on Plan 7 or as shown on the relevant cross-sections in Appendix B or as specified by another requirement in the PSP; • Safe and convenient crossing points of connector roads and local streets at all intersections and on key desire lines as well as crossing of creeks and waterways; • Pedestrian priority crossings on all slip lanes; and • Safe and convenient transition between on-road and off-road bicycle networks. All to the satisfaction of the coordinating roads authority and the responsible authority.
R61	Shared and pedestrian paths along waterways must: <ul style="list-style-type: none"> • Be delivered by development proponents consistent with the network shown on Plan 7; • Be above 1:10 year flood level with any crossing of the waterway designed to maintain hydraulic function of the waterway; • Be constructed with a concrete surface if identified as a shared path on Plan 7; • Where a shared path is to be delivered on one side of a minor waterway, also deliver a path on the other side of the waterway (which may be constructed to a lesser standard); and • Provide appropriate connection of walking and cycling paths to surrounding pedestrian and cycling networks. All to the satisfaction of the Melbourne Water and the responsible authority.
R62	Bicycle parking facilities including way finding signage are to be provided by development proponents in convenient locations at key destinations such as parks and the local convenience centre, to the satisfaction of the responsible authority.



precinct boundary



drainage reserve



existing culvert to be upgraded to cater for 100 year ARI flood flows



future environmental culvert



existing drainage line

R63	Lighting must be installed along shared, pedestrian, and cycle paths where they are adjacent to roads, linking to key destinations, unless otherwise agreed by the responsible authority.
R64	The alignment of the off-road bicycle path must be designed for cyclists travelling up to 30km/hr, to the satisfaction of the responsible authority.
GUIDELINES	
G31	Location of walkways or pedestrian and cycle paths in addition to those described through the standard cross sections should consider the need for appropriate lighting and passive surveillance.
G32	Street activation within residential areas should be encouraged through the inclusion of street furniture and incidental meeting places.

3.6 Integrated water management and utilities

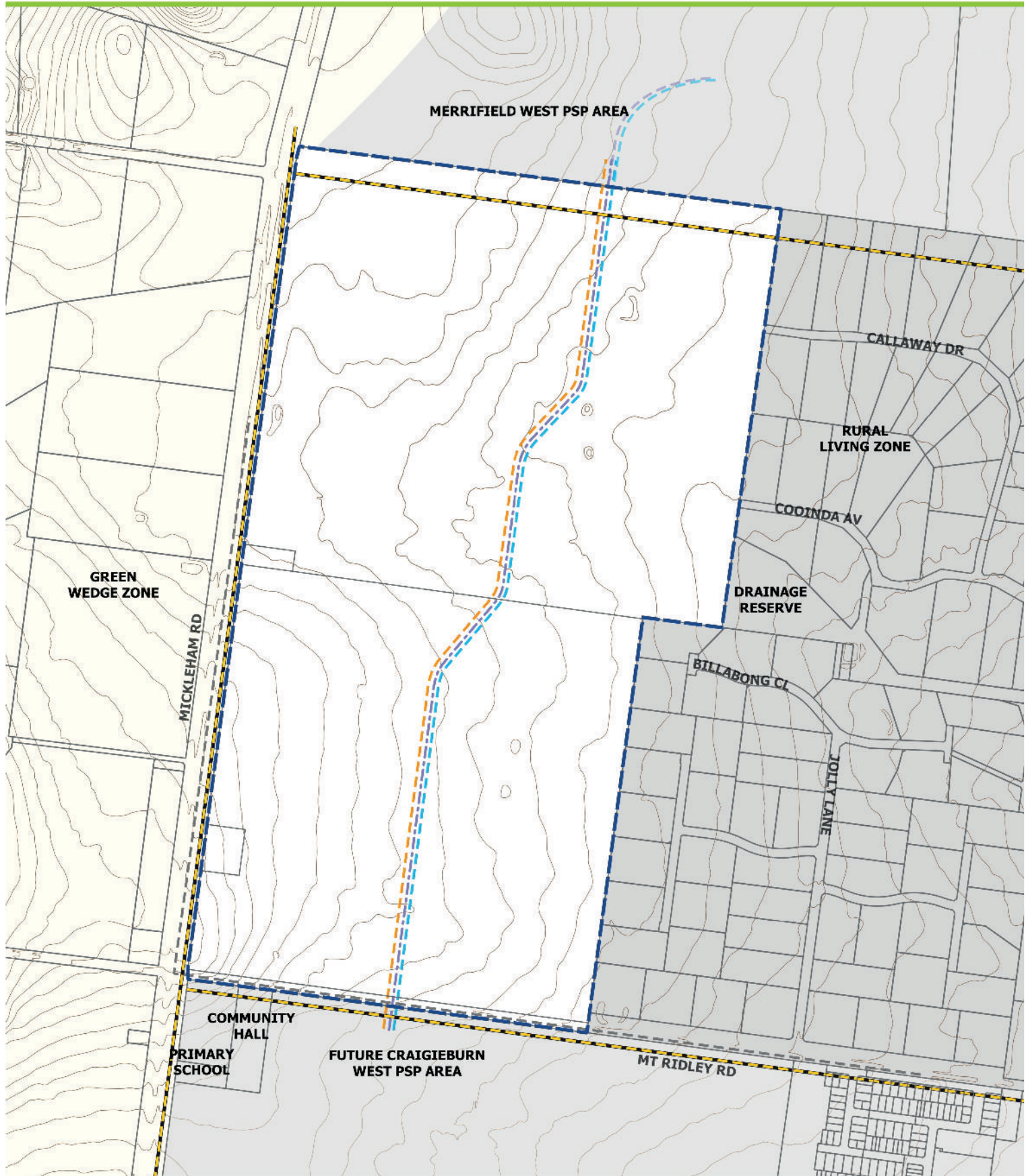
Table 5 Stormwater drainage and water quality treatment infrastructure

INFRASTRUCTURE ID	DESCRIPTION	AREA (HA)	RESPONSIBILITY
DR-01	Drainage Reserve	1.63	Melbourne Water*
RBWL-01	Sediment Basin & Wetland	1.36	Hume City Council
RBWL-02	Sediment Basin & Wetland	2.56	Melbourne Water*
RBWL-03	Sediment Basin & Wetland	1.33	Hume City Council

*Areas outside Melbourne Water's Statement of Obligations will be managed by Hume City Council

3.6.1 Integrated water management

REQUIREMENTS	
R65	Stormwater run-off from the development must meet or exceed the performance objectives of the <i>Best Practice Environmental Management Guidelines for Urban Stormwater Management</i> (1999) prior to discharge to receiving waterways.
	Development staging must provide for the delivery of ultimate waterway drainage infrastructure, including stormwater quality treatment, listed in Table 5.
R66	Where Melbourne Water and the responsible authority agree to an interim storm water management solution, the developer must: <ul style="list-style-type: none"> • Provide the land required for the ultimate drainage solution prior to the issue of a Statement of Compliance; and • Demonstrate that the interim solution will not result in an increase in the cost of achieving the ultimate solution.
R67	A permit for subdivision must ensure that the ultimate stormwater management assets and associated land described in the precinct structure plan are provided by the developer prior to the issue of a Statement of Compliance.
R68	Stormwater conveyance and treatment must be designed generally in accordance with the relevant drainage strategy, to the satisfaction of Melbourne Water and the responsible authority including: <ul style="list-style-type: none"> • Overland flow paths and piping within road reserves will be connected and integrated across property/parcel boundaries; and • Melbourne Water and the responsible authority freeboard requirements for overland flow paths will be adequately contained within the road reserves and drainage reserve.
R69	Final design and boundary of retarding basins, wetlands, stormwater quality treatment infrastructure and associated paths, boardwalks, bridges and planting, must be to the satisfaction of Melbourne Water and the responsible authority.
R70	The design and layout of roads, lots, and public open space must ensure the long-term viability of vegetation (especially existing mature River Red Gums) and optimise water use efficiency and public uses through the use of overland flow paths and stormwater harvesting for passive irrigation and Water Sensitive Urban Design initiatives.
R71	Development must reduce reliance on reticulated non-potable water for irrigation of vegetation, including existing mature River Red Gums, through utilisation of passive irrigation facilitated by appropriate subdivision and road design, where practical.



precinct boundary

contours (1m interval)

sewer - proposed

electricity - transmission - existing

water - portable - proposed

gas - transmission - proposed

water - recycled - proposed

GUIDELINES	
G33	Where practical, 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.
G34	Development should have regard to relevant policies and strategies being implemented by the responsible authority, Melbourne Water and Yarra Valley Water, including any approved Integrated Water Management Plan.
G35	Where practical, integrated water management systems should be designed to: <ul style="list-style-type: none"> • Maximise habitat values for local flora and fauna species; and • Enable future harvesting and/or treatment and re-use of stormwater.
G36	Maximise the potential for integration of recreation and environmental uses on land required for integrated water management, where this does not conflict with the primary function of the open space.

3.6.2 Utilities

REQUIREMENTS	
R72	Trunk services are to be placed along the general alignments shown on Plan 10, subject to any refinements as advised by the relevant servicing authorities.
R73	Delivery of underground services must be coordinated, located, and bundled (utilising common trenching) to facilitate the planting of trees and other vegetation within road verges.
R74	All services must be located outside tree protection zones and in accordance with the Australian Standard (AS4970 – 2009 Protection of Trees on Development Sites).
R75	Utilities must be placed outside the conservation reserve and any landscape values areas shown on Plan 3. Utilities must be placed outside of natural waterway corridors or on the outer edges these corridors to avoid disturbance to existing waterway values, native vegetation, significant landform features and heritage sites, to the satisfaction of Melbourne Water and the responsible authority or as otherwise agreed with them.
R76	All new electricity supply infrastructure (excluding substations and cables of a voltage greater than 66kV) must be provided underground.
R77	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.
R78	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.
R79	Where above ground infrastructure is intended to be located in local parks, the land required to accommodate that infrastructure will not be included as contribution to local park requirements as outlined in the Lindum Vale Infrastructure Contributions Plan.

GUIDELINES	
G37	Above ground utilities should be located outside of key view lines and screened with vegetation, as appropriate.
G38	Design and placement of underground services in new or upgraded streets should utilise the service placement guidelines outlined in Appendix D.
G39	Utility easements to the rear of lots should only be provided where there is no practical alternative.
G40	Existing above ground 66kV electricity cables should be removed and placed underground as part of the upgrade of existing roads.



-  precinct boundary
-  waterway & drainage reserve
-  local park & conservation reserve ID
-  intersection projects
-  road project

3.7 Precinct infrastructure plan and staging

Table 6 Precinct Infrastructure Plan

TITLE	DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			ICP RE TIMING* F	APPORTIONMENT	ICP REF
			ULTIMATE LAND	INTERIM CONSTRUCTION	ULTIMATE CONSTRUCTION			
TRANSPORT								
Mt Ridley Road	6 lane arterial from Mickleham Road (IN-02) to Eastern PSP Boundary	Hume City Council	Yes	Yes	No	L	100%	RD-01
Mickleham Road and Boulevard Connector	Signalised T-intersection	VicRoads	Yes	Yes	No	S	100%	IN-01
Mickleham Road and Mt Ridley Road	Signalised 4-way intersection	VicRoads	Yes	Yes	No	M-L	50%	IN-02
Mt Ridley Road and Boulevard Connector	Signalised T-intersection (interim) Signalised 4-way intersection (ultimate)	Hume City Council	Yes	Yes	No	S	75%	IN-03
COMMUNITY & RECREATION								
Local Parks	Land for local parks	Hume City Council	Yes	-	No	S-M	100%	LP-01 to LP-07
Sports Reserve	Land and construction of local sporting fields, including sports pavilion.	Hume City Council	Yes	-	Yes	M-L	50%	SR-01
Community Centre	Land and construction of multipurpose community centre including community rooms and kindergarten	Hume City Council	Yes	-	Yes	M-L	50%	CI-01
Library	Land for a library in Mickleham Town Centre	Hume City Council	Yes	-	No	M-L	10%	CI-02

3.7.1 Subdivision works and development staging

REQUIREMENTS

R80	<p>Development staging must provide for the timely provision and delivery of:</p> <ul style="list-style-type: none"> • Arterial road reservations; • Street links between properties, constructed to the property boundary; • Connection of the on and off-road pedestrian and bicycle network; and • Open space reserves.
R81	<p>Subdivision of land within the precinct must provide and meet the total cost of delivering the following infrastructure:</p> <ul style="list-style-type: none"> • Connector streets and local streets; • Local bus stop infrastructure (where locations have been agreed in writing by Public Transport Victoria); • Landscaping of all open space areas and streets; • Intersection works and traffic management measures along arterial roads, connector streets, and local streets (except those included in the Lindum Vale Precinct Infrastructure Contributions Plan (ICP); • Council approved fencing and landscaping (where required) along arterial roads; • Local shared, pedestrian and bicycle paths along local arterial roads, connector roads, utilities easements, local streets, waterways and within local parks including bridges, intersections, and barrier crossing points (except those included in the ICP); • 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 included in the ICP or outlined as the responsibility of another agency in the Precinct Infrastructure Plan; and • Infrastructure as required by utility service providers including water, sewerage, drainage (except where the item is funded through a Development Services Scheme), electricity, gas and telecommunications.
R82	<p>All local parks and tree reserves must be finished to a standard that satisfies the requirements of the responsible authority prior to the transfer of the public open space, including:</p> <ul style="list-style-type: none"> • Removal of all existing and disused structures, foundations, pipelines, and stockpiles; • Clearing of rubbish and weeds, levelled, topsoiled and grassed with warm climate grass (unless conservation reserve requirements dictate otherwise); • Tree management works required to be undertaken to maximise tree longevity and ensure retained trees are safe for public open space; • Provision of water tapping, potable and recycled water connection points; • Planting of trees and shrubs; • Provision of vehicular exclusion devices (fence, bollards, or other suitable method) and maintenance access points; • Bicycle parking facilities; and • Installation of park furniture including barbeques, shelters, furniture, rubbish bins, local scale playground equipment, local scale play areas, and appropriate paving to support these facilities, consistent with the type of public open space listed in the open space delivery guide (Table 4).

GUIDELINES

G41	<p>Staging will be determined largely by the development proposals on land within the precinct and the availability of infrastructure services. Within this context, the following should be achieved:</p> <ul style="list-style-type: none"> • Development staging should, to the extent practicable, be integrated with adjoining developments, including the timely provision of connecting roads and walking/cycling paths; and • Access to each new lot must be via a sealed road.
G42	<p>The early delivery of community facilities, local parks and playgrounds is encouraged within each neighbourhood and may be delivered in stages.</p>

4.0 APPENDICES

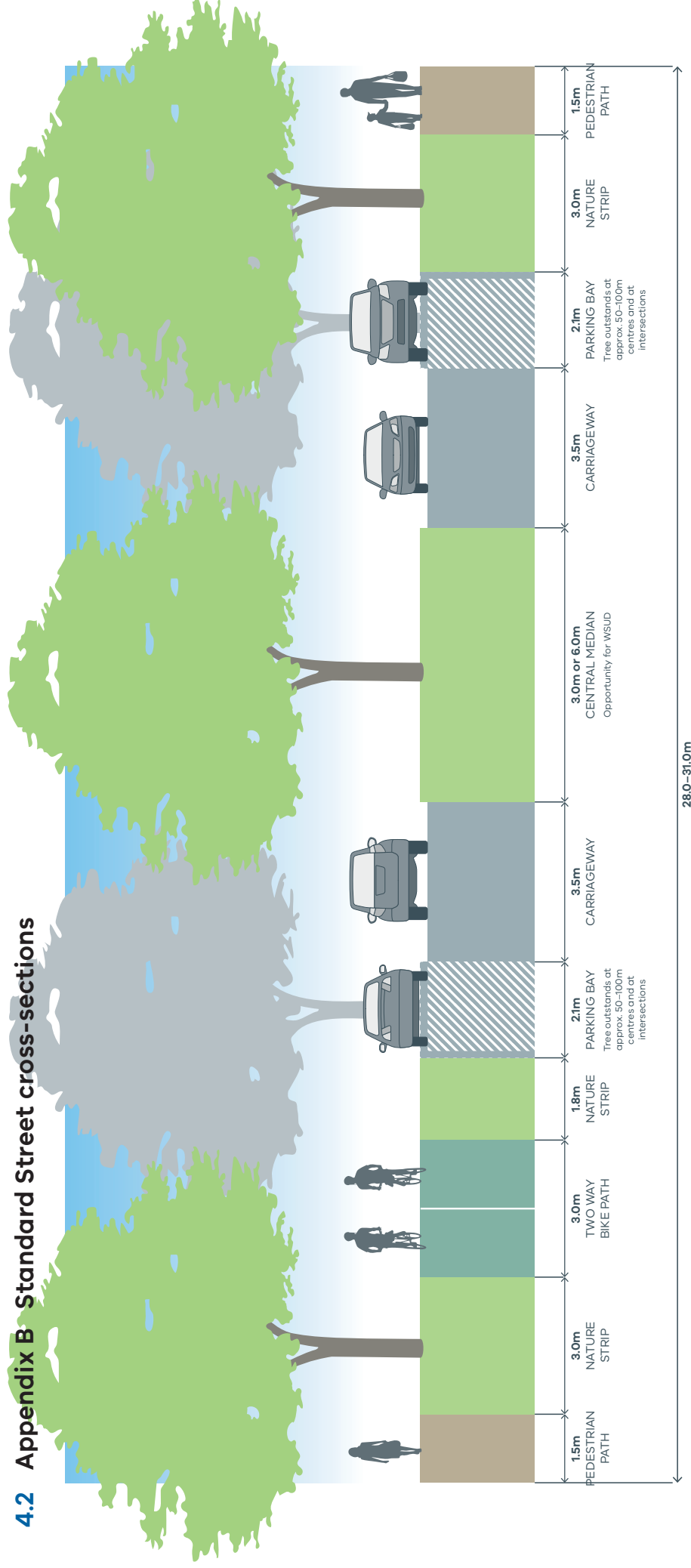
4.1 Appendix A Parcel Specific Land Budget

Table 7 Parcel Specific Land Budget

PSP PROPERTY ID	TOTAL AREA (HECTARES)			TRANSPORT			OPEN SPACE							TOTAL NET DEVELOPABLE AREA (HECTARES)	NET DEVELOPABLE AREA % OF PROPERTY
	ARTERIAL ROAD			LOCAL INDOOR RECREATION (ICP LAND)		SERVICE OPEN SPACE						CREDITED OPEN SPACE			
	ARTERIAL ROAD - EXISTING ROAD RESERVE	ARTERIAL ROAD - PUBLIC ACQUISITION OVERLAY	ARTERIAL ROAD - NEW / WIDENING / INTERSECTION FLARING (ICP LAND)			CONSERVATION RESERVE	WATERWAY AND DRAINAGE RESERVE	HERITAGE RESERVE - ABORIGINAL	UTILITIES EASEMENTS	OTHER	LOCAL SPORTS RESERVE (ICP LAND)	LOCAL NETWORK PARK (ICP LAND)			
1		78.81	-	1.61	0.27	-	-	5.51	-	4.56	7.66	-	2.50	56.70	71.94%
2		62.93	-	-	1.97	-	-	1.36	0.36	-	4.44	-	3.30	44.30	70.39%
3		0.69	-	-	-	-	-	-	-	-	-	-	-	0.69	100.00%
4		0.41	-	-	-	-	-	-	-	-	-	-	-	0.41	100.00%
SUB-TOTAL		142.84	0.00	1.61	2.24	0.00	0.00	6.87	0.36	4.56	12.10	0.00	5.80	102.09	71.47%
Road Reserve															
R1		1.52	1.52	-	-	-	-	-	-	-	-	-	-	0.00	0.00%
SUB-TOTAL		1.52	1.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
TOTALS PSP 1202		144.36	1.52	1.61	2.24	0.00	0.00	6.87	0.36	4.56	12.10	0.00	5.80	102.09	70.72%

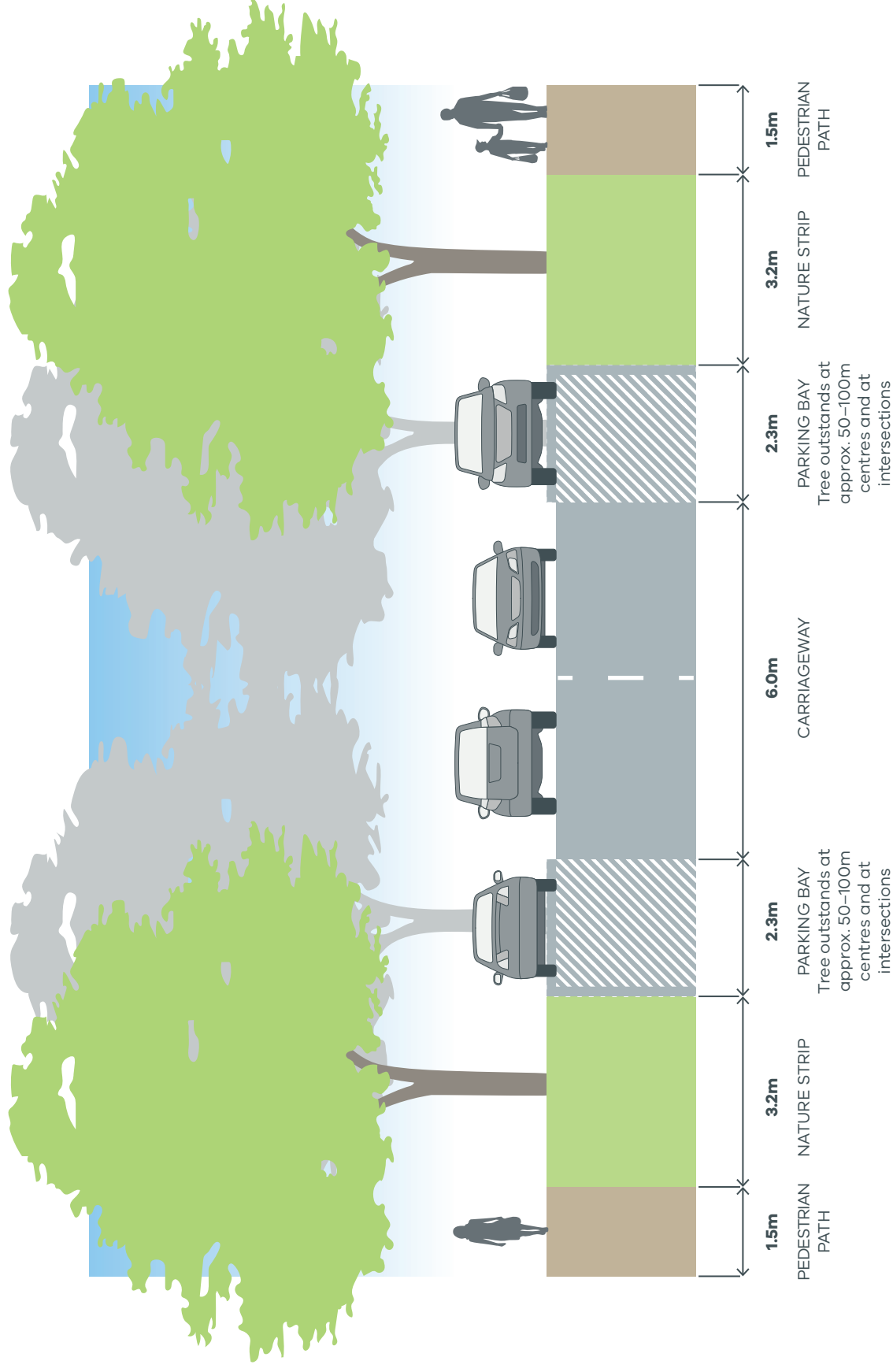
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4.2 Appendix B Standard Street cross-sections



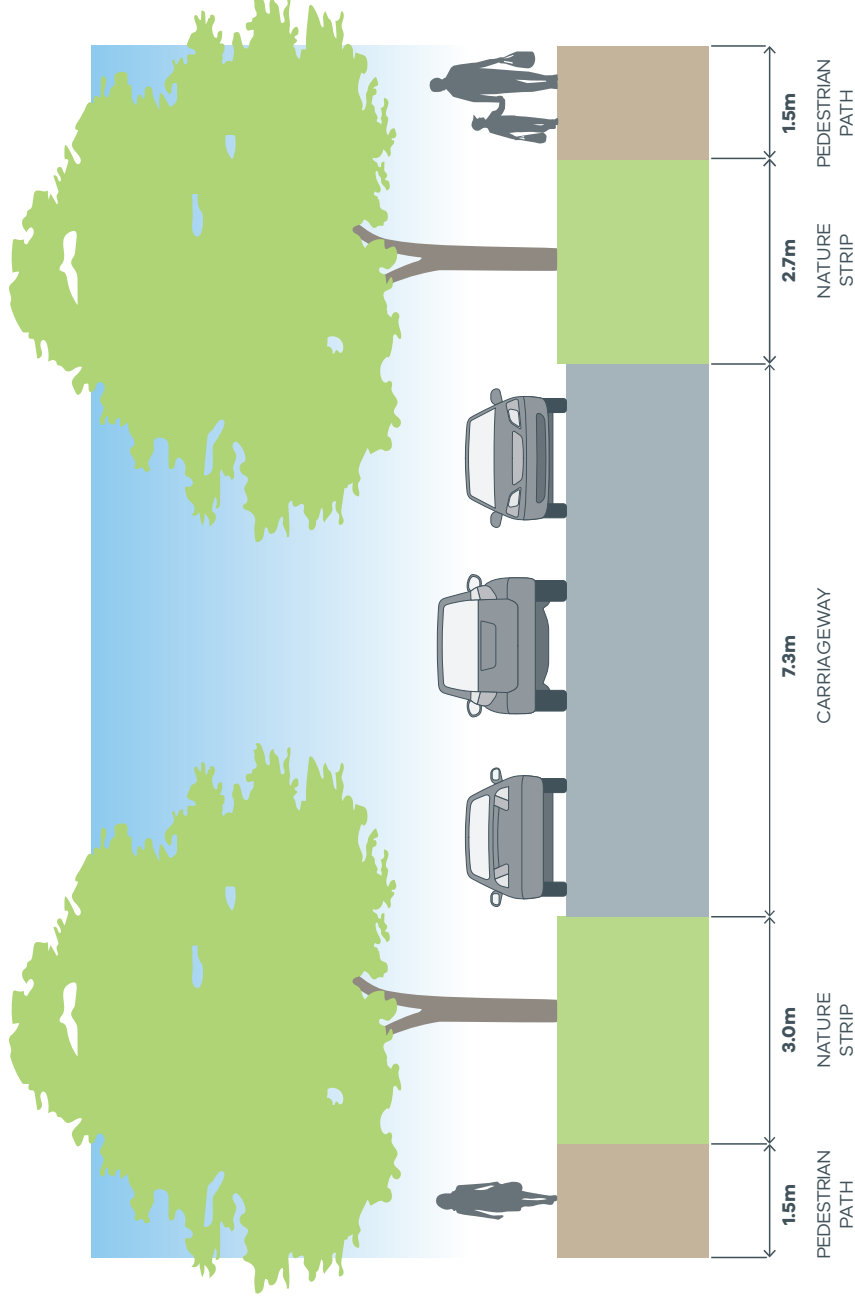
NOTES:

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



NOTES:

- Minimum street tree mature height 12 metres
- All kerbs are to be B2 Barrier Kerb
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority.

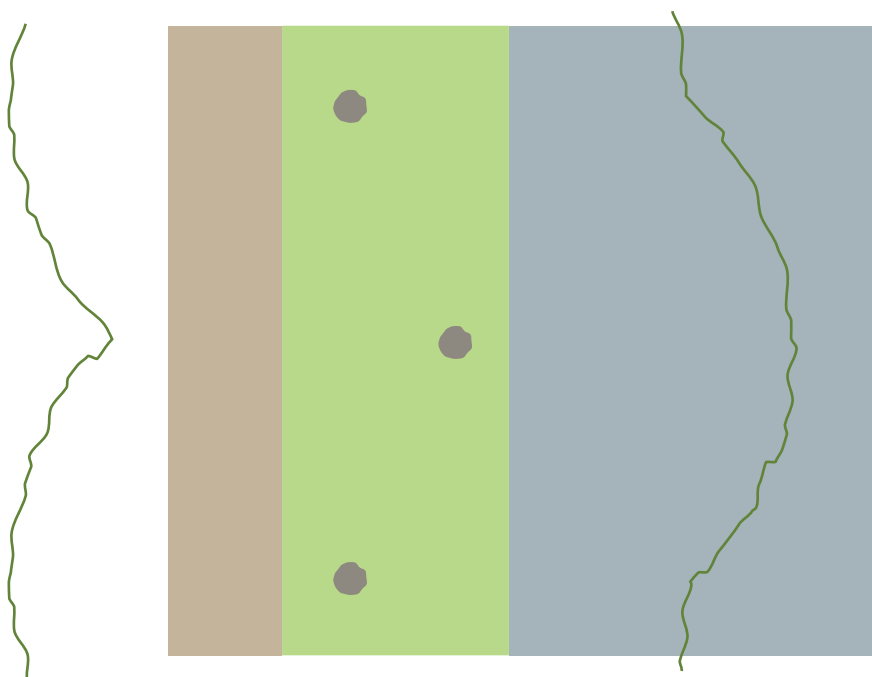
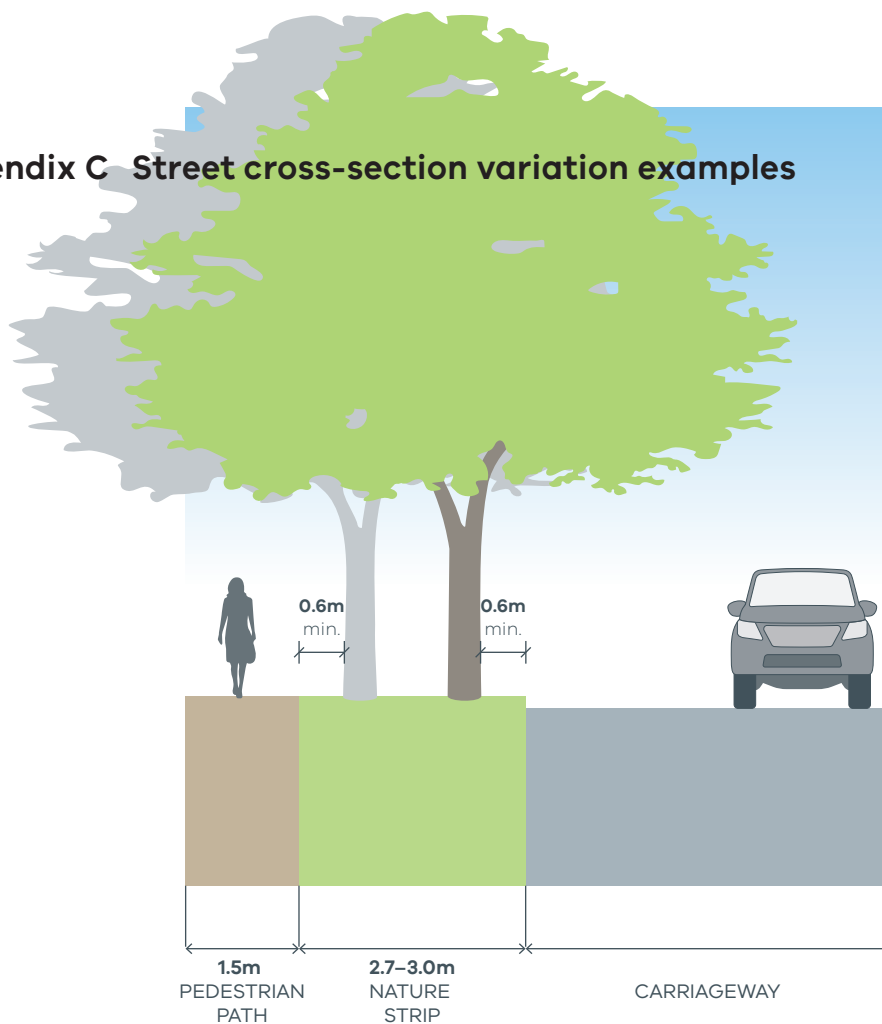


NOTES:

- Minimum street tree mature height 15 metres
- All kerbs are to be B2 Barrier Kerb

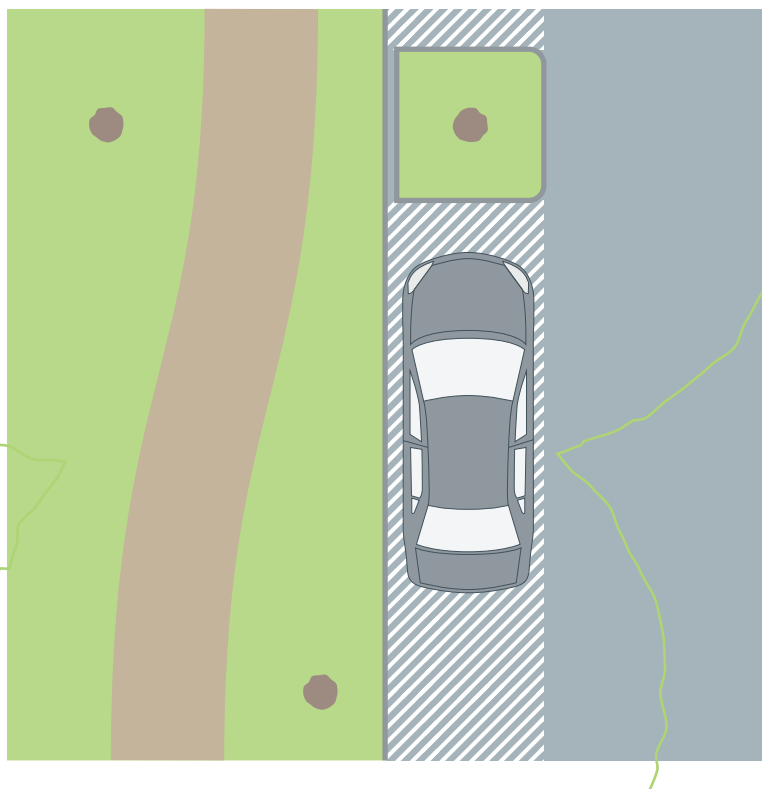
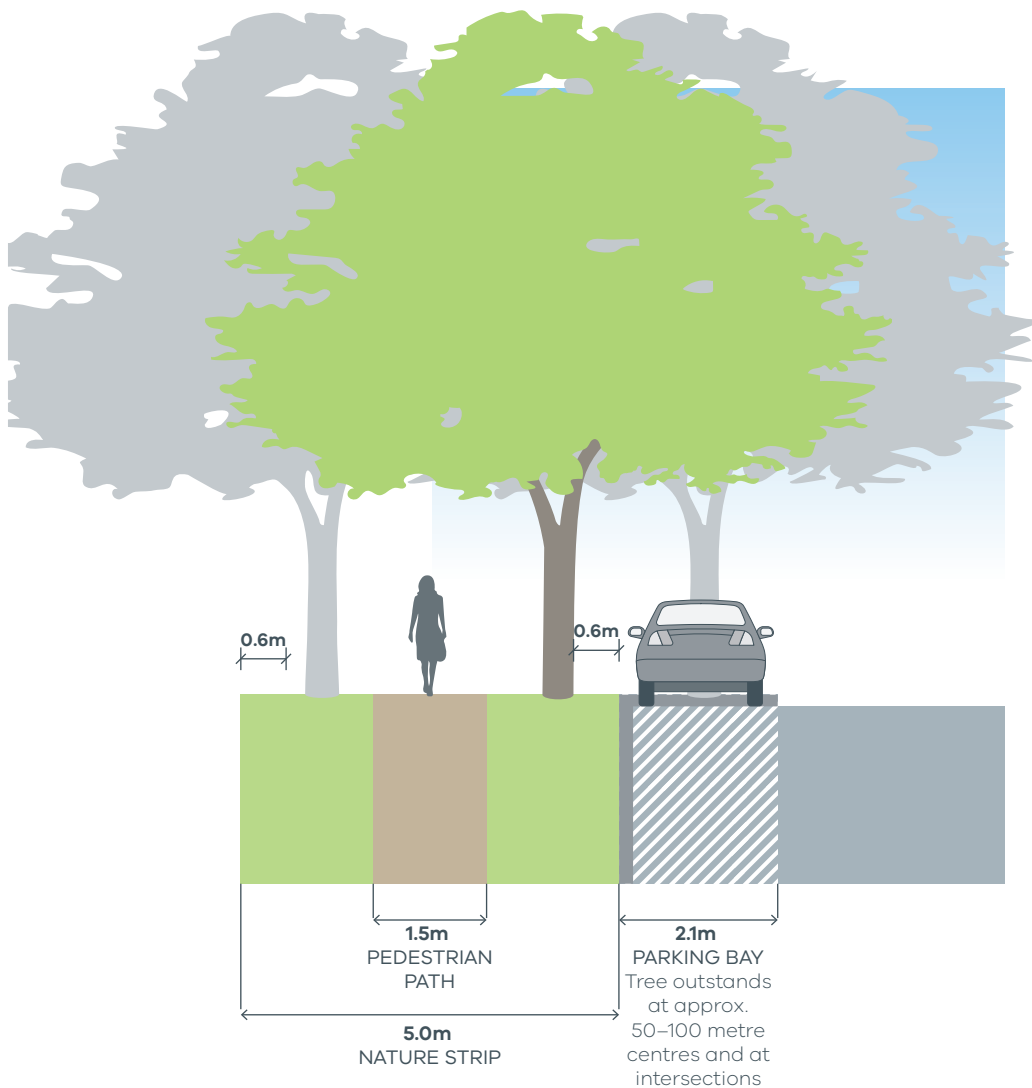
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4.3 Appendix C Street cross-section variation examples



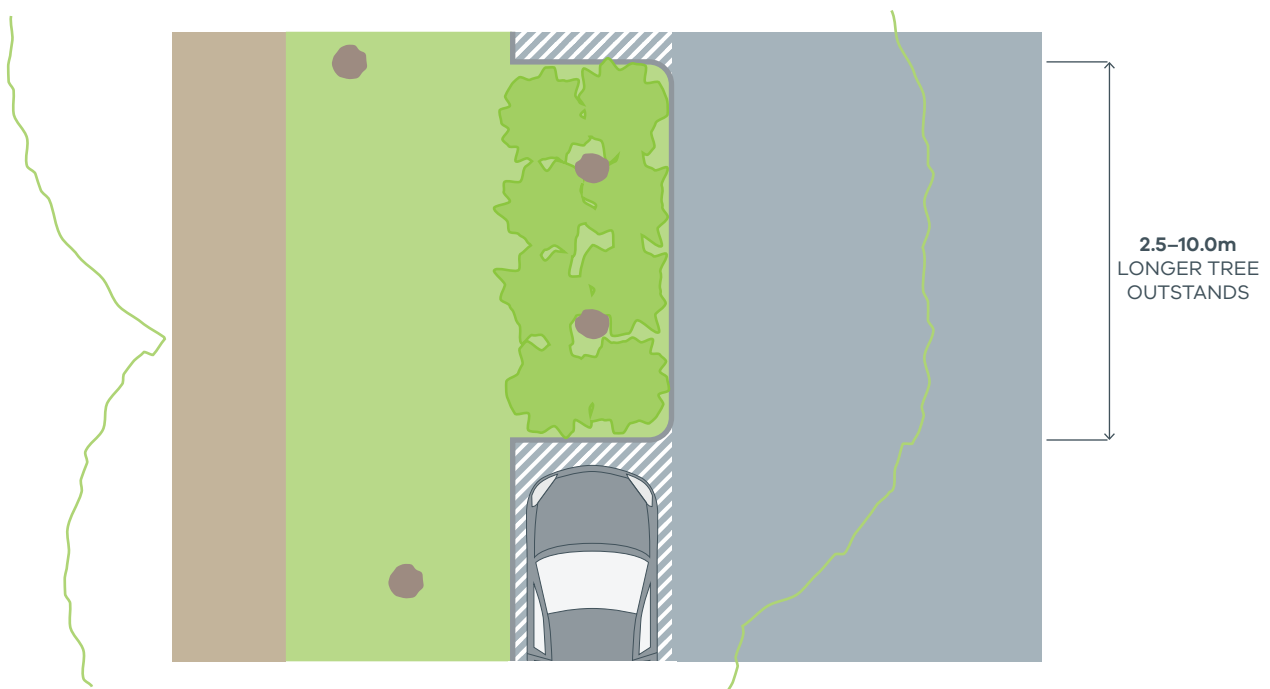
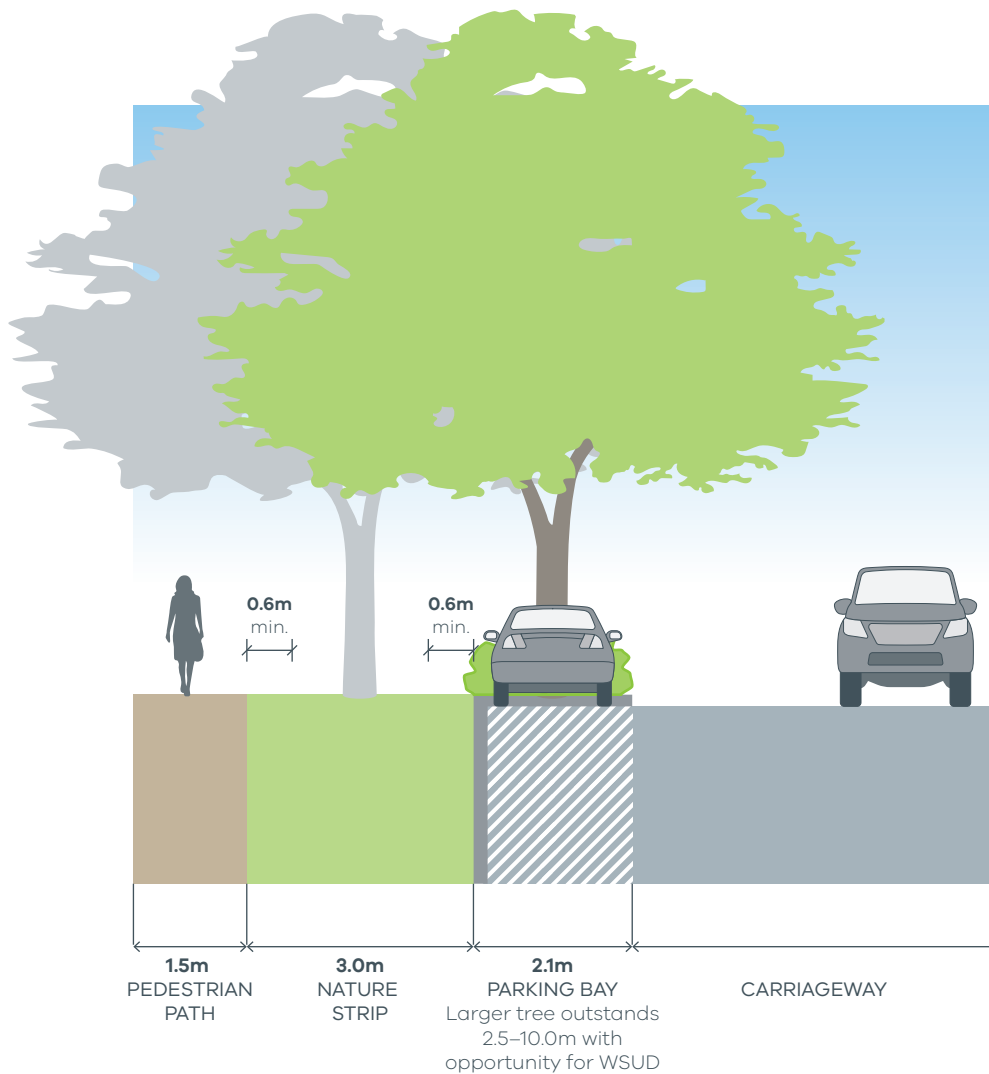
NOTES:

- Tree planting in varying locations in nature strip, in groups or clusters
- Minimum offset of tree trunks 0.6m from back of kerb and footpath edge
- Variations to indicative cross section may include water-sensitive urban design (WSUD) outcomes. These could include but are not limited to bioretention tree planter systems and/or median bioretention swales. Such variations must be to the satisfaction of the responsible authority.



NOTES:

- Footpath in varying locations in nature strip
- Tree placement adjusts in response to footpath location
- Minimum offset of footpath 1.0m from back of kerb and 0.6m from tree trunks
- Design of meandering footpath is to consider bin placement on nature strips, access to letter boxes for mail delivery, interface with driveways, definition of front allotment boundary and accommodation of bus stops
- Tree outstand with separate kerb surround shown



NOTES:

- For allotments with frontages of 13m or greater tree outstand lengths can be increased to accommodate more trees, garden bed planting and WSUD treatments
- Provide a minimum distance of 6.0m between outstands and adjacent driveways

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4.4 Appendix D: Service Placement Guidelines

STANDARD ROAD CROSS SECTIONS

Figures 003 and 004 in the *Engineering Design and Construction Manual for Subdivision in Growth Areas (April 2011)* outline placement of services for a typical residential street environment. This approach is appropriate for the majority of the 'standard' road cross sections outlined in Appendix 4.3 containing grassed nature strips, footpaths and road pavements.

NON-STANDARD ROAD CROSS SECTIONS

To achieve greater diversity of streetscape outcomes in Melbourne's growth areas, which enhances character and amenity of these new urban areas, non-standard road cross sections are required. Non-standard road cross sections will also be necessary to address local needs, such as fully sealed verges for high pedestrian traffic areas in town centres and opposite schools. This PSP contains suggested non-standard 'variation' road cross sections, however other non-standard outcomes are encouraged.

For non-standard road cross sections where service placement guidance outlined in Figure 003 and 004 in the *Engineering Design and Construction Manual for Subdivision in Growth Areas (April 2011)* 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	WITHIN ALLOTMENTS	NOTES
SEWER	Preferred	Possible	Possible	No	Possible	Possible ³	
POTABLE WATER	Possible ⁴	Preferred	Preferred	No	No	No	Can be placed in combined trench with gas
RECYCLED WATER	Possible ⁴	Preferred	Preferred	No	No	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 property service connections.
 - 2 Placement of services under road pavement is to be considered when service cannot be accommodated elsewhere in road reserve. Placement of services beneath edge of road pavement/ parking bays is preferable to within traffic lanes.
 - 3 Where allotment size/frontage width allows adequate room to access and work on a pipe.
 - 4 Where connections to properties are within a pit in the pedestrian pavement/footpath.

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 (eg. drainage, street light electricity supply) closer to the road carriageway.
- Maintain appropriate services clearances and overlap these clearances wherever possible.

4.5 Appendix E Local Convenience Centre Design Guidelines

PRINCIPLES	GUIDELINES
<p>Principle 1</p> <p>Provide smaller neighbourhoods with a viable Local Convenience Centre which offers accessible services to the surrounding community.</p>	<ul style="list-style-type: none"> 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 1km 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 as creeks and waterways, linear open space, pedestrian and cycle links and areas of high aesthetic value.
<p>Principle 2</p> <p>Provide a range of local services and facilities which are appropriate to the Local Convenience Centre location and the catchment that it serves.</p>	<ul style="list-style-type: none"> Land uses should be located generally in accordance with the locations and general land use terms identified in this PSP. 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 nearby Local Town Centres 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.
<p>Principle 3</p> <p>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"> 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 the Public Transport Victoria. Bicycle parking should be provided within the street network and public spaces in highly visible locations and close to pedestrian desire lines and key destinations. The design of buildings within the Local Convenience Centre should have a relationship with and should interface to the public street network. Car parking areas should be located centrally to the site and to the rear and or side of street based retail frontages. Car parking areas should be designated to ensure passive surveillance and public safety through adequate positioning and lighting. Car parking areas should be designed to provide dedicated pedestrian routes and areas of landscaping. On street car parking should be provided either as parallel or angle parking to encourage short stay parking. Car parking ingress and egress crossovers should be grouped and limited. Car parking ingress or egress and car parking areas accommodating heavy vehicle movements should be designed to limit the pedestrian/vehicle conflict. Streets, public spaces and car parks should be well lit to Australian standards and with pedestrian friendly (generally white) light. Lighting should be designed to avoid unnecessary spill to the side or above.
<p>Principle 4</p> <p>Create a sense of place with high quality engaging urban design.</p>	<ul style="list-style-type: none"> 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 property boundary.

	<ul style="list-style-type: none"> • Street facades and all visible side or rear facades 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 property 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.
<p>Principle 5</p> <p>Promote localisation, sustainability and adaptability.</p>	<ul style="list-style-type: none"> • The Local Convenience Centre should promote the localisation of services which 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: <ul style="list-style-type: none"> • 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; and • Investigating other opportunities for the built form to reduce greenhouse gas emissions associated with the occupation and the ongoing use of buildings. • Encourage building design which can be adapted to accommodate a variety of uses over time.

