Shenstone Park

Precinct Structure Plan

October 2020

Victorian Planning Authority

City of Whittlesea

VICTORIA State Government

CONTENTS

PLANS

TABLES

Plan 1 - Regional Context

Shenstone Park Precinct Structure Plan

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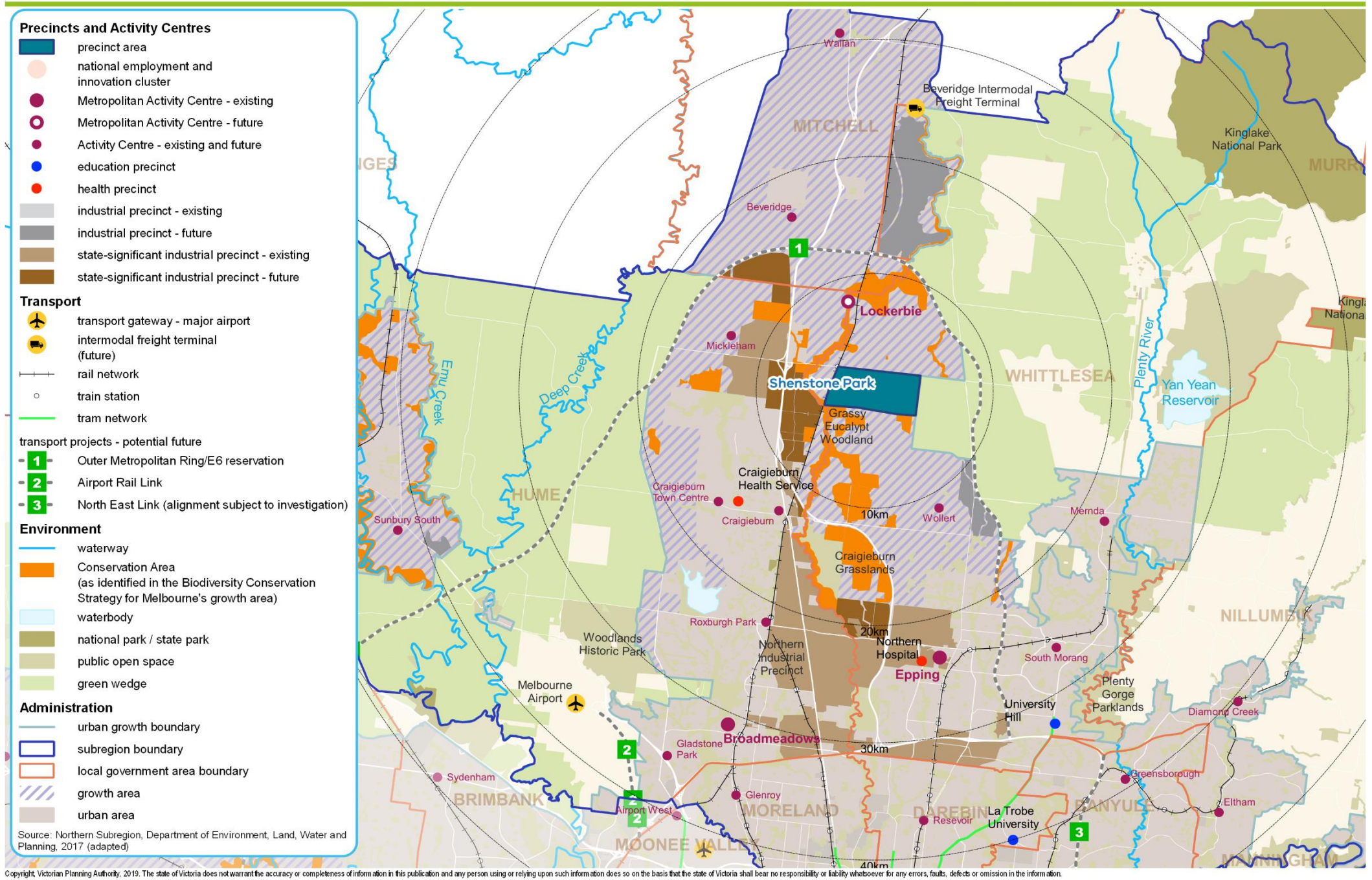

1 INTRODUCTION

The Shenstone Park Precinct Structure Plan (PSP) has been prepared by the Victorian Planning Authority (VPA) in conjunction with the City of Whittlesea (Council) and with assistance from Government departments and agencies, service authorities and major stakeholders.

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

The PSP is a set of decisions about how the land is to be developed. The PSP:

- Sets out plans to guide the delivery of quality urban environments in accordance with the Victorian Government guidelines.
- Enables the transition of non-urban land to urban land.
- Facilitates the quarrying of important stone resources in, and in proximity to, the precinct.
- 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.
- Provides Government agencies, the Council, developers, investors and local communities with certainty about future development.
- Addresses the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act 1999**) through Federal approval of the Biodiversity Conservation Strategy and *Sub Regional Species Strategies for Melbourne's Growth Areas* (September 2013).

The PSP is informed by:

- The State Planning Policy Framework set out in the *Whittlesea Planning Scheme*;
- The Growth Corridor Plans: *Managing Melbourne's Growth* (Growth Areas Authority, June 2012);
- The Local Planning Policy Framework of the Whittlesea Planning Scheme;
- *Plan Melbourne* 2017-2050 (Victorian Government, 2017)
- The *Biodiversity Conservation Strategy* and Sub Regional Species Strategies for Melbourne's Growth Areas (Department of Environment and Primary industries, June 2013); and
- The Precinct Structure Planning Guidelines.

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 *Shenstone Park Infrastructure Contributions Plan* (**ICP**) requires development proponents to make a contribution toward infrastructure required to support the development of the Precinct.
- The Shenstone Park Background Report (**Background Report**).

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 (Clauses 37.07 of the Whittlesea Planning Scheme), or any other provision of the planning scheme that references this structure plan.

A planning 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, guidelines and conditions as relevant.

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

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

Meeting these requirements, guidelines and conditions will implement the outcomes of the PSP.

Conditions that must be included in a planning permit are outlined in Schedule 7 to the Urban Growth Zone (UGZ) in the Whittlesea Planning Scheme and in this document.

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 use, development or subdivision is addressed in this structure plan. A responsible authority may manage development and issue permit as relevant under its general discretion and in accordance with the Whittlesea Planning Scheme.

1.2 Infrastructure Contributions Plan

Development proponents within the Shenstone Park precinct will be bound by the *Shenstone Park Infrastructure Contributions Plan* (**ICP**). The ICP sets out requirements for infrastructure funding across Shenstone Park precinct.

The ICP shall be an incorporated in the Whittlesea Planning Scheme.

An ICP has been gazetted for the abutting Donnybrook-Woodstock precinct in the City of Whittlesea and Shire of Mitchell. Although a separate ICP, the Donnybrook-Woodstock ICP shares infrastructure projects with the Shenstone Park ICP.

1.3 Background Information

Detailed background information used in the planning of the precinct is available. This includes reports on history, biodiversity, landform and topography, land contamination, aboriginal cultural and historical heritage, drainage, current land uses, transport, economic and retail provision, and community infrastructure.

This information is summarised in the *Shenstone Park Background Report* and has informed the preparation of the PSP.

1.4 Land to which this PSP applies

Plan 02 identifies the key features of the land.

The PSP applies to approximately 628 hectares of land.

The PSP area is generally bound by:

- Donnybrook Road to the north;
- Urban Growth Boundary to the east;
- Wollert Suburb boundary to the south; and
- The Sydney-Melbourne railway line to the west.

The PSP area is located in the City of Whittlesea, approximately 30 kilometres north of Melbourne's Central Business District. The precinct is located on Donnybrook Road, south-east of Donnybrook township and the existing Donnybrook train station on the Sydney-Melbourne rail line.

Plan 2 - Precinct Features and Local Context

Shenstone Park Precinct Structure Plan

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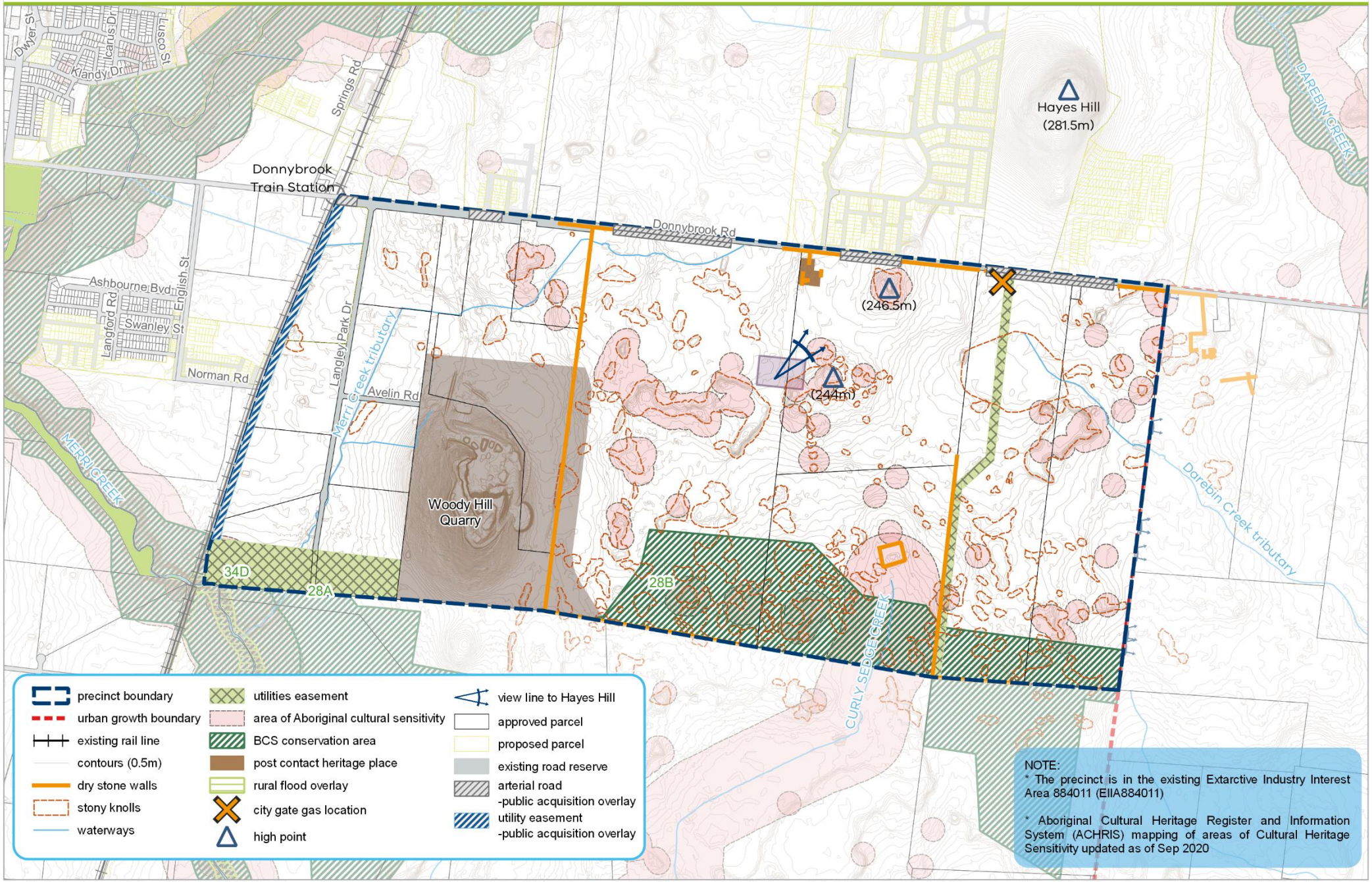

Plan 3 - Future Urban Structure

Shenstone Park Precinct Structure Plan

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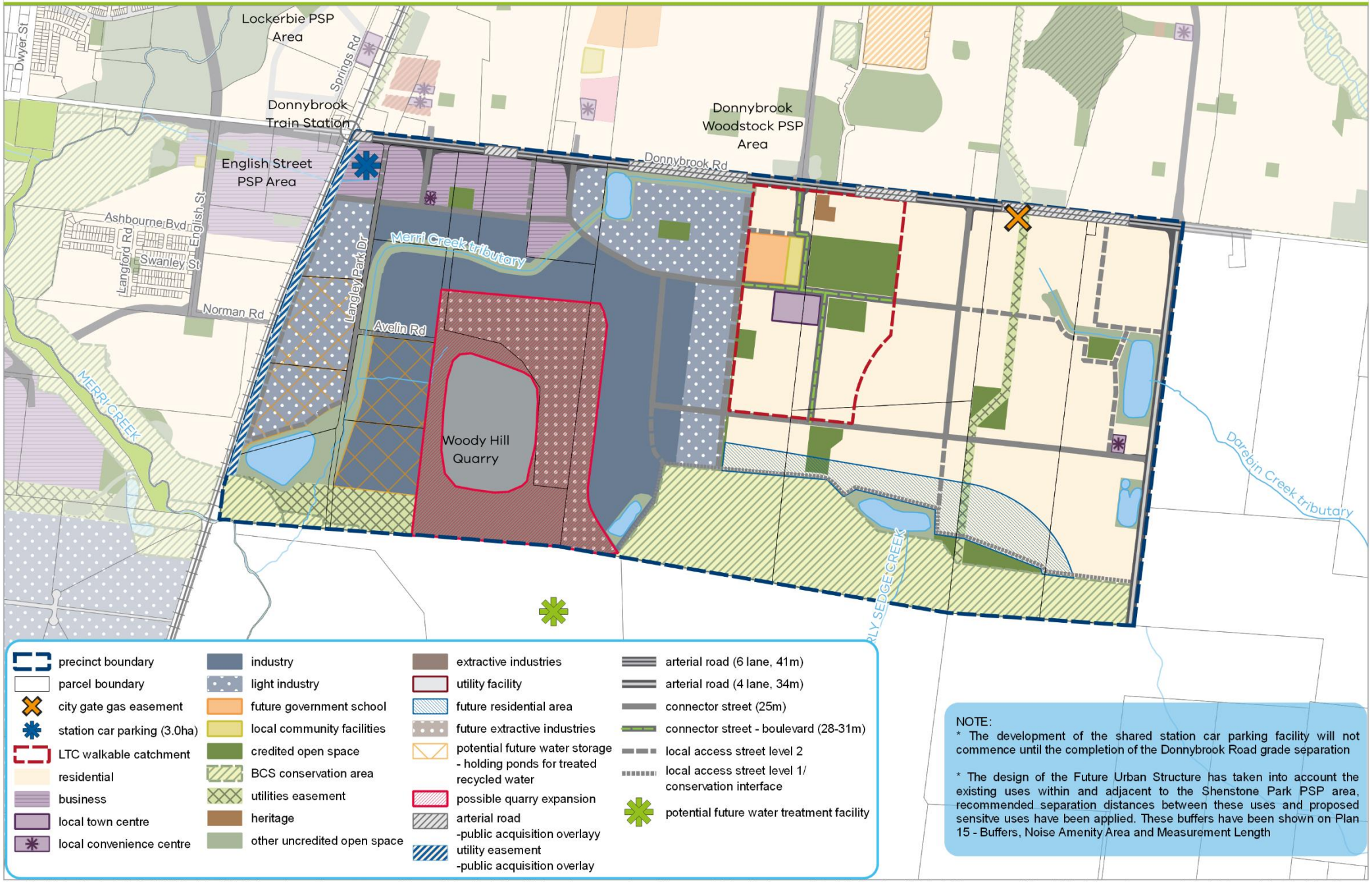


- precinct boundary
- parcel boundary
- city gate gas easement
- station car parking (3.0ha)
- LTC walkable catchment
- residential
- business
- local town centre
- local convenience centre
- industry
- light industry
- future government school
- local community facilities
- credited open space
- BCS conservation area
- utilities easement
- heritage
- other uncredited open space
- extractive industries
- utility facility
- future residential area
- future extractive industries
- potential future water storage - holding ponds for treated recycled water
- possible quarry expansion
- arterial road -public acquisition overlayy
- utility easement -public acquisition overlay
- arterial road (6 lane, 41m)
- arterial road (4 lane, 34m)
- connector street (25m)
- connector street - boulevard (28-31m)
- local access street level 2
- local access street level 1/ conservation interface
- potential future water treatment facility

NOTE:

* The development of the shared station car parking facility will not commence until the completion of the Donnybrook Road grade separation

* The design of the Future Urban Structure has taken into account the existing uses within and adjacent to the Shenstone Park PSP area, recommended separation distances between these uses and proposed sensitve uses have been applied. These buffers have been shown on Plan 15 - Buffers, Noise Amenity Area and Measurement Length

2 OUTCOMES

2.1 Vision

The Shenstone Park precinct will be defined by its incorporation and celebration of natural and cultural features. Development will have a strong emphasis on creating a high-quality urban environment supported by landscaping, strong connections to transport and community facilities.

Shenstone Park will be a model for a self-sufficient precinct that will deliver a wide range of housing types and uses. In turn, it will foster a diverse local community in an attractive setting. The neighbourhood will be an urban extension to the Donnybrook-Woodstock and English Street areas and will integrate cohesively with these urban neighbourhoods and employment areas to the west to continue the development of the North Growth Corridor.

The Local Town Centre (**LTC**), will act as the anchor and heart of the precinct, and serve a variety of roles and functions to promote self-sufficiency for residents in meeting daily retail and convenience shopping needs, community uses and recreation opportunities.

The Shenstone Park precinct will offer diverse housing choices. Along with traditional detached housing that meets the housing density requirements of the PSP; higher densities will be delivered within the LTC walkable catchment and adjacent to some open space.

A permeable network of pedestrian friendly streets and paths will emanate from the LTC and will connect residents to areas of open space. The local street pattern together with off-road paths and on-road bicycle links will also promote integration with the Principal Public Transport Network, including links to Donnybrook Train Station.

The road network will emphasise connections between the precinct and surrounding communities, particularly those developing to the north in Donnybrook-Woodstock. Donnybrook Road is the primary east - west arterial road providing access to the precinct. Donnybrook Road connects the Hume Freeway to Epping Road and to Plenty Road further to the east. Koukoura Drive will develop as an arterial road and connect into Woodstock to the north and Wollert to the South.

Shenstone Park will contribute to an employment hub for the north, conveniently served by a train station along a nationally significant railway line, as well as major arterial roads and freeways. Light Industrial and Bulky Goods type employment uses will thrive in this well-connected network and will offer specialised services to the Shenstone Park PSP and complement the other parts of the state significant employment area to the south-west of the PSP area.

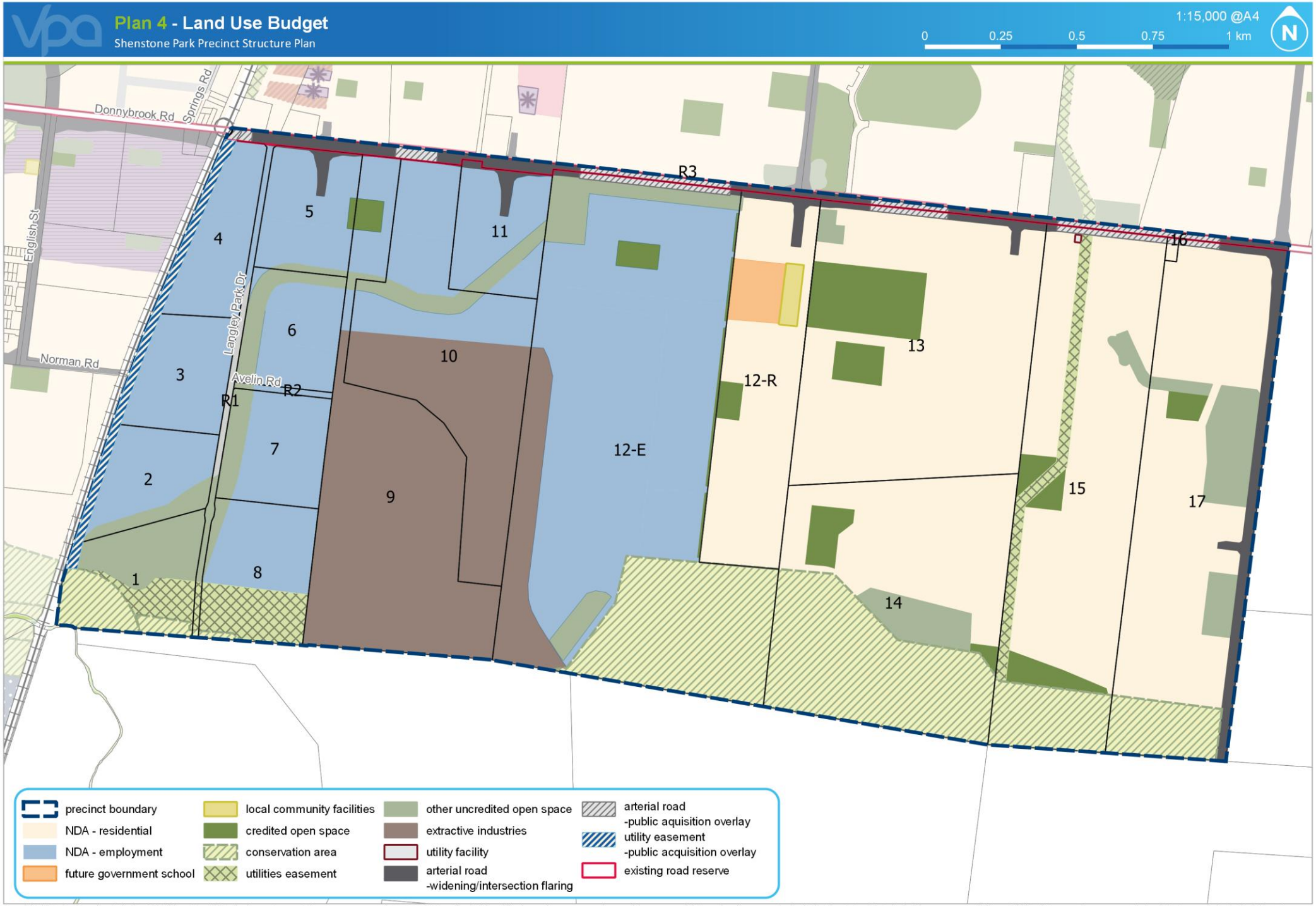
Development will also respond to the many natural and constructed features that characterise the area. This includes the nationally significant conservation areas to the south-east and south-west, which provide habitat for nationally listed Grassy Eucalypt Woodland and Natural Temperate Grassland communities, and Growling Grass Frog. These areas will be retained, and habitat reinstated, while being incorporated into the design and layout of the precinct.

Furthermore, these features where appropriate will be used to help protect and separate key existing economic and employment generators, including the Woody Hill Quarry, and Phillips Quarry and Wollert Wastewater Recycling Treatment Plant immediately south of the precinct, from urban development. The Woody Hill and Phillips Quarries have been identified as being of strategic importance to the development of the northern growth corridor to 2050 and their operation and expansion are protected through this PSP.

2.2 Objectives

OBJECTIVES	
IMAGE, CHARACTER, HERITAGE & HOUSING	
	To achieve a high-quality gateway to the City of Whittlesea by ensuring urban design of the area along Donnybrook Road considers and enhances the Donnybrook train station.
	Encourage retention and planting of large canopy trees, including tree rows, to retain the prevailing landscape of the district and create comfortable and healthy streets and public spaces, pedestrian and cycle networks, and open spaces.
O1 O2	Deliver high quality interfaces between residential, employment land and utilities (including the proposed sewerage treatment plant) to minimise impacts of industrial and commercial uses on residential amenity, and to ensure the viability of industrial and commercial land uses.
	Identify, retain and celebrate cultural heritage places and Aboriginal cultural heritage places by integrating them into the design of new areas through place making.
O3	Deliver approximately 3,600 new homes across the precinct and promote increased housing choice and density within a walkable catchment of town centres, high amenity areas and public transport.
EMPLOYMENT & TOWN CENTRES	
O4 O5	To deliver a high amenity Local Town Centre catering to the daily needs of surrounding residents, along with creating local employment opportunities and help create a sense of place, identity and local character.
	To create a pedestrian friendly 'main street' which provides safety and comfort to encourage community interaction at the Local Town Centre, while enabling public transport and private vehicular access.
	To design a Local Town Centre that can adapt and evolve over time, while also encouraging commercial and residential uses above ground to support Local Town Centre Activity.
	To ensure appropriate separation distances between industry/utilities and sensitive uses.
O8	Deliver employment land for a variety of sectors through industrial and commercial precincts that allow the continued operation and expansion of the Woody Hill quarry and commencement and expansion of the Phillips Quarry.
COMMUNITY FACILITIES, OPEN SPACE & NATURAL RESOURCES	
O9 O10	To provide open space that is safe and accessible to all which offers active and passive recreation opportunities, including developing recreation opportunities along waterways and the gas pipeline.
O11	To develop a network of local parks, sports reserves and community hubs that provide access to education, recreation and health services across the Shenstone Park Precinct that are connected and accessible via walking, cycling and public transport.
O12	To facilitate development of shared-use facilities by co-locating schools and community facilities with sporting reserves adjacent to the Local Town Centre and facilitating the appropriate and timely delivery of local community infrastructure and services.
	To provide for a proposed government school site to meet the strategically justified need for government education in the area.
O13	To provide for the operation and expansion of the Woody Hill and Phillips Quarries.
O14	

BIODIVERSITY, THREATENED SPECIES & BUSHFIRE MANAGEMENT	
	To contribute to the long-term conservation of significant flora and fauna species through the protection of habitat, particularly of Biodiversity Conservation Strategy conservation areas 28 (Grassy Eucalypt Woodland and Natural Temperate Grassland) & 34 (Growling Grass Frog), River Red Gums and other remnant indigenous trees.
O16	Ensure that bushfire protection measures are considered in the layout and design of development including the local street network.
TRANSPORT & MOVEMENT	
	To establish an integrated, safe, sustainable and permeable transport network that reduces car dependency, maximises access to public transport and encourages walking and cycling within and between neighbourhoods.
O17	To facilitate 20-minute neighbourhoods by providing for an integrated transport network that supports active and public transport options, movement of goods and connections to jobs.
O18	To provide a range of road configurations that promote green links and vistas throughout the precinct.
O19	To provide a transport network for the safe and efficient operation of the existing and future road users including maximising access to the surrounding arterial road network, the planned E6/OMR and Hume Freeway.
INTEGRATED WATER MANAGEMENT & UTILITIES	
O20 **O21**	To deliver an integrated water management system that reduces reliance on reticulated potable water, increases the re-use of alternative water, responds to local soil types, minimises flood risk, ensures waterway health and contributes towards a sustainable and green urban environment.
O22	To ensure that high quality interfaces between development, waterway, utilities easements and drainage assets maximise the community's use and enjoyment of these assets.
O23	Ensure sensitive land uses (as defined by Australian Standard 2885.1-2012) are located outside the measurement length of the high pressure gas transmission pipeline where possible and that construction is managed to minimise risk of adverse impacts.
PRECINCT INFRASTRUCTURE PLAN & STAGING	
O24	To ensure utilities services delivery does not impede on the ability to provide a high-quality public realm including street tree planting and existing landscape features.
O25 **O26**	Ensure the development staging is coordinated with the delivery of key local and state infrastructure and encourage the early provision of local community infrastructure, including retail.



2.3 Summary land budget

Table 1 – Summary Land Use Budget provides a summary of the land required for transport, community facilities, government education facilities, and open space and identifies the total amount of land available for development.

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**).

Table 1 Summary Land Use Budget

Description	PSP Shenstone Park		
	HECTARES	% OF TOTAL	% OF NDA
TOTAL PRECINCT AREA (ha)	**628.22**		
Transport			
Arterial Road - Existing Road Reserve	5.68	0.90%	1.54%
Arterial Road - Public Acquisition Overlay	6.22	0.99%	1.69%
Arterial Road - New / Widening / Intersection Flaring (ICP land)	10.93	1.74%	2.97%
Non-Arterial Road - Retained Existing Road Reserve	1.35	0.21%	0.37%
Sub-total Transport	**24.17**	**3.8%**	**6.56%**
Community & Education			
Government School	3.50	0.56%	0.95%
Local Community Facility (ICP land)	1.20	0.19%	0.33%
Sub-total Education	**4.70**	**0.7%**	**1.3%**
Open Space			
Uncredited Open Space			
Conservation Reserve	70.75	11.26%	19.21%
Waterway and Drainage Reserve	43.38	6.90%	11.78%
Heritage Reserve - Post Contact	0.88	0.14%	0.24%
Utilities Easements	14.22	2.26%	3.86%
Utilities Easements - Public Acquisition Overlay	3.86	0.61%	1.05%
Sub-total Service Open Space	**133.09**	**21.18%**	**36.14%**
Credited Open Space			
Local Sports Reserve (ICP land)	8.45	1.3%	2.29%
Local Network Park (ICP land)	14.14	2.3%	3.84%
Sub-total Credited Open Space	**22.59**	**3.6%**	**6.13%**
Total All Open Space	**155.68**	**24.8%**	**42.27%**
Other			
Quarry (including existing and expanded area)	75.35	11.99%	20.46%
Utilities Sub-stations / facilities (acquired by relevant authority)	0.05	0.01%	0.01%
Sub-total	**75.40**	**12.00%**	**20.47%**
TOTAL NET DEVELOPABLE AREA - (NDA) Ha	**368.27**	**58.62%**	
NET DEVELOPABLE AREA - RESIDENTIAL (NDAR) Ha	**196.84**	**31.33%**	
NET DEVELOPABLE AREA - EMPLOYMENT (NDAE) Ha	**171.42**	**27.29%**	
Description	**PSP Shenstone Park**		
Residential Local Open Space (expressed as % of NDAR)	Hectares	% of NDAR	
Local Sports Reserve (ICP land)	8.45	4.29%	
Local Network Park (ICP land)	11.24	5.71%	
Sub-total	**19.69**	**10.00%**	
Employment Local Open Space (expressed as % of NDAE)	Hectares	% of NDAE	
Local Network Park (ICP land)	2.90	1.69%	
Sub-total	**2.90**	**1.69%**	

Plan 5 - Image, Character, Housing and Heritage

Shenstone Park Precinct Structure Plan

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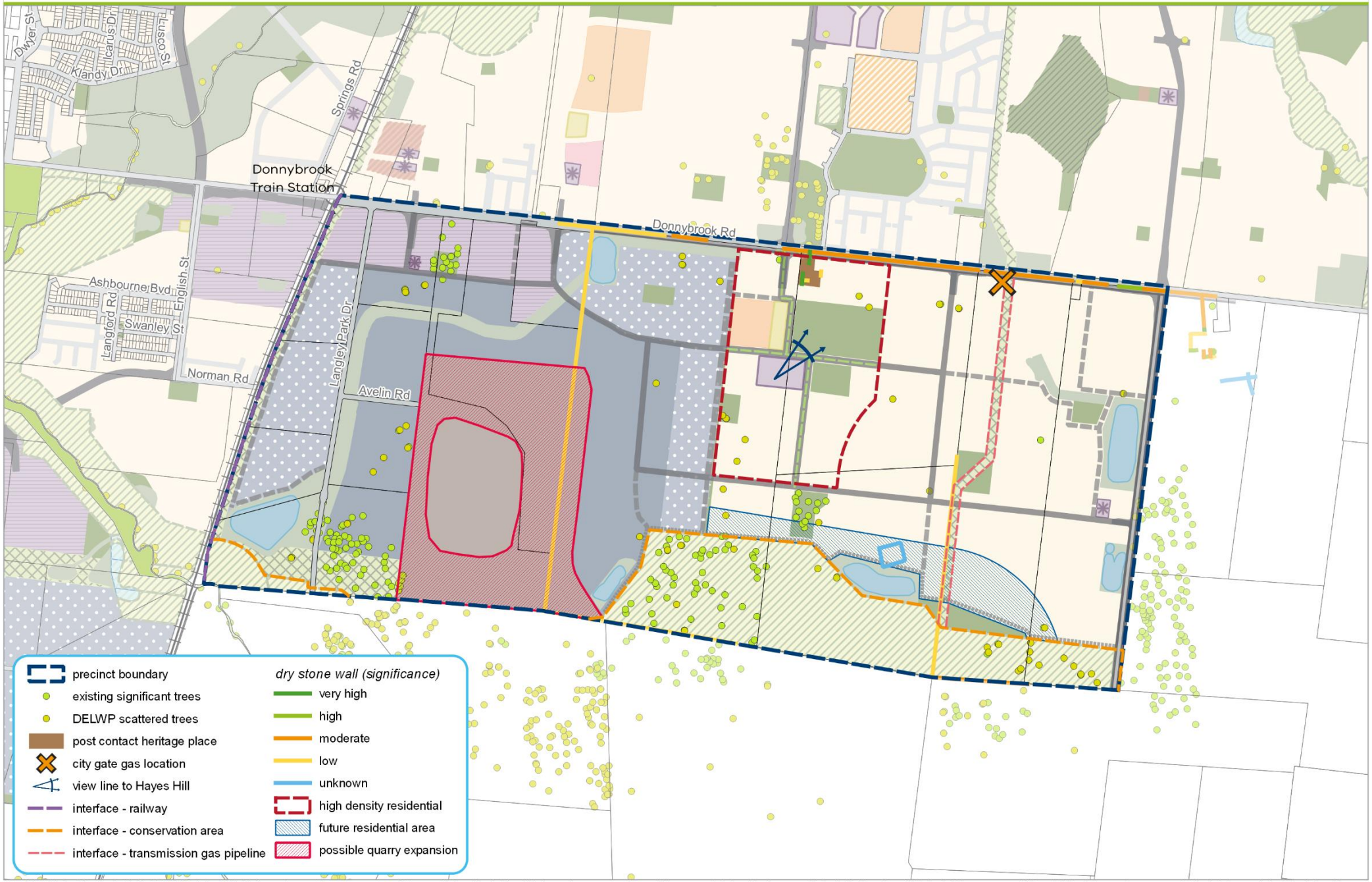


3 IMPLEMENTATION

3.1 Image, Character, Housing and Heritage

3.1.1 Image, Character and Heritage

REQUIREMENTS	
R1	Street trees must be provided on both sides of all roads and streets (excluding laneways) and to be spaced at regular intervals appropriate to tree size at maturity, unless otherwise agreed by the responsible authority, at an average of: • 8-10 metres – small trees; • 10-12 metres – medium trees; and • 12-15 metres – large trees.
R2	Trees in parks and streets must be suitable for local conditions and planted in modified and improved soil as required to support tree longevity.
R3	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.
R4	Dry stone walls identified as having a moderate to very high value for retention on Plan 5 must be retained as part of any future development, unless otherwise agreed to by the responsible authority after consideration of overall design response and following receipt of advice from a suitably qualified professional regarding the condition of the wall.
R5	Dry Stone walls identified as significant fauna habitat must be retained as part of any future development unless otherwise agreed to in writing by the responsible authority after consideration of habitat values by a suitably qualified professional.
R6	Dry stone walls that are retained must: • Be situated within public open space or street reserve to the satisfaction of the responsible authority; • Be sensitively incorporated into subdivision design to minimise disturbance to the walls (e.g. utilisation of existing openings for vehicle and pedestrian access); • Have a suitable landscape interface to minimise maintenance requirements (for example mulch, garden bed or gravel) and which does not encourage public access immediately adjacent to the retained walls; • Be checked by a suitably qualified professional for works required to preserve the structural integrity of the wall in a manner suitable for the future context; and • Retain any post and wire or post and rail elements, with any wire protruding beyond the vertical face
R7	Any reinstatement or repair of dry-stone walls must be undertaken by a suitably qualified professional and is to be consistent with the construction style of the original wall, with edges around wall openings made secure (cemented) to the satisfaction of the responsible authority. Reinstatement is to use stone from (in order of priority): • The original wall in that location (including fallen stone adjacent to the wall); • A nearby section of the wall approved to be removed; • Any adjacent land containing wall parts which can be recovered; and • Walls approved for removal in the nearby area (including any stone which has been stockpiled by Council). A list of suitably qualified professionals can be obtained from Council and the Dry-Stone Walls Association of Australia. Any reinstatement or repair to be undertaken following consultation with suitably qualified professional and provision of advice regarding protection of fauna habitat resources
R8	Where dry stone wall removal is proposed, land owners/applicants must consult with Council to determine the most suitable relocation and reconstruction opportunity for the removed wall and appropriate arrangements for relocation and reuse of removed stones where reconstruction is not possible. Ensure any proposed removal/ reconstruction/ relocation is considerate of and sensitive to any identified fauna habitat resources.

R9	Sites nominated as heritage – post contact on Plan 05 must be investigated for potential adaptive re-use, for a residential or suitable commercial / community use.

GUIDELINES	
G1	Street networks within subdivisions should be designed to maximise the number of connections onto connector streets to create a permeable and safe street network.
G2	Subdivision design should incorporate natural and built design elements which respond to local heritage and topography to assist in place making and the achievement of a "sense of place".
G3	An integrated landscaping theme should be developed along streets and access ways with: • Street trees generally used consistently across subdivisions to reinforce the local character of the area. • Variations in street tree species being used to create visual cues in appropriate locations such as at the termination of view lines, key intersections, local town centre and in parks.
G4	A consistent suite of lighting and furniture should be used across subdivisions, appropriate to the type and role of street or public space, unless otherwise agreed by the responsible authority.
G5	Wherever possible, salvaged rocks should be incorporated in the design of waterways, retaining structures, fences and other landscape features.
G6	Development in areas identified on Plan 02 as having potential cultural heritage sensitivity should be avoided subject to the completion of a Cultural Management Heritage Plan.
G7	Streets should be aligned to create views and direct connections to open space areas, River Red Gums, service easements, wetlands and drainage corridors.
G8	Planting in streetscapes and parks abutting waterways should make use of indigenous species to the satisfaction of Melbourne Water and the responsible authority.

3.1.2 Tree Protection

REQUIREMENTS	
R10	Except with the written consent of Council, a minimum of 80 per cent of River Red Gums classified as Medium, Large, or Very Large (per DSE publication 'Guide for Assessment of Referred Planning Permit Applications') must be retained on each parcel for their landscape and amenity value. The trees identified as "to be retained" and "scattered trees" on Plan 08, and those identified in any site-specific Arborist Report submitted with any application will contribute to the attainment of this requirement. Where multiple contiguous parcels are owned or controlled by a single entity and planned to be developed in an integrated manner, this Requirement may be applied and met across those contiguous parcels. • Note: trees shown as ''native vegetation to be removed' on Plan 08 are excluded from the total number of trees used to determine tree retention calculations by parcel. However, where voluntarily retained, these trees will contribute to retention percentage. Trees located within a Public Acquisition Overlay, future arterial road or intersection flaring as shown on Plan 04 – Land Budget, are considered as 'native vegetation to be removed' in the context of Plan 08, at the discretion of the responsible authority.
R11	Retained River Red Gums, tree rows and significant trees must be located within the public domain, including parks and street reserves, unless otherwise agreed by the responsible authority.
R12	Where trees are retained, applications for subdivision and/or development must apply Tree Protection Zones as identified within Appendix 4.6 of the Shenstone Park Precinct Structure Plan, unless otherwise agreed by the responsible authority.
R13	Small River Red Gum and other indigenous trees must be retained where located with other trees identified for retention.
R14	Large areas of closely scattered River Red Gums must be prioritised for retention to enhance local identity and visually reference the historic rural landscape except with written consent from Council

Please Note: For additional information relating to the retention of trees within Shenstone Park please refer to Section 4.6 of this document.

3.1.3 Housing and Development Layout

REQUIREMENTS	
R15	Lots must front (in order of priority where a lot fronts multiple elements) to the satisfaction of the responsible authority: • Waterways, BCS Conservation Areas, local conservation areas, and public open space; • Gas easement; • Local access streets; • Connector roads; • Education Facility; and • Arterial roads.
R16	Development with a direct interface to BCS conservation areas or local conservation reserves must seek to enhance and protect the viability of the conservation area or reserve to the satisfaction of the responsible authority or the Department of Environment, Land, Water and Planning, as appropriate. A cross-section demonstrating the relationship of the proposal with the conservation area will be required to be submitted as part of any application proposal.
R17	Residential subdivision within the walkable catchment boundary shown on Plan 03, must create lots suitable for the delivery of higher density housing as outlined in Table 3- Housing Delivery Guide, and achieve an overall minimum average density of 25 dwellings per ha. Applications for residential subdivision that can demonstrate how target densities can be achieved over time, to the satisfaction of the responsible authority, will be considered.
R18	Subdivision design must provide for streets separating development from BCS conservation areas.
R19	Subdivision design must actively respond to the landscape character throughout the precinct by aligning streets, lots, open space and public spaces to retain visual character elements such as River Red Gums, stony rises, dry stone walls, heritage places, and other features such as gas pipeline transmission easement and waterways, to the satisfaction of the responsible authority.
R20	Development (including subdivision) is not permitted in the "future residential area" identified on Plan 3, until such time as DJPR determines that the earth resources in the Phillips Quarry have been extinguished, or that the sensitive use buffer is no longer required.

GUIDELINES	
G9	Subdivisions should cater for a broad range of dwelling types, as listed in Table 2 as appropriate, or demonstrate an alternative lot range that achieves the housing diversity objectives.
G10	Where front fencing is proposed it should be less than 1.5 m in height and semipermeable to facilitate public safety and surveillance.
G11	Specialised housing forms such as lifestyle communities, retirement living, or aged care facilities should: • Be integrated with adjoining development; • Be located within the walkable catchment shown on Plan 3; • Be accessible by public transport; and • Not present a barrier to movement from adjoining development to key hubs and destinations or active and public transport routes.
G12	Subdivisions should cater for a broad range of dwelling types, as listed in Table 2 as appropriate, or demonstrate an alternative lot range that achieves the housing diversity objectives.
G13	Subdivision design should provide for streets separating development from waterways, sporting reserves and local parks, electricity and gas transmission easements Where a street frontage is not possible, design and layout options should demonstrate: • Lots directly fronting open space should be set back at least 4.0 metres from the waterway corridor and open space via a 'paper road'; and inclusive of a minimum 1.5m pedestrian path where a shared path is not already proposed as part of the waterway. • Vehicular access via a rear laneway;

	• Where a street frontage to a park is not provided, lots must provide for a 4 metre "Paper Road" to the satisfaction of the responsible authority; • Avoidance of side or rear fence treatments fronting open space; • how passive surveillance is maximised. All to the satisfaction of the responsible authority and Melbourne Water where adjacent to a waterway.
G14	Subdivision of land should provide up to 10% of the NDA for the provision of affordable housing as defined by the *Planning & Environment Act 1987* (as amended).
G15	Land for affordable housing should: • be provided within walkable catchments provide for a range of housing typologies to meet demonstrated local need.
G16	Residential subdivision should include a broad range of lot configurations including a variety of lot sizes, lot widths and lot depths.

Table 2 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.

DWELLINGS	TYPICAL LOT SIZE (m^2)		
	<300	300-600	>600
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			
Walk Up Flats			

Table 3 Housing Delivery Guide and Anticipated Population

The following table provides guidance on the anticipated lot yield for residential development on *Plan 05 –Image, Character, Heritage and Housing*, along with medium and higher density development in the mixed-use land and within the Shenstone Park Local Town Centre.

Part A

CATCHMENT	NDAR (Ha) (rounded)	Dwell / NDHA	DWELLINGS
Residential outside walkable catchment	156.56	17.0	2,662
Residential within Walkable Catchment	37.5	25.0	937
Residential within local town centre	2.40	17.0	41
Residential within local convenience centre	0.40	17.0	7
Totals Residential Yield Against NDAR	196.84	18.5	3,646

Part B

DESCRIPTION	ANTICIPATED POPULATION
Anticipated population @ 2.8 persons per dwelling	10,209
Anticipated population @ 3.1 persons per dwelling	11,303

3.2 Town Centres, Employment and Community Facilities

3.2.1 Local Town Centre and Local Convenience Centres

Table 4 Local Town Centre Composition and Delivery Guide

The following table outlines the components of the Local Town Centres for the precinct.

Local Town Centre	Land Area (Ha)	Retail Floor Space m^2	Commercial Floor Space m^2	Role and Function
Shenstone Park Local Town Centre	2.40	6,000	2,500	Located centrally within the precinct. The purpose of the Shenstone Park LTC is to service all residents within the precinct and meet their day to day retail and community needs. The Shenstone Park LTC will provide for a full-line supermarket with speciality retail and commercial floor space. Co-located with a state primary school, neighbourhood house and community centre, and sporting reserve. Higher density residential and mixed-use development is envisaged as part of the overall centre concept.
Potential Shenstone Park Local Convenience Centre - East	0.40	1000	200	To locate adjacent to public open space in the north-east of the precinct to service the convenience needs of the local residents and people visiting the open space. Cafes and small offices encouraged.
Potential Shenstone Park Local Convenience Centre - West	0.20	500	200	To locate on the east-west connector road, to service the convenience needs of workers in the employment areas.

Table 5 Anticipated Employment Creation in the Shenstone Park Precinct

LAND USE	MEASURE	JOBS	QTY IN PSP	EST'D JOBS
Council Community Facility	Jobs/ha	10	1.2	12
(Proposed) Government Primary School	Jobs per 50 m² floor space	40	1	40
Town Centre (retail)	Jobs/30m2 retail floor space	1	6000	200
Town Centre (office)	Jobs/20m2 commercial office space	1	2,500	125
Home based business	Jobs/dwelling	0.05	3,665	183
Eastern LCC	Item	-	-	40
Western LCC	Item	-	-	30
Subtotal				**630**
Employment Area - Business	Jobs per hectare	30	23.02	691
Employment Area - Light Industry	Jobs per hectare	30	64.56	1937
Employment Area - Industry (outside blast buffer)	Jobs per hectare	30	32.99	990
Subtotal				**3617**
Employment Area - Industry (within blast buffer)	Jobs per hectare	30	50.85	1526
Total Estimated Jobs				**5143**

REQUIREMENTS	
R21	Subdivision, land use and development within the Local Town Centre must be generally in accordance with the Town Centre Concept Plan (Plan 06), Table 4 and the Local Town Centre Performance Criteria – attached as Appendix 4.2. An alternative concept may be considered where it can be demonstrated that the key design objectives, principles and guidelines have been achieved or exceeded to the satisfaction of the Responsible Authority.
R22	A Local Convenience Centre may be developed in the locations shown on Plan 03 (Future Urban Structure Plan) and must be consistent with the role and function requirement provided in Table 4 and Local Convenience Centre Performance Criteria – attached as Appendix 4.3. A concept of the Local Convenience Centre must demonstrate that the key design objectives, principles and guidelines have been achieved to the satisfaction of the Responsible Authority.
R23	Allocation of land uses, building design, and interface treatment in retail and mixed-use areas shown on Plans 03 and 06 must create a positive address to streets and minimise negative impacts on the amenity of adjacent residential areas. In addition to the performance criteria outlined in Appendix 4.2 or Appendix 4.3 (as relevant), retail and mixed use areas must incorporate features of interest into the built form and surrounding landscape, including variations in built form elements (such as building heights, use of parapets, awnings, shade structures, balconies, and roof elements, articulation of building façades, feature colours and materials).
R24	Development proposals in retail and mixed-use areas must take into account the Crime Prevention Through Environmental Design (CPTED) principles and the Safer Design Guidelines for Victoria.

GUIDELINES	
G17	Buildings and signage should be designed to have an integrated appearance so as to avoid the appearance of clutter.
G18	Environmentally sustainable principles and initiatives should be considered in the design of buildings, such as solar aspect, cross-flow ventilation, materials and finishes, embodied energy, use of solar hot water and on-site collection and reuse of stormwater.

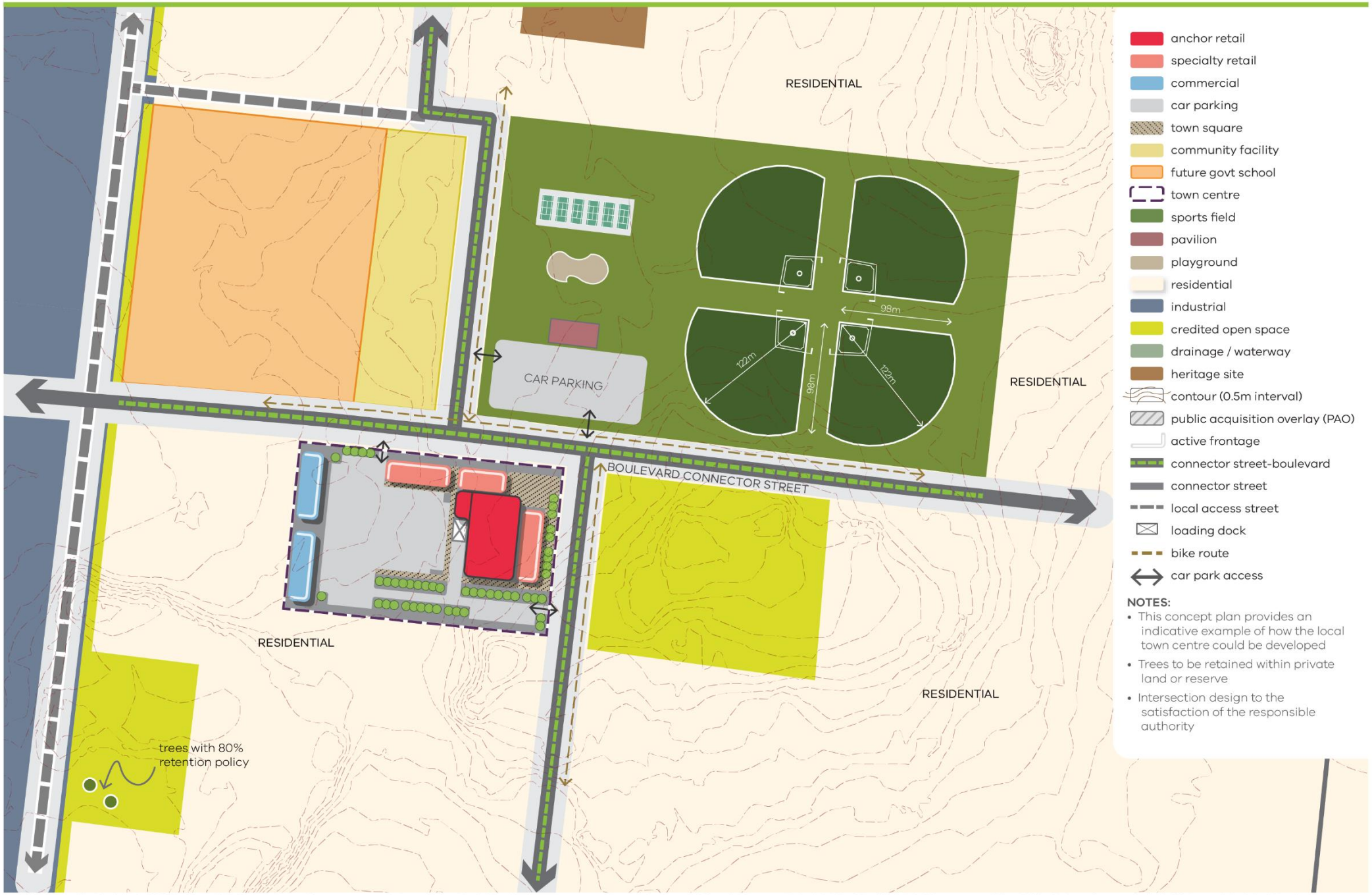
Plan 06 - Shenstone Park Local Town Centre (LTC) & Community Hub Concept Plan

Shenstone Park Precinct Structure Plan

SCALE 1:3,500 @ A4

0 40 80 120 160 200 240m

N



NOTES:

- This concept plan provides an indicative example of how the local town centre could be developed
- Trees to be retained within private land or reserve
- Intersection design to the satisfaction of the responsible authority

3.2.2 Employment

REQUIREMENTS	
R25	The retention, enhancement and integration of the natural environment must be considered through subdivision design, and, where applicable, building design.
R26	Appropriate transition must be provided with landscape, building height, setbacks and materials to any adjacent residential interfaces, community facilities and/or heritage buildings.
R27	Active building frontages and customer pedestrian entrances must be provided, where possible, to (in order of priority): • all highest-order public streets; • residential areas; • waterways; • open space; • local conservation reserves, to create visual interest and provide passive surveillance over the public realm.
R28	Secondary street frontages must provide opportunities to activate building edges, such as glazed frontages that enable passive surveillance over the public realm.
R29	Allocation of employment, industrial, business or business/large format retail land uses, building design, and interface treatment must minimise negative impacts on the amenity of adjacent residential areas, including light spill, to the satisfaction of the responsible authority. More specifically: • smaller lots and businesses with office must be provided at sensitive interfaces, with larger lots and more industrial uses towards Donnybrook Road on the edge of the precinct; • appropriate landscaped interfaces must be provided encouraged at sensitive interfaces; • uses that generate high traffic volumes and utilise large vehicles are discouraged from sites that directly interface residential areas.
R30	Water tanks, service infrastructure and other structures (including plant and equipment) that are not part of the building must be located behind the front building line or where this is not possible, behind constructed screening using durable and attractive materials, to the satisfaction of the responsible authority
R31	Buildings adjacent to waterways and open space must provide for buildings to front the open space.

GUIDELINES	
G19	Car parks greater than six car spaces should be located behind the front building line, be adequately landscaped and not used for storage, loading or unloading of goods.
G20	Goods and materials storage areas and refuse areas should not be visible from public areas.
G21	Subdivision should provide for the creation of a range of regular-shaped lots to cater for various uses.
G22	Offices should be located at the front of buildings and with a façade and main public entrance addressing the street frontage of the lot and engagement with the public domain.
G23	Car parking and loading facilities should be located to the side or rear of any buildings. Any visitor car parking and access areas in the front setback area should be setback a minimum of 3 metres from the street frontage to enable provision of sufficient landscape strips at the street frontage.
G24	All loading and unloading should occur within the site and is to be separated from private vehicles, pedestrian and bicycle routes.
G25	All loading and service bays should be located internally within buildings or screened from street view.
G26	Buildings should be constructed with a zero setback to at least one side boundary to make most efficient use of lot space.
G27	Development applications should include an overall signage strategy incorporating business, directional and temporary signage in an integrated package.

G28	Signage and materials should be treated as an integral part of the building design.
G29	Fences and gates should be visually permeable and unobtrusive, integrated with the design of the buildings and sited behind the building line whereby building becomes part of the security solution.
G30	In addition to the public open space shown on Plan 03 and Plan 07 occasional incidental areas of landscaped public or semi-public open space should be integrated with places of employment to provide rest spots shaded with large canopy trees and / or constructed shelters.
G31	Office uses above ground floor should be encouraged and investigated where practical.
G32	Seating and continuous awnings should be incorporated in front of bulky goods developments in areas of high pedestrian activity and without impeding the ability for street trees to be planted.
G33	Appropriate articulation should be provided to building facades fronting streets and public spaces to minimise the scale and bulk of buildings.

3.3 Community Facilities & Education

REQUIREMENTS	
R32	Community facilities, schools and sports reserves which are co-located must be designed to: • Maximise efficiencies through the sharing of car parking and other complementary infrastructure; • Maximise direct access and permeability for pedestrians and cyclists through and between facilities; and • Apply a user centred approach to ensure these spaces are accessible, flexible, safe and intuitive to create a positive experience for the community.
R33	Education facilities must have at least 2 road frontages, one of which must be a connector street. Roads must have sufficient widths to provide student drop-off zones and on-street indented parking.
R34	Community facilities must be designed to front and be directly accessed from a public street.
R35	Any connector road or 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.

GUIDELINES	
G34	Any additional private childcare, medical, educational, community civic infrastructure or similar facility should be located proximate to the Local Town Centre, or nominated community hub, to the satisfaction of the responsible authority.
G35	The community centre within the Local Town Centre should make efficient use of the land through the sharing and overall reduction of car parking and consideration of a multi-storey facility where practicable.

Table 6 Local Town Centre Community Facilities

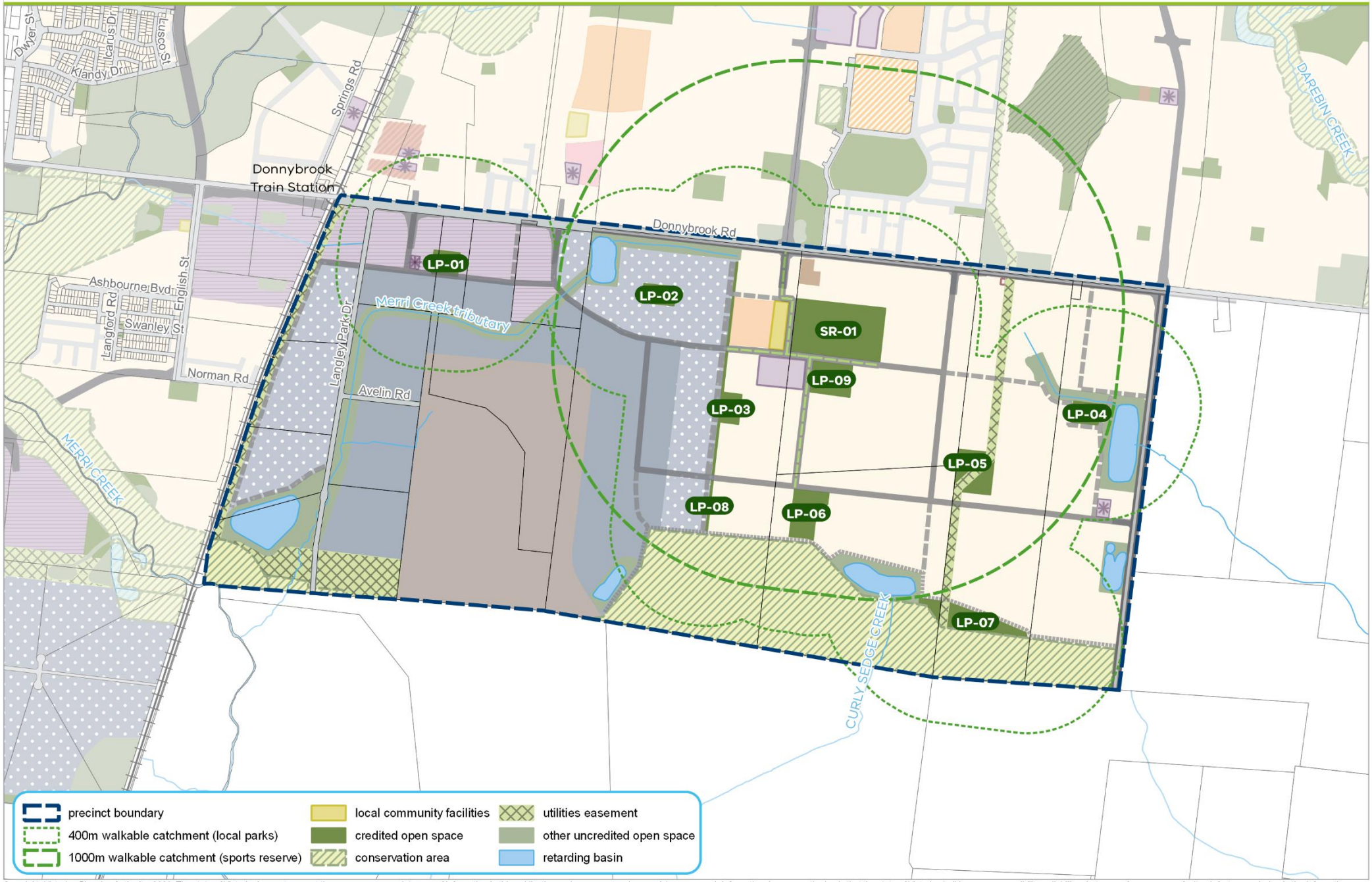
FACILITIES	POTENTIAL COMPONENTS	LAND AREA
MCH	1 Room MCH	1.2ha
	Program Room	
Kindergarten facilities	Triple Room kindergarten facility (99 licenced spaces)	
Dedicated community meeting space	Integrated with MCH	
Neighbourhood House	Flexible location	
Proposed Government School (p-6)	N/A	3.5ha

Plan 7 - Open Space

Shenstone Park Precinct Structure Plan

1:20,000 @A4

0 0.5 1 1.5 2 km



3.4 Open Space

Table 7 Open Space Delivery Guide

PARK-ID	AREA (HA)	TYPE	ATTRIBUTES	RESPONSIBILITY
LP-01	1.10	Local Park	Protects tree group	City of Whittlesea
LP-02	1.08	Local Park	Protects stony knoll	City of Whittlesea
LP-03	1.00	Local Park	Central to the surrounding community	City of Whittlesea
LP-04	1.08	Local Park	Central to surrounding community, protects tree group and stony knoll	City of Whittlesea
LP-05	1.95	Local Park	Central to surrounding community and gas pipeline	City of Whittlesea
LP-06	2.34	Local Park	Central to surrounding community	City of Whittlesea
LP-07	2.66	Local Park	Adjacent to the BCS	City of Whittlesea
LP-08	0.72	Local Park	Linear park to provide a landscape treatment along industrial/residential interface	City of Whittlesea
LP-09	2.19	Local Park	Protects stony knoll, aboriginal cultural sensitivity, high point and view line to Hayes Hill	City of Whittlesea
Subtotal	**14.14**			
PARK-ID	**AREA (HA)**	**TYPE**	**POTENTIAL COMPONENTS**	**RESPONSIBILITY**
SR-01	8.45	Sports Reserve	*4 x dedicated baseball diamonds, 6 x tennis courts, shared use pavilion and playground.	City of Whittlesea
Subtotal	**8.45**			

* The ultimate sports use and configuration of playing fields will be determined at a future planning permit stage. (Plan 06 – Shenstone Park Local Town Centre only indicatively shows that the Sports Reserve would have a sufficient area to accommodate two sports ovals or two rectangular fields.)

REQUIREMENTS	
R36	All public landscaped areas must be designed to be robust and climatically appropriate, consistent with any relevant Council open space strategies or street tree policy.
R37	All parks must be located, designed and developed in accordance with the relevant description in Table 7 (Open Space Delivery Guide), Table 9 (Precinct Infrastructure Plan) and Council's Open Space Strategy. The area of the park may vary so long as it remains inside the guidance for the relevant type of park. Where a park is smaller than that outlined in the table, the land must be added to another park or used to create a new park in addition to those outlined on Plan 08 to the satisfaction of the responsible authority. Where a proposed park is larger than outlined in the table it may be accepted by the responsible authority so long as it does not result in the removal of another park allocation as listed in Table 7.
R38	Proposals to relocate allocated open space must: • not detract from walkable access as demonstrated on Plan 07 not being adversely impacted • not diminishing the quality or usability of the space • not adversely impacting on the overall diversity of the precinct open space network • still be supported by the preferred path network outlined in Plan 09. • have the written consent of the landowner, where it is proposed to relocated onto another property, and to the satisfaction of the responsible authority.
R39	Where a local park shown on Plan 07 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.
R40	Where local parks interface with a waterway corridor, conservation area, heritage site or encompasses remnant native vegetation, the design of that open space must demonstrate that it has integrated the relevant environmental and heritage constraints and features into the design of the park. Where local parks and recreation areas occur adjacent to BCS conservation areas, they must be designed and managed to compliment the outcomes required in Section 5 of the BCS relating to Conservation Area 28 and 34.
R41	Any fencing of open space must be low scale and visually permeable to facilitate public safety and surveillance, unless otherwise agreed by the responsible authority.
R42	Any proposed recreation infrastructure (including shared paths) within the Biodiversity Conservation Area 28 must be located in where identified for on Plan 09a and 09b and must not detract from the conservation values in the Reserve, unless an alternative location is agreed, to the satisfaction of the Secretary to the Department of Environment, Land, Water and Planning.
R43	If local (credited) parks interface with a drainage corridor, heritage site, stony knoll or encompass remnant native vegetation, the design of that open space must demonstrate that it has integrated the relevant environmental and heritage values and features into the design of the park.

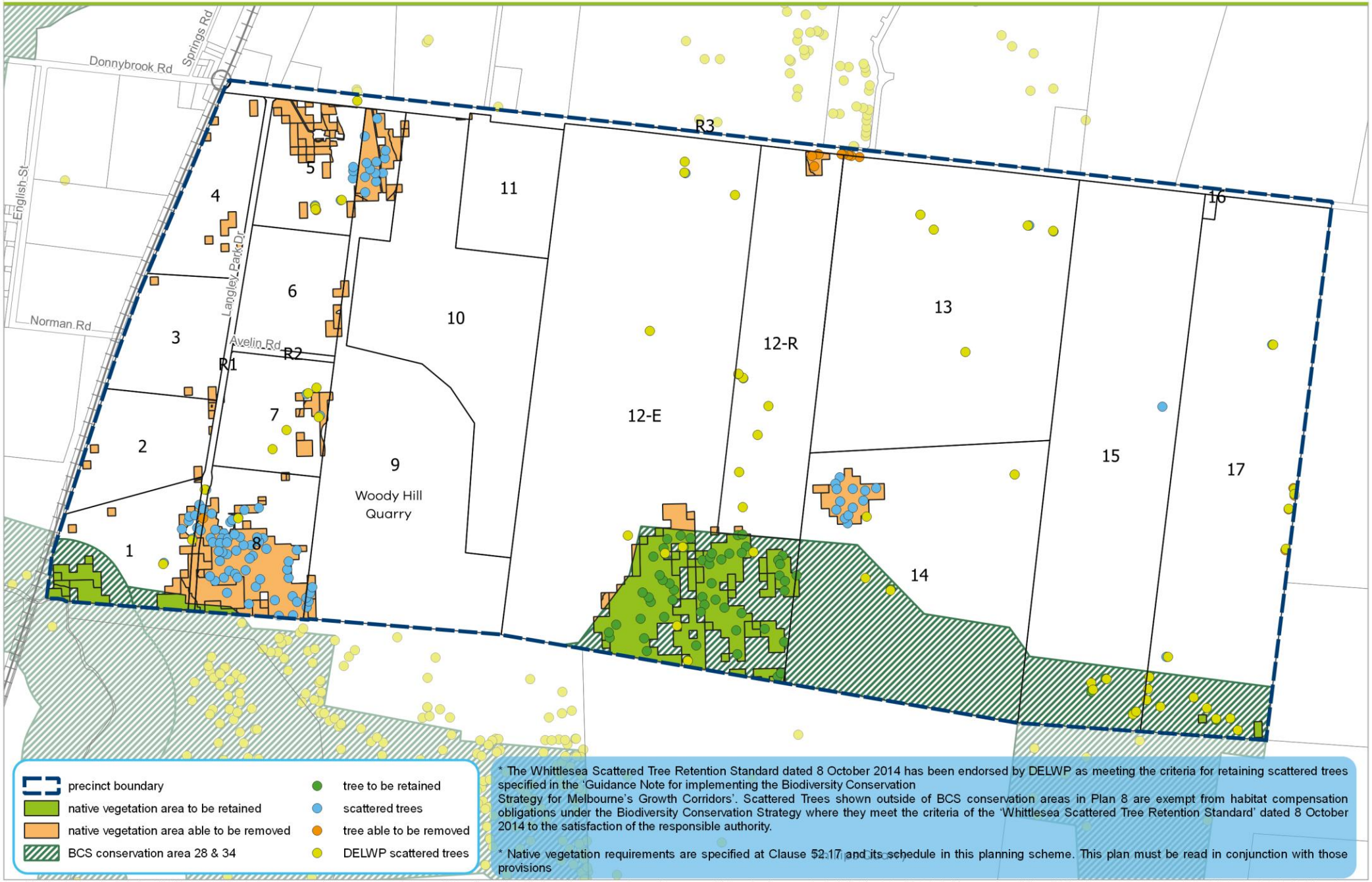
GUIDELINES	
G36	Subject to being compatible with Table 7, parks and open space should contain extensive tree planting where appropriate. Species selection, spacing of plants and landscaping features should be designed to prevent an increased risk of fire and facilitate ongoing emergency vehicle access to open space areas.
G37	A range of local park types should be provided across the precinct, in accordance with Table 7 and the Whittlesea City Council's Play Space Planning Framework and Policy, or any alternative similar updated Council Policy.
G38	A proponent delivering a master plan for a local park that traverses multiple property ownerships should consult with landholders of parcels covered by the park to ensure an integrated design.
G39	Embellishment of local parks should be consistent with Council's Open Space Strategy.

Plan 8 - Native Vegetation Retention and Removal

Shenstone Park Precinct Structure Plan

1:15,000 @A4

0 0.25 0.5 0.75 1 km



* The Whittlesea Scattered Tree Retention Standard dated 8 October 2014 has been endorsed by DELWP as meeting the criteria for retaining scattered trees specified in the 'Guidance Note for implementing the Biodiversity Conservation Strategy for Melbourne's Growth Corridors'. Scattered Trees shown outside of BCS conservation areas in Plan 8 are exempt from habitat compensation obligations under the Biodiversity Conservation Strategy where they meet the criteria of the 'Whittlesea Scattered Tree Retention Standard' dated 8 October 2014 to the satisfaction of the responsible authority.

* Native vegetation requirements are specified at Clause 52.17 and its schedule in this planning scheme. This plan must be read in conjunction with those provisions

3.5 Biodiversity & Threatened Species

Operation of Commonwealth Environment Laws

On 5 September 2013, the Commonwealth Department of Environment and Energy granted an approval for urban development in Melbourne's Growth Corridors under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). This approval covers the Shenstone Park Precinct.

Provided the conditions of this approval are satisfied, individual assessment and approval under the EPBC Act is not required. These conditions include but are not limited to the following:

- Urban development must comply with habitat compensation arrangements and fees described in 'Habitat compensation under the Biodiversity Conservation Strategy – Melbourne Strategic Assessment' (Victorian Government Department of Environment and Primary Industry, August 2013) and as amended by the Victorian Government from time to time.
- Urban development must be undertaken in accordance with the Biodiversity Conservation Strategy for Melbourne's Growth Corridors (Victorian Government Department of Environment and Primary Industries, June 2013).

REQUIREMENTS	
R44	Development abutting a BCS conservation area must be in accordance with the corresponding relevant Conservation Interface Plan unless otherwise agreed to by the Department of Environment, Land, Water and Planning.
R45	Development must provide for a minimum public land buffer of 20 metres between Conservation Area 28 boundary and the nearest residential, commercial, or industrial lot. The public land buffer area may include roads, paths, open space and drainage infrastructure.
R46	Public paths or infrastructure located within a BCS conservation area must be designed to avoid and minimise disturbance to native vegetation and habitat for matters of national environmental significance and be located in accordance with the corresponding Plan 09 BCS Conservation Area Concept Plan.
R47	Any proposed development or works within a BCS conservation area must obtain the approval of the Department of Environment, Land, Water and Planning.
R48	Development within any BCS conservation area must be in accordance with the corresponding Conservation Area Concept Plan unless otherwise agreed in writing by the Department of Environment, Land, Water and Planning.

GUIDELINES	
G40	Public recreation and open space areas should be co-located with significant conservation areas and waterways to create and/or enhance any buffer area.
G41	The layout and design of the waterways, wetlands and retarding basins (including the design of paths, bridges and boardwalks and the stormwater drainage system) within conservation areas, should integrate with biodiversity and natural systems to the satisfaction of the responsible authority, Melbourne Water and the Department of Environment, Land, Water and Planning.
G42	Street trees and public open space landscaping should contribute to habitat for indigenous fauna species, in particular arboreal animals and birds, where practical.

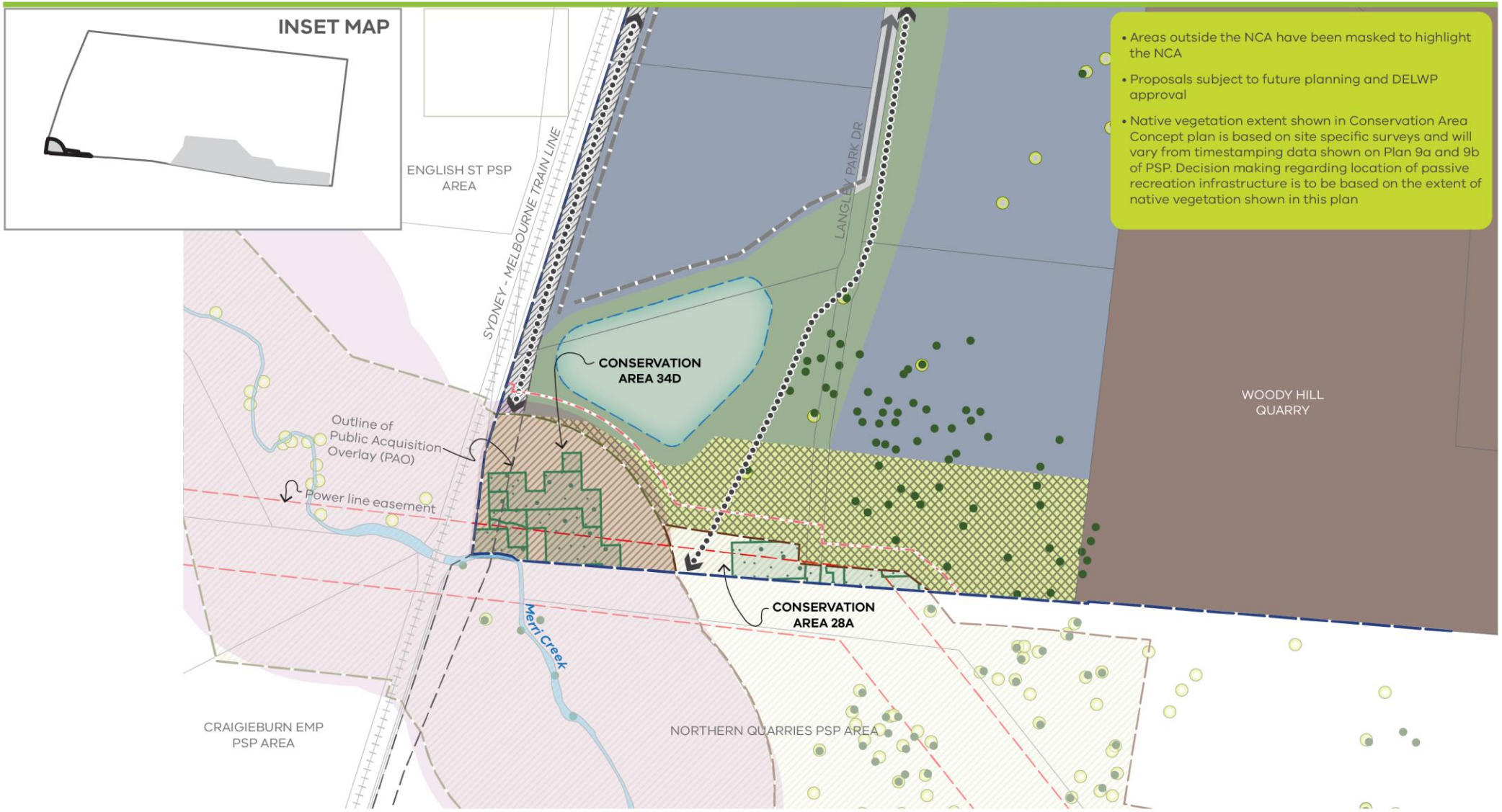
Plan 09a - Conservation Area 34D & 28A Concept Plan

Shenstone Park Precinct Structure Plan

SCALE 1:7,000 @ A4

0 100 200 300 400 500m

N



- precinct boundary
- Growling Grass Frog conservation area 34D
- nature conservation area 28A
- scattered trees to be retained
- DELWP scattered trees
- native vegetation to be retained
- area of Aboriginal cultural values
- conservation interface plan extent (30m)
- waterway / stormwater management
- Public Acquisition Overlay (PAO)
- utilities easement
- utility facility
- extractive industries
- shared path (indicative)
- local access street (contributes to fire buffer where adjacent to NCA)

Plan 09B - Conservation Area 28B Concept Plan

Shenstone Park Precinct Structure Plan

SCALE 1:10,000 @ A4

0 100 200 300 400 500m

N

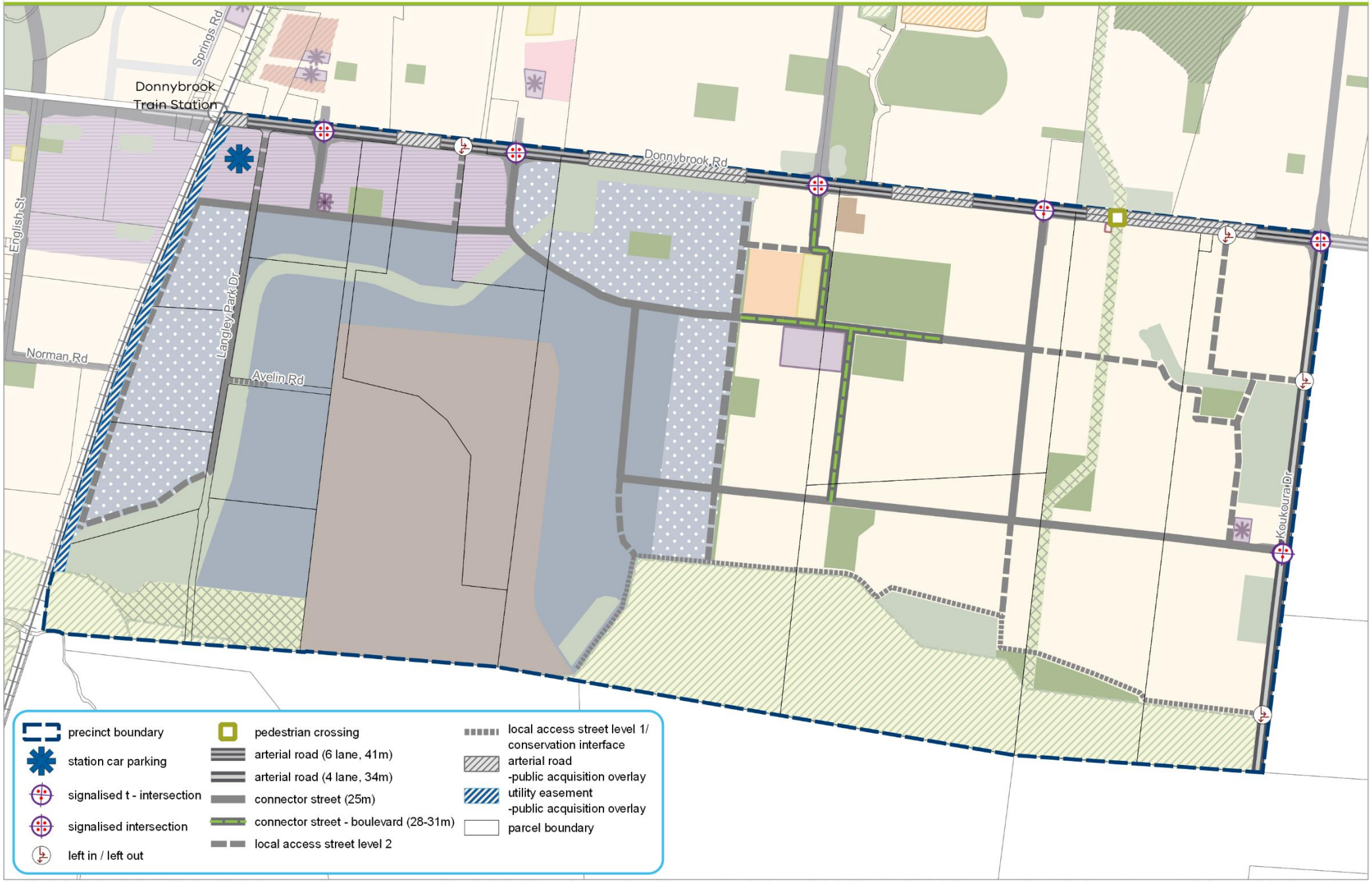
- precinct boundary
- nature conservation area 28B
- scattered trees to be retained
- DELWP scattered trees
- native vegetation to be retained
- area of Aboriginal cultural values
- conservation interface plan extent (30m)
- waterway / stormwater management
- local park
- residential (adjacent house lots to front onto conservation area)
- industrial
- utilities easement
- curly sedge creek
- shared path (indicative)
- arterial road (4 lane)
- local access street (contributes to fire buffer where adjacent to NCA)

Plan 10 - Street Network

Shenstone Park Precinct Structure Plan

1:15,000 @A4

0 0.25 0.5 0.75 1 km



3.6 Transport & Movement

3.6.1 Street Network

REQUIREMENTS	
R49	Subdivision layouts must provide: • A permeable, safe and low speed street network that encourages walking and cycling; and • Convenient access to local points of interest and destinations for the effective integration with neighbouring parcels.
R50	The connector street network must provide a safe and low speed environment for all road users.
R51	a) Vehicular movement and access to residential properties fronting primary arterial roads must be from internal loop roads, and/or rear laneways to the satisfaction of the responsible authority. b) Vehicle access to properties fronting Donnybrook Road to the Employment Area must be from service roads, internal roads or rear laneways. c) Development within the Employment Area must engage positively with the frontage of Donnybrook Road and the LTC and include a high quality landscaped interface, to the satisfaction of the responsible authority.
R52	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 property boundary, the onus is on the development connecting into that street to adopt a consistent cross-section until that suitable transition can be made.
R53	Convenient and direct access to the connector road network must be provided through neighbouring properties where a property does not otherwise have access to the connector network or signalised access to the arterial road network, as appropriate.
R54	Development must positively address all waterways through the use of frontage roads or lots with a direct frontage to the satisfaction of Melbourne Water and the responsible authority.
R55	Any connector road or access street abutting a school must be designed to achieve safe and slow vehicle speeds and provide designated pedestrian crossing points as required by the responsible authority.
R56	Where determined that roundabouts are required at cross 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.
R57	Frontage streets are to be the primary interface between the development and utility easement. Public open space and allotments with direct frontages may be provided as a minor component of the utility easement reserve interface.
R58	Where a connector street crosses a waterway on Plan 10, the developer(s) must enter into an agreement with the responsible authority to construct a connector street crossing prior to the issue of statement of compliance for the first stage of residential subdivision on the second side of the waterway to be developed, whether or not that residential subdivision directly abuts the waterway.
R59	Temporary access roads must be delivered at the cost of the developer, to the satisfaction of the responsible authority.
R60	Slip lanes must be avoided in high pedestrian traffic areas such as town centres and schools.
R61	Waterway crossings within a BCS conservation area must be designed and constructed in accordance with Growling Grass Frog Crossing Design Standards to the satisfaction of the Department of Environment, Land, Water and Planning.
R62	All infrastructure (including but not limited to roads, drainage, or utility) must only cross the APA gas pipeline at 90 degrees unless with the consent of the pipeline owner or operators (APA VTS) and be engineered to protect the integrity of the pipeline.
R63	Traffic management devices are required at connector to connector road intersections, and in particular locations as determined appropriate to break up the overall length of road for traffic calming purposes.

GUIDELINES	
G43	Where a lot that is 7.6 metres or less in width, vehicle access should be via rear laneway, unless otherwise approved by the responsible authority.
G44	Street layouts should provide multiple convenient routes to major destinations such as the walking trails, parks, sporting reserves, local convenience centres, local town centre and the arterial road network.
G45	A variety of cross sections should be utilised in a subdivision layouts to create differentiation and neighbourhood character. Alternative cross sections should ensure that: • Minimum required carriageway dimensions are maintained to ensure safe and efficient operation of emergency vehicles on all streets as well as buses on connector streets. • The performance characteristics of standard cross sections as they relate to pedestrian and cycle use are maintained. • Relevant minimum road reserve widths for the type of street are maintained, unless otherwise approved by the responsible authority.
G46	Cul-de-sacs should not detract from convenient pedestrian and cycle and vehicular connections.
G47	All signalised intersections should be designed having regard to the Department of Transport (DoT)working document 'Guidance for Planning Road Networks in Growth Areas' November 2015 (as updated), to the satisfaction of The Head, Transport for Victoria and the responsible authority.
G48	The frequency of vehicular crossovers on streets with widened verges (a verge in excess of six metres) and / or abutting linear open space, 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; and • Increased lot widths.
G49	Streets should be the primary interface between development and waterways. Public open space and lots with a direct frontage may be provided as a minor component of the waterway interface. This should be in accordance with the relevant waterway/open space cross section in Appendix 4.4.

Plan 11 - Public Transport and Pathways

Shenstone Park Precinct Structure Plan

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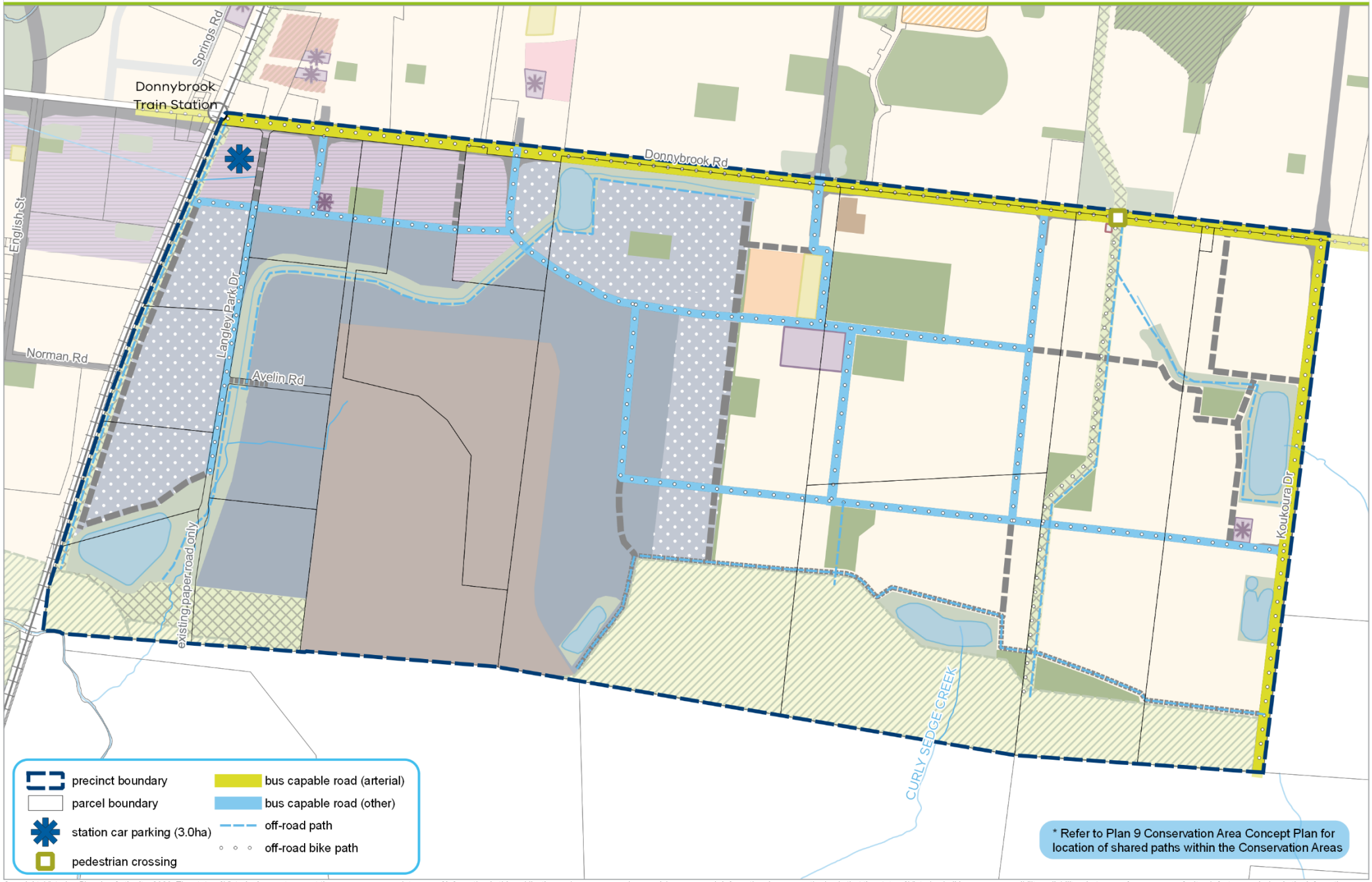

3.6.2 Public Transport

REQUIREMENTS	
R64	Any roundabouts on roads shown as 'bus capable' on Plan 11 must be constructed to accommodate ultra-low-floor buses in accordance with the Austroads guidelines as well as Department of Transport's guidance for public transport and land use development.
R65	Bus stop facilities must be designed to the satisfaction of Public Transport Victoria and be an integral part of town centres and activity generating land uses such as schools, sports fields and employment areas.
R66	The street network must be designed to ensure 95% of all households are located within 400 metres of public transport services or bus capable roads, and all households are able to directly and conveniently walk to public transport services.
R67	Subdivision design must enable passive surveillance to the public transport network by designing buildings which front on to streets on the public transport network.

3.6.3 Walking & Cycling

REQUIREMENTS	
R68	Design of all streets and arterial roads must give priority to the requirements of pedestrians and cyclists by providing: • Safe and convenient crossing points of connector roads and local streets at all intersections and on key desire lines as well as crossing or creeks and waterways; • Safe pedestrian crossings of arterial roads at all intersections, at key desire lines, and on regular intervals appropriate to the function of the road and public transport provision; • Pedestrian priority crossings on all slip lanes; • Safe and convenient transition between on- and off-road bicycle networks; and • Street designs should be in general accordance with the relevant cross-sections in Appendix 4.4. • All to the satisfaction of the coordinating roads authority and the responsible authority.
R69	Shared and pedestrian paths must be delivered by development proponents and be generally in accordance with the network shown on Plan 11 – Public Transport and Pathways and where along waterways / retarding basins; • Be above 1:10 year flood level with any crossing of the waterway designed to be above the 1:100; flood level to maintain hydraulic function of the waterway; • Be positioned above 1:100 year flood where direct access is provided to the dwelling from the waterway reserve; • Be located constructed to a standard that satisfies the requirements of relevant responsible authorities.
R70	Bicycle parking facilities including way finding signage are to be provided by development proponents in convenient locations at key destinations such as parks and local centres.
R71	Lighting must be installed along shared, pedestrian, and cycle paths linking to key destinations, unless otherwise agreed to by the responsible authority.

GUIDELINES	
G50	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.
G51	Street activation within residential areas should be encouraged through the inclusion of street furniture and incidental meeting places.
G52	Shared paths and off-road bike paths should be raised at intersections to ensure pedestrian and cyclist priority.
G53	Design details for the layout of roundabouts should consider safe bicycle movements through the intersection.

3.7 Integrated Water Management & Utilities

3.7.1 Integrated Water Management

REQUIREMENTS	
R72	Stormwater runoff from the development must meet or exceed the performance objectives of the Best Practice Environmental Management Guidelines for Urban Stormwater Management (1999) prior to discharge to receiving waterways as outlined on Plan 12, unless otherwise approved by Melbourne Water and the responsible authority.
R73	Final design of constructed waterways (including widths), waterway corridors, stormwater quality treatment, retarding basins, wetlands, associated paths, boardwalks, bridges, and planting, must be to the satisfaction of Melbourne Water and the responsible authority.
R74	Development staging must provide for the delivery of ultimate waterway and drainage infrastructure, including stormwater quality treatment. Where this is not possible, development proposals 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, to the satisfaction of Melbourne Water and the responsible authority.
R75	Subdivision 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 property / parcel boundaries; and Melbourne Water and the responsible authority's freeboard requirements for overland flow paths will be adequately contained within road reserves.
R76	Stormwater conveyance and treatment must be designed in accordance with the relevant Development Services Scheme to the satisfaction of Melbourne Water.

GUIDELINES	
G54	The design and layout of roads, road reserves and public open space should optimise water use efficiency and long-term viability of vegetation and public uses through the use of Water Sensitive Urban Design initiatives.
G55	Where practical, development should include integrated water management initiatives to reduce reliance on potable water and increase the utilisation of storm and waste water, contributing to a sustainable and green urban environment.
G56	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 or local planning policy.
G57	Where practical, integrated water management systems should be designed to: • Maximise habitat values for local flora and fauna species; • Enable future harvesting and/or treatment and re-use of stormwater; and Protect and manage for Matters of National Environment Significance (MNES) values, particularly within conservation areas, in relation to water quality and suitable hydrological regimes (both surface and groundwater).
G58	Where practical, and where primary waterway, conservation or recreation functions are not adversely affected, land required for integrated water management initiatives (such as stormwater harvesting, aquifer storage and recharge, sewer mining) should be incorporated within the precinct open space system as depicted on Plan 07.

Plan 12 - Integrated Water Management

Shenstone Park Precinct Structure Plan

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0 0.25 0.5 0.75 1 km

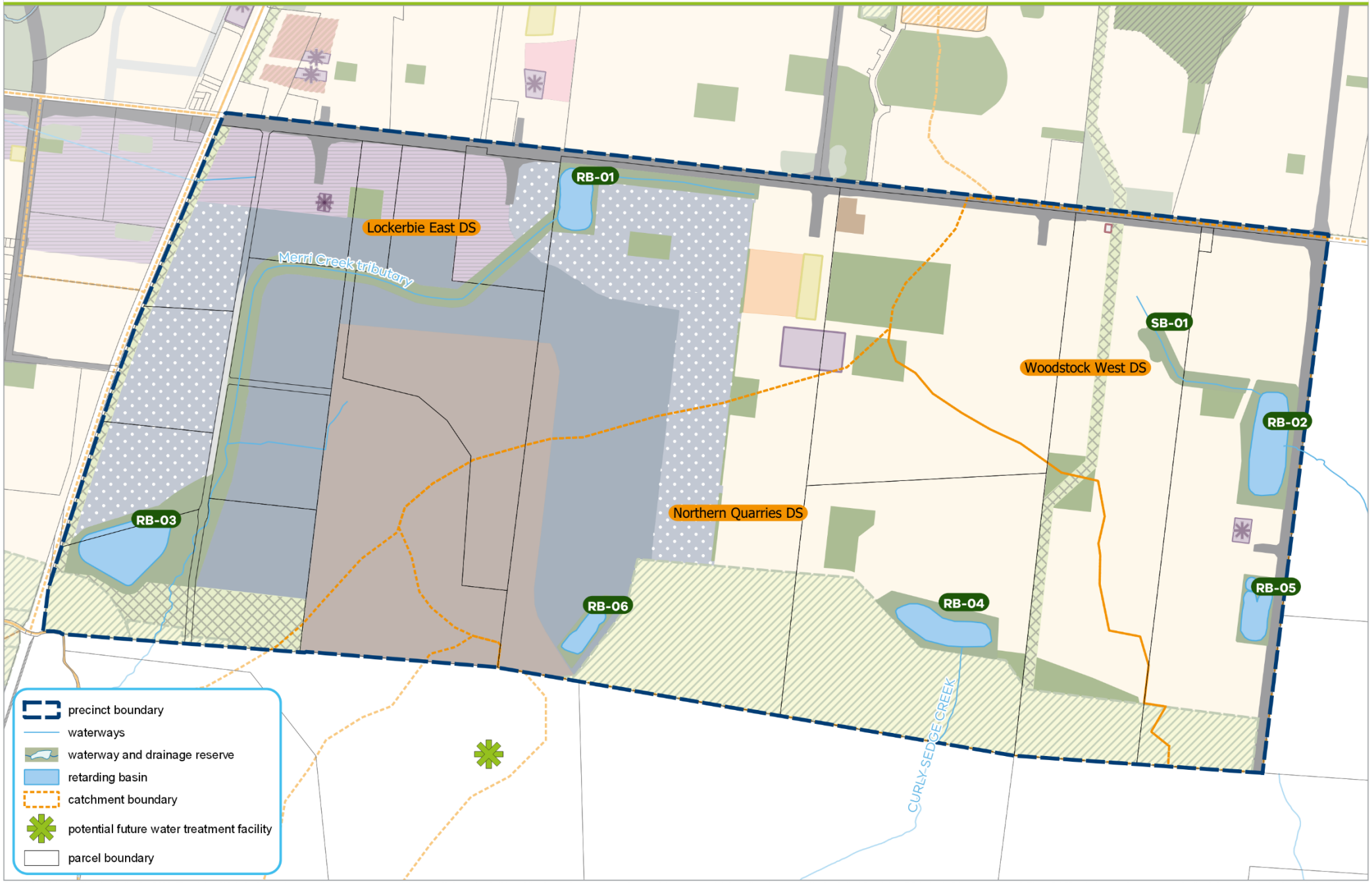

Table 8 Stormwater Drainage and Water Treatment Infrastructure

ASSET-ID	ASSET TYPE	LOCATION	AREA (HA)	RESPONSIBILITY
RBWL-01	Retarding Basin/Wetlands	Parcel 12	2.76	Whittlesea Council
RBWL-02	Retarding Basin/Wetlands	Parcel 17	6.00	Melbourne Water
RBWL-03	Retarding Basin/Wetlands	Parcel 1 & 2	7.81	Whittlesea Council
RBWL-04	Retarding Basin/Wetlands	Parcel 14	4.65	Whittlesea Council
RBWL-05	Retarding Basin/Wetlands	Parcel 17	2.10	Whittlesea Council
RBWL-06	Retarding Basin/Wetlands	Parcel 12	3.05	Whittlesea Council
SB-01	Sediment Basin	Parcel 15	0.36	Whittlesea Council

Melbourne Water is generally considered to be the responsibility authority for retarding basins with a catchment of greater than 60 ha

Plan 13 - Utilities

Shenstone Park Precinct Structure Plan

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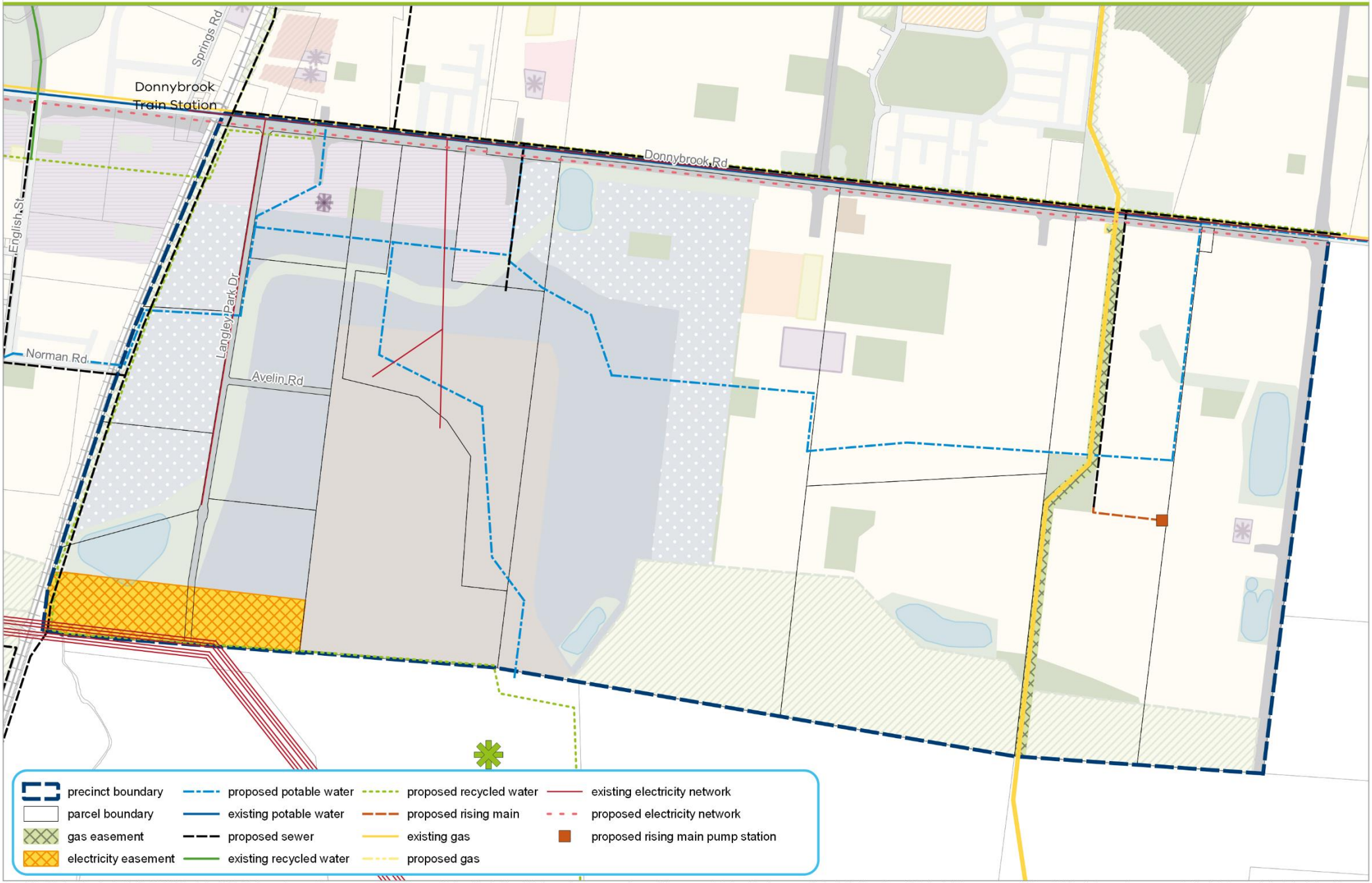
0 0.25 0.5 0.75 1 km

N



3.7.2 Utilities

REQUIREMENTS	
R77	Trunk services are to be placed along the general alignments shown on Plan 13, subject to any refinements as advised by the relevant servicing authorities.
R78	Before development commences on a property, functional layout plans are to be submitted of the road network showing the location of all: • Underground services; • Driveways/crossovers; • Intersection devices; • Footpaths/shared paths; • Street lights; and • Street trees. A typical cross section of each street must 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 so as to achieve the road reserve width (consistent with the road cross sections outlined in Appendix 4.4 in this PSP) and accommodate the minimum level of street tree planting (as outlined in this PSP). If required, the plan and cross sections will nominate which services will be placed under footpaths or road pavement. The plans and cross sections are to be approved by the responsible authority and 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, to the satisfaction of the responsible authority.
R79	All new electricity supply infrastructure (excluding substations and cables of a voltage greater than 66kV) must be provided underground.
R80	Where existing above ground electricity cables of 66kV voltage are retained along road ways, underground conduits designed for future undergrounding of the powerlines are to be provided as part of the installation of signalised intersection projects provided public land is available for the conduit installation and provided that the cost of the works are funded through the Infrastructure Contributions Plan. Where such works are required, they need to be carried out to the satisfaction of The Head, Transport for Victoria and the responsible authority.
R81	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 public open space, the land required to accommodate that infrastructure will not be counted as contribution to public open space requirements outlined in the Shenstone Park Infrastructure Contributions Plan.
R82	Utilities must be placed outside of conservation areas, natural waterway corridors or on the outer edges of these corridors in the first instance. Where services cannot avoid crossing or being located within the conservation area or natural waterway corridor, they must be located to avoid disturbance to existing waterway values, native vegetation, habitat for Growling Grass Frog, significant landform features and heritage sites, to the satisfaction of the Department of Environment, Land, Water and Planning, Melbourne Water and the responsible authority.
R83	Subdivision abutting the APA high pressure gas transmission pipeline easement must provide for the outcomes illustrated in the appropriate cross section in Appendix 4.4.
R84	Vegetation should not be planted within 3 metres of the existing gas pipeline. Where vegetation is required to be planted within 3 metres of the existing gas pipeline, line of sight between high pressure gas pipeline awareness markers must be maintained. The vegetation must be shallow rooted and mature trees must not exceed 1.5m.

GUIDELINES	
G59	Above ground utilities should be located outside of key view lines and screened with vegetation, as appropriate.
G60	Existing above ground 66kV electricity cables should be removed and placed underground as part of the ultimate duplication of existing roads.
G61	Design and placement of underground services in new or upgraded streets should utilise the service placement guidelines outlined in Appendix 4.5.

3.8 Precinct Infrastructure Plan & Staging

3.8.1 Precinct Infrastructure Plan

REQUIREMENTS	
R85	Utilities and other infrastructure must avoid traversing Conservation Area 28.
R86	Where there are no alternative options other than passing through Conservation Area 34, subdivisional development must consolidate utilities into dedicated service corridors. Utilities and other infrastructure must avoid traversing patches of native vegetation and habitat for matters of national environmental significance.

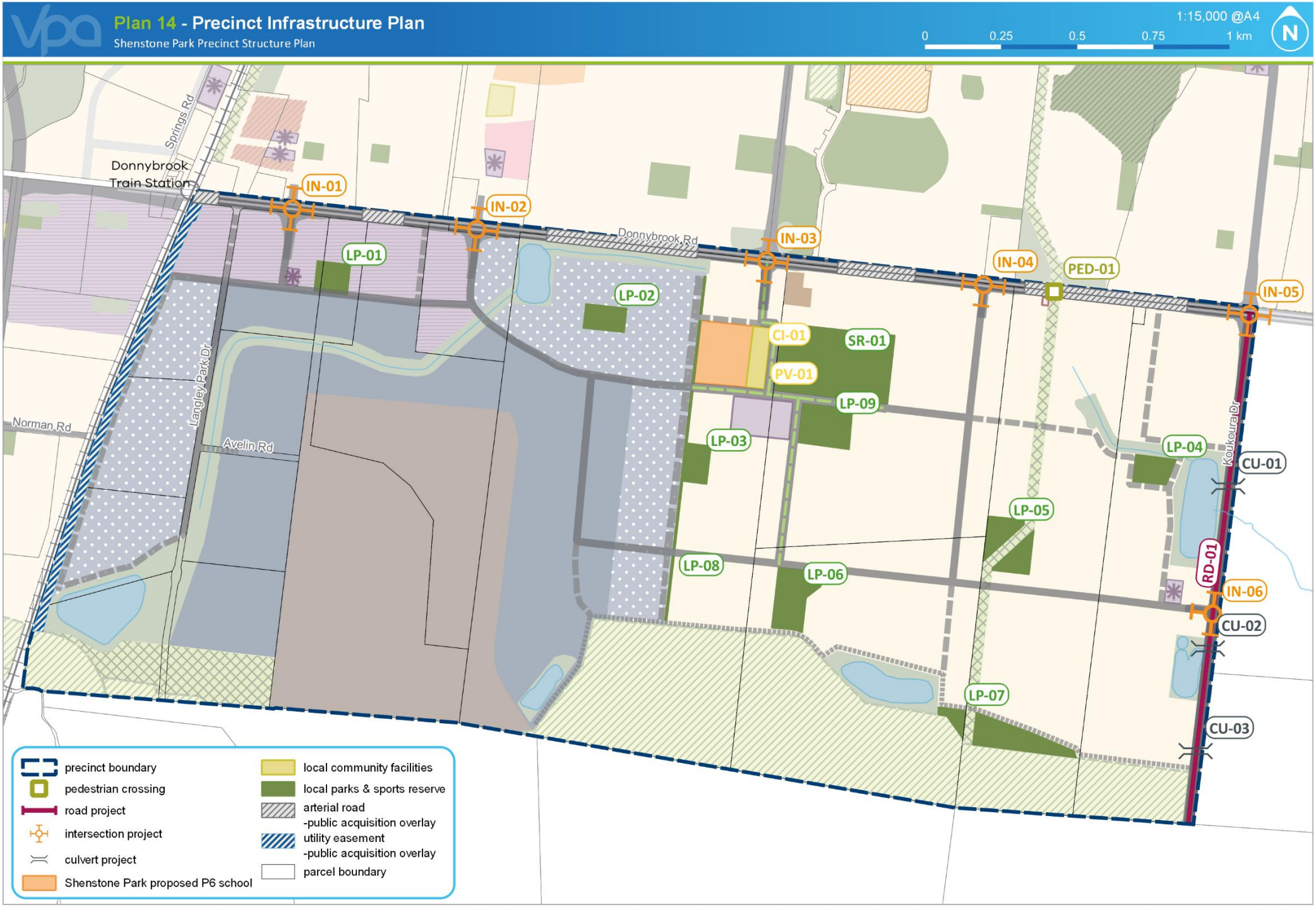


Table 9 Precinct Infrastructure Plan

CATEGORY	TITLE	DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			TIMING*	INTERNAL APPORTIONMENT	ICP REF
				ULTIMATE LAND	INTERIM CONSTRUCTION	ULTIMATE CONSTRUCTION			
Road projects									
Road	**Koukoura Dr: Donnybrook Road to PSP boundary**	Provision of land to create road reserve 34m wide (ultimate treatment) and construction of two lane 2-way carriageway, excluding intersections (interim treatment).	Whittlesea City Council	Yes	Yes	No	M		
		Construction of a secondary arterial (4 lane carriageway), excluding intersections (ultimate treatment).	The Head, Transport for Victoria	No	No	No	L	100%	RD-01
Intersection projects									
Intersection	**Donnybrook Road & Connector Street (N-S Connector 1)**	Provision of land (ultimate treatment) and construction of the fourth leg of a primary arterial to connector road 4-way intersection (interim treatment).	Whittlesea City Council	Yes	Yes	No	S		
		Construction of a primary arterial to connector road 4-way intersection (ultimate treatment).	The Head, Transport for Victoria	No	No	No	L	100%	IN-01

Intersection	**Donnybrook Road & Connector Street (N-S Connector 2)**	Purchase of land (ultimate treatment) and construction of the fourth leg of a primary arterial to connector road 4-way intersection (interim treatment).	Whittlesea City Council	Yes	Yes	No	S		
		Construction of a primary arterial to connector road 4-way intersection (ultimate treatment).	The Head, Transport for Victoria	No	No	No	L	100%	IN-02
Intersection	**Donnybrook Road & Patterson Drive (–N-S Boulevard Connector 3)**	Purchase of land (ultimate treatment) and construction of the fourth leg of a primary arterial to connector road 4-way intersection (interim treatment).	Whittlesea City Council	Yes	Yes	No	S		
		Construction of a primary arterial to connector road 4-way intersection (ultimate treatment)	The Head, Transport for Victoria	No	No	No	L	100%	IN-03
Intersection	**Donnybrook Road & Connector St (N-S Connector 4)**	Purchase of land (ultimate treatment) and construction of a primary arterial to connector road T-intersection (interim treatment).	Whittlesea City Council	Yes	Yes	No	S		
		Construction of a primary arterial to connector road T- intersection (ultimate treatment).	The Head, Transport for Victoria	No	No	No	M	100%	IN-04
Intersection	**Donnybrook Road & Koukoura Drive (arterial - arterial)**	Purchase of land (ultimate treatment) and construction of the fourth leg of a primary arterial to secondary arterial 4-way	Whittlesea City Council	Yes	Yes	No	S	100%	IN-05

		intersection (interim treatment).							
		Construction of a primary arterial to connector road 4-way intersection (ultimate treatment).	The Head, Transport for Victoria	No	No	No	L		
Intersection	**Koukoura Dve & Connector Road (E-W Connector 1)**	Purchase of land (ultimate treatment) and construction of a connector road to secondary arterial T-intersection (interim treatment).	Whittlesea City Council	Yes	Yes	No	S		
		Construction of a connector road to secondary arterial T-intersection (ultimate treatment).	The Head, Transport for Victoria	No	No	No	M	100%	IN-06
Culvert Project									
Culvert	**Crossing over creek at as part of Koukoura Dr**	Construction of a culvert through a Secondary Arterial 4 x 1500mm pipes	Whittlesea City Council	Yes	Yes	No	S	100%	CU-01
Culvert	**Crossing over creek at as part of Koukoura Dr**	Construction of a culvert through a Secondary Arterial 2 x 1050mm pipes	Whittlesea City Council	Yes	Yes	No	S	100%	CU-02
Culvert	**Crossing over creek at as part of Koukoura Dr**	Construction of a culvert through a Secondary Arterial 2 x 1050mm pipes	Whittlesea City Council	Yes	Yes	No	S	100%	CU-03
Pedestrian Crossing projects									
Signals	**Crossing Donnybrook Road**	Construction of pedestrian signals to support pedestrian and cycle movement along	Whittlesea City Council	.	Yes	No	S	50%	PED-01

		the gas pipeline easement connecting north to Donnybrook/Woodstock PSP.							
Community & Recreation									
Southern Community Centre	Community activity centre co-located with Shenstone Park Local Town Centre	Purchase of land and construction of a community centre	Whittlesea City Council	Yes	-	Yes	S-M	100%	CI-01
Education									
Government School	Government P-6 School	Purchase of land and construction of a government P-6 school co-located with the Shenstone Park Local Town Centre	DET	No	No	No	M	0%	N/A
Other Infrastructure									
Bus		Bus Services	Department of Transport (DoT)	No	No	No	M-L	-	N/A
Open space project									
Sports Reserve	Construction of a multi-purpose sports reserve	Sports fields (Baseball and Tennis) located near the Shenstone Park Local Town Centre	Whittlesea City Council	Yes	N/A	Yes	S-M	100%	SR-01
Sports Pavilion	Construction of a multi-purpose sports pavilion	Construction of a multi-purpose sports pavilion	Whittlesea City Council	Yes	N/A	Yes	S-M	100%	PV-01
Local Park	Passive open space	Local Park	Whittlesea City Council	Yes	No	No	S-M	100%	LP-01
Local Park	Passive open space	Protects stony knoll	Whittlesea City Council	Yes	No	No	S-M	100%	LP-02

Local Park	Passive open space	Adjacent to sports reserve and protects stony knoll	Whittlesea City Council	Yes	No	No	S-M	100%	LP-03
Local Park	Passive open space	Central to surrounding community, protects tree group and stony knoll	Whittlesea City Council	Yes	No	No	S-M	100%	LP-04
Local Park	Passive open space	Central to surrounding community and protects tree group	Whittlesea City Council	Yes	No	No	S-M	100%	LP-05
Local Park	Passive open space	Central to surrounding community	Whittlesea City Council	Yes	No	No	S-M	100%	LP-06
Local Park	Passive open space	Central to surrounding community	Whittlesea City Council	Yes	No	No	S-M	100%	LP-07
Local Park	Passive open space	Central to surrounding community and within quarry buffer	Whittlesea City Council	Yes	No	No	S-M	100%	LP-08
Conservation Area	Conservation Area 28	BCS – Nature Conservation Reserve along southern boundary of Shenstone Park Precinct Structure Plan	DELWP	No	No	No	S	0%	N/A

3.8.2 Development Staging

REQUIREMENTS	
R87	Development staging must provide for the timely provision and delivery of: • Arterial road reservations; • Connector streets and connector street bridges; • Street links between properties, constructed to the property boundary; and • on- and off-road pedestrian and bicycle network paths. • land for community infrastructure, sports fields and local open space
R88	Streets must be constructed to property boundaries where an inter-parcel connection is intended or indicated in the PSP at the relevant stage of development required or approved by the responsible authority.

GUIDELINES	
G62	The staging of development should provide for the early delivery of community facilities to the satisfaction of the responsible authority.
G63	Staging of development should be determined largely by the development proposals on land within the precinct and the availability of infrastructure services. Development applications should demonstrate how the development will: • integrate with adjoining developments, including the timely provision of roads 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 service extensions, including confirmation of the agreed approach and timing by the relevant service provider • avoid and minimise impacts to BCS conservation areas with regard to the location of essential and other services.
G64	Sports fields, community facilities, local parks and playgrounds should be delivered as early as possible within each neighbourhood and may be delivered in stages.
G65	Infrastructure projects identified in the Precinct Infrastructure Plan at Table 9 should be delivered as per the timing priority identified in the timing column of Table 9 Where infrastructure is proposed to be delivered outside ahead of the sequence identified in Table 9, the onus is on the developer to fund the infrastructure works as 'Works In Kind'. Note: *Project delivery timing outlined in Table 9 is indicative and subject to periodic review by the relevant responsible authority.*
G66	Development staging should have regard to: • proximity to existing or proposed development fronts or serviced land • proximity to significant existing public transport infrastructure or public transport service • proximity to existing or committed community infrastructure, such as schools • proximity to new or existing arterial or connector road infrastructure • its role in facilitating delivery of the above infrastructure. Staging that meets alternative criteria to the above may be considered by the responsible authority where an applicant satisfactorily demonstrates that development will not be isolated from basic and essential infrastructure and services.

3.8.3 Subdivision Works

REQUIREMENTS	
R89	Subdivision of land within the precinct must provide and meet the total cost of delivering the following infrastructure: • Connector roads and local streets; • Crossings of connector roads and local streets over waterways; • Local bus stop infrastructure (where locations have been agreed in writing by Transport for Victoria (TfV)); • Fencing along the rail reserve boundary to the satisfaction of Transport for Victoria (TfV) and VicTrack; • Landscaping of all existing and future roads and local streets; • Intersection works and traffic management measures along arterial roads, connector streets, and local streets (except those included in the Donnybrook–Woodstock 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; • 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;
	• Construction of shared paths along waterways, utility easements and open space; and • Remediation and / or reconstruction of dry-stone walls where required.
R90	All public open space must be finished to a standard that satisfies the requirements of the responsible authority prior to the transfer of the public open space, including: • Removal of all existing and disused structures, foundations, pipelines, and stockpiles; • Basic levelling, including the supply and spread of minimum 75mm topsoil and sub soil if required on the proposed areas of open space to provide a stable, free draining surface; • Clearing of rubbish and weeds, levelled, topsoiled and grassed with warm climate grass (unless conservation reserve requirements dictate otherwise); • Provision of water tapping, potable and recycled water connection points. Sewer and gas connection points must also be provided to land identified as an active reserve; • Planting of trees and shrubs; • Provision of vehicular exclusion devices (fence, bollards, or other suitable method); • Maintenance access points; 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 7).
R91	Sports reserves must be vested in the relevant authority in the following condition: • free from surface and protruding rocks and structures • reasonably graded and/or top soiled to create a safe and regular surface, with a maximum 1:6 gradient • bare, patchy and newly graded areas seeded, top-dressed with drought resistant grass.

3.8.4 Buffers, Noise Amenity Area & Measurement Length

The PSP responds to the current operation of the Woody Hill Quarry and allows for its future expansion. Buffers for noise, sensitive use and blasting are shown on Plan 15, calculated from the maximum possible extent of expansion, given known constraints. The Phillips Quarry has also been shown on Plan 15 as its future operation impacts the development of residential land in the south east of the PSP area. These two quarries are of strategic importance to the State and the earth resources in these locations need to be protected and utilised. These resources take precedence over private development and the buffers shown on Plan 15 are intended to ensure the quarries can operate while protecting amenity and human health and safety.

The Wollert Sewerage Treatment Plant (STP) has also been shown on Plan 15. While it sits outside the PSP area and is only in early stages of planning, when constructed it will have an odour buffer of 613m (directional) and this impacts the PSP area. Sensitive uses within the odour buffer are not permitted.

GUIDELINES	
G67	Extractive operations should be managed within the blast restriction area where shown on Plan 15, to reduce the extent of the blasting buffer in the vicinity of the proposed water treatment facility.

Plan 15 - Buffers, Noise Amenity Area and Measurement Length

Shenstone Park Precinct Structure Plan

1:20,000 @A4

0 0.25 0.5 0.75 1 km

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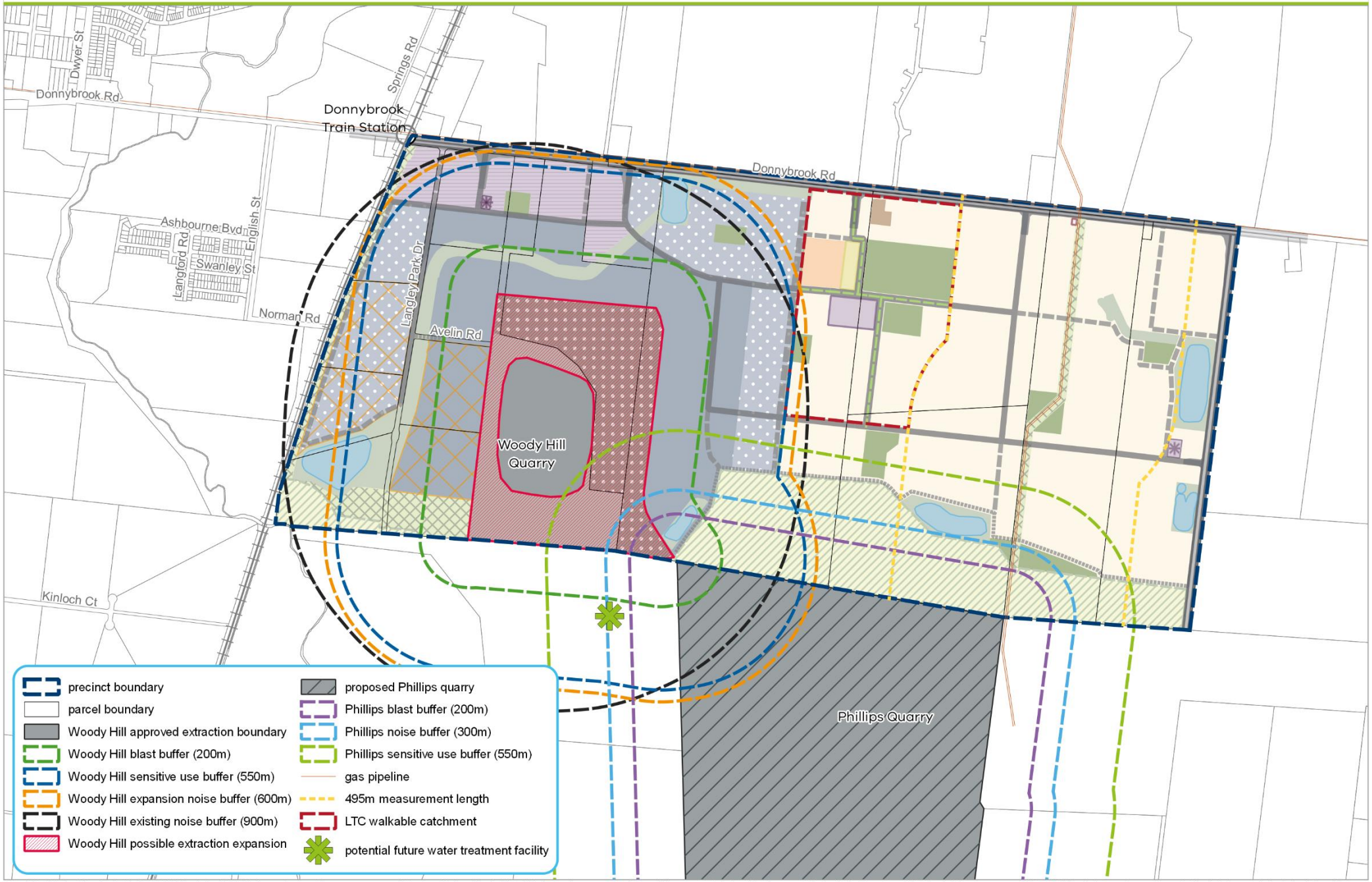


4 APPENDICES

4.1 Parcel Specific Land Budget

PSP PROPERTY ID	TOTAL AREA (HECTARES)	Transport		Community & Education			Open Space						Other		Total Net Developable Area (Hectares)	Net Developable Area % of Property
		Arterial Road				Uncredited Open Space					Credited Open Space					
		Arterial Road - Public Acquisition Overlay	Arterial Road - New / Widening / Intersection Flaring (ICP land)	Government School	ICP Community Facilities	Conservation Reserve	Waterway and Drainage Reserve	Heritage Reserve - Post Contact	Utilities Easements - Public Acquisition Overlay	Utilities Easements	Local Sports Reserve (ICP land)	Local Network Park (ICP land)	Quarry (including existing and expanded area)	Utilities Sub-stations / facilities (acquired by relevant authority)		
1	15.05	-	-	-	-	5.01	6.93	-	0.25	2.85	-	-	-	-	0.00	0.00%
2	12.19	-	-	-	-	-	2.10	-	1.03	-	-	-	-	-	9.05	74.30%
3	12.15	-	-	-	-	-	-	-	0.98	-	-	-	-	-	11.17	91.97%
4	12.25	0.01	0.01	-	-	-	-	-	1.61	-	-	-	-	-	10.63	86.79%
5	12.20	-	0.71	-	-	-	0.48	-	-	-	-	0.21	-	-	10.80	88.51%
6	12.11	-	-	-	-	-	3.09	-	-	-	-	-	-	-	9.02	74.47%
7	12.10	-	-	-	-	-	2.27	-	-	-	-	-	-	-	9.83	81.22%
8	15.85	-	-	-	-	0.29	0.67	-	-	5.73	-	-	-	-	9.15	57.73%
9	48.37	0.00	0.02	-	-	-	0.33	-	-	-	-	0.89	42.63	-	4.50	9.29%

10	40.76	0.01	0.02	-	-	-	2.15	-	-	-	-	-	22.43	-	16.15	39.62%
11	12.26	-	0.85	-	-	-	1.50	-	-	-	-	-	-	-	9.91	80.86%
12-R	28.78	-	1.00	3.50	1.20	-	0.03	-	-	-	-	1.00	-	-	25.38	79.02%
12-E	118.76	1.05	0.26	-	-	24.28	6.72	-	-	-	-	1.81	10.29	-	71.00	61.52%
13	66.23	0.53	1.32	-	-	-	-	0.88	-	-	8.45	2.19	-	-	52.86	79.82%
14	60.76	-	-	-	-	26.72	4.65	-	-	-	-	2.78	-	-	26.61	43.80%
15	67.35	0.76	0.08	-	-	7.83	1.18	-	-	5.30	-	4.18	-	0.05	47.98	71.24%
16	0.30	0.08	-	-	-	-	-	-	-	-	-	-	-	-	0.22	73.45%
17	67.38	0.28	6.66	-	-	6.57	9.02	-	-	-	-	1.08	-	-	43.78	64.98%
SUB-TOTAL	**614.86**	2.72	10.92	3.50	1.20	70.70	41.14	0.88	3.86	13.89	8.45	14.14	75.35	0.05	368.06	59.86%

4.2 Local Town Centre – Draft Guidelines

4.2.1 Key Design Elements

- Community Centre to provide a prominent built form to address the North-South Connector Street and serve as a civic land mark entrance into the local town centre.
- Design of housing central to the retail, schools and sports reserves should continue an active built form presence to contribute to centre activation and passive surveillance at all times of day.
- Provision of the shared pedestrian zone between the Community Facility and Retail to enhance pedestrian safety for parents and children crossing between the two uses.
- Encourage high density residential/office uses at upper storeys along main streets to provide vitality and diversity.
- All buildings to have main entrance/access point to the street.
- *Sports Reserve to include facilities for soccer and pavilion.

* The ultimate sports use and configuration of playing fields will be determined at a future planning permit stage. (Plan 06 – Shenstone Park Local Town Centre only indicatively shows that the Sports Reserve would have a sufficient area to accommodate two sports ovals and two rectangular fields.)

4.2.2 Local Town Centre Key Design Principles

LOCAL TOWN CENTRES	
PRINCIPLE 01 Provide the Shenstone Park neighbourhood with a centrally located viable Local Town Centre as a focus of the community.	• Deliver a fine-grained distribution pattern of highly accessible Local Town Centres generally on a scale of one Local Town Centre for every neighbourhood of 8,000 to 10,000 people. • Locate Local Town Centres with a distribution pattern of around one Local Town Centre for every square mile (2.58km^2) of residential development (taking into account adjoining precincts). • Deliver a network of economically viable Local Town Centres including a supermarket and supporting competitive local shopping business, medical, leisure, recreation and community needs while allowing opportunities for local specialisation. • Ensure that 80-90% of households are within a 1km walkable catchment of the Local Town Centre. • Locate the Local Town Centre in an attractive setting and incorporate natural or cultural landscape features such creeks and waterways, linear open space, pedestrian and cycle links and areas of high aesthetic value. • The design of the Local Town Centre should respect existing views and vistas to and from the Local Town Centre location.
PRINCIPLE 02 Locate the Local Town Centre on a connector street intersection with access to arterial road and transit stop.	• Locate the Local Town Centre on a connector intersection and ensure that the Local Town Centre is central to the residential catchment that it services while optimising opportunities for passing trade. • Locate the Local Town Centre with transit stops to benefit the Local Town Centre and to offer convenience for public transport passengers. • Other Local Town Centre locations may be considered where the location results in the Local Town Centre being central to the residential catchment that it serves and/or the location incorporates natural or cultural landscape features such as rivers and creeks, tree rows, topographic features or other heritage structures which assist in creating a sense of place.
PRINCIPLE 03 Provide a full range of local community and other facilities including a supermarket, shops, medical and recreation uses.	• Land uses should be located generally in accordance with the locations and general land use terms identified on the Local Town Centre Concept Plan. • The design of the Local Town Centre should facilitate development with a high degree of community interaction and provide a vibrant and viable mix of retail, recreation and community facilities. • The creation of land use precincts within the centre is encouraged to facilitate the clustering of uses. For example, a 'medical precinct' where similar or synergistic uses should be sited together to promote stronger trading patterns. • The design of the Local Town 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. • The Local Town Centre should generally be anchored by one full line supermarket and supported by specialty stores unless otherwise noted on the Local Town Centre Concept Plan.

	• Supermarkets and other commercial or community anchors or secondary anchors within the Local Town Centre should be located diagonally opposite one another across the main street and/or town square to promote desire lines that maximise pedestrian movement within the public realm. • A small access mall that addresses a supermarket/other 'large box uses' may be considered as part of the overall design. Such access malls may have a limited number of internalised shops. The primary access to the mall should be from the main street and/or the town square. • Active building frontages should address the main street and town square to maximise exposure to passing trade and promote pedestrian interaction. • Shopfronts should have varying widths and floor space areas to promote a diversity of trading opportunities throughout the Local Town Centre. • Flexible floor spaces (including floor to ceiling heights) should be incorporated into building design to enable localised commercial uses to locate amongst the activity of the Local Town Centre. • Mixed Use precincts should provide retail and/or office at ground level, and office, commercial and residential above ground level. • Childcare, medical centres and specialised accommodation (e.g. aged care/nursing home, student accommodation, and serviced apartments) should be located within the Local Town Centre and at the edge of the Local Town Centre to contribute to the activity of the centre and so these uses are close to the services offered by the centre. • 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 accommodate flexible use s and allow for long term development opportunities. • Public toilets should be provided in locations which are safe and accessible and within the managed area of the property.
PRINCIPLE 04 Focus on a public space as the centre of community life.	• A public space which acts as the central meeting place within the Local Town Centre must be provided. This public space may take the form of a town square, town park, public plaza space, public market place or a similar locally responsive option. • The public space should be located in a position where the key uses of the Local Town Centre are directly focused on this public space to ensure that it is a dynamic and activated space. • The public space should be designed to function as the identifiable 'centre' or 'heart' with a distinctive local character for both the Local Town Centre and the broader residential catchment. • The public space should be designed as a flexible and adaptable space so that a range of uses can occur within this space at any one time. Such uses may include people accessing their daily shopping and business needs as well as providing a space where social interaction, relaxation, celebrations and temporary uses (such as stalls, exhibitions and markets) can occur. • The public space should be well integrated with pedestrian and cycle links around and through the Local Town Centre so that the public space acts as a 'gateway' to the activity of the centre.

	• The main public space or town square within the Local Town Centre should have a minimum area of 500m^2. Smaller public spaces which are integrated within the built form design, are surrounded by active frontages and facilitate high levels of pedestrian movement are also encouraged. • Footpath widths within and around the public space as well as along the main street should be sufficient to provide for pedestrian and mobility access as well as provide for outdoor dining and smaller gathering spaces.
PRINCIPLE 05 Integrate local employment and service opportunities in a business-friendly environment.	• A variety of employment and business opportunities should be planned through the provision of a broad mix of land uses and commercial activities. • A range of options and locations for office-based businesses should be provided within the Local Town Centre. • Services and facilities to support home based and smaller businesses are encouraged within the Local Town Centre. • Appropriate locations for small office/home office ('SOHO') housing options which maximise the access and exposure to the activity of the Local Town Centre should be considered as part of the design process.
PRINCIPLE 06 Include a range of medium and high-density housing and other forms of residential uses within and surrounding the Local Town Centre.	• Medium and high-density housing in and around the Local Town Centre is required to provide passive surveillance, contribute to the life of the centre and to maximise the amenity of the centre. • Medium and high-density housing should establish in locations of high amenity around the Local Town Centre and be connected to the activity of the Local Town Centre through strong pedestrian and cycle links. • A range of housing types for a cross section of the community (such as retirement living) should be included in and around the Local Town Centre. • Specialised accommodation (such as aged/nursing care, student accommodation and serviced apartments) is encouraged at the edge of the Local Town Centre with strong pedestrian and cycle links to the central activity area of the Town Centre. • The Local Town Centre design should avoid potential land use conflicts between residential and commercial uses by focusing on retail operations on the main street and around the town square and locating residential uses predominantly at the edge of the Local Town Centre and/or on upper levels. • Refer to the Small Lot Housing Code for further information about housing requirements for small lots around Local Town Centres.
PRINCIPLE 07 Design the Local Town Centre to be pedestrian friendly and accessible by all modes including public transport, while enabling private vehicle access.	• The Local Town 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. • The Local Town Centre should provide a permeable network of streets, walkways and public spaces that provide linkages throughout the centre and designated pedestrian crossing points. • The main street should be designed to comply with the relevant cross sections found within the Precinct Structure Plan – Appendix 4.4. • A speed environment of 40km/h or less should be designed for the length of the main street.

	• Public transport infrastructure/facilities should be planned for commuter friendly/convenient locations within the Local Town Centre. • Bus stops should be provided in accordance with the Department of Transport's guidance for public transport and land use 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. • Supermarkets and other 'large format' buildings should not impede on the movement of people around the Local Town Centre. • Key buildings within the Local Town Centre should be located to encourage pedestrian movement along the length of the street through public spaces.

4.3 Local Convenience Centre – Design Guidelines

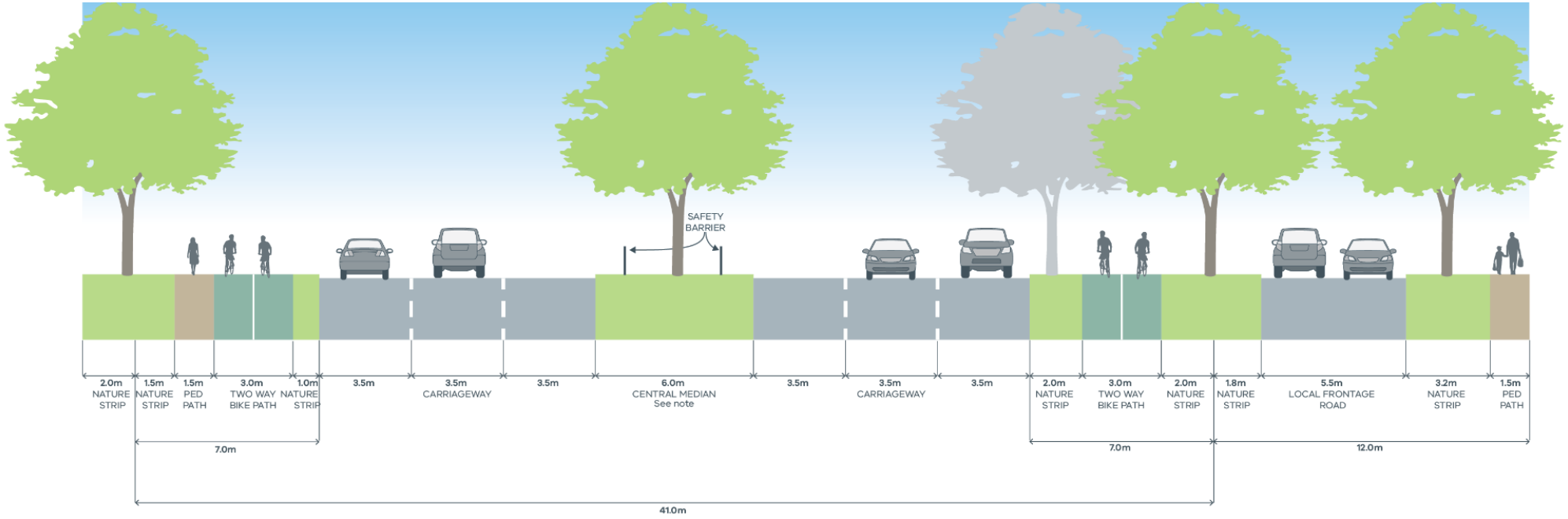
4.3.1 Local Convenience Centre Key Design Principles

LOCAL CONVENIENCE CENTRES	
PRINCIPLE 01 Design the Local Convenience Centre to be pedestrian friendly and accessible by all modes of 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 Department of Transport's guidance for public transport and land use development, to the satisfaction of the Department of Transport. • 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 angel 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.
PRINCIPLE 02 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 property boundary. • 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. • 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
PRINCIPLE 03 Promote localisation, sustainability and adaptability.	• 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. • 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. • 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; 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.

4.4 Streetscape Cross Sections

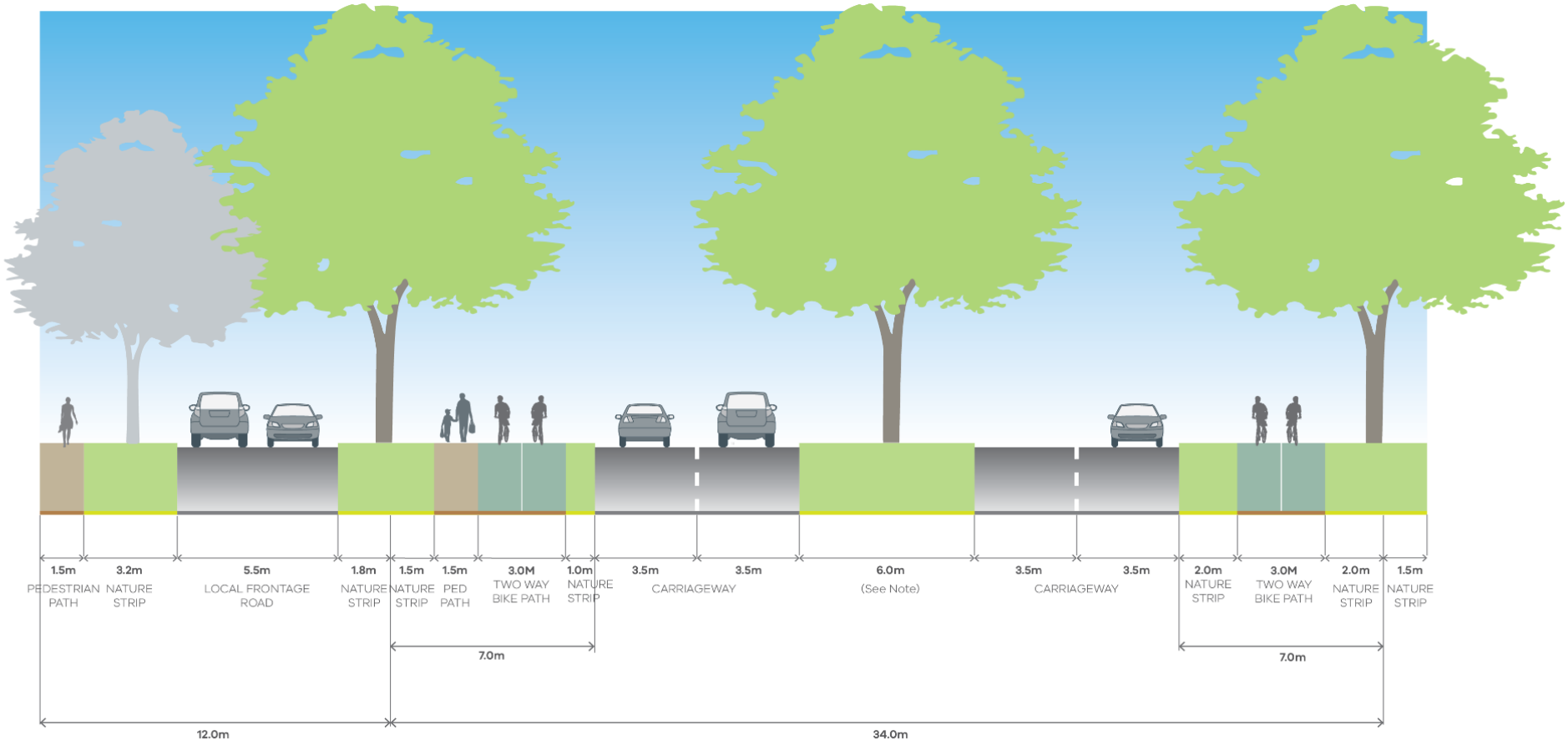


NOTES:

- Includes typical residential interface both sides
- Minimum street tree mature height 15 metres
- Kerbs for arterial carriageways are to be SM2 Semi-Mountable Kerb, and local frontage roads are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas (April 2011)
- See VicRoads Tree Planting Policy. Large trees within the road reserve to be protected by safety barriers, else small tree <100mm ø trunk at double spacing)

Primary Arterial Road 6 lane (41.0m)
Donnybrook Road

Victorian Planning Authority

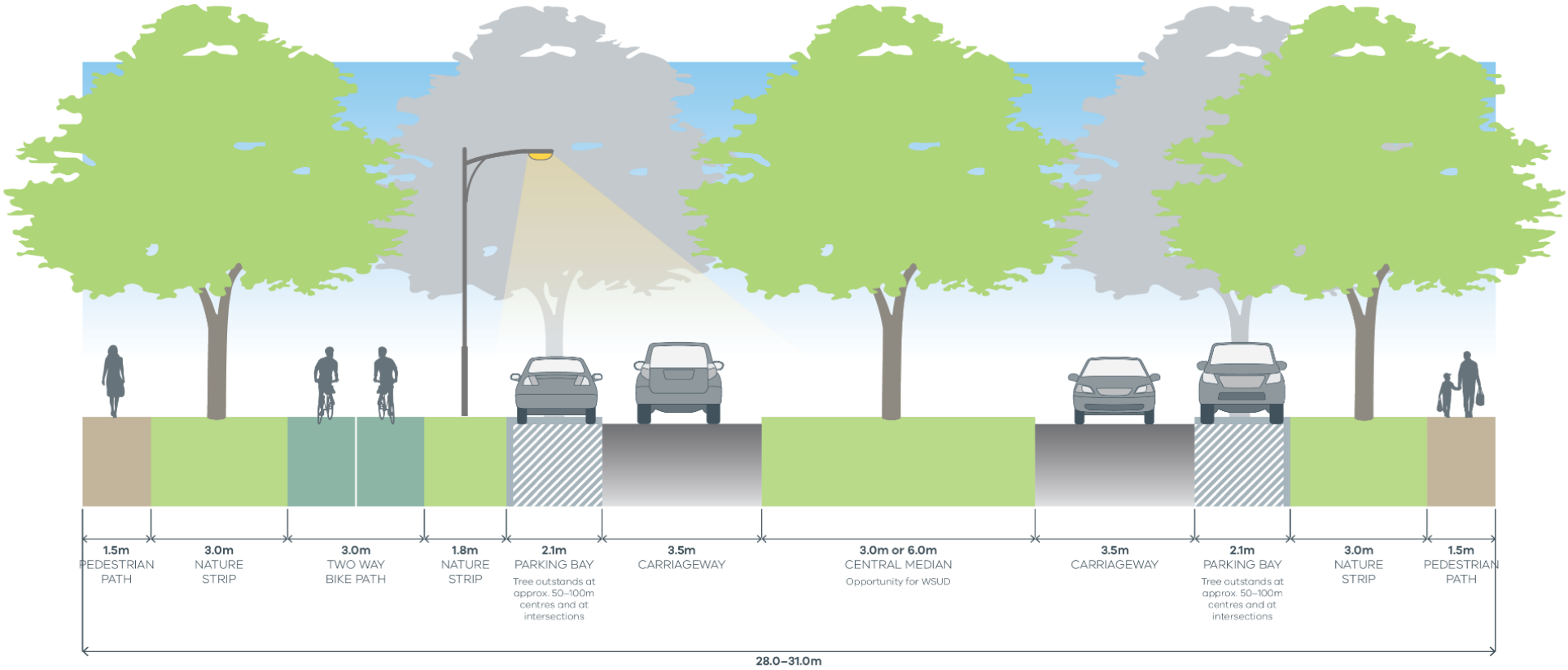


NOTES:

- Includes typical residential interface on west side of the existing road reservation
- Minimum street tree mature height 15 metres
- Kerbs for arterial carriageways are to be SM2 Semi-Mountable Kerb, and local frontage roads are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas (April 2011)
- See VicRoads Tree Planting Policy. Large trees within the road reserve to be protected by safety barriers, else small tree <100mm ø trunk at double spacing)
- where a local frontage road is provided, cross section may vary to the satisfaction of the responsible authority

Secondary Arterial Road 4 lane (34.0m)
Koukoura Drive - Ultimate

Victorian Planning Authority

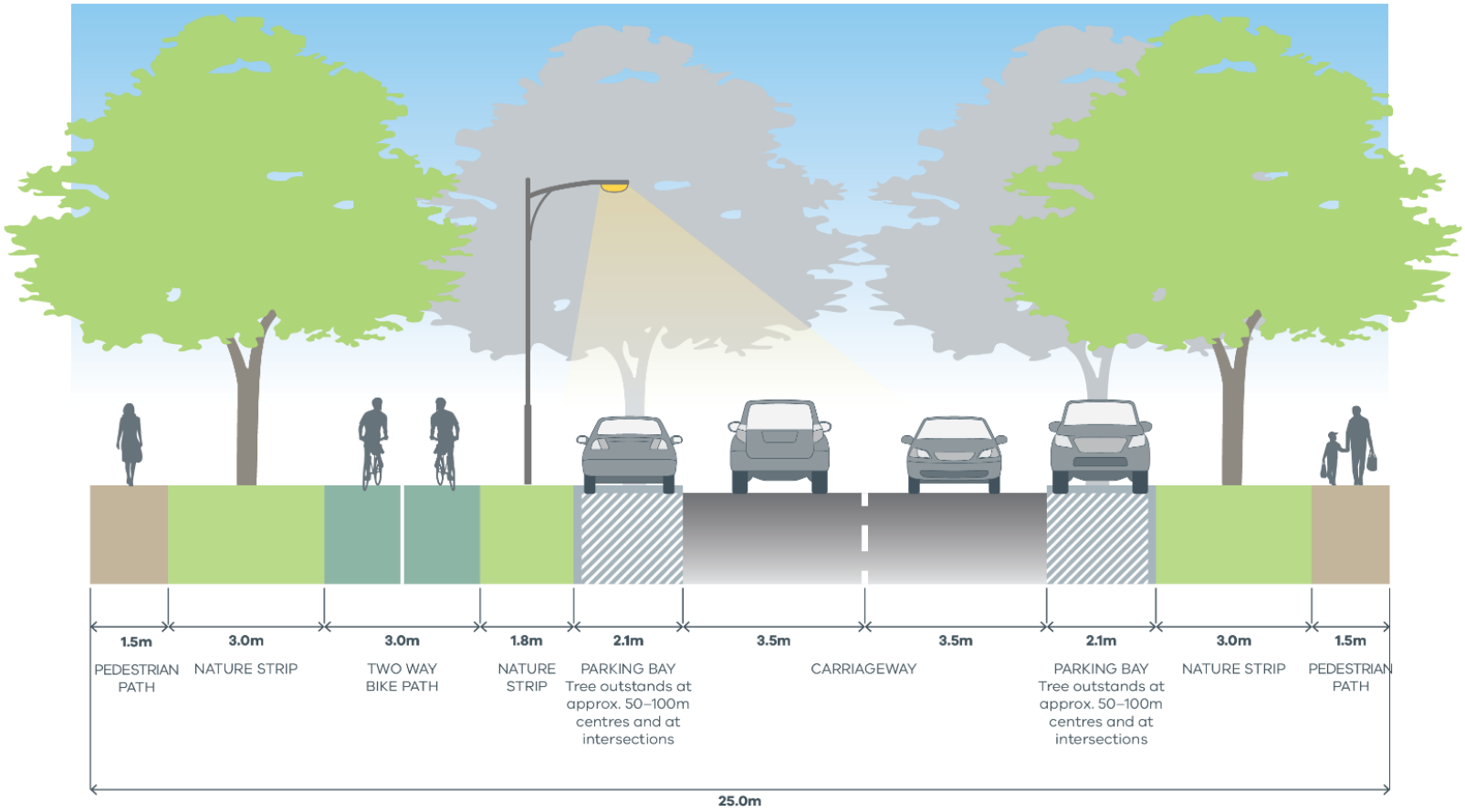


NOTES:

- 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.
- 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 abut open space with the consent of the responsible authority.

Connector Street (28.0–31.0m)
Boulevard

Victorian Planning Authority

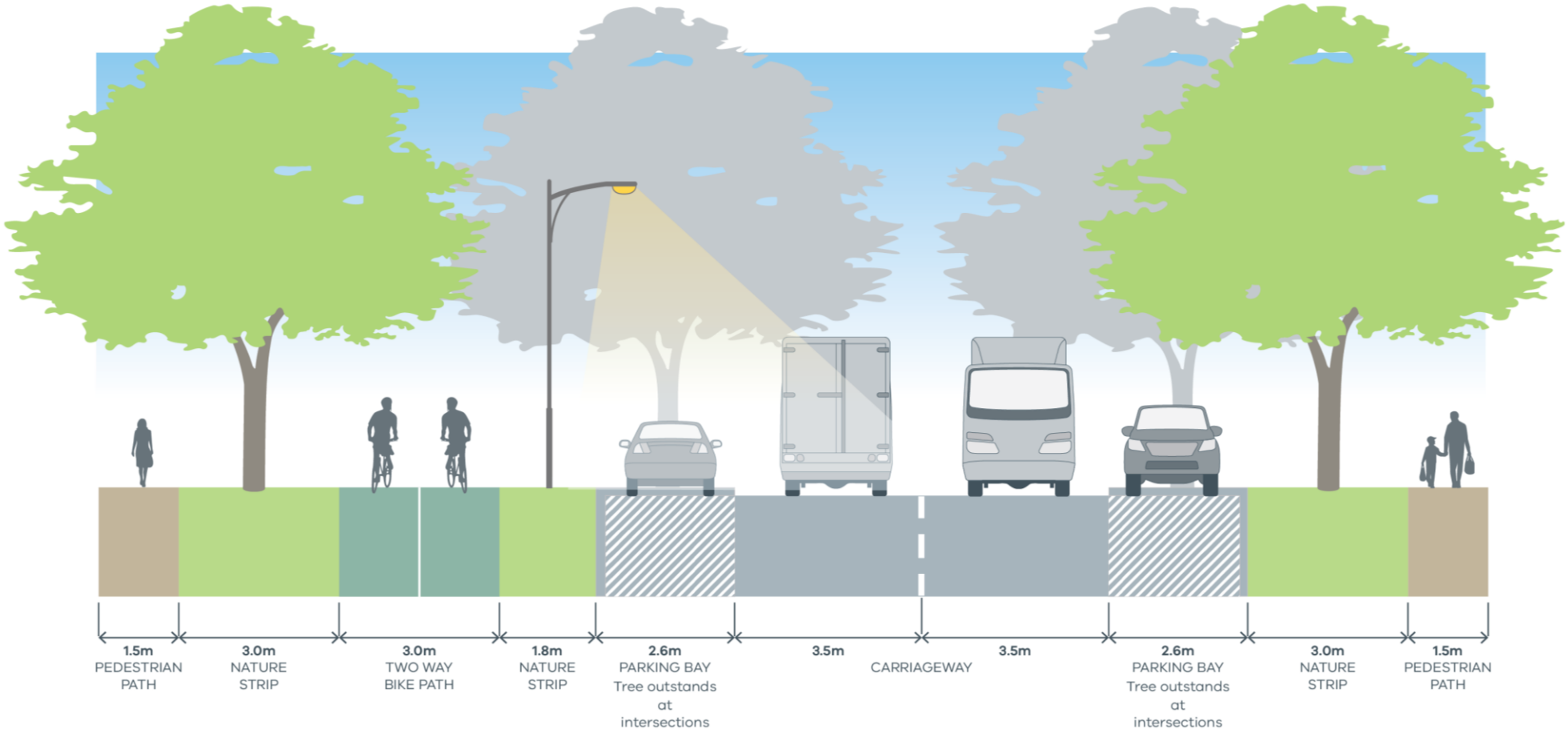


NOTES:

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

Connector Street (25.0m)
Residential

Victorian Planning Authority

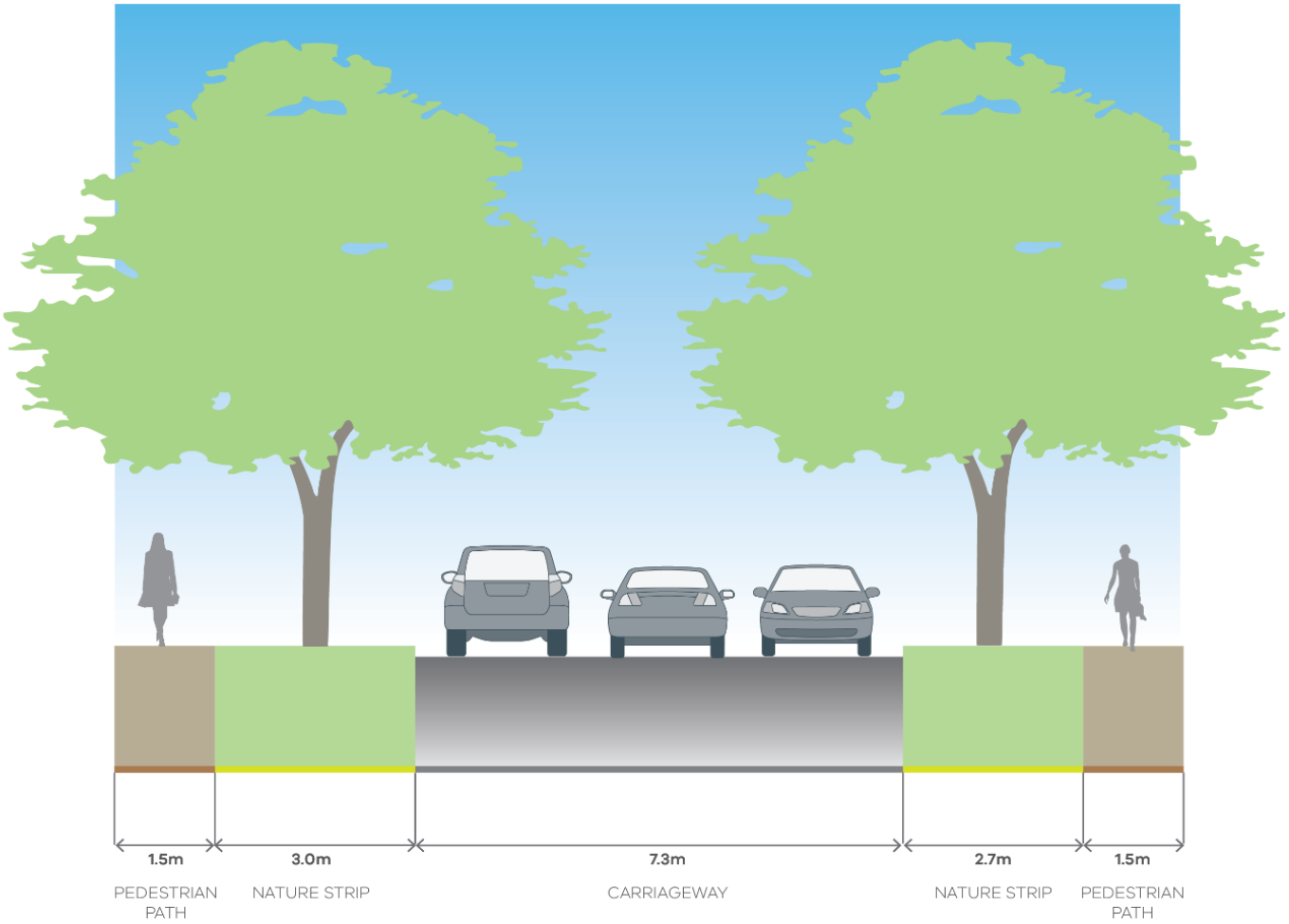


NOTES:

- Minimum street tree mature height 15 metres.
- All kerbs are to be B2 Barrier Kerb.
- Where roads abut thoroughfares, grassed nature strip should be replaced with pavement. Canopy tree planting must in incorporated into any additional pavement.
- Verge widths may be reduced where roads abut 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.

Connector Street (26.0m)
Industrial

Victorian Planning Authority

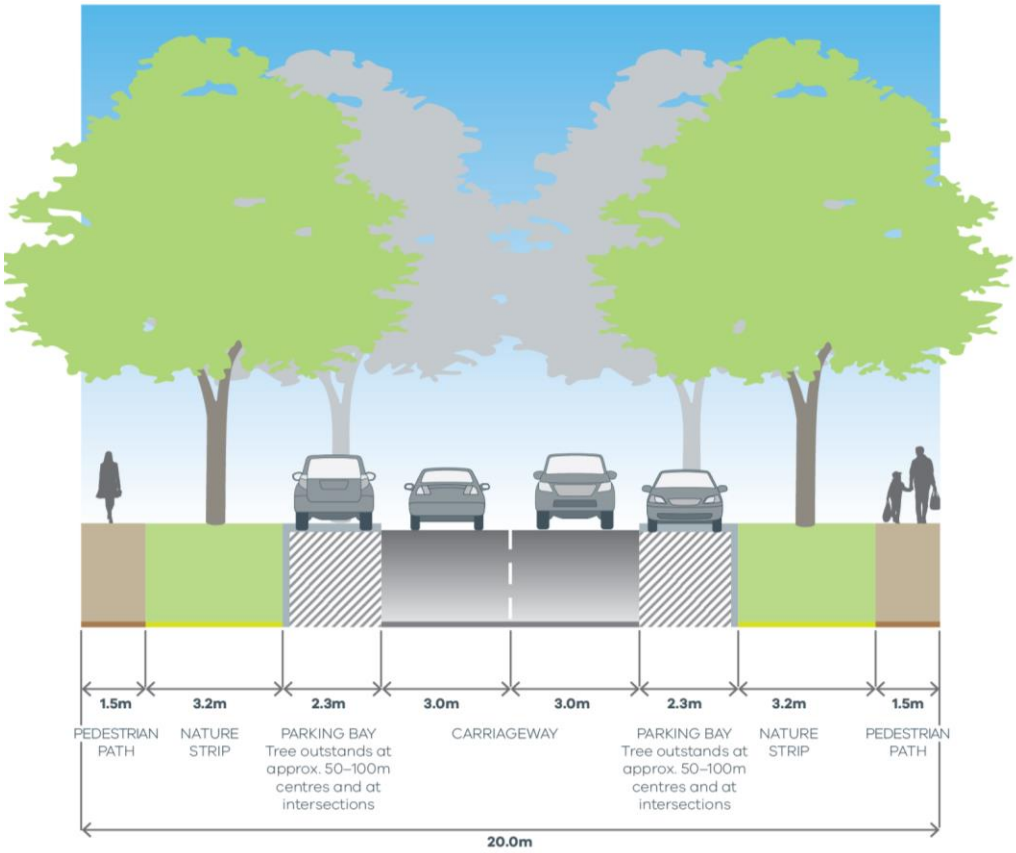


NOTES:

- Minimum street tree mature height 12 metres
- All kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas (April 2011)
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority.

Local Access Street Level 1 (16.0m)

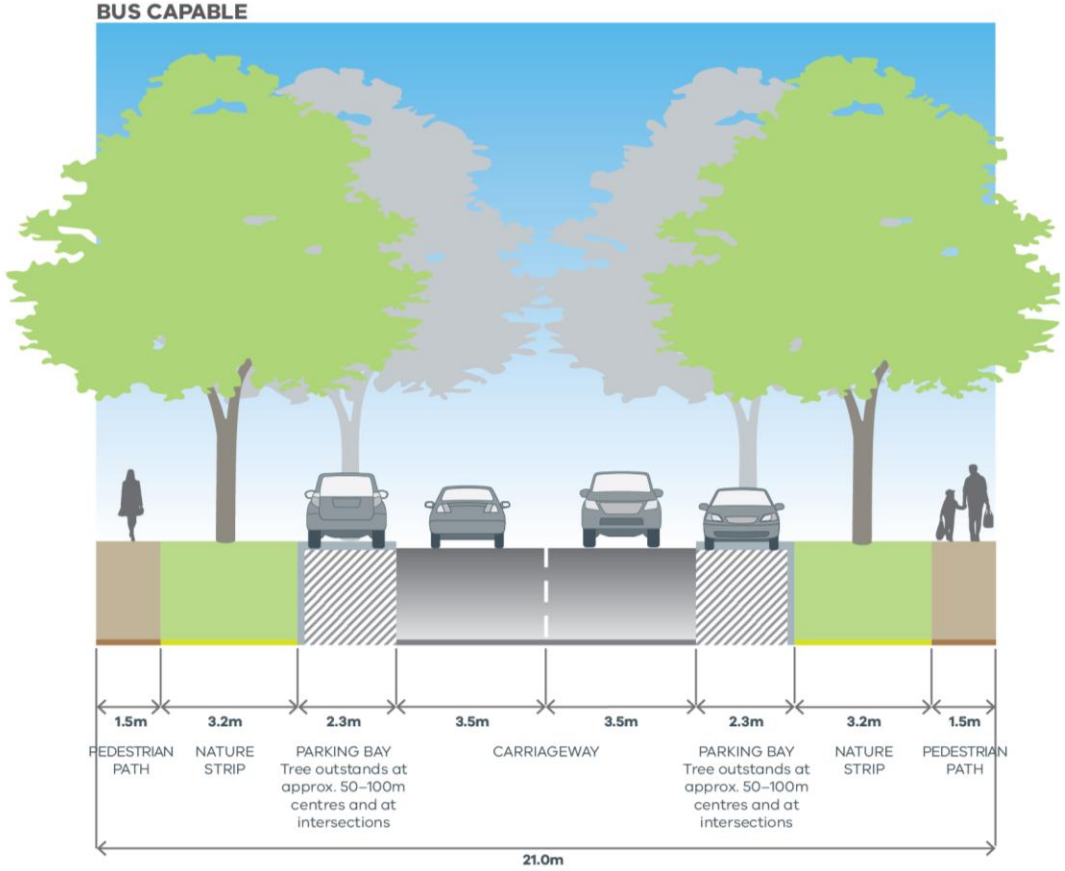
Victorian Planning Authority



NOTES:

- Minimum street tree mature height 12 metres
- All kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas (April 2011)
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority.

BUS CAPABLE

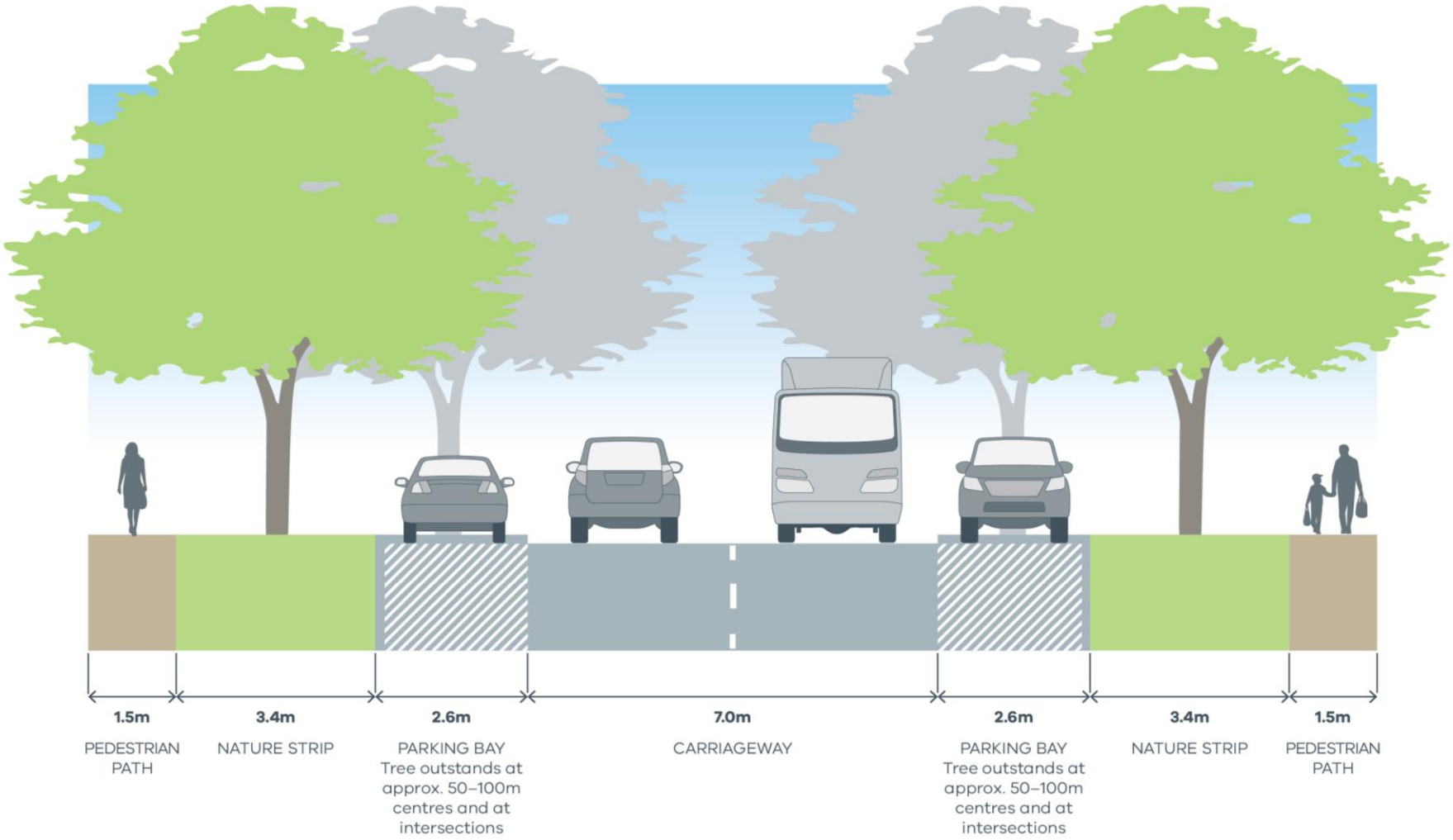


NOTES:

- The above cross section applies to Local Access Streets required to accomodate future bus movements.

Local Access Street Level 2 (20 - 21m)

Victorian Planning Authority

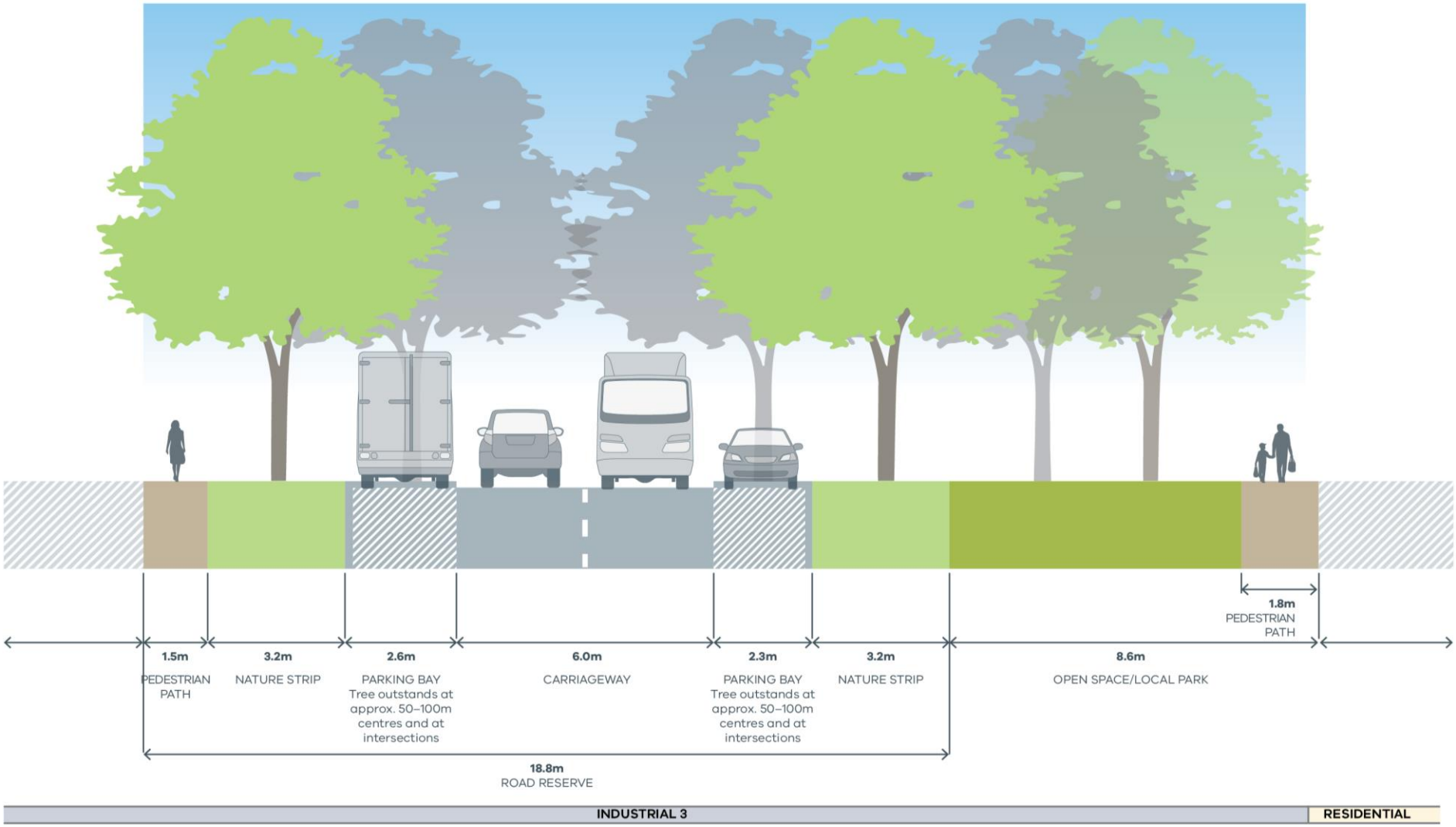


NOTES:

- Minimum street tree mature height 12 metres
- All kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas (April 2011)
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority.
- The above cross section applies to local access street required in the Employment area (Industry, Business and Light Industry area)

Local Access Street Level 2 (22.0m)
Industrial

Victorian Planning Authority

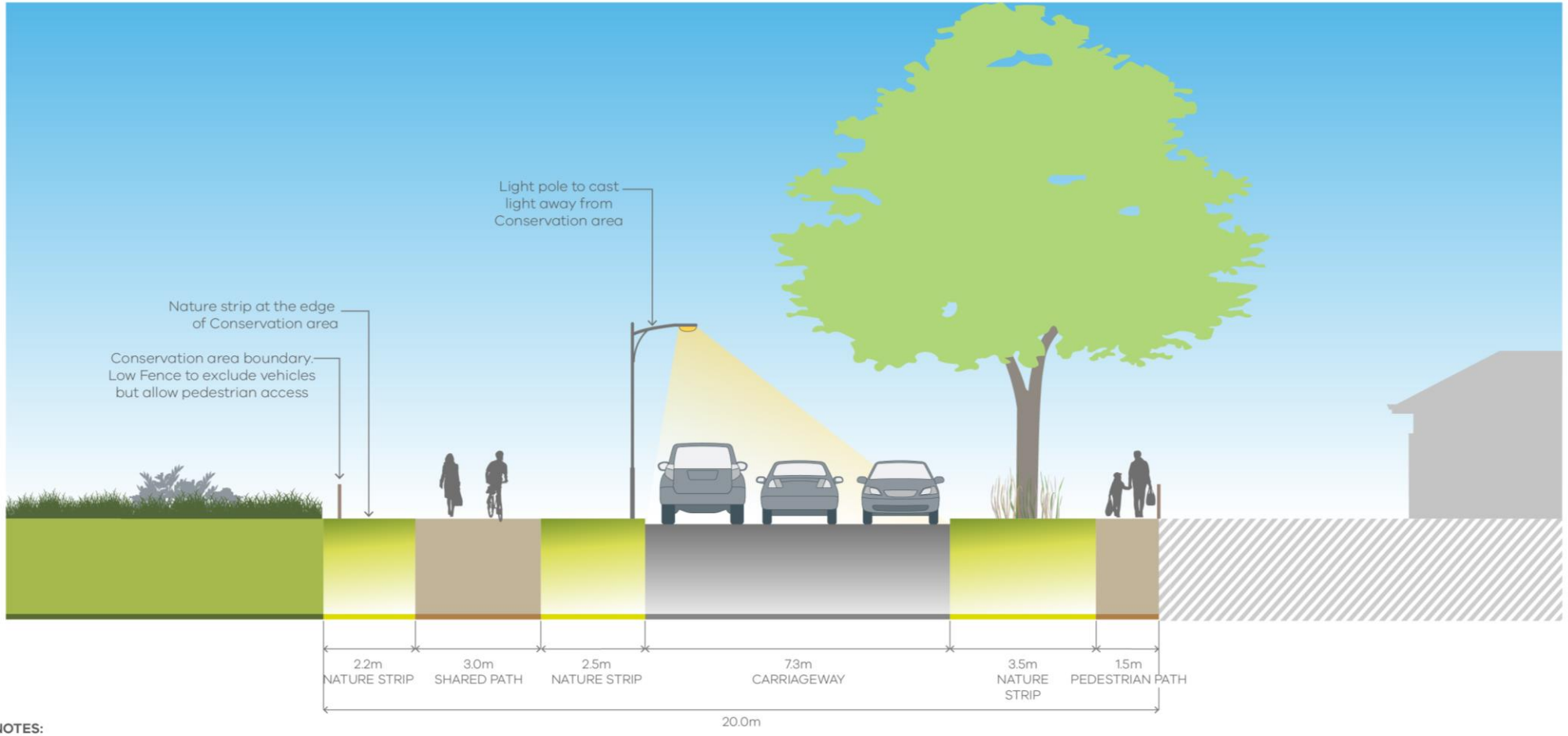


NOTES:

- 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.

Local Access Street Level 2 (18.8m)
Special Industrial - Residential Interface

Victorian Planning Authority

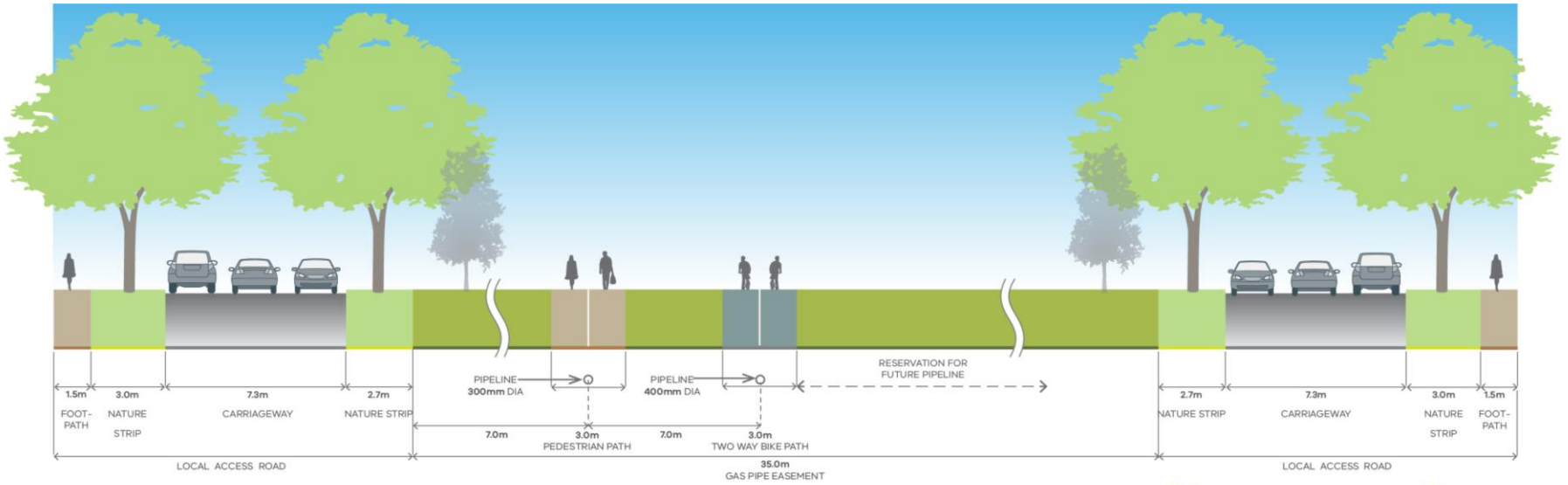


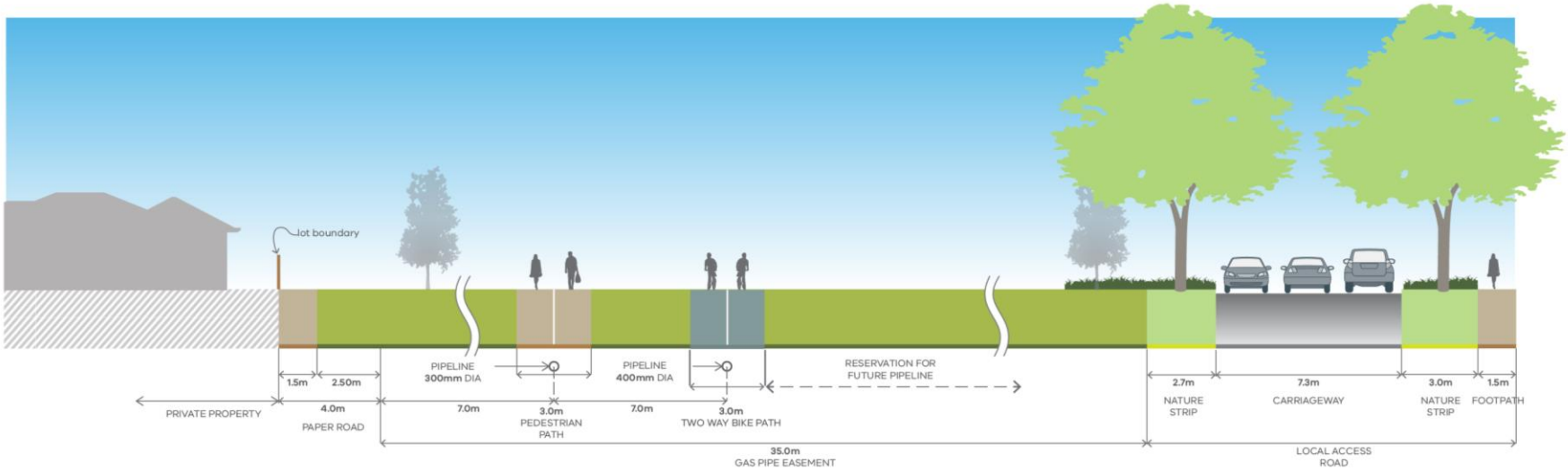
NOTES:

- All trees located within 10m of the conservation area boundary must be of local provenance.
- no trees are to be located within 10m of the conservation area boundary.
- All properties are to be oriented the front the conservation area.
- All necessary fire breaks must be located outside of the BCS Conservation Areas.
- All private propery boundaries to be setback by at least 20 metres from the BCS Conservation area boundary.
- Where the road reserve does not directly abutt the conservation area, the shared path maybe located in the open space or drainage reserve.

Local Access Street (14.5 - 20.0m)
Conservation Interface BCS Area 28

Victorian Planning Authority



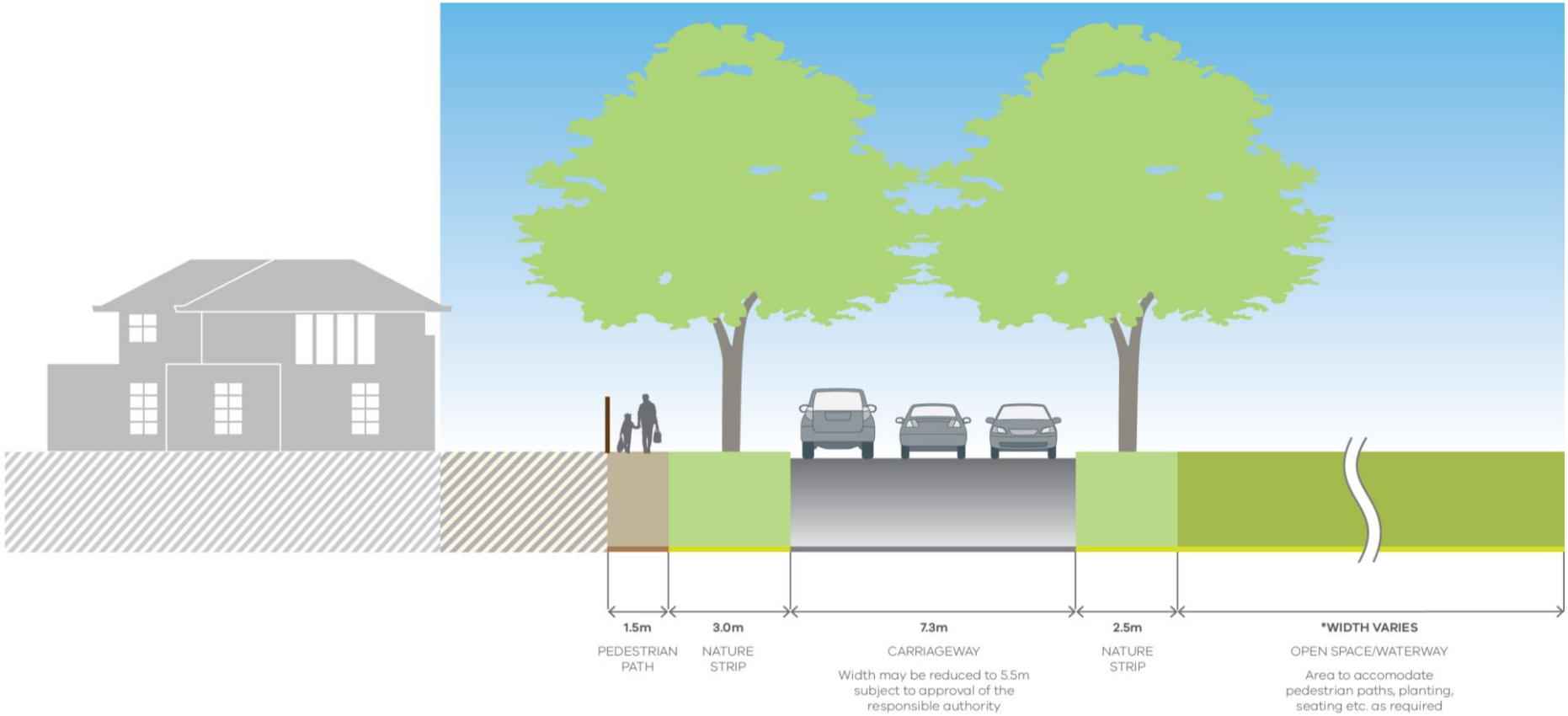


NOTES:

- No large tree or shrub is located within 3 metres of the high pressure gas transmission pipeline. Please note that this three metre separation must be maintained throughout the trees entire life cycle.
- Where vegetation is proposed to be planted within three metres of the pipeline alignment, it must be shallow rooted and not exceed 0.5m in height.
- Any planting of vegetation within or adjacent to the easement must ensure line of sight between high pressure gas pipeline awareness markers.

APA Gas pipeline easement Interface

Victorian Planning Authority

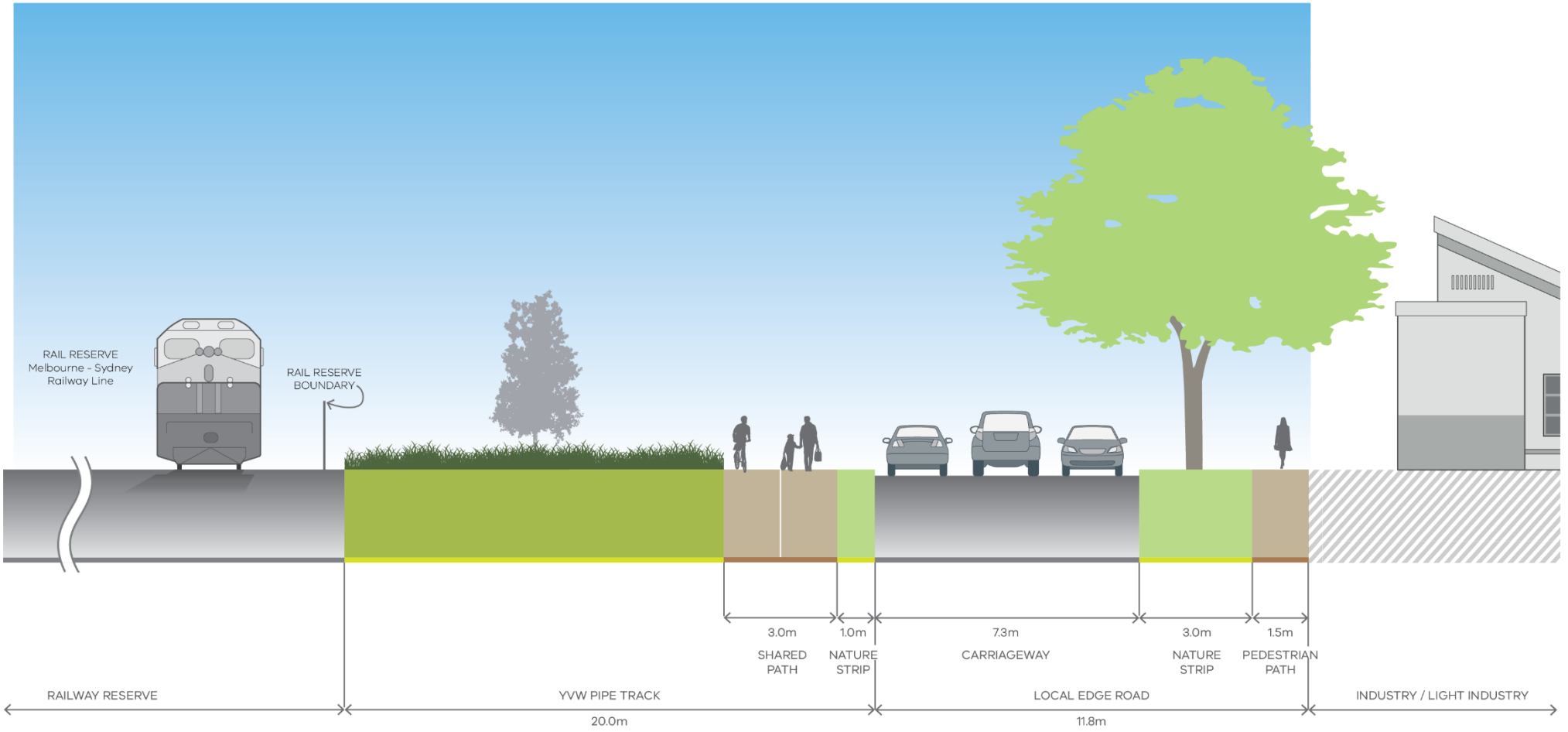


NOTES:

- Where active interfaces to waterways are not provided, waterway corrdior widths will be increased in order to ensure maintenance access, to the satisfaction of Melbourne Water
- Where a 2.5m nature strip adjacent to the open space/waterway is not needed for tree planting and/or provision of services, the width may be reduced, to the satisfaction of the Responsible Authority
- 3m wide nature strip may be reduced to the satisfaction of the Responsible Authority and subject to servicing infrastructure.

Waterways & Open Space Interface

Victorian Planning Authority



Railway Interface - Industrial Frontage

Victorian Planning Authority

4.5 Service Placement Guidelines

STANDARD ROAD CROSS SECTIONS

The Engineering Design and Construction Manual for Subdivision in Growth Areas outlines the 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 4.4.

NON-STANDARD ROAD CROSS SECTIONS

To achieve greater diversity of streetscape outcomes, which enhances character and amenity of these new urban areas, non-standard road cross sections are required. Nonstandard 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 (refer Appendix 4.4), however other non-standard outcomes are encouraged.

For non-standard road cross sections where service placement guidance contained within the Engineering Design and Construction Manual for Subdivision in Growth Areas is not applicable, the following service placement guidelines will apply.

General principles for service placement are as follows:

- 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; and
- Services must be placed outside of natural waterway corridors or on the outer edges of these corridors to avoid disturbance to existing waterway values.

4.6 Scattered Tree Retention in the City of Whittlesea

RETENTION AND PROTECTION OF EXISTING TREES

In addition to their heritage and environmental attributes, remnant and existing trees contribute significantly to the landscape amenity of an area and provide instant visual impact in new developments. Where possible, existing trees shall be retained, protected and incorporated into the design of new developments. The retention of juvenile trees is considered equally as important as the preservation of mature specimens.

The following guidelines apply, where appropriate, to the retention of scattered trees and may, where appropriate, be applied as conditions of planning permits.

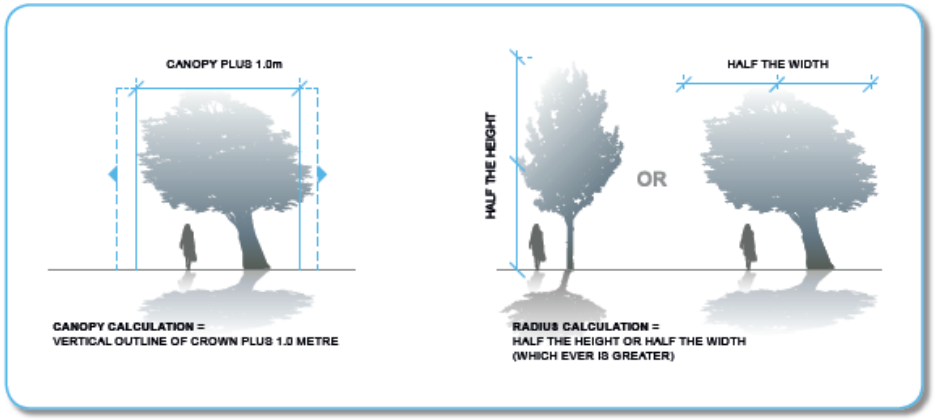
Tree Protection Zones are exclusion zones designed to protect all trees and stags identified for retention in a development.

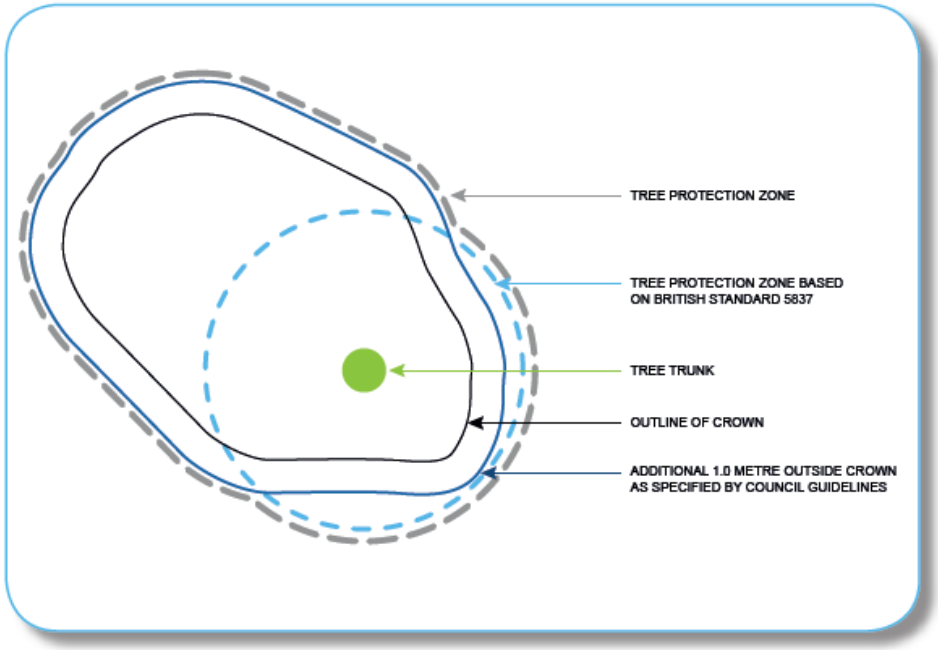
Street tree planting must use locally appropriate species and be consistent with any guidance provided on the relevant cross section within this Precinct Structure Plan within Appendix 4.4 unless otherwise approved by the responsible authority.

CALCULATING TREE PROTECTION ZONES

A Tree Protection Zone is defined by a circle or polygon, the centroid point of which is the centre point of the tree at ground level and whose radius is equal to half the height of the tree or half the crown width (whichever is the greatest) plus the tree canopy plus one metre (refer to SDL.2.01).

The Tree Protection Zone is to be determined by a consulting arborist to the satisfaction of the responsible authority.





AS4970-2009 TREE PROTECTION ZONES ON DEVELOPMENT SITES

The Tree Protection Zone as set out in this Appendix should be applied in preference to AS4970–2009 and/or any other tree protection zone standard/ calculation.

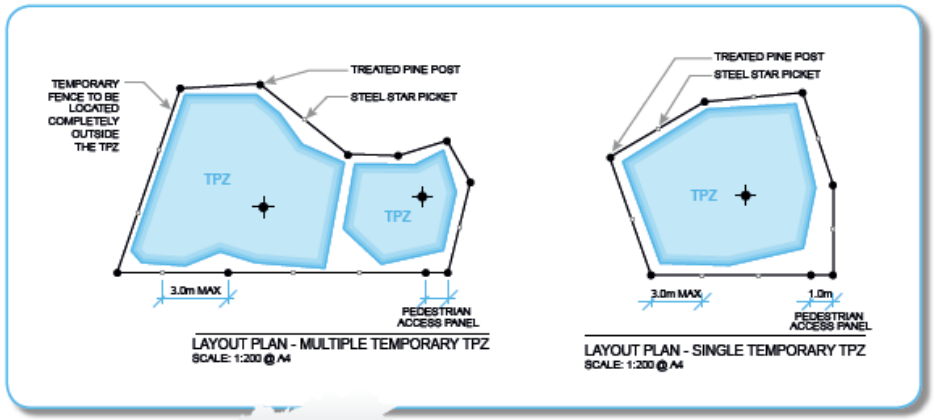
The Tree Protection Zone as set out in this Appendix considers both the ongoing health of the tree and has been developed to protect people, infrastructure and property (i.e. the shape considers the impact of falling limbs and delineates a pedestrian deterrent zone) whereas AS4970–2009 only considers the impact of works on the ongoing health of the tree.

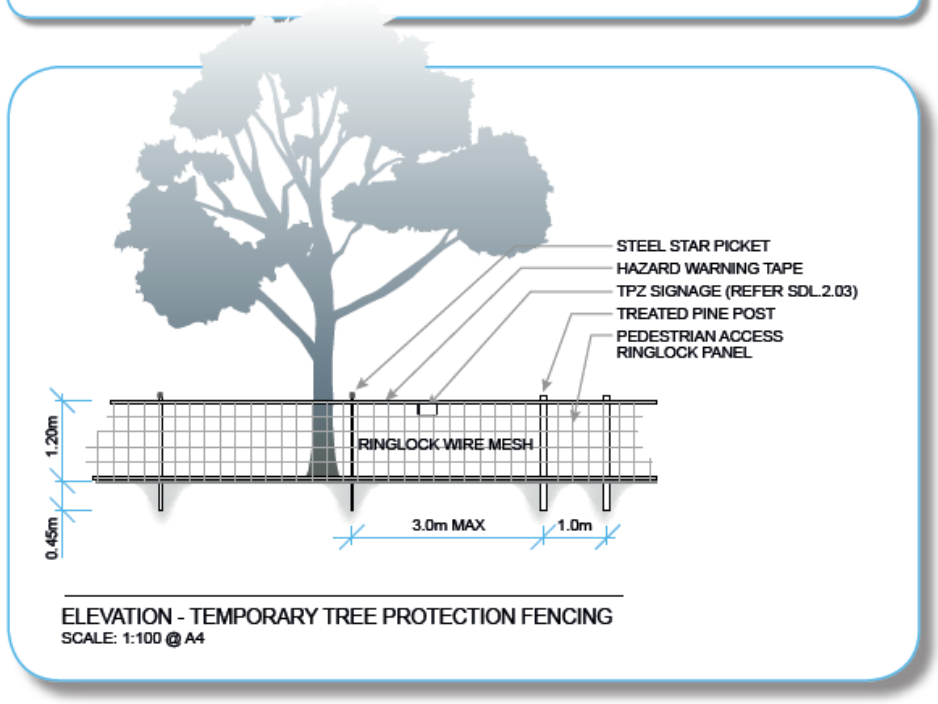
CONDITION: TREE PROTECTION ZONES

No works are to be undertaken within a Tree Protection Zone unless:

- Council determines that the works proposed within the Tree Protection Zone will not adversely impact on the tree or damage any part of the tree including its canopy, branches, trunk and roots; or
- Council determines that the variation is required to minimise risk to the public and/or property; or
- Council otherwise consents.

All works located in or in close proximity to a Tree Protection Zone must be supervised by a suitably qualified and experienced consulting arborist.





CONDITION: WORKS WITHIN TREE PROTECTION ZONES

With Council consent, works may encroach into a Tree Protection Zone, including (where appropriate):

- "no dig" footpaths, mulching and limited soft landscaping provided all footpaths are first pegged on site and confirmed by the responsible authority prior to construction and all works are undertaken by hand to minimise disturbance to surface roots; and

boring for services where all other alternative alignments have been investigated and determined unfeasible to the satisfaction of Council

CONDITION: DOCUMENTATION OF WORKS WITHIN TREE PROTECTION ZONES

All works proposed to occur within a Tree Protection Zone must be documented in the civil infrastructure drawings and landscape plans, or otherwise approved in writing, to the satisfaction of the responsible authority.

CONDITION: TREE PROTECTION ZONE FENCING

The Tree Protection Zone as calculated by the consulting arborist must be clearly identified on site by an appropriately qualified person.

Temporary Tree Protection Zone fencing (refer to SDL.2.02) must be erected around the perimeter of all Tree Protection Zones and must be inspected by and approved by Council prior to the commencement of any buildings, works or demolition.

Tree Protection Zone fencing must be to the satisfaction of the responsible authority and should comprise:

Treated pine posts with a minimum height of 1.8 metres (total post length) at every corner or at a maximum interval of 9.0 metres. These posts shall be sunk 450mm into the ground. Concrete may affect the soil pH level and shall not be used to secure posts;

- Treated pine stays shall be fixed to all corner posts;
- Steel star pickets with a minimum height of 1.8 metres (total picket length) shall be installed between the treated pine posts at a maximum interval of 3.0 metres. These pickets shall be sunk 450mm into the ground and shall include high visibility safety caps;
- Ring lock wire mesh fencing with a minimum height of 1.2 metres shall be securely fixed at each post with wire ties. The fence shall completely enclose the tree protection zone;
- High visibility hazard marker tape shall be securely fixed to the top of the ring lock mesh fencing with wire ties;
- Signage must be attached to the fence at regular intervals. Signage must read "TREE PROTECTION ZONE. NO ENTRY EXCEPT TO AUTHORISED PERSONNEL. FINES SHALL BE IMPOSED FOR REMOVAL OR DAMAGE OF FENCING AND/OR TREES" (refer to SDL.2.03).

Tree Protection Zone fencing must be regularly maintained and may only be removed after the landscape pre-commencement meeting has occurred or until such date as is approved by the responsible authority in writing.

With the agreement of the responsible authority, Tree Protection Zone fencing may not be required where permanent fencing is introduced prior to construction.

The specification of the permanent fencing must be to the satisfaction of Council. Prior to the removal of Tree Protection Zone fencing, any required landscape planting below existing tress must be completed. The landscape planning must be designed to act as a deterrent to pedestrian access into

the Tree Protection Zone, to minimise weed establishment, encourage habitat values and generally improve the visual amenity, to the satisfaction of the responsible authority.

Alternative permeable mulching (e.g. oversized gravel) below existing trees may be considered where appropriate.

CONDITION: ENHANCED GROWING ENVIRONMENT WITHIN TREE PROTECTION ZONES

The area within the Tree Protection Zone must be modified to enhance the growing conditions of the tree to help reduce stress or damage to the tree as a direct result of adjacent construction works to the satisfaction of the responsible authority.

Specific improvements may include one or a combination of the following:

- Ground surfaces within tree protection zones must be left intact and a Glyphosate based herbicide mixed in accordance with the manufacturer's recommendations used to remove any weeds or unwanted vegetation;
- The area within the exclusion zone must be mulched with wood chips to a depth of 150mm;
- If required or as directed by the responsible authority, trees are to receive supplementary water. The amount of water is to be determined by the consulting arborist and will be determined by the amount of disturbance the tree has sustained and/or climatic conditions; and
- Where severing of roots (greater than 50mm in diameter) is required directly adjacent to tree protection zones, the roots must be cleanly cut. Where possible this is to be completed at the beginning of the development of the site. Roots are not to be left exposed, they are to be back filled or covered with damp hessian.

The health of retained trees will be recorded prior to the commencement of works and periodically monitored by the consulting arborist and the responsible authority.

CONDITION: ENHANCED GROWING ENVIRONMENT WITHIN TREE PROTECTION ZONES

Prior to any works commencing in proximity to Tree Protection Zone, a consulting arborist must induct all personnel involved in construction in close proximity to and/or involved in works that may impact tree protection zone.

CONSTRUCTION PERSONNEL MUST BE ADVISED

- Unless authorised by the consulting arborist or as directed by the responsible authority, no party must enter into a tree protection zone or modify the tree protection zone fencing in any way;
- No buildings or works (including loading and unloading, storage of materials, dumping of waste, vehicle access and parking or other construction activity) are to occur in the tree protection zone without the written consent of and to the satisfaction of the responsible authority;
- The storing or disposal of chemicals or toxic material must not be undertaken within 10 metres of any exclusion zone. Where the slope of the land suggests that these materials may drain towards an exclusion zone, the storing or disposal of these materials is strictly forbidden; and

Any trees that are to be removed next to exclusion zones are to be done so manually under the direct supervision of the consulting arborist (ie. cut not pushed). Stumps are to be ground and not excavated to prevent damage to trees in close proximity.

CONDITION: ENHANCED GROWING ENVIRONMENT WITHIN TREE PROTECTION ZONES

In appropriate circumstances, a Tree Protection bond may be required as a condition of a permit for subdivision or development where existing trees are required to be retained. Such a condition may, as appropriate, including the following:

- Prior to commencement of the subdivision, a bank guarantee or other security to the satisfaction of the responsible authority for the total amount of $100,000.00 (or otherwise determined by the responsible authority) must be submitted to the responsible authority as security for the satisfactory observance of the conditions in relation to Tree Protection Zones within that subdivision;

- Upon completion of any buildings or subdivision works to the satisfaction of the responsible authority, the bank guarantee or other security will be returned to the person providing the bank guarantee or security; and

- Where the responsible authority determines that the tree covered by the Tree Protection Zone has been damaged as a result of buildings and works by the applicant or its contractors to an extent that it affects detrimentally the life, health and appearance of the tree or its contribution to the landscape, an amount from the security is to be paid by the developer for the purchase of trees for planting on the land or the pruning or other arboricultural works to rehabilitate and improve existing trees, all to the satisfaction of the responsible authority.

CONDITION: HAZARD REDUCTION PRUNING

Prior to the issue of Practical Completion of the landscaping works, all trees that are to be retained must have hazard reduction pruning undertaken by a suitably qualified and experienced arborist to ensure the tree does not present an unreasonable risk. If necessary, pruning works shall include:

- Removal of all dead and diseased branches. Specifically, dead branches greater than 40mm in diameter (measured at the base of the branch) shall be removed from the canopy unless they contain hollows that are clearly being used for habitat. Due care shall be given to ensure the integrity of the tree as habitat for native fauna is not compromised (larger material shall be left on site for its habitat value);

- Weight reduction and canopy thinning (especially for branches overhanging trafficable areas and fixed infrastructure). No live branches greater than 200 mm in diameter shall be removed from the tree without authorisation from the responsible authority. Remove no more than 20% of live foliage from any tree; and

- Removal of epiphytic plant material, wire and any attached debris/rubbish.

Prior to any pruning works being undertaken, the arborist engaged to undertake the works shall arrange a site meeting with a representative from Council's Parks and Open Space Department.

All pruning works shall be approved arboricultural practices and have regard to AS4373–2007.

CONDITION: TREE REMOVAL

Where a tree is permitted to be removed:

- Each tree nominated for removal shall be suitably marked prior to its removal and an inspection arranged with an appropriate Council Officer to verify that the tree marked accords with the permit and/or endorsed plans;

- Prior to removal, the tree to be removed shall be inspected by an appropriately qualified and experienced zoologist to determine the presence of any native animals living or nesting in the tree. Should

any native animals be detected they must be caught and relocated to a site deemed appropriate by the zoologist;

- Tree removal is to be undertaken in a safe manner;
- All services either above or below ground are to be located prior to the commencement of any works;
- Stumps and any surface roots are to be ground down below ground level. Ground and chipped material to a depth of 50mm is to be removed from site at the direction of the project manager. The project manager must supply and place suitable topsoil and seed the area making certain that the reinstated ground surface is level, even and safe;
- Stumps shall be removed within 14 days of removal of the tree. All stumps not removed immediately after removal of the tree are to be paint marked with a suitable bright yellow reflective marking paint;
- Where ever possible and appropriate, native trees to be removed should be retained for use in core conservation areas for habitat purposes or reused in open space as urban art, park furniture and/or other use determined appropriate by the responsible authority;
- After a tree has been fallen, the tree must be protected from firewood harvesting via temporary fencing and signage to the satisfaction of Council until such time as the tree has been relocated for habitat or mulched;
- All timber greater than 300mm in diameter that cannot be reused as habitat, furniture or another use determined appropriate by the responsible authority shall be hammer milled and shredded for reuse as mulch within the site; and
- All timber less than 300mm in diameter and branch/leaf material shall be shredded for reuse as mulch within the subject site.

City of Whittlesea