PSP 1210
Pakenham East

Precinct Structure Plan

December 2017

Cardinia

Victorian Planning Authority

VICTORIA
State Government

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PLANS

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Plan 1 - Regional Context

Pakenham East Precinct Structure Plan

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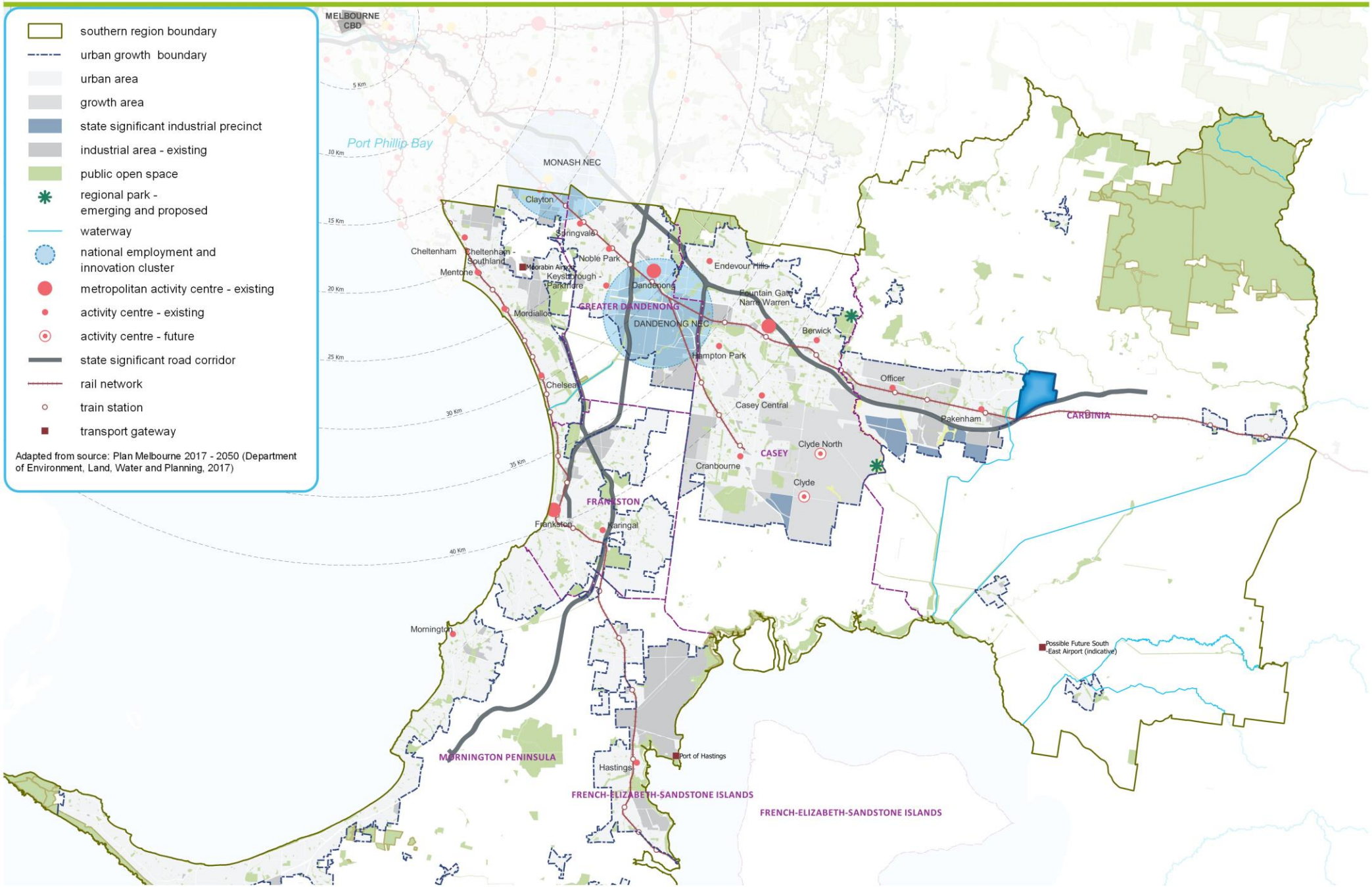

1.0 INTRODUCTION

The Pakenham East Precinct Structure Plan (the PSP) has been prepared by the Victorian Planning Authority (VPA) and Cardinia Shire Council, in collaboration with government agencies, service authorities, major stakeholders and the community.

The PSP is a long term strategic plan to guide urban development. It describes how land is expected to be developed, what natural assets must be protected, and how and where services are planned to support this development.

The PSP guides proposed development within the Pakenham East Precinct.

Generally, the PSP:

- Sets out plans to guide the delivery of quality urban environments in accordance with Victorian Government guidelines listed in this section;
- Enables the transition of non-urban land to urban land;
- Sets the vision for how land should be developed and the desired outcomes achieved;
- Outlines the projects required to ensure that future residents, visitors and workers within the Precinct will be provided with timely access to services, transport, jobs, open space and recreation facilities to support a healthy and affordable lifestyle;
- Sets out objectives, requirements and guidelines for land use and development;
- Provides Government agencies, the Council, developers, investors and local communities with greater certainty about future development; and
- Addresses the requirements of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999).

The PSP is informed by:

- The State and Local Planning Policy Framework set out in the Cardinia Planning Scheme;
- The Precinct Structure Planning Guidelines (Growth Areas Authority, 2008);
- The Growth Corridor Plans: Managing Melbourne's Growth Areas (Growth Areas Authority, June 2012); and
- Plan Melbourne 2017-2050 (Victorian Government, 2017).

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

- Pakenham East Precinct Structure Plan Background Report (December 2017);
- Pakenham East Infrastructure Contributions Plan (ICP); and
- Pakenham East Native Vegetation Precinct Plan (NVPP) (December 2017).

Plan 2 - Precinct Features

Pakenham East Precinct Structure Plan

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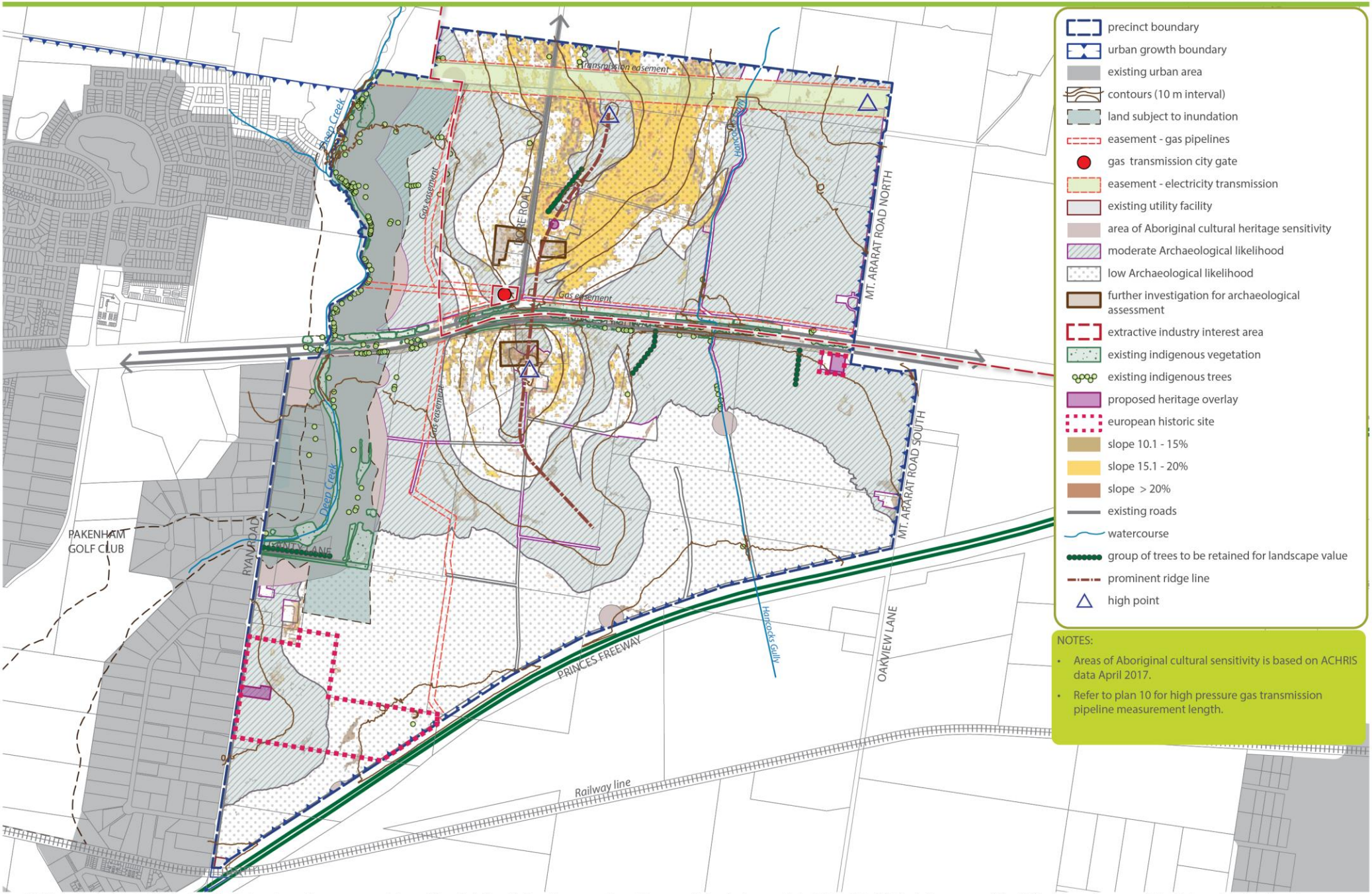

NOTES:

- Areas of Aboriginal cultural sensitivity is based on ACHRIS data April 2017.
- Refer to plan 10 for high pressure gas transmission pipeline measurement length.

1.1 How to read this document

The PSP guides land use and development where a planning permit is required under the Urban Growth Zone (UGZ) or another zone where that zone references this PSP.

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

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

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

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

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

Conditions that must be included in a planning permit are outlined in Schedule 5 to the Urban Growth Zone (UGZ9) in the Cardinia Planning Scheme.

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

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

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

1.2 Land to which this PSP applies

The PSP covers 629.82 hectares located approximately 56km south east of the Melbourne CBD and applies to PSP1210 (Pakenham East). The precinct is bounded by properties that abut Seymour Road and traversed by electricity transmission line easement to the north, Mount Ararat Road to the east, the Princes Freeway to the south and Deep Creek and Ryan Road to the west. The precinct is illustrated on *Plan 2- Precinct Features.*

1.3 Background information

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

1.4 Pakenham East Infrastructure Contributions Plan (ICP)

The Pakenham East ICP sets out the requirements for development proponents to contribute towards basic and essential infrastructure required to support development of the precinct. The ICP is a separate document incorporated into the Cardinia Planning Scheme and implemented through Schedule 1 to Clause 45.10 of the Cardinia Planning Scheme. The ICP applies to the same land as the PSP.

Table 8- Precinct Infrastructure Identifies which infrastructure projects are to be funded through the ICP.

1.5 Native Vegetation Precinct Plan

The Pakenham East Native Vegetation Precinct Plan (NVPP) has been prepared concurrently with the Precinct Structure Plan. The NVPP identifies:

- Native vegetation to be protected and the native vegetation that can be removed, destroyed or lopped without a planning permit; and
- The offsets that must be provided by landowners wishing to commence works prior to removing the native vegetation which can be removed. The NVPP is a separate document.

The statutory basis for the NVPP is Clause 52.16 of the Cardinia Planning Scheme.

The NVPP will be incorporated into the Cardinia Planning Scheme Plan under Clause 81.01 (Incorporated documents) and is a separate document to the Precinct Structure Plan.

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Plan 3 - Future Urban Structure

Pakenham East Precinct Structure Plan

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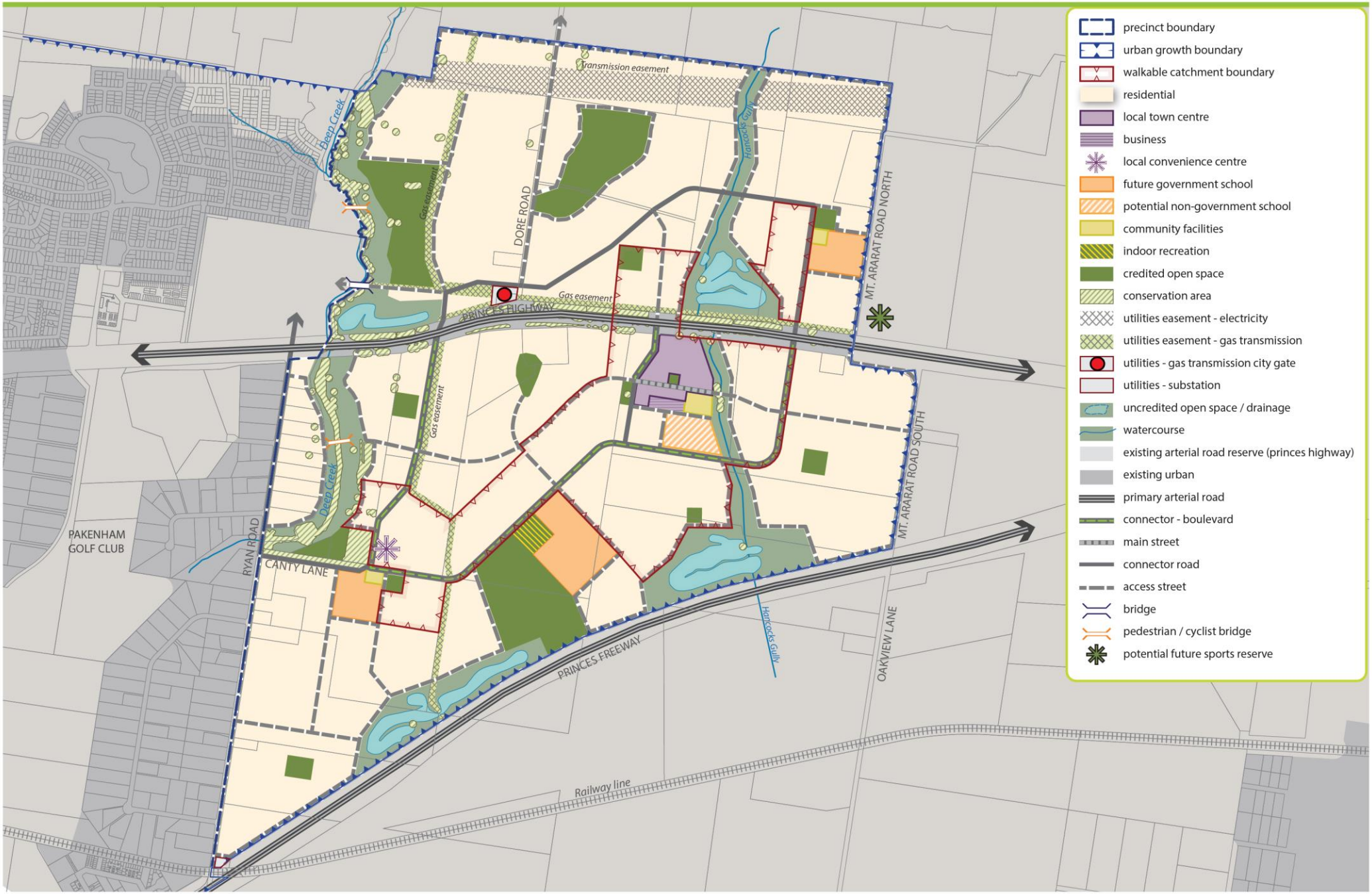

2.0 OUTCOMES

2.1 Vision

The PSP outlines and manages the transition of the Pakenham East Precinct area from an historic agricultural area at the foothills of the Dandenong Ranges to a thriving part of Metropolitan Melbourne. The PSP recognises and enhances the local heritage, landscape and environmental values of the area, while delivering a variety of housing options and community and recreational facilities as a logical extension of the Pakenham Township.

The Precinct will offer its community distinct residential neighbourhoods that create a strong sense of place and community by ensuring development is safe and diverse, provides a high standard of urban design and amenity, while protecting environmentally sensitive areas.

The PSP will embrace the natural landscape and cultural heritage features of the precinct by protecting the ridgelines from inappropriate development, facilitating appropriately scaled and responsive development on steeper land, safeguarding views to and from hilltops, creating habitat corridors along Deep Creek and other waterways, maintaining significant native vegetation and conserving and celebrating places of Aboriginal cultural heritage and post-contact cultural heritage.

The PSP will also plan and respond to the existing built environment and land uses, by providing appropriate infrastructure to both the north and south of the Princes Highway, ensuring appropriate development with the interface to the existing residential development to the west of the precinct and the farming land to the north and east, and the Princes Freeway to the south.

Community hubs featuring schools, open space and community services will be developed on both sides of the Princes Highway to ensure that all neighbourhoods within the precinct are provided with excellent local services, facilities and community infrastructure. These will be linked via a strong public transport and path network.

The precinct will offer diverse housing choices. Along with more traditional detached housing that meet the housing density requirements of the PSP, higher density housing will be delivered within and surrounding the local town centre and in close proximity to key bus routes, community hubs and local convenience centres.

A diverse mix of retail and commercial jobs within the town and local convenience centres, along with jobs within the community hubs and schools will support the delivery of a range of goods and services to support residents, workers, visitors and businesses. Each centre will have its own distinct character, incorporating places for people to gather.

Sport and recreation reserves will attract visitors to the area by providing a range of activity options, all integrated with an extensive path and open space network.

2.2 Objectives

The development of the Pakenham East PSP is guided by the following objectives.

OBJECTIVES	
IMAGE, CHARACTER, HERITAGE & HOUSING	
O1	Ensure subdivision design, developments and public spaces are functional, safe, aesthetically pleasing and incorporate environmentally sustainable design.
O2	Ensure the landscape, waterways, topographical features and the historic/cultural characteristics of the precinct are utilised to guide the pattern of development, streets and public spaces.
O3	Preserve view corridors to and from the ridgeline and ensure development does not detract from the visual amenity of the area.
O4	Capitalise on gateways and focal points for future landmarks, site, squares, landscape features and/or public art.
O5	Deliver approximately 7,148 new homes across the precinct and promote increased housing choice and density within a walkable catchment of high amenity features and public transport.
O6	Support the provision of social and community housing within a walkable catchment of high amenity features and public transport.
O7	Provide a sensitive interface to existing adjoining development, cultural heritage, post contact heritage and conservation areas.
O8	Protect, conserve and celebrate places of Aboriginal cultural heritage and post-contact cultural heritage significance.
O9	Encourage a strong sense of place through the protection, enhancement and interpretation of places of post-contact cultural heritage significance.
TOWN CENTRES & EMPLOYMENT	
O10	Strengthen the local economy by creating opportunities for new businesses (in appropriate locations) and a variety of local jobs.
O11	Maximise accessibility to employment areas and community facilities by public transport, cycling and/or walking for all ages and abilities.
O12	Deliver highly accessible, functional and vibrant town and local convenience centres of appropriate scale with high quality architecture, active street frontages, strong urban character and a sense of place that encourages social interaction and community engagement through a diverse mix of uses, including retail, commercial, leisure, entertainment, health, community service activities and accommodation.
OPEN SPACE, COMMUNITY FACILITIES & EDUCATION	
O13	Deliver an accessible network of local parks, sports reserves and neighbourhood community hubs across the precinct that provide access to social, education, recreation, and health services and that includes flexible and adaptable design and facilitate multi-use.
O14	Provide walking, cycling and recreation opportunities by developing an open space network along natural and constructed waterways, the high pressure gas transmission easement, streets, parks and public spaces.
O15	Encourage the retention of native and non-native trees where they are located in the public domain and open space network and provide for planting of canopy trees along streets, pedestrian and cycle networks, open spaces and waterways.
O16	Provide for government school sites to meet the strategically justified need for government education in the area.
O17	Provide for all non-government school site(s) to meet a strategically justified need for non-government schools in the area.
O18	Ensure that the health and wellbeing of residents are protected by delivering a built environment of facilities and amenities that promote healthy lifestyle practices, social interaction, civic engagement and access to services.
BUSHFIRE, BIODIVERSITY & THREATENED SPECIES	
O19	Plan for the long term conservation of significant flora and fauna species through protection of habitat, particularly along Deep Creek and within the local conservation reserve.
O20	Ensure development responds to flora and fauna species and habitats in accordance with the Pakenham East Native Vegetation Precinct Plan.
O21	Ensure that bushfire hazards are identified and that protection measures are considered in the layout and design of the local street network, subdivisions and buildings and works.

TRANSPORT & MOVEMENT	
O22	Provide a high-amenity, low speed and permeable local road network that prioritises community access and safety.
O23	Establish an integrated and permeable transport network to encourage public transport, walking and cycling, reduced car dependency and safety and connectivity for all road users.
O24	Promote public transport movements by providing a bus capable network that services key destinations throughout the precinct, particularly the local town centre.
INTEGRATED WATER MANAGEMENT, UTILITIES & ENERGY	
O25	Prepare for the impacts of climate change by encouraging resilient, environmentally sustainable design and development across the Precinct.
O26	Ensure sensitive land uses are minimised within the area subject to planning controls responding to the high pressure gas transmission pipeline and that construction is managed to minimise risk of any adverse impacts.
O27	Facilitate the use of renewable energy including the installation of localised systems.
O28	Deliver an integrated and resilient water management system that reduces reliance on reticulated potable water, increases the re-use of alternative water through stormwater harvesting, minimises flood risk, ensures the environmental health of waterways and bays, protects public health, delivers affordable essential water services and contributes towards a sustainable and green urban environment.
PRECINCT INFRASTRUCTURE PLAN & STAGING	
O29	Deliver cohesive and integrated neighbourhoods by co-ordinating development with the delivery of key local and state infrastructure.

Plan 4 - Land Use Budget

Pakenham East Precinct Structure Plan

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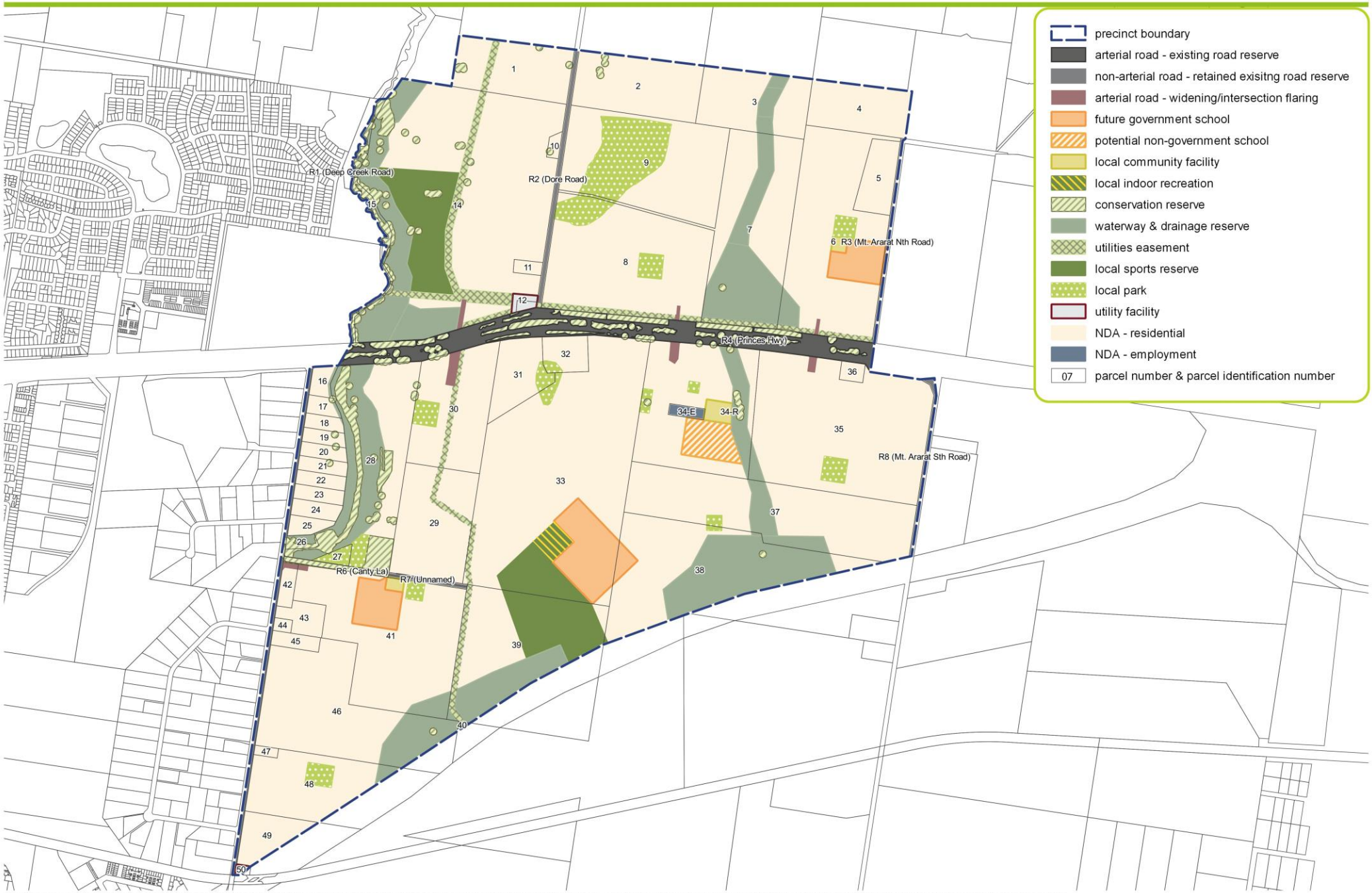

2.3 Summary land use budget

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).

The GDA for the PSP is 629.82ha. The NDA is 436.64 ha meaning approximately 69.33% of the land within the PSP is available for development. The residential NDA is 435.94 hectares, meaning approximately 69.22% of the land within the precinct is available for residential development, while 0.70 hectares, or 0.11% of the land is available for predominately employment uses.

Based on the estimated residential development yield established in *Table 3 - Housing Delivery Guide*, the Pakenham East PSP will generate approximately 7,148 dwellings to accommodate between 20,000-22,200 new local residents.

Table 1 Summary land use budget

Description	PSP 1210		
	HECTARES	% OF TOTAL	% OF NDA
TOTAL PRECINCT AREA (ha)	**629.82**		
Transport			
Arterial Road - Existing Road Reserve	13.02	2.07%	2.98%
Non-Arterial Road - Retained Existing Road Reserve	7.22	1.15%	1.65%
Sub-total Transport	22.19	3.5%	5.08%
Community & Education			
Government School	15.10	2.40%	3.46%
Potential Non-Government School	3.50	0.56%	0.80%
Local Community Facility (ICP land)	1.80	0.29%	0.41%
Local Indoor Recreation (ICP land)	1.50	0.24%	0.34%
Sub-total Community and Education	21.90	3.5%	5.0%
Open Space			
Uncredited Open Space			
Conservation Reserve	23.03	3.66%	5.28%
Waterway and Drainage Reserve	68.93	10.94%	15.79%
Utilities Easements	12.42	1.97%	2.84%
Sub-total Uncredited Open Space	104.38	16.57%	23.91%
Credited Open Space			
Local Sports Reserve (ICP land)	23.68	3.8%	5.42%
Local Network Park (ICP land)	20.14	3.2%	4.61%
Sub-total Credited Open Space	43.82	7.0%	10.04%
Regional Open Space			
Sub-total Regional Open Space	0.00	0.0%	0.00%
Total All Open Space	148.20	23.5%	33.94%
Other			
Utilities Sub-stations / facilities (acquired by relevant authority)	0.89	0.14%	0.20%
Sub-total	0.89	0.14%	0.20%
TOTAL NET DEVELOPABLE AREA - (NDA) Ha	**436.64**	**69.33%**	
NET DEVELOPABLE AREA - RESIDENTIAL (NDAR) Ha	**435.94**	**69.22%**	
NET DEVELOPABLE AREA - EMPLOYMENT (NDAE) Ha	**0.70**	**0.11%**	

Plan 5 - Image and Character, Housing & Community

Pakenham East Precinct Structure Plan

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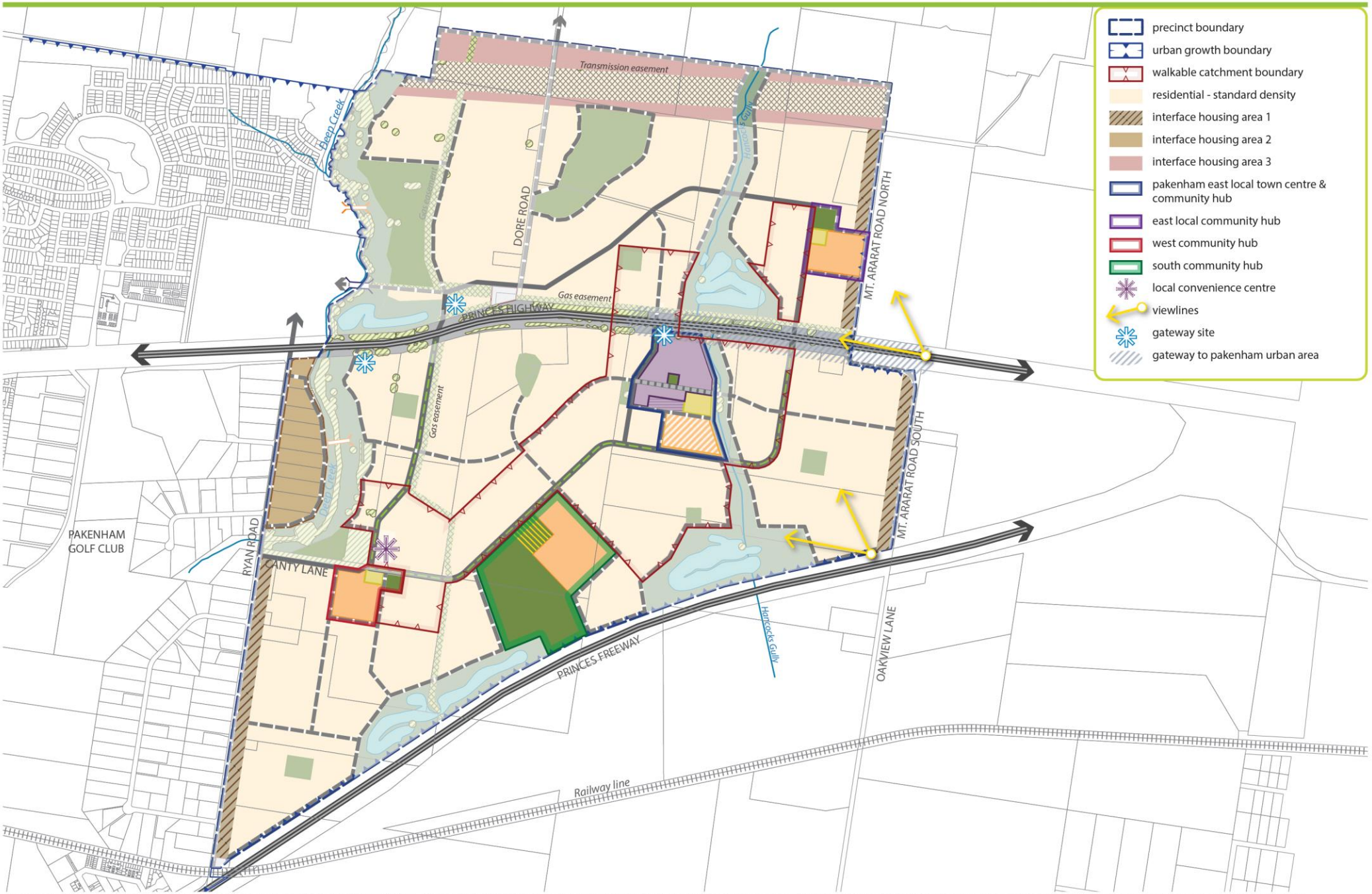

3.0 IMPLEMENTATION

3.1 Image, Character, Topography, Housing and Heritage

3.1.1 Image and character

REQUIREMENTS	
R1	Subdivisions must be designed to maximise the number of lots with direct views to landscape features and public open spaces.
R2	Trees in streets, civic spaces and the open space network must be: • Complementary to the existing native, indigenous and exotic species where appropriate; • Larger species to facilitate continuous canopy cover, wherever space allows; • Planted in modified and improved soil to support tree establishment; • Appropriate in size to nature strips, nearby utilities and built form; and • Suitable for local conditions. All public landscaped areas must be planted and designed to the satisfaction of the responsible authority.
R3	Key built form treatments must be provided at gateway sites, as shown on *Plan 5 – Image, Character, Housing and Community* to: • Establish an attractive and prominent entry to the precinct; • Positively address the Deep Creek corridor and Princes Highway corridor and views to the ridgeline; and • Present a strong sense of address to the corner of Princes Highway and the North-South Connector Street to create a high quality entry into the Local Town Centre.
R4	All public landscape areas must be consistent with Cardinia Shire Council Developer Landscape Guidelines January 2017 (or as amended) and: • Comprise of a mix of native flowering and non-flowering indigenous and other appropriate species. Edible planting (e.g. fruits, nuts, herbs and bush foods) are encouraged; and • be planted in modified and improved soil suitable to the location conditions as required, to support tree longevity.
R5	The inclusion of public art and complementary infrastructure for public creative and cultural activities in open space areas in key nodes of district, municipal and regional open space and primary paths and trails must be consistent with Cardinia Shire Council Developer Landscape Guidelines January 2017 (or as amended).
R6	Street trees must be provided on both sides of all roads and streets (excluding laneways) at regular intervals appropriate to tree size at maturity and not exceeding the average intervals below unless otherwise agreed by the Responsible Authority: AVERAGE INTERVAL — TREE SIZE 8 – 10 metres — Small trees (less than 10 metre canopy) 10 – 12 metres — Medium trees (10 – 15 metre canopy) 12 – 15 metres — Large trees (canopy larger than 15 metres)

GUIDELINES	
G1	Street trees should be selected to provide local landmarks and definition to key nodes, local town centre, park frontages and key intersections and entrances.
G2	Streets should be provided directly abutting waterway reserves, open spaces and utilities easements to ensure houses generally face these public spaces.
G3	In locations where the responsible authority is satisfied it is not feasible to locate a street adjacent to the open space network (including waterway reserve, open space or utilities easement functioning as open space), then houses should face the path within the open space network path and be 'rear-loaded'.
G4	High quality landscape treatments should be provided throughout the precinct, most particularly in streetscapes and along creek and drainage waterway corridors.
G5	Street networks within subdivisions should be designed to maximise the number of connections and direct views to the open space network, town centres and/or the closest community hub.
G6	Buildings and structures should be designed to protect viewlines to and from landscape features, utilise natural materials consistent with the surrounding environment and be screened by vegetation where required.

G7	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”.
G8	Built form on corner lots should provide a positive address to both frontages. This can be achieved through the appropriate use of glazing and other architectural treatments.
G9	Built form should add to the precinct character by providing an attractive street address that encourages passive surveillance and visual interest.
G10	Sites in prominent locations, such as the Local Town Centre and major intersections, should be developed to respond to their strategic location and preferably have greater height, density and architectural quality (refer *Appendix B- Local Town Centre Design Principles*).
G11	A consistent suite of street lighting and street furniture should be used across neighbourhoods, appropriate to the type and role of street or public space unless otherwise approved by the Responsible Authority.

3.1.2 Topography

REQUIREMENTS	
R7	Any retaining structures in public places and within lots (with the exception of those which are part of a building) must be: • No more than 1.0 metre in height between a dwelling and a street or public space, or where visible from a street or public space; • Set back at least 1.0 metres from any building envelope; • Staggered, with a minimum 1.0 metre distance between each stagger to allow for the inclusion of landscaping, where cutting and filling is deeper than 1.0 metres; • Positioned so that associated drainage infrastructure and structural foundations are fully located within the same lot; and • No more than 2.0 metres in overall height to avoid unreasonable overshadowing of secluded private open space and habitable room windows. Unless otherwise approved by the responsible authority as part of an approved slope management plan.

3.1.3 Housing

REQUIREMENTS	
R8	Residential subdivision of land within the walkable catchment boundary shown on *Plan 3- Future Urban Structure*, must create lots suitable for the delivery of medium or higher density housing as outlined in *Table 3 - Housing Delivery Guide*, and achieve a minimum average density of 22 dwellings per hectare. Applications for subdivision that can demonstrate how target densities can be achieved over time, to the satisfaction of the responsible authority, shall be considered.
R9	Subdivision applications must include indicative building envelopes for any lots identified for medium density, high density, or integrated housing that suitably demonstrate: • Active interfaces with adjacent streets, open spaces and waterways; • Safe and effective vehicle and pedestrian access and internal circulation, as appropriate; and • Servicing arrangements.
R10	Lots and dwellings where possible must front or side: • Drainage channels, waterways; • All open space and utilities reserves; and • Arterial roads and connector streets. The siding of lots to waterways, open space and primary street frontages must be kept to a minimum.
R11	Residential subdivision applications must include layouts for any lots identified for future development of medium density, high density or integrated housing that suitably demonstrate: • Potential dwelling yield; • Active interfaces with adjacent street, open space and waterways; • Safe and effective internal vehicle and pedestrian circulation; • The delivery of dwelling diversity and lot sizes; • Servicing arrangements; and • Treatments for sensitive interfaces.
R12	Where housing is proposed adjacent to an acoustic wall, dwellings must front an internal road that runs directly parallel to the acoustic wall unless otherwise agreed by the responsible authority.

R13	Subdivision of land within the Interface Housing Area 1 & 2 , as identified in *Plan 5 – Image, Character, Housing and Community*, must:
	• When fronting Ryan Road or Mt Ararat Road North and South, be a single dwelling on a lot;
	• Have a minimum front setback of 6 metres when fronting Ryan Road or Mt Ararat Road North and South;
	• Have low or visually permeable front fencing; and
	• Minimise amenity impacts on existing lots with houses on the western side of Ryan Road and on the eastern side of Mt Ararat Road North and South (as defined on *Plan 5 – Image, Character, Housing and Community)* by:
	  ○ Providing wider lot frontages when fronting Ryan Road or Mt Ararat Road North and South; and
	  ○ Providing sufficient setbacks of dwellings within new lots to allow screen planting along the interface or another appropriate design.

R14	Subdivision of land in Interface Housing Area 2 as shown in *Plan 5 – Image, Character, Housing and Community* must provide:

	• A building envelope to maximise the retention of native and non-native vegetation and respond to the environmental sensitivity of the area (Deep Creek and Canty Lane); • Nominal vehicle crossings/driveways to access and egress from the site; • That the application will achieve an average minimum lot size of 800m^2; • Fencing that is low scale and facilitates wildlife permeability; and • Addresses bushfire risk management.
R15	Subdivision of land in Interface Housing Area 3 as shown in *Plan 5 – Image, Character, Housing and Community* must provide: • A building envelope to address the ridgeline and electricity line easement; • That the application will achieve an average minimum lot size of 2,000m^2; • Rural fencing that is low scale and visually permeable to facilitate the rural lifestyle character of this area; and • Maximise side setbacks and create openness between the dwellings.
R16	Where a street frontage to a park is not provided, lots must: • Directly front the open space and allow for vehicular access via a rear laneway; and • Allow for a primary point of access from the footpath of a minimum width of 1.5 metres along the frontage of the lot.

GUIDELINES	
G12	Residential subdivision should deliver a broad range of lot sizes capable of accommodating a variety of housing types, as described in *Table 2 - Housing Type by Lot Size*.
G13	Specialised housing forms such as lifestyle communities, retirement living or aged care facilities should, subject to limitations imposed by utilities: • Be integrated into the wider urban structure; • Be built with building fronting the public street network; • Be located in close proximity to town centres and community hubs; • Be accessible by public and active transport; and
	• Not present a barrier to movement from adjoining development to key hubs and destinations or active and public transport routes.
G14	Residential development should avoid high fences, blank walls and prominent (including separated) garages that face streets and public spaces. This includes: • Ensuring garages are not the dominant front façade element across the width of a lot; and • That front fences do not exceed 1.2 metres in height.
G15	Subdivision of land should maximise north-south orientation of street blocks to facilitate appropriate solar orientation of lots.
G16	Different lot arrangements/configuration should be investigated to provide appropriate built form along sensitive interfaces and to allow for tree retention where conventional configurations do not support this, to the satisfaction of the responsible authority.
G17	Rear loaded lots suitable for town houses and terrace housing should be provided where housing directly fronts open space or where it is considered advantageous to limit vehicle cross overs, to the satisfaction of the responsible authority.
G18	Double storey and rear loaded dwellings are encouraged on key streets and boulevards to provide a strong built form edge and enclose the street.
G19	Where rear access lanes are provided, they should: • Be linear with no t-intersection or bends; • Ensure garages and rear fences are constructed to the edge of the road reserve of the laneway (with zero setback); and • Be a maximum paved width of 6 metres.
G20	Environmentally Sustainable Development principles should be explored and encouraged in all development, such as the inclusion of: • Material re-use and recycling; - • Use of materials with reduced embodied energy; - • Electrical self-generation, car charge schemes, smart grids and battery storage; • Use of Built Environment Sustainability Scorecard (BESS); Measures that reduce the urban heat island effect; and – Waste management initiatives.
G21	Social and community housing should be located within a walkable catchment of high amenity features and public transport.

Table 2 Housing type by lot size

The following table provides an example of the typical range of lot sizes that supports the delivery of a broad range of housing types.

HOUSING TYPES THAT MAY BE SUPPORTED	LOT SIZE CATEGORY (m^2)		
	LESS THAN 300 m^2	BETWEEN 301-600 m^2	More than >600 m^2
Small Lot Housing including townhouses, terraces and attached, semi- detached and detached houses (including shop-top)	✓		
Dual occupancies, duplexes	✓	✓	✓
Detached houses		✓	✓
Multi-unit housing sites, including terraces, row houses and villas		✓	✓
Stacked housing including apartments, shop-top living and walk up flats			✓

Table 3 Housing delivery guide

RESIDENTIAL TYPE	NDA (HA)	DWELLINGS/NDHA	DWELLINGS
Residential within walkable catchment	96.95	22.00	2,133
Residential outside walkable catchment	262.12	17.00	4,456
Residential outside walkable catchment - Interface housing area 1	13.33	14.00	187
Residential outside walkable catchment - Interface housing area 2	11.47	9.50	789
Residential outside walkable catchment - Interface housing area 3	45.63	2.95	135
Residential in the local town centre	6.43	20	129
TOTAL	**435.94**	**16.40**	**7,148**
Anticipated population @ 2.8 persons per dwelling*			**20,014**
Anticipated population @ 3.1 persons per dwelling*			**22,158**

*An anticipated range of population estimates have been made assuming 2.8 persons per dwelling and 3.1 persons per dwelling.

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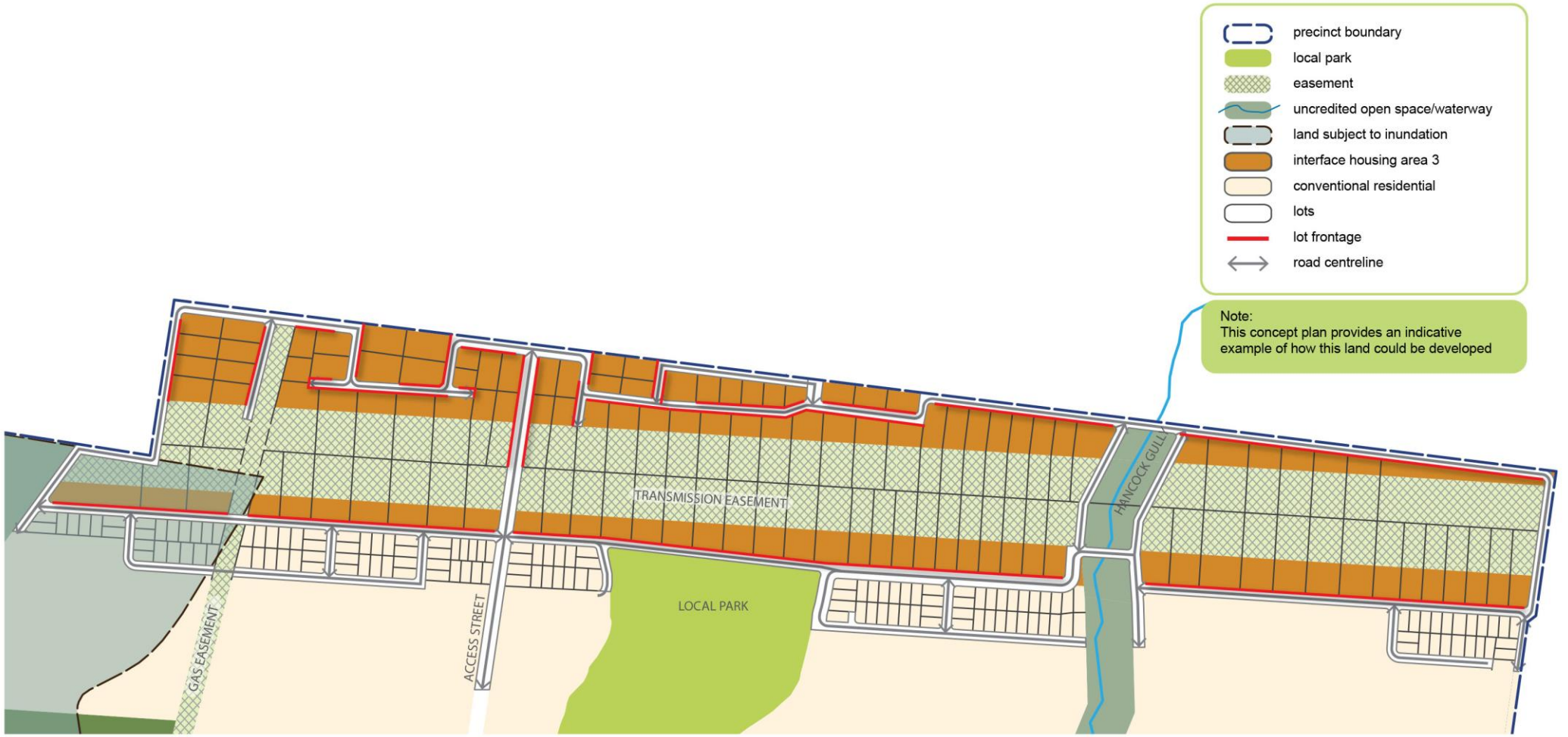

3.1.4 Heritage

REQUIREMENTS	
R17	Before the commencement of works for any stage of subdivision, the heritage place(s) must be appropriately secured against damage as a result of works, deterioration, and the effects of weather, trespassing or vandalism, to the satisfaction of the responsible authority.
R18	Prior to the issue of a Statement of Compliance for the first stage of subdivision, the owner must enter into an agreement with the Responsible Authority made pursuant to Section 173 of the *Planning and Environment Act 1987*, which provides for and ensures works to the heritage places for the purposes of restoration and repair are in accordance with the timeframes and requirements of the Conservation Management Plan.
R19	Any subdivision or development of land adjoining a heritage site identified under the Heritage Overlay in the Cardinia Planning Scheme and/or Aboriginal cultural heritage significance must have regard to the cultural/heritage significance of the site and provide a sensitive interface with appropriate scaled development, proportion and materials, to the satisfaction of the responsible authority.

GUIDELINES	
G22	Development of land subject to the Heritage Overlay in the Cardinia Planning Scheme should ensure that the heritage place is recognised within, and well integrated with, the subdivision. Heritage place(s) must be appropriately secured against damage as a result of works, deterioration, and the effects of weather, trespassing or vandalism.
G23	Proponents undertaking development of land identified on the Victorian Aboriginal Heritage Register, and/or with high Aboriginal cultural heritage values, including those identified on *Plan 2 – Precinct Features*, should liaise with the designated Registered Aboriginal Party (or Aboriginal Victoria and Traditional Owner Groups in its absence) to ascertain whether heritage interpretation is appropriate in these identified locations, and how the heritage site(s) should be incorporated into the design of the subdivision.
G24	Adaptive reuse of the heritage listed places may be appropriate if it is demonstrated that it will contribute to the long term conservation of these heritage places.

3.2 Town Centres and employment

The Pakenham East Precinct Structure Plan provides for a local town centre and a local convenience centre shown in *Plan 3 - Future Urban Structure* and detailed in *Table 4 - Town Centre Hierarchy.*

Table 4 Town centre hierarchy

TOWN CENTRE	SHOP FLOOR SPACE	LOCATION AND ANCILLARY USES
Local Town Centre	9,100 m^2	Located to the east Of the Precinct. Expected to service the higher order retail and community needs of future residents as well as providing opportunities for entertainment, employment and accommodation.
Local Convenience Centre	4,100 m^2	Located opposite a State Primary School in the south west of the Precinct to service the convenience needs to the local residents and people visiting the school and sporting reserve. Cafes and small offices encouraged. Residential and office uses are encouraged on upper floors.

Table 5 Anticipated employment creation in the precinct

LAND USE	EMPLOYMENT MEASURE	JOBS PER EMPLOYMENT MEASURE	ANTICIPATED QUANTITY OF EACH LAND USE	ANTICIPATED QUANTITY OF JOBS
Retail	Jobs per 30m^2 of floor space	1/30	13,200	440
Office	Jobs per 60m^2 of floor space	1/60	1,400	70
Other community services (medical NGOs etc)	Jobs per 50m^2 of floor space	1/50	10,300	206
Community centre	Jobs per centre	10	3	30
Government primary schools	Jobs per school	40	2	80
Government secondary school	Jobs per school	90	1	90
Non-government primary school	Jobs per school	40	1	40
Home based business	Jobs per dwelling	0.05	7,148	357
Total				**1,313 Jobs**

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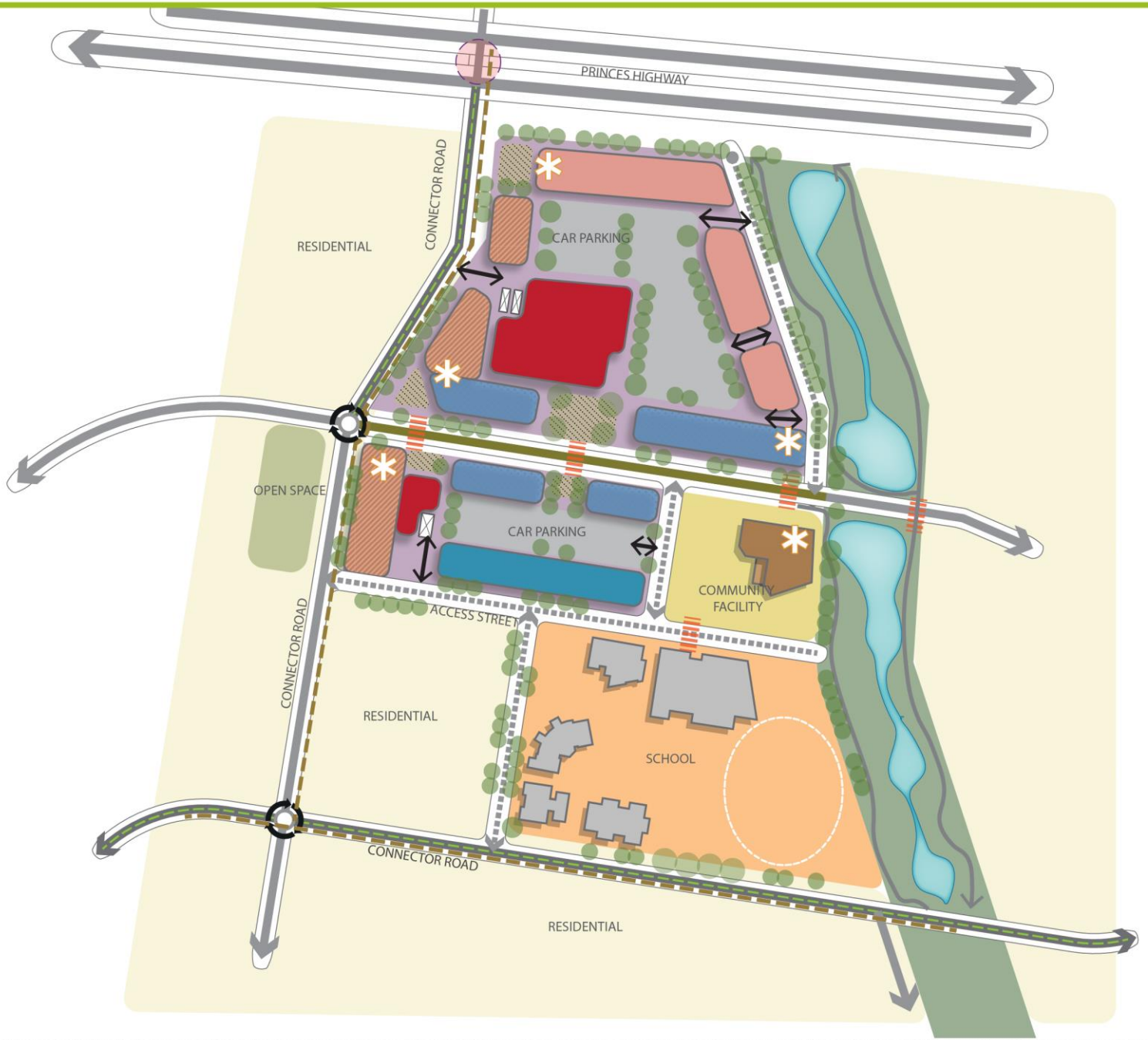

- anchor retail
- retail (commercial / mixed use / residential over)
- mix of commercial uses (residential over)
- small local enterprises
- specialty retail
- community facility
- car parking
- potential govt school
- local park
- constructed waterway
- loading dock
- residential
- prominent site/key built form
- plaza
- high quality public realm treatment
- pedestrian priority (e.g. pavement treatment)
- arterial road (6 lanes)
- connector street
- connector street - boulevard
- feature main street
- local access street
- roundabout (including pedestrian / cycle crossing points)
- signalised intersection
- bike route
- shared path
- car park access

Note:
This concept plan provides an indicative example of how the local town centre could be developed.

3.2.1 Local town and convenience centres

The local town centre in Pakenham East will be a local destination in the Cardinia growth corridor which will provide retail, services, lifestyle, leisure and commercial needs for the surrounding residential catchment.

The location of the centre will maximise the exposure of the site to passing traffic on the Princess Highway, be easily accessible from connector and local access streets and will not compromise the viability of the existing local centres located in Windermere Boulevard, Cardinia Lakes to the west of the Precinct.

Each centre will have a distinctive character and sense of place by addressing the Hancock's Gully landscaped waterway corridor and the local road network and will be connected visually and physically to the future residential areas, community facilities and open space.

The public realm will be a pedestrian priority area with strong physical and visual links to Hancock's Gully and the local road network which will make the most of the visual amenity provided by the landscaped waterway corridor and the physical links to surrounding land uses provided by the linear trails.

The design of each centre will have a pedestrian focus that allows a strong mix of retail, commercial, leisure and community activities. It is envisaged that shoppers, workers and residents will be able to:

- Access the town centre or convenience centre from the north south connector and local access streets through pedestrian focused environs;
- Access the town centre from the Hancock's Gully corridor and the local convenience centre from Canty Lane and the boulevard connector road;
- Recreate and enjoy the amenity provided by the public realm within the town centre with Hancock's Gully and the local convenience centre with Canty Lane, conservation reserve and the boulevard connector road; and
- Congregate and linger in the public realm and surrounding open spaces.

The design philosophy of the local town centre and convenience centre will:

- Respond to the existing landscape and environmental features;
- Respond to the pedestrian, bicycle and vehicular movement hierarchy;
- Create an active, fine grain main street centre;
- Enhance the public realm by having the local town centre address the Hancock's Gully waterway corridor and the local convenience centre address Canty Lane and the conversation reserve;
- Provide a small and local enterprise precinct within the Local Town Centre to encourage lower-cost, flexible space for a range of small local enterprises, to ensure these centres have an ability to adapt and evolve over time;
- Activate the frontages that address the connecter boulevard and the Hancock's Gully waterway corridor and conservation reserve; and
- Demonstrate best practice environmentally sustainable design.

REQUIREMENTS	
R20	The use and development of the Local Town Centre must be generally in accordance with the Local Town Centre Concept Plan, as shown in *Figure 2 – Pakenham East Local Town Centre (LTC) Concept Plan* and must address the design principles outlined in *Appendix B: Local Town Centre Design (LTC) and Local Convenience Centre (LCC) Principles,* and the *Urban Design Guidelines for Victoria, DELWP*.
R21	Except with the consent of the responsible authority, shop uses with combined leasable floor areas of the Local Town Centre must not exceed: • 9,100m^2 without a planning permit.
R22	Except with the consent of the responsible authority, shop uses with combined leasable floor areas of the Local Convenience Centre must not exceed: • 4,100m^2 without a planning permit.
R23	The Local town Centre must focus on the Main Street. The town centre must be provided with active frontages to the public realm. Larger built form core retail developments in the Local Town Centre are to: • Be sleeved behind specialty retail or permissible use built form, as illustrated in the Local Town Centre Concept Plan shown in in *Figure 2 – Pakenham East Local Town Centre (LTC) Concept Plan,* addressing the Main Street and any other public realm area other than a lane; • Screen all loading areas, loading docks and all other service areas from public realm areas; • Minimise views to car parking areas; and • Be provided to a zero setback from the footpath.
R24	The built form of sleeving uses, including specialty retail, mixed use and commercial development in the Local Town Centre are to: • Contribute to the development of a traditional town centre urban pattern focused on a Main Street; • Be provided to a zero setback from the footpath with a continuous frontage; • Provide for buildings up to four storeys (14 metres); • Promote commercial uses at ground floor level and commercial and/or residential at upper levels;
	• Focus pedestrian movement and activity on the Main Street: • Locate pedestrian entrances to the Main Street; • Provide highly activated frontages with windows and entrances as the predominant elements of the ground floor façade; • Maximise opportunities to enhance passive surveillance of the public realm; and • Provide a continuous weather protection canopy along the full length of the facade.
R25	Deliver higher density residential development that provides a transition between the urban pattern of the Local Town Centre and that of the residential neighbourhood. Higher density residential development in the Local Town Centre is to: • At ground level present a maximum front set back of 4 metres with a zero side setback; • Be constructed to a minimum of 2 storeys for the majority of the building envelope; • Provide vehicular access from a rear lane only; and • Encourage the inclusion of verandas and balconies to the street frontage. The built form of higher density residential development in the Local Town Centre is to be sited and oriented to: • Provide front facades that maximise passive surveillance opportunities of the public realm and include the dwellings' main entrance; • Provide front fencing to a maximum height of 1.2 metres; and • Consider a raised ground floor level of up to 1 metre above natural ground level to partially restrict views into dwellings and allow passive surveillance opportunities from the dwellings.
R26	Ensure that the development of the community facility activates the Main Street and contributes to a vibrant town centre streetscape. The built form of community facilities in the Local Town Centre are to: • Provide their primary frontage to the Main Street; • Be provided to a zero setback from the footpath with a continuous frontage; • Screen views of car parks and service areas from the public realm;

	• Contribute to a consistent town centre streetscape; • Locate pedestrian entrances to the primary street façade or public realm space adjoining the built form; • Provide active frontages with windows and entrances as the predominant elements of the ground floor façade; and • Provide a continuous weather protection canopy along the full length of the façade.
R27	Create a town square and other civic spaces which provide the community with places for meeting, markets, performances, alfresco dining and lingering. The design of the town square is to: • Provide appropriate street furniture and amenities within the town square (or civic space) to comply with the Cardinia Street Furniture Guidelines; • Provide required circulation space around outdoor dining areas; • Provide built form interfaces to civic spaces that provide appropriate activation and connectivity.
R28	Create a Main Street that provides the main access point to facilities and activities by prioritising pedestrian and cycle movement and access whilst supporting multiple transport modes and on street car parking, including: Provide pavements of a sufficient width to accommodate street furniture, landscape treatments, weather protection and outdoor dining. • maximises continuous built form • minimise vehicle crossovers • protect view corridors and vistas; and • Provide public accessible areas that can accommodate temporary events such as markets, festivals, concerts, etc.
R29	The secondary street network of the town centre is to support the functioning of the Main Street. The secondary street network must: • Support direct access and connectivity between the activity centre and surrounding uses; • Be utilised for the main vehicular access to car parking and loading areas.
R30	On-street parking must be: • Maximised in all activity centre streets and is to be provided via indented on-street parallel car parking bays; and
	• Prioritised for short-stay parking to cater for customers and visitors.

R31	Off-street car parking areas must be:
	• Responsive to the topography of their site and consider under croft, multi-decked or basement car parking formats;
	• Located behind built form that is oriented toward and presents an active frontage towards the public realm and be generally screened from view from the public realm;
	• Designed to not disrupt the continuity of the Main Street;
	• Designed to ensure:
	  ○ car parking areas are screened from street frontages through the use of built form, landscaping or facade treatments;
	  ○ safely designed pathways are incorporated to, from and within the car park;
	  ○ appropriate detail has been considered such as landscaping and provision of canopy trees to enhance amenity.
	• Passive surveillance can be provided from adjacent development, while not adversely impacting on future development opportunities.

Local convenience centre

REQUIREMENTS	
R32	Local Convenience Centres must be oriented towards the connector street and consider the relationship and interface with surrounding uses.
R33	Shops with a combined leasable floor area within the Local Convenience Centre must not exceed 4,100m^2 without a planning permit.
R34	Development proposals within the Local Convenience Centre area must be generally in accordance with and must address the design principles outlined in *Appendix B: Local Town Centre Design (LTC) and Convenience Centre (CC) Principles.*
R35	Buildings as part of a local convenience centre must: • Provide primary access to tenancies from the connector street; • Provide active and articulated frontages to the adjoining street network; • Have active frontages and must be designed in a way which contributes to the public domain; and

	• Incorporate sensitively designed loading areas which do not impact the surrounding residential area nor detract from the design of the centre.
R36	Safe and convenient pedestrian access must be provided to the local convenience centre, including a safe pedestrian street crossing and proximity to bus stop locations.

GUIDELINES	
G25	Local convenience centres should consider inclusion of two-storey built form and ensure that all buildings are well articulated and of a high quality design.

G26	The design of the local convenience centre should: • Feature clear circulation and a high degree of permeability for pedestrians; • Provide for a mix of tenancies; • Incorporate a range of uses including retail, offices and medium and higher density residential; and • Locate any servicing infrastructure or car parking to the rear or centre of the allotment in a manner that protects the amenity of the surrounding neighbourhood.

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Plan 6 - Open Space

Pakenham East Precinct Structure Plan

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3.3 Open Space, Community Facilities and Education

3.3.1 Open space

REQUIREMENTS	
R37	All parks must be located, designed and developed to the satisfaction of the responsible authority in accordance with *Plan 6 - Open Space*, *Table 6 - Open Space Delivery Guide*, *Appendix G: Open Space Delivery Guidelines*, and the Cardinia Shire Council Open Space Strategy (or as amended). An alternative location for a local park may be considered if it is generally in accordance *with Plan 6- Open Space*; and provided: • The location does not reduce the walkable access to local parks demonstrated in *Plan 6- Open Space*; • The design does not require the removal of protected trees; • The design does not diminish the quality or usability of the space for passive recreation; • The land area is equal to or more than the local park provision outlined in *Table 6 - Open Space Delivery Guide.* Where a proposed park is larger than outlined in *Table 6 - Open Space Delivery Guide,* it may be accepted so long as it does not result in the removal of another park allocation.
R38	Appropriately scaled lighting must be installed along all major pedestrian thoroughfares traversing public open space and along the cycling network to the satisfaction of the responsible authority.
R39	All landscaping proposed within the gas easement must align with *Appendix E: Easement Cross Sections*. A landscape plan must be submitted to the responsible authority in consultation with the coordinating gas authority demonstrating species, location and who will be responsible for the ongoing management of landscaping within the easement.
R40	All parks, open space and public landscape areas must be designed and constructed to enable practical maintenance and be planted with species suitable to the local climate and soil conditions, as per Cardinia Shire Council Developer Landscape Guidelines January 2017 (or as amended).
R41	• Where open space spans across multiple properties, the first development proponent to lodge a permit application for land containing the open space must prepare an indicative concept master plan for the entire park, unless otherwise agreed by the responsible authority.
R42	Any fencing of open space where required must be: • Low scale and visually permeable to facilitate public safety and natural surveillance; • Designed to guide appropriate movement and access; and • Designed and constructed from materials that complement the open space/conservation setting.
R43	Design of service open space including waterway corridors, utilities easements and any other encumbered open space, must maximise the amenity and biodiversity value of that open space and provide for flexible recreational opportunities, particularly when such land also abuts unencumbered open space.
R44	Trees in parks and open spaces (pedestrian and cycle paths) must be strategically and frequently located to provide shade, and wherever space allows, larger species should be provided to facilitate continuous canopy cover.
R45	Land designated for local parks must be finished and maintained to a suitable standard prior to transfer of land, to the satisfaction of the responsible authority.
R46	Development adjoining the natural Deep Creek waterway, must: • Not encroach past the waterway corridor defined in the Precinct Structure Plan, unless otherwise agreed by the responsible authority and Melbourne Water; and • Minimise earthworks and impact on the existing landform of the waterway corridor.
R47	Development of the hilltop park (LP-01) must respond to *Figure 5 - Hilltop Park Concept Plan,* and provide appropriate car parking, playground, landscaping and paths, to the satisfaction of the responsible authority.

GUIDELINES	
G27	Where lots directly front open space, access should be provided by a footpath of a minimum width of 1.5 metres along the frontage of the lot.
G28	The allocation of land for a neighbourhood or district reserves located on hilltops, needs to consider the provision of parking and access, and include land appropriate for the construction of these facilities without the need for major earthworks, to the satisfaction of the responsible authority.
G29	Local reserves and non-sports field components of sports reserves should cater for a broad range of users by providing a mix of spaces and planting to support both structured and informal recreational activities and play opportunities for all ages and abilities, including infrastructure and spaces appropriate for arts and cultural activity (i.e. festivals, performance and events).
G30	Public open space design and landscaping should complement existing natural systems and contribute to habitat for indigenous fauna species, particularly birds, arboreal species, and ground dwelling mammals.
G31	The design of waterways, wetlands, retarding basins, transmission easements and other encumbered land (service open space) should maximise the potential for the integration of passive and/or active recreation uses where this does not conflict with the primary function of the land.
G32	The design principles of *Urban Design Guidelines for Victoria, DELWP* should guide the design and lighting of open spaces, associated facilities and key pedestrian routes to provide a safe and pleasant experience, increase community usage of public space and create more liveable environments.

Table 6 Open Space Delivery Guide

The following table sets out the open space provisions expected to be delivered for the Precinct area.

OPEN SPACE ID	AREA (HA)	TYPE	ATTRIBUTES	RESPONSIBILITY
LP-01	10.89	Local Park	Hilltop Local Park	Cardinia Shire Council
LP-02	0.80	Local Park	Local park abutting community facility and primary school	Cardinia Shire Council
LP-03	1.00	Local Park	Local park	Cardinia Shire Council
LP-04	1.00	Local Park	Local park	Cardinia Shire Council
LP-05	1.63	Local Park	Local park abutting conservation reserve and Deep Creek Reserve	Cardinia Shire Council
LP-06	1.00	Local Park	Local park	Cardinia Shire Council
LP-07	0.50	Local Park	Local park adjacent to community facility and primary school (property 41) Land purchase	Cardinia Shire Council
LP-08	1.39	Local Park	Hilltop Local Park	Cardinia Shire Council
LP-09	0.33	Local Park	Local Park	Cardinia Shire Council
LP-10	0.20	Local Park	Pocket park / town square (property 34) in the Local Town Centre	Cardinia Shire Council
LP-11	0.40	Local Park	Local Park abutting drainage reserve	Cardinia Shire Council
LP-12	1.00	Local Park	Local park	Cardinia Shire Council
SR-01	10.08	Sports reserve	Local Sports reserve and associated pavilion	Cardinia Shire Council
SR-02	13.60	Sports reserve	Local Sports reserve and associated pavilion	Cardinia Shire Council

Fig 3 - Sports Reserve 1 Concept Plan

Pakenham East Precinct Structure Plan

Fig 4 - Sports Reserve 2 Concept Plan

Pakenham East Precinct Structure Plan

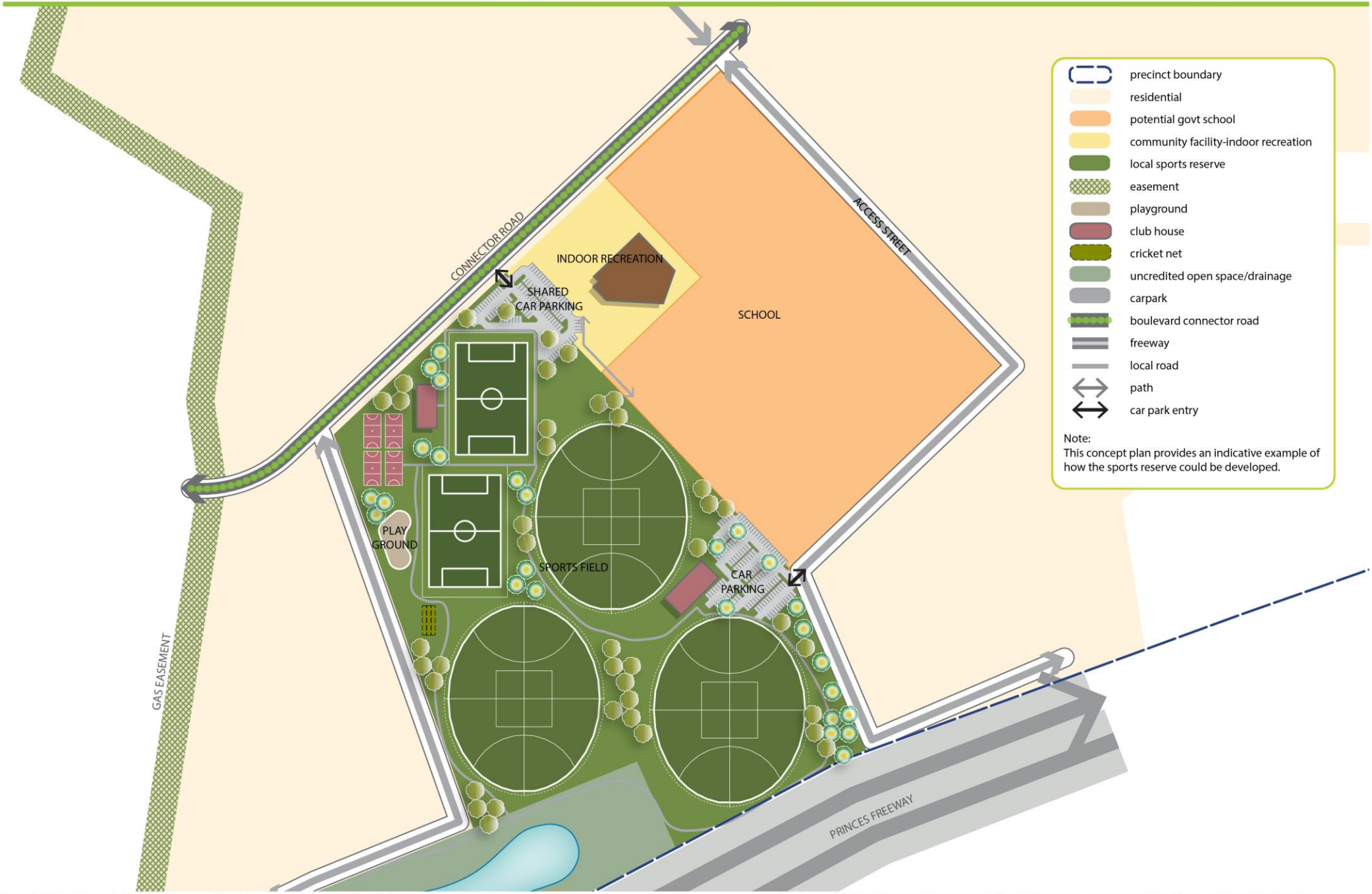

Fig 5 – Hilltop Concept Plan (Local Park LP-01)

Pakenham East Precinct Structure Plan

3.3.2 Community Facilities and Education

REQUIREMENTS	
R48	The design and layout of each community facility should reflect appropriate consideration of the requirements specified for the Local Town Centre and/or Local Convenience Centre to ensure effective cohesion.

R49	The layout of each community facility must:
	• Have regard to the varied needs of people of all ages, genders, cultures and abilities;
	• Maximise flexibility in the range of uses which can occur at the site and allow for future adaptability and shared use of spaces; and
	• Incorporate appropriate opportunities for:
	  ○ urban food production, community gardens and associated infrastructure (garden beds, vertical herb gardens, sheds, water tanks and compost); and
	  ○ Spaces for community art making, performance, rehearsals, storage and/or exhibitions.

R50	Community facilities, schools, and sports fields that are co-located are to be designed concurrently to maximise sharing opportunities of car parking and other complementary infrastructure, to the satisfaction of the responsible authority.

R51	Where the responsible authority is satisfied that land shown as a non-government school site is unlikely to be used for a non-government primary school, that land may be used for an alternative purpose which is generally consistent with the surrounding land uses and the provisions of the zone applied zone.
	In order to satisfy the responsible authority that a site is unlikely to be used for a school, it is necessary to demonstrate that:
	• The application for an alternative use is not premature having regard to the extent of development in the surrounding residential area; and
	• The school site is no longer strategically justified having regard to the provision of schools in the locality, including land not within the Precinct Structure Plan, as appropriate; and
	• The landowner provides the responsible authority with evidence that:
	  ○ Genuine negotiations have been had with a range of educational providers, including the Lead Agency nominated in the Precinct Structure Plan, regarding the use of the site as a school and the sale of the site to the educational provider/s; and
	  ○ The educational provider/s, including the Lead Agency nominated in the Precinct Structure Plan, do not intend to purchase the site, and use the site as a school.

R52	Schools and Community facilities must be designed to front, and be directly accessed from a public street with car parks located away from the main entry.
R53	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	
G33	School sites should be provided with three street frontages, where practicable.
G34	The location of key entries to schools and community facilities should allow for activation of the street and safe and convenient pedestrian and cyclist access for all ages and abilities.
G35	Private childcare, education facility, medical or similar facility not shown on *Plan 5 – Image, Character, Housing and Community* should be located within or proximate to a Local Town Centre, Local Convenience Centre, or community hub, and along higher order roads, as appropriate.
G36	Design of community facilities should: • Maximise land use efficiency through multi-storey building formats and through shared (and reduced) car parking; • Encourage the integration of schools and community facilities where they are co-located; • Include extensive canopy tree planting; • Be integrated with neighbouring facilities; • Minimise fencing to encourage out-of-hours use; and • Provide safe and convenient pedestrian and shared paths.

3.4 Biodiversity, Threatened Species and Native Vegetation Retention

REQUIREMENTS	
R54	Development within any Conservation Area (other than Conservation Area-Local) must be in accordance with the relevant Conservation Area Concept Plan *(Figure 6 - Deep Creek Conservation Reserve Concept Plan*) and relevant Interface Cross Section in *Appendix C: Road Cross Sections* to the satisfaction of the Department of Environment, Land, Water and Planning. Any proposed development or works within the Deep Creek Conservation Reserve must obtain the approval of the responsible authority.
R55	Development abutting the Deep Creek Conservation Reserve must be in accordance with the corresponding relevant Interface Cross Section in *Appendix C: Road Cross Sections*, to the satisfaction of the Department of Environment, Land, Water and Planning, and the responsible authority.
R56	Public lighting must be designed and baffled to prevent light spill and glare within and adjacent to any conservation area (other than Conservation Area-Local), to the satisfaction of the Department of Environment, Land, Water and Planning, and the responsible authority.
R57	A 30m buffer zone must be provided around all edges of the Deep Creek Conservation Reserve. The buffer zone must exclude buildings but may include roads, paths, nature strips, public open space and drainage infrastructure. A frontage road must be provided between the conservation area and adjacent development in accordance with the relevant cross section in *Appendix C: Road Cross Sections and Intersections*.
R58	Drainage from storm water treatment infrastructure must be designed to minimise impacts on biodiversity values, particularly matters of national environmental significance
R59	Any local conservation reserve as shown in *Plan 6- Open Space* must be delivered to the satisfaction of the responsible authority.
R60	Associated streetscape treatments must be sympathetic to the conservation reserve with use of indigenous trees. Where a street intersects the conservation area, the treatment of the conservation area should spill out onto the nature strip through appropriate indigenous streetscape planting. Appropriate application of vehicular exclusion fencing around should be provided, to the satisfaction of the responsible authority.
R61	Development abutting the conservation reserve must be in accordance with the corresponding relevant Interface Cross Section in *Appendix C:Road Cross Sections and Intersections*.
R62	Drainage from storm water treatment infrastructure must be designed to minimise impacts on biodiversity values.
R63	Roads fronting the local conservation reserves must contain planting and street trees of indigenous species. Frontage roads must not include plant species that could behave as environmental weeds including non-indigenous tree and shrub species and vigorous rhizomatic grasses.
R64	Where trees are retained, applications for subdivision and/or development must apply Tree Protection Zones
R65	Existing indigenous trees shown for retention in local parks, drainage areas and conservation areas on *Plan 2- Precinct Features* must be retained, except where agreed by the responsible authority.
R66	Development abutting Deep Creek must ensure native vegetation provision and/or planting of a riparian edge from the Deep Creek waterline. The provision should reflect a suitable variety of native species appropriate to the riparian transition.
R67	Development applications which include the upgrading, modification or construction of wetland and/or retarding basins must be accompanied by a plan that examines the feasibility of incorporating threatened species habitats into the wetland/retardation basin design.
R68	Any development or public infrastructure to be located abutting or adjacent to retained biodiversity must be designed and located in a manner so as to avoid or minimise the potential for future degradation.

GUIDELINES	
G37	For land adjacent to a the local conservation reserve, the traditional standard nature strip and path will act as a buffer with vehicle exclusion fencing 1 metre from the curb (as opposed to 1 metre offset park edge treatment).
G38	Planting in the open space network including conservation areas, waterways, streets, parks and utilities easements should make use of indigenous species to the satisfaction of the responsible authority and the relevant land manager.
G39	The layout and design of waterways, wetlands and retarding basins (including the design of paths, bridges and boardwalks and the stormwater drainage system) should integrate with biodiversity and natural systems to

	the satisfaction of the responsible authority and Melbourne Water as relevant.
G40	Where appropriate, parks should be located abutting conservation areas and waterways to provide a buffer.

G41	Where practical, natural or pre development hydrological patterns must be maintained in conservation areas.

Fig 6 - Deep Creek Concept Plan

Pakenham East Precinct Structure Plan

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- precinct boundary
- conservation interface zone (30m)
- existing indigenous trees & conservation
- fencing
- drainage / conservation area*
- watercourse
- local sports reserve
- residential
- utilities easement
- access street
- connector road
- shared path
- potential shared path (existing Deep Creek Road)
- road bridge
- pedestrian / cyclist bridge
- entry point

Note:
This concept plan provides an indicative example of how this land could be developed

*extent of conservation area to be confirmed

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Plan 7 - Road Network Plan

Pakenham East Precinct Structure Plan

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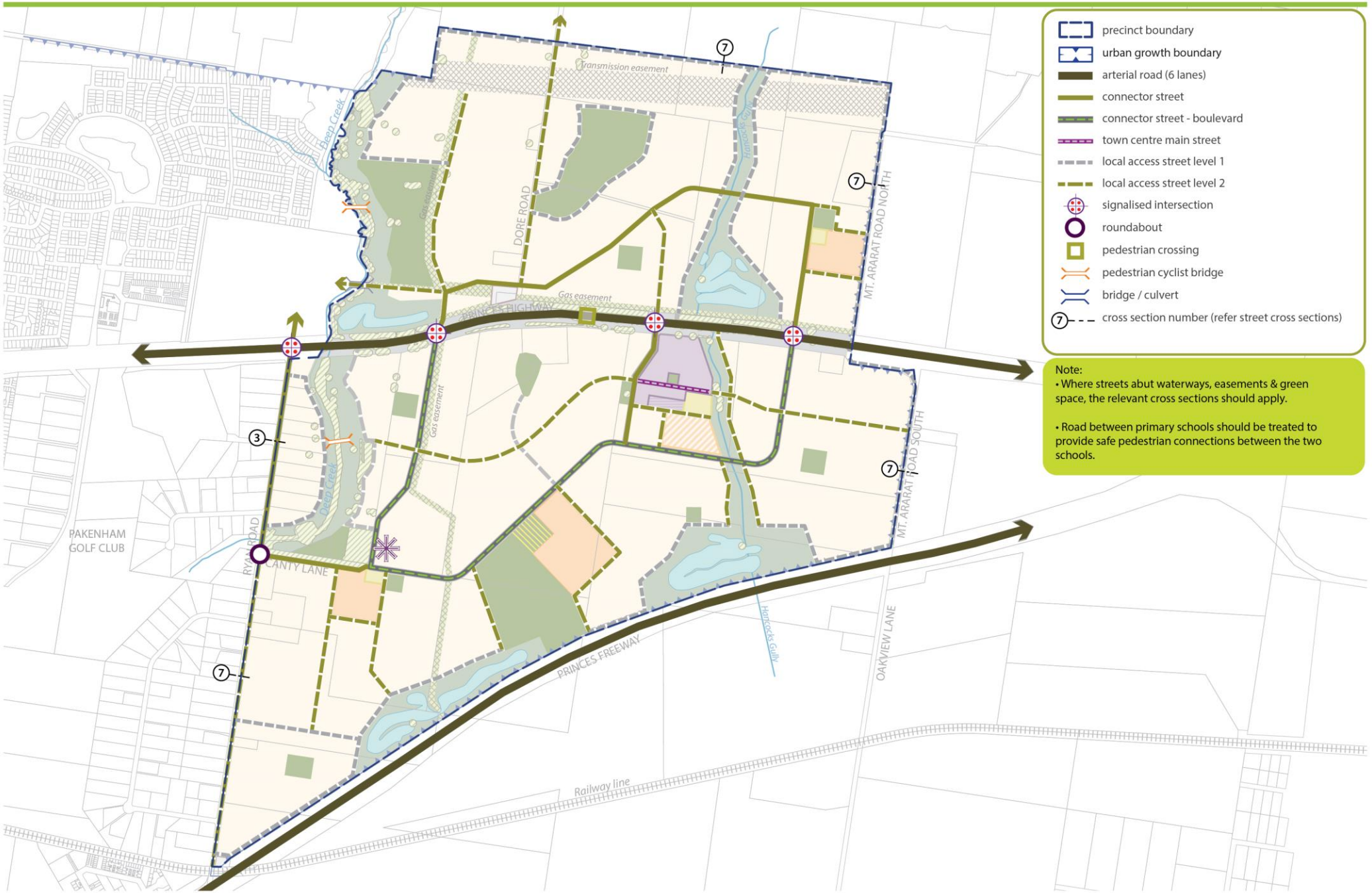

- precinct boundary
- urban growth boundary
- arterial road (6 lanes)
- connector street
- connector street - boulevard
- town centre main street
- local access street level 1
- local access street level 2
- signalised intersection
- roundabout
- pedestrian crossing
- pedestrian cyclist bridge
- bridge / culvert
- (7) cross section number (refer street cross sections)

Note:

- Where streets abut waterways, easements & green space, the relevant cross sections should apply.
- Road between primary schools should be treated to provide safe pedestrian connections between the two schools.

3.5 Transport and Movement

3.5.1 Street network

REQUIREMENTS	
R69	Subdivision layouts must provide: • a permeable safe low speed and direct local street network for walking and cycling; • a convenient access to local points of interest and destinations for effective integration with neighbouring properties, parkland and sports reserves.
R70	Road networks and street types must be designed and developed in accordance with the cross sections in *Appendix C: Road Cross Sections and Intersections*, unless otherwise agreed by the responsible authority.
R71	Vehicle access to lots fronting arterial roads must be provided from a local internal loop road, rear lane, or service road to the satisfaction of the coordinating road authority.
R72	Configuration of vehicle access to lots from a public street must ensure there is sufficient separation between crossovers to allow for a minimum of one on-street car park for every two residential lots.
R73	Where a lot is six metres or less in width, vehicle access must be via rear laneway, unless otherwise approved by the responsible authority.
R74	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.
R75	Streets must be constructed to property boundaries where an inter-parcel connection is intended or indicated in the Precinct Structure Plan, by any date or stage of development required or approved by the responsible authority.
R76	Where a connector street crosses a waterway on *Plan 9- Integrated Water Management* a connector street bridge must be constructed prior to the issue of statement of compliance (unless otherwise included in the Pakenham East Infrastructure Contributions Plan) for the first stage of residential subdivision, whether or not that residential subdivision directly abuts the waterway.
R77	Roundabouts must be designed to slow vehicles, provide for pedestrian visibility and safety, and ensure connectivity/continuity of shared paths and bicycle paths.
R78	Where a connector street crosses a waterway on *Plan 7- Road Network* and is not listed in *Table 8 - Precinct Infrastructure*, the developer/proponent must construct a connector street waterway crossing prior to the issue of statement of compliance for the initial stage of subdivision on the opposite side of the waterway, whether or not that residential subdivision directly abuts the waterway.
R79	Where a local access street is determined to be required to cross a waterway (service open space drainage), the proponent must construct local access street culverts to the satisfaction of the responsible authority.
R80	Any changes required to the design of roads and intersections in the PSP at the time of development must be accommodated within the land take identified in *Plan 4 - Land Use Budget* and *Appendix A: Property Specific Land Use Budget*.
R81	Deep Creek Road must be closed to public vehicle access once an alternate road access is provided to Deep Creek Road, in accordance with the proposed network shown on *Plan 7 – Road Network* and to the satisfaction of the responsible authority and Melbourne Water.

GUIDELINES	
G42	Street block lengths should not exceed 240 metres to ensure a safe, permeable and low speed environment for pedestrians, cyclists and vehicles is achieved.
G43	Additional access points (temporary and permanent) to the existing or proposed arterial road network will not generally be permitted, but will be assessed on merit in consultation with the coordinating road authority.
G44	Culs-de-sac should not detract from convenient pedestrian, cycle and vehicular connections.
G45	All signalised intersections should be designed in accordance with the VicRoads Growth Area Road Network Planning Guidance & Policy Principles handbook to the satisfaction of the responsible authority and coordinating road authority.

G46	The frequency of vehicular crossovers on widened verges (a verge in excess of six metres) or crossing cycling lanes should be minimised with 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.
G47	Slip lanes should be avoided in areas of high pedestrian activity and only be provided at any other intersection between connector roads and arterial roads where they are necessitated by high traffic volumes, to the satisfaction of the coordinating road authority.
G48	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 to the satisfaction of Melbourne Water and the responsible authority.
G49	Where lots with direct frontage to waterways are provided, they should be set back up to 5.0 metres from the waterway corridor to provide pedestrian and service vehicle access to those lots, to the satisfaction of Melbourne Water and the responsible authority.
G50	The location of new roads adjacent to or approaching heritage listed buildings should enhance visibility to the front and/or side elevations of the heritage listed buildings.

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Plan 8 - Public Transport and Path Network

Pakenham East Precinct Structure Plan

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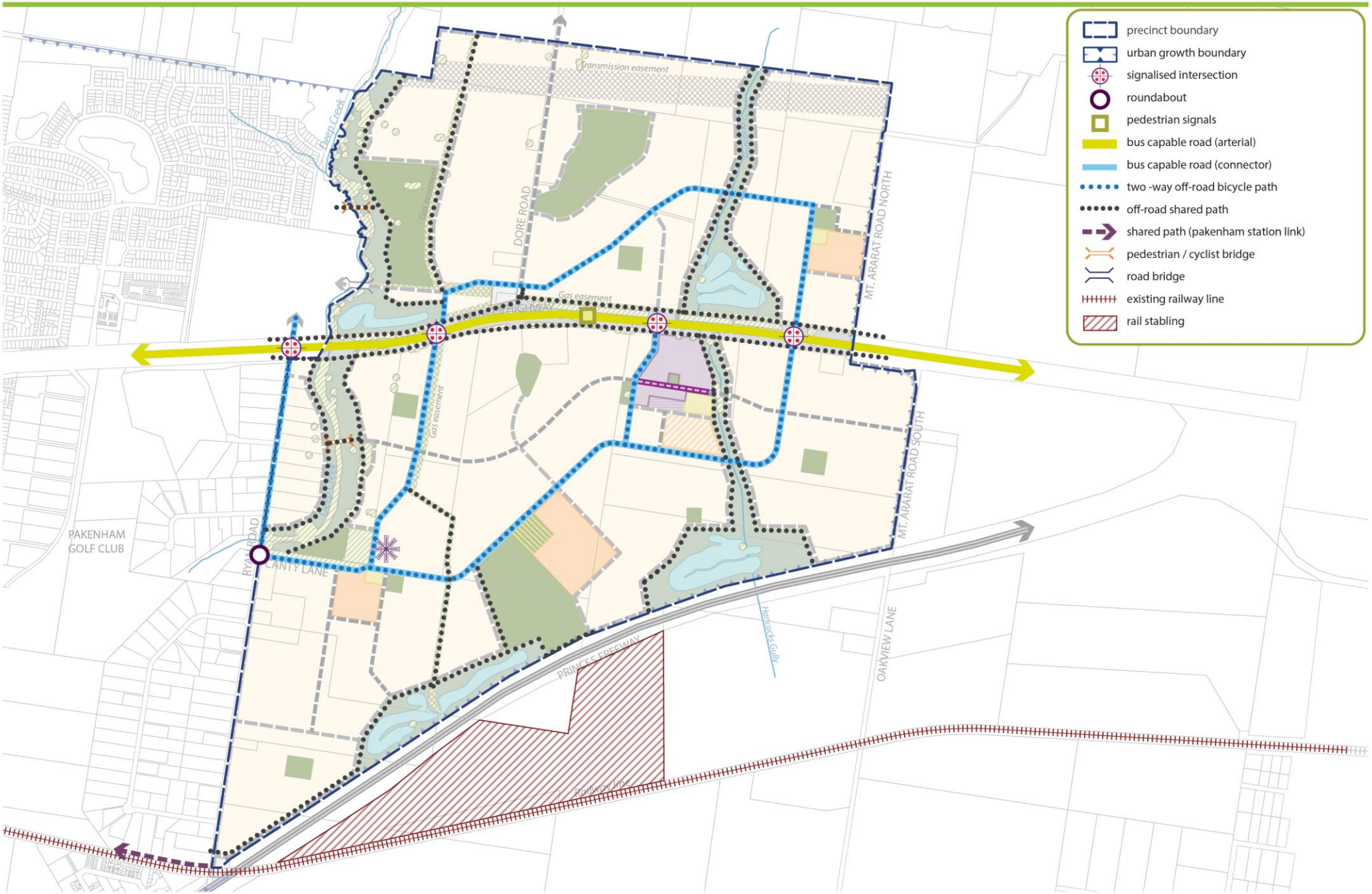

3.5.2 Public transport

REQUIREMENTS	
R82	Roads and intersections identified as bus capable on *Plan 8- Public Transport and Path Network* must be constructed to accommodate ultra-low floor buses, in accordance with the Public Transport Guidelines for Land Use and Development and to the satisfaction of Transport for Victoria and the responsible authority.
R83	Bus stop and facilities must be designed as an integral part of the town and convenience centres, and activity generating land uses such as schools, community facilities, sports reserves and employment areas, to the satisfaction of the responsible authority.
R84	Unless otherwise agreed by the Transport for Victoria, prior to the issues of a Statement of Compliance for any subdivision stage, bus stop hard stands with direct and safe pedestrian access to a pedestrian path must be constructed: • In accordance with the Public Transport Guidelines for Land Use and Development; and compliant with the Disability Discrimination Act – Disability Standards for Accessible Public Transport 2002; and • At locations approved by the Transport for Victoria, at no cost to the Transport for Victoria and to the satisfaction of the Transport for Victoria.
R85	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.

3.5.3 Walking and cycling

REQUIREMENTS	
R86	Design of all subdivision, streets, and arterial roads must give priority to the requirements of pedestrians and cyclists by providing: • Footpaths of at least 1.5 metres on both sides of all streets and roads unless otherwise specified by the Precinct Structure Plan; • Shared paths or bicycle paths of 3.0 metres as shown on *Plan 8 - Public Transport and Path Network* or as shown on relevant cross-sections in the *Appendix C – Road Cross Sections and Intersections*, or as specified by another requirement in the Precinct Structure Plan; • Safe, accessible and convenient crossing points of connector roads and local streets at all intersections, key desire lines and locations of high amenity (for example town centre and open space); • Safe pedestrian crossings of arterial roads at all intersections, at key desire lines and at 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; • Wayfinding signage; and • Seating at spacing of 400 metres or less along shared paths unless otherwise specified by the Precinct Structure Plan. All to the satisfaction of the coordinating road authority and the responsible authority.
R87	Bicycle priority at intersections of local streets and connector roads with dedicated off-road bicycle paths must be achieved through strong and consistent visual and physical cues and supportive directional and associated road signs, as per the designs in the Greenfield Engineering Design and Construction Manual and to the satisfaction of the responsible authority.
R88	Bicycle parking facilities must be provided by development proponents in convenient locations at key destinations such as parks, sporting reserve, schools, community facilities and town centres.
R89	Shared and pedestrian paths along waterways/retarding basins must: • Be delivered by development proponents consistent with the network shown on *Plan 8 – Public Transport and Path Network*; • 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 constructed to a standard that satisfies the requirements of Melbourne Water and the responsible authority. All to the satisfaction of Melbourne Water and the responsible authority.

R90	Subdivision designs must demonstrate how any proposed dedicated cycle paths, pedestrian paths and shared paths will integrate and connect in a safe and convenient manner.

GUIDELINES	
G51	The alignment of the off-road bicycle path should be designed for cyclists travelling up to 30 km/hr, to the satisfaction of the responsible authority.
G52	Lighting should be installed along shared, pedestrian, and cycle paths linking key destinations, unless otherwise agreed by the responsible authority.
G53	Where practical, public land within the high pressure gas transmission pipeline easement shall contain shared paths and landscaping which should occasionally and mildly deviate from a direct and straight alignment to create varied view lines and visual interest.

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Plan 09 - Integrated Water Management

Pakenham East Precinct Structure Plan

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3.6 Integrated Water Management, Utilities, Energy and Sustainability

3.6.1 Integrated water management

REQUIREMENTS	
R91	All 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 freeboard requirements for overland flow paths will be adequately contained within the road reserves; and • Relevant integrated water management requirements and guidelines of this PSP will be achieved, to the satisfaction of the retail water authority, including the supply of recycled water. Melbourne Water drainage assets must be to the satisfaction of Melbourne Water and the responsible authority.
R92	Development must meet best practice stormwater quality treatment standards prior to discharge to receiving waterways and as outlined on *Plan 9 – Integrated Water Management*, unless otherwise approved by Melbourne Water and the responsible authority.
R93	Final design and boundaries of constructed waterways, waterway corridors, retarding basins, stormwater quality treatment infrastructure and associated paths, boardwalks, bridges and planting, must be to the satisfaction of Melbourne Water and the responsible authority.
R94	Development staging must provide for the delivery of ultimate waterway drainage infrastructure, including stormwater quality treatment, listed in *Table 7 – Water Infrastructure.* 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.
R95	Stormwater conveyance and treatment must be designed in accordance with the relevant Scheme and/or Drainage Strategy, 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	Development should include integrated water management initiatives to diversify water supply, reduce reliance on potable water and increase the utilisation of storm and waste water, contributing to a sustainable and green urban environment where practicable.
G56	Development should have regard to relevant policies and strategies being implemented by the responsible authority, Melbourne Water and South East Water (retail water authority), including any approved Integrated Water Management Plan.
G57	Development should reduce reliance on potable water by increasing the utilisation of fit-for-purpose alternative water sources such as storm water, rain water and recycled water (where required by the relevant water authority).
G58	Where practical, Integrated water management systems should be designed to: • Support and enhance habitat values for local flora and fauna species; and • Enable future harvesting and/or treatment and re-use of stormwater, including those options or opportunities outlines in *Plan 9 – Integrated Water Management*.
G59	Any drainage infrastructure running adjacent to or crossing a high pressure gas transmission pipeline should cross at 90 degrees and be engineered to protect the integrity of the asset to the satisfaction of the responsible authority and gas pipeline owner.

Table 7 Water Infrastructure

ASSET ID	DESCRIPTION	LOCATION	AREA (HA)	RESPONSIBILITY
WI-01	Constructed waterway	Hancock's Gully north of Princes Highway	4.95	Melbourne Water
WI-02	Stormwater quality treatment & drainage asset	North of the Princes Highway	9.09	Melbourne Water
WI-03	Constructed waterway	Hancock's Gully south of Princes Highway	5.57	Melbourne Water
WI-04	Stormwater quality treatment & drainage asset	South of Princes Highway	14.97	Melbourne Water
WI-05	Stormwater quality treatment & drainage asset	North of Princes Highway	6.02	Melbourne Water
WI-06	Natural waterway corridor-Deep Creek reserve	Adjacent to western PSP boundary	16.25	Melbourne Water
WI-7	Stormwater quality treatment & drainage asset	South of Princes Highway	12.09	Melbourne Water
TOTAL			**68.93 ha**	

Note: The areas and corridor widths identified in this table are subject to refinement during detailed design to the satisfaction of Melbourne Water and the responsible authority.

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Plan 10 - Utilities

Pakenham East Precinct Structure Plan

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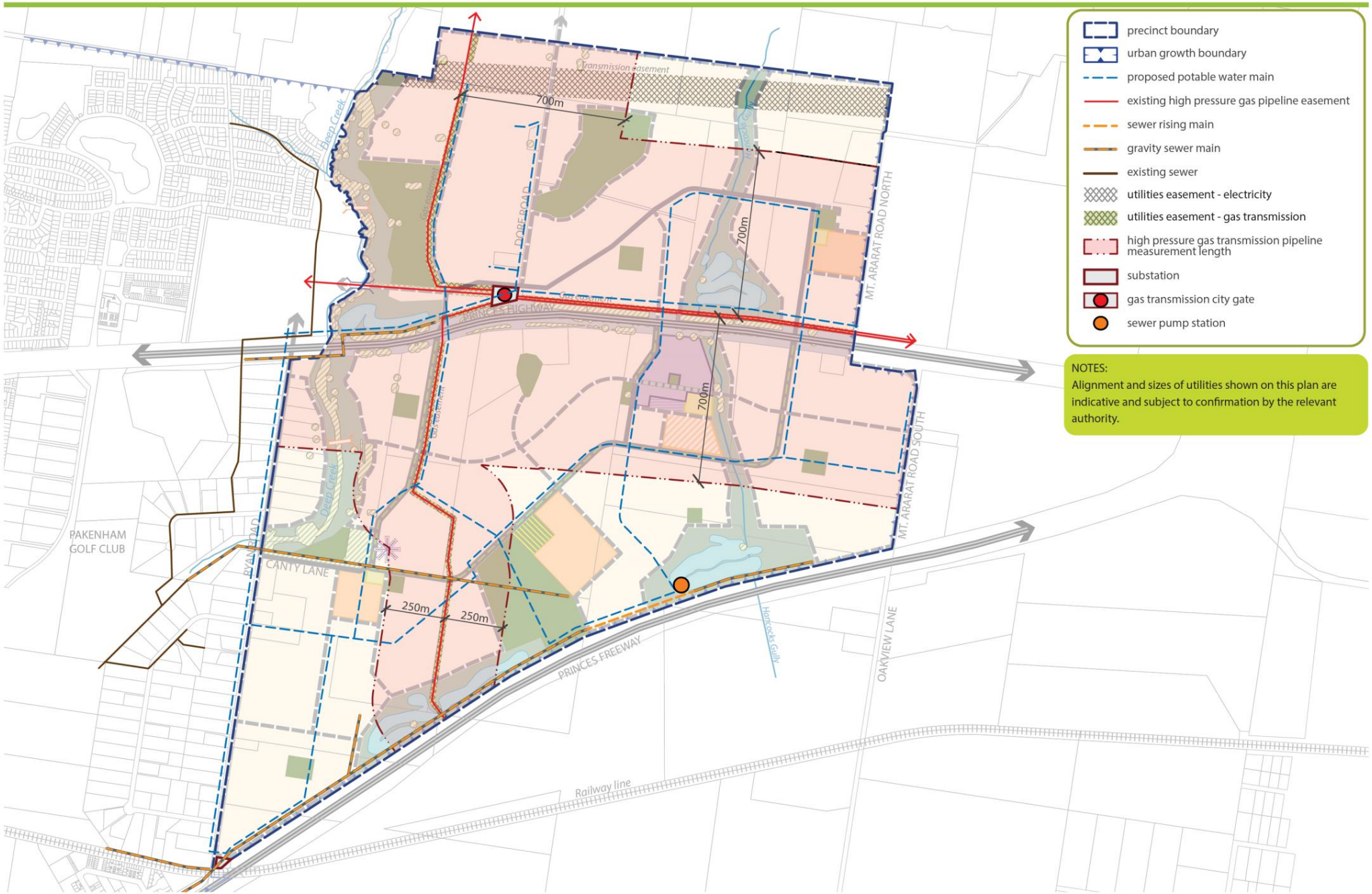

3.6.2 Utilities

REQUIREMENTS	
General	
R96	Trunk services are to be placed along the general alignments illustrated on *Plan 10- Utilities*, subject to any refinements as advised by the relevant service authorities.
R97	Utilities must be placed on the outer edges of waterway corridors to avoid disturbance to existing waterway values, native vegetation, significant landform features and heritage sites, to the satisfaction of Melbourne Water and the responsible authority.
R98	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 a conservation area or natural waterway corridor they must be located to avoid disturbance to existing
R99	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; • Shared, pedestrian and bicycle paths • Street lights; and • Street trees. A typical cross section of each street is also to be submitted showing above and below ground placement of services, street lights and trees. The plans and cross sections must demonstrate how services, driveways and street lights will be placed so as to achieve the road reserve width identified in the cross sections at *Appendix C: Road Cross Sections and Intersections* and the minimum level of street tree planting. If required, the plan and cross sections will nominate which services will be placed under footpaths or road pavement. If the required services do not fit within the road reserve, the road reserve width will need to be increased to accommodate the services. The plans and cross sections are to be approved by the responsible authority and all relevant service authorities prior to development commencing.
R100	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 specified and will be additional to the areas designated in *Table 6 - Open Space Delivery Guide.*
R101	Subject to South East Water agreeing to do so, the developer must enter into an agreement with South East Water requiring the subdivision to be reticulated with a dual pipe recycled water system to provide for the supply of recycled water from a suitable source or scheme to all allotments and open space reserves within the subdivision.
R102	All new electricity supply infrastructure (excluding substations and cables with voltage 66kv or greater) must be provided underground.
R103	All existing above ground electricity cables (excluding substations and cables with voltage 66kv or greater) must be placed underground as part of the upgrade or subdivision of existing roads.

GUIDELINES	
G60	Above ground utilities should be located outside of key view lines and should be screened with vegetation as appropriate
G61	Design and placement of underground services in new or upgraded streets should be guided by *Appendix F: Service placement guidelines).*
G62	Utility easements to the rear of lots should only be provided where there is no practical alternative.
G63	Street and other public lighting should utilise cut-off fittings to minimise light spill beyond the required illuminated area.
G64	Design and location of underground services should be guided by *Appendix F: Service Placement Guidelines*
G65	Any utility infrastructure running adjacent to or crossing a high pressure gas transmission pipeline should cross at 90 degrees and be engineered to protect the integrity of the asset to the satisfaction of the responsible authority and gas pipeline owner.

3.6.3 Energy and sustainability

GUIDELINES	
G66	Development should facilitate the reduction of environmental impacts and resource use through: • Appropriate subdivision designs that orientate dwellings on an east-west axis to achieve greater access to northern sun; • Public realm design and connectivity; • Facilitation of alternative energy generation systems; and • Access to public and integrated active transport networks

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Plan 11 - Precinct Infrastructure Plan

Pakenham East Precinct Structure Plan

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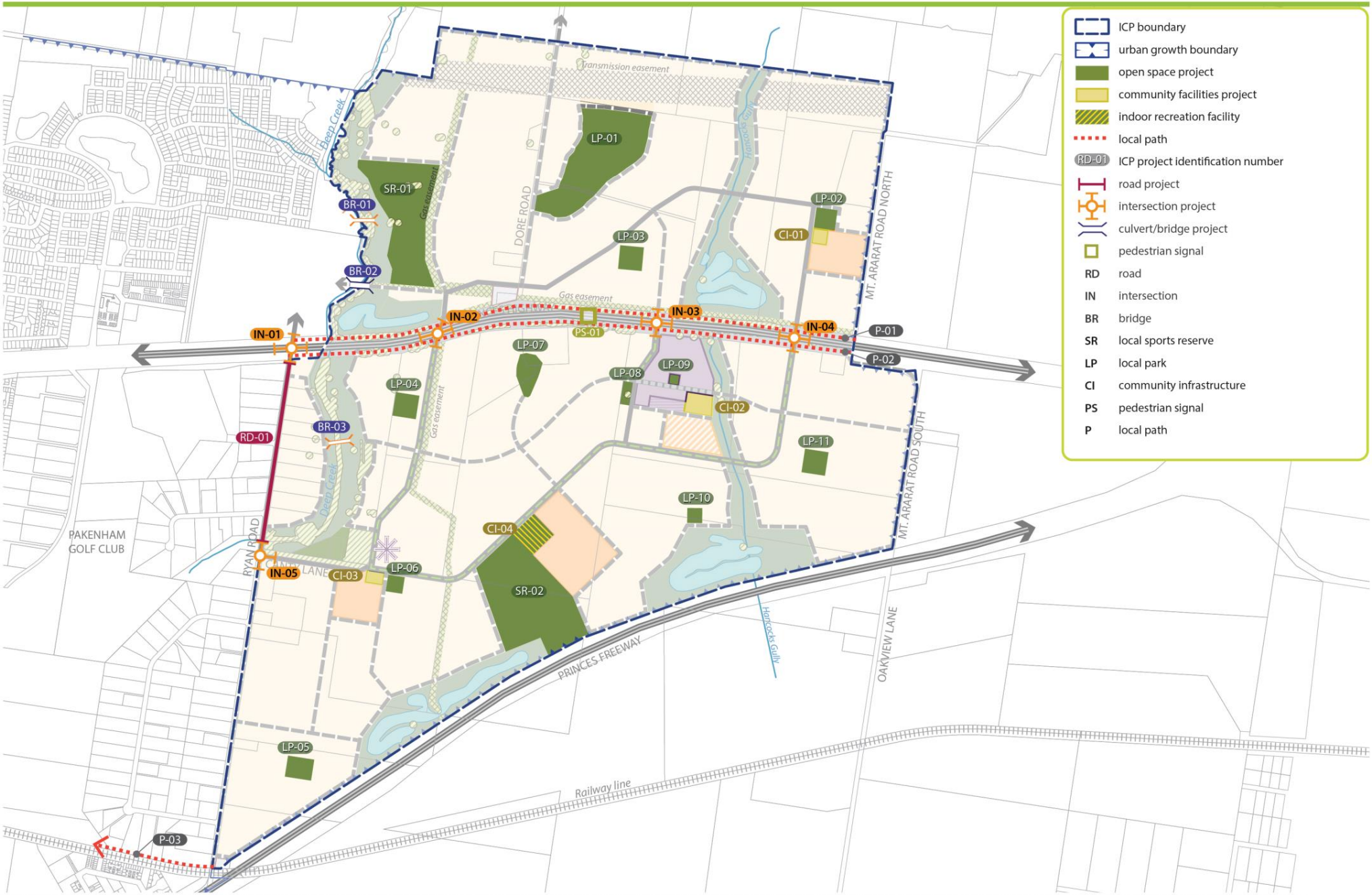

3.7 Infrastructure Delivery and Staging

Infrastructure within the precinct will be delivered via the following mechanisms:

- Subdivision construction works by developers;
- Agreements under S173 of the *Planning and Environment Act 1987*;
- Utility service provider requirements, including any development services (drainage) scheme/strategy or equivalent managed by the relevant drainage authority;
- Pakenham East Infrastructure Contributions Plan (ICP);
- Relevant development/infrastructure contributions from adjoining areas;
- Capital works projects by Council, State government agencies and non-government organisations;
- The Growth Area Infrastructure Contributions (GAIC) and GAIC Works in Kind projects; and
- Works-in-kind (WIK) projects undertaken by developers on behalf of Council or State government agencies.

3.7.1 Subdivision works by developers

REQUIREMENTS	
R104	Subdivision of land within the precinct must provide and meet the total cost of delivering the following infrastructure: • Connector roads and local streets (including internal loop roads and service roads that abut arterial roads); • Local bus stop infrastructure (where locations have been agreed in writing by Public Transport Victoria); • 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 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 where otherwise included in the ICP); • Bicycle parking facilities as required in this document; • Appropriately scaled lighting along all roads, major shared and pedestrian paths, and traversing public open space; • Basic improvements to local reserves and open space (refer open space delivery below); • Local drainage system; • Local street or pedestrian path crossings of waterways and the electricity transmission line easement 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; and • Provision of water tapping, potable and recycled water connection points for any potential open space.
R105	All public open space (where not otherwise provided via an Infrastructure Contributions Plan) must be finished to a standard that satisfies the requirements of the responsible authority prior to the transfer of the public open space, including but not limited to: • Removal of all existing and disused structures, foundations, pipelines and stockpiles; • Clearing of rubbish and environmental weeds and rocks, levelled, topsoiled and grassed with warm climate grass; • Provision of water tapping, potable and/or recycled water connection points; • Identification of sewer, gas and electricity connection points for land proposed as sports reserves, district reserves, neighbourhood reserves or local reserves; • Trees and other plantings; • Vehicular exclusion devices (landscape treatments, fences, bollards or other suitable methods) and maintenance access points, to the satisfaction of the responsible authority; and • Installation of park furniture including barbeques, shelters, tables, local scale play grounds and other local scale play equipment elements such as half basketball courts, rubbish bins and appropriate paving to

	support these facilities consistent with the type of public open space listed in the open space delivery guide, Appendix G.
R106	Local sports reserves identified in *Table 8 - Precinct Infrastructure* must be vested in the relevant authority in the following condition: • Free from surface and/or protruding rocks and structures and contaminated soil • Reasonably graded and/or topsoiled to create a safe and regular surface with a maximum 1:6 gradient; and • Seeded and top-dressed with drought-resistant grass in bare, patchy and newly-graded areas.
R107	Any development in proximity to the freeway that triggers the VicRoads *Requirements of Developers – Noise Sensitive Uses* document must respond to its requirements to the satisfaction of the responsible authority.
R108	Any heritage site / reserve or conservation area to be vested in the relevant authority must be done so in a standard that satisfies the requirements of that authority. Works required prior to the transfer include, but may not be limited to: • Clearing of rubbish, weeds and contaminated soils • Essential repairs to and stabilisation of any structures • Any fencing required to ensure the safety of the public Any works carried out must be consistent with any relevant Cultural Heritage Management Plan and Conservation Management Plan.
R109	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.
R110	Where a street has already been constructed or approved for construction to a property boundary, subsequent development must connect with that street to adopt a consistent cross-section until a suitable transition can be made

3.7.2 Development staging

REQUIREMENTS	
R111	Development staging must provide for the timely provision and delivery of: • Intersections of connector streets and arterial roads; • Connector streets, bridges and pedestrian bridges; • Street links between properties, constructed to the property boundary; and • Connection of the on and off road pedestrian and bicycle network.
R112	Streets must be constructed to property boundaries where an inter-parcel connection is intended or indicated in the Precinct Structure Plan, by any date or stage of development required or approved by the responsible authority.

GUIDELINES	
G67	Development staging will be largely determined by the development proposals on land within the Precinct and the availability of infrastructure services. Development applications should demonstrate: • How the development, to the extent practicable, will be integrated with adjoining developments, through the timely provision of connecting roads and walking/cycling paths; • How local open space will be provided in the early stages of the development to provide new residents with amenity; • How sealed road access will be provided to each new allotment; and • How any necessary trunk service extensions will be delivered, including confirmation of the agreed approach and timing by the relevant infrastructure or service provider.
G68	Where practical delivery of sports fields, community facilities, local and neighbourhood reserves and playgrounds, pedestrian and cycle path connections (as relevant) should commence in the early stages of development.

3.8 Precinct Infrastructure

Plan 11 Precinct Infrastructure Plan and *Table 8 - Precinct Infrastructure* list the items of the Pakenham East ICP and other infrastructure to be delivered by the local council or State Government to meet the needs of the proposed development within the precinct.

Table 8 Precinct Infrastructure

PROJECT CATEGORY	ICP PROJECT NUMBER	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			TIMING
					Ultimate land	Interim construction	Ultimate construction	
Road Projects								
Road	RD-01 (ICP)	Ryan Road Connector Road: Princes Highway (IN-01) to Canty Lane connector (IN-05)	Construction of a 1 lane carriageway, excluding intersections (ultimate treatment) within the existing Ryan Road reserve	Cardinia Shire Council	No	Yes	Yes	M-L
Intersection Projects								
Intersection	IN-01 (ICP)	Intersection - Princes Highway / Ryan Road connector road	Purchase of land (ultimate treatment) and construction of primary arterial to connector road 4-way signalised intersection (interim treatment)	VicRoads	Yes (50%)	Yes (50%)	No	M-L
Intersection	IN-02 (ICP)	Intersection - Princes Highway / north south connector road	Purchase of land (ultimate treatment) and construction of primary arterial to connector road 4-way signalised intersection (interim treatment)	VicRoads	Yes	Yes	No	S

PROJECT CATEGORY	ICP PROJECT NUMBER	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			TIMING
					Ultimate land	Interim construction	Ultimate construction	
Intersection	IN-03 (ICP)	Intersection - Princes Highway / north south connector road/local access road	Purchase of land (ultimate treatment) and construction of primary arterial to connector road (south of the highway)/local access road (north of the highway) 4-way signalised intersection (interim treatment)	VicRoads	Yes	Yes	No	M
Intersection	IN-04 (ICP)	Intersection - Princes Highway / north south connector road	Purchase of land (ultimate treatment) and construction of primary arterial to connector road 4-way signalised intersection (interim treatment)	VicRoads	Yes	Yes	No	M
Intersection	IN-05 (ICP)	Roundabout - Ryan Road/Canty Lane connector road	Purchase of land (ultimate treatment) and construction of connector to connector road 3-way roundabout (ultimate treatment)	Cardinia Shire Council	Yes	N/A	Yes	M
Bridge and Culvert Projects								
Bridge	BR-01 (ICP)	Pedestrian and cyclist bridge	Purchase of land and construction of pedestrian and cycle bridge across Deep Creek, north of the Princes Highway	Cardinia Shire Council	Yes	No	Yes	L
Bridge	BR-02 (ICP)	Connector road bridge across Deep Creek	Purchase of land and construction of road bridge across Deep Creek	Cardinia Shire Council	Yes	No	Yes	L
Bridge	BR-03 (ICP)	Pedestrian and cyclist bridge	Purchase of land and construction of pedestrian and cycle bridge across Deep Creek, south of the Princes Highway	Cardinia Shire Council	Yes	No	Yes	L

PROJECT CATEGORY	ICP PROJECT NUMBER	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			TIMING
					Ultimate land	Interim construction	Ultimate construction	
Pedestrian Crossing Projects								
Signals	PS-01	Pedestrian Signals	Construction of pedestrian signals on Princes Highway	VicRoads	N/A	Yes	No	M-L
Community Facility Projects								
Community	(CI-01) C	Northern Community Centre	Construction of a Level 1 community building (child services) Land purchase of a Level 1 community building (child services)	Cardinia Shire Council	Yes	N/A	Yes	L
Community	CI-02 (C)	Local Town Centre Community Centre	Construction of a Level 2 community building (community use with potential for child services) Land purchase for a Level 2 community building (community use with potential for child services)	Cardinia Shire Council	Yes	N/A	Yes	M
Community	CI-03 (C)	Southern Community Centre	Construction of a Level 1 community building (child services) Land purchase of a Level 1 community building (child services)	Cardinia Shire Council	Yes	N/A	Yes	M
Education Projects								
School	-	Government Primary School	Land and construction of government primary school in the Northern Community Hub	Department of Education and Training	No	No	No	L

PROJECT CATEGORY	ICP PROJECT NUMBER	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			TIMING
					Ultimate land	Interim construction	Ultimate construction	
School	-	Government Primary School	Land and construction of government primary school in the Southern Community Hub	Department of Education and Training	No	No	No	M
School	-	Non-Government Primary School	Land and construction of potential non-government primary school adjacent to the Local Town Centre	Non-government school provider	No	No	No	M
Open Space and Local Park Projects								
Open space	SR-01	Northern Sports Reserve	Land purchase for sports reserve and pavilion/s.	Cardinia Shire Council	Yes	N/A	Yes	M-L
			Construction of a sports reserve incorporating basic and essential playing surfaces and car parks, including all construction works, landscaping and related infrastructure.					
			Construction of pavilion/s to serve the sports reserve, including all building works, landscaping and related infrastructure.					

PROJECT CATEGORY	ICP PROJECT NUMBER	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			TIMING
					Ultimate land	Interim construction	Ultimate construction	
Open space	SR-02	Southern Sports Reserve	Land purchase for sports reserve and pavilion/s.	Cardinia Shire Council	Yes	N/A	Yes	M
			Construction of a sports reserve incorporating basic and essential playing surfaces and car parks, including all construction works, landscaping and related infrastructure .					
			Construction of a pavilion/s to serve the sports reserve, including all building works, landscaping and related basic and essential infrastructure.					
Open space	LP-01	Local Park	Hilltop Local Park (property 7 8, 9) Land purchase	Cardinia Shire Council	Yes	No	No	L
Open space	LP-02	Local Park	Local park abutting community facility and primary school (property 6) Land purchase	Cardinia Shire Council	Yes	No	No	L
Open space	LP-03	Local Park	Local park (property 8) Land purchase	Cardinia Shire Council	Yes	No	No	L
Open space	LP-04	Local Park	Local park (property 30) Land purchase	Cardinia Shire Council	Yes	No	No	S
Open space	LP-05	Local Park	Local park abutting conservation reserve and Deep Creek Reserve (property 27,28) Land purchase	Cardinia Shire Council	Yes	No	No	M

PROJECT CATEGORY	ICP PROJECT NUMBER	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			TIMING
					Ultimate land	Interim construction	Ultimate construction	
Open space	LP-06	Local Park	Local park (property 48) Land purchase	Cardinia Shire Council	Yes	No	No	M
Open space	LP-07	Local Park	Local park adjacent to community facility and primary school (property 41) Land purchase	Cardinia Shire Council	Yes	No	No	M
Open space	LP-08	Local Park	Hilltop Local Park (property 31,32,33)	Cardinia Shire Council	Yes	No	No	M
Open space	LP-09	Local Park	Local Park (property 34)	Cardinia Shire Council	Yes	No	No	M-L
Open space	LP-10	Local Park	Pocket park / town square (property 34) in the Local Town Centre Land purchase	Cardinia Shire Council	Yes	No	No	M-L
Open space	LP-11	Local Park	Local Park abutting drainage reserve (property 37-38)	Cardinia Shire Council	Yes	No	No	M-L
Open space	LP-12	Local Park	Local park (property 35) Land purchase	Cardinia Shire Council	Yes	No	No	M-L

PROJECT CATEGORY	ICP PROJECT NUMBER	TITLE	PROJECT DESCRIPTION	LEAD AGENCY	COMPONENT INCLUDED IN ICP			TIMING
					Ultimate land	Interim construction	Ultimate construction	
Local path	P-01	Shared path within the Prince Highway road reserve (north of the highway)	Construction of shared path within the Princes Highway road reserve, north of the highway carriageway	Cardinia Shire Council	No	N/A	Yes	L
Local path	P-02	Shared path within the Prince Highway road reserve (south of the highway)	Construction of shared path within the Princes Highway road reserve, south of the highway carriageway	Cardinia Shire Council	No	N/A	Yes	M
Local path	P-03	Shared path Ryan road to Racecourse Road	Construction of shared path within the Vic track rail reserve- Ryan road- Racecourse road	Cardinia Shire Council	No	N/A	Yes	L
Conservation Projects								
Conservation	-	Local Conservation	Nature Conservation area	Cardinia Shire Council	No	No	No	M
Conservation	-	Deep Creek Conservation Reserve	Nature Conservation area	DELWP/Melbourne Water	No	No	No	L

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4.0 APPENDICES

4.1 APPENDIX A: Property-Specific Land Use Budget

Table 9 Property Specific Land Use 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		Other Transport					Uncredited Open Space			Credited Open Space					
		Arterial Road - Existing Road Reserve	Arterial Road - New / Widening / Intersection Flaring (ICP land)	Non-Arterial Road - Retained Existing Road Reserve	Government School	Potential Non-Government School	ICP Community Facilities	Local Indoor Recreation (ICP land)	Conservation Reserve	Waterway and Drainage Reserve	Utilities Easements	Local Sports Reserve (ICP land)	Local Network Park (ICP land)	Utilities Sub-stations / facilities (acquired by relevant authority)			
1	11.00	-	-	-	-	-	-	-	0.30	-	0.60	-	-	-		10.10	91.82%
2	12.67	-	-	-	-	-	-	-	0.26	-	-	-	-	-		12.41	97.95%
3	11.53	-	-	-	-	-	-	-	-	1.70	-	-	-	-		9.83	85.26%
4	8.35	-	-	-	-	-	-	-	-	-	-	-	-	-		8.35	100.00%
5	4.27	-	-	-	-	-	-	-	-	-	-	-	-	-		4.27	100.00%

6	30.76	-	0.15	-	3.50	-	0.40	-	0.06	1.00	0.81	-	0.80	-	24.05	78.17%
7	26.60	-	-	-	-	-	-	-	0.12	11.33	0.68	-	0.16	-	14.30	53.78%
8	30.24	-	0.13	-	-	-	-	-	0.02	-	1.49	-	3.09	-	25.51	84.34%
9	26.03	-	-	-	-	-	-	-	-	-	-	-	8.64	-	17.39	66.82%
10	0.50	-	-	-	-	-	-	-	0.06	-	-	-	-	-	0.44	87.54%
11	0.66	-	-	-	-	-	-	-	-	-	-	-	-	-	0.66	100.00%
12	0.39	-	-	-	-	-	-	-	-	-	-	-	-	0.39	0.00	0.00%
13	0.31	-	-	-	-	-	-	-	-	-	-	-	-	0.31	0.00	0.00%
14	71.96	-	0.33	-	-	-	-	-	3.01	12.23	4.59	10.08	-	-	41.72	57.98%
15	1.99	-	-	-	-	-	-	-	1.56	0.42	0.01	-	-	-	0.00	0.00%
16	1.18	-	0.01	-	-	-	-	-	0.01	0.12	-	-	-	-	1.05	88.45%
17	1.00	-	-	-	-	-	-	-	0.04	0.07	-	-	-	-	0.90	89.37%
18	1.00	-	-	-	-	-	-	-	0.01	0.01	-	-	-	-	0.99	98.22%
19	1.09	-	-	-	-	-	-	-	0.10	0.00	-	-	-	-	0.99	91.22%
20	1.18	-	-	-	-	-	-	-	0.04	-	-	-	-	-	1.14	96.57%
21	1.25	-	-	-	-	-	-	-	0.07	-	-	-	-	-	1.18	94.65%
22	1.26	-	-	-	-	-	-	-	-	-	-	-	-	-	1.26	100.00%
23	1.31	-	-	-	-	-	-	-	-	-	-	-	-	-	1.31	100.00%

24	1.45	-	-	-	-	-	-	-	-	-	-	-	-	-	1.45	100.00%
25	1.20	-	-	-	-	-	-	-	-	0.00	-	-	-	-	1.20	100.00%
26	0.72	-	-	-	-	-	-	-	0.37	0.35	-	-	-	-	0.00	0.00%
27	0.77	-	-	-	-	-	-	-	0.00	-	-	-	0.77	-	0.00	0.00%
28	24.70	-	-	-	-	-	-	-	6.15	8.84	-	-	0.86	-	8.85	35.81%
29	14.67	-	-	-	-	-	-	-	-	-	0.89	-	-	-	13.78	93.96%
30	15.71	-	0.56	-	-	-	-	-	0.11	-	1.15	-	1.00	-	12.89	82.06%
31	6.07	-	-	-	-	-	-	-	-	-	-	-	0.60	-	5.47	90.14%
32	2.89	-	-	-	-	-	-	-	-	-	-	-	0.29	-	2.60	89.94%
33	59.65	-	-	-	7.28	-	-	1.50	0.07	-	0.60	5.0	0.50	-	44.74	75.00%
34-E	0.70	-	-	-	-	-	-	-	-	-	-	-	-	-	0.70	100.00%
34-R	24.76	-	0.32	-	-	3.50	1.00	-	0.53	2.91	-	-	0.53	-	15.98	64.53%
35	38.93	-	0.20	-	-	-	-	-	-	0.57	-	-	1.00	-	37.16	95.45%
36	0.80	-	-	-	-	-	-	-	-	-	-	-	-	-	0.80	100.00%
37	28.52	-	-	-	-	-	-	-	-	3.36	-	-	0.28	-	24.88	87.23%
38	29.28	-	-	-	0.82	-	-	-	0.07	13.71	-	0.1	0.12	-	14.51	49.56%
39	23.84	-	-	-	-	-	-	-	-	5.95	1.48	8.6	-	-	7.81	32.74%
40	0.10	-	-	-	-	-	-	-	-	0.04	0.06	-	-	-	0.00	0.00%

41	29.89	-	0.09	0.00	3.50	-	0.40	-	0.03	1.24	0.00	-	0.50	-	24.12	80.70%
42	1.22	-	0.15	-	-	-	-	-	0.03	-	-	-	-	-	1.05	85.78%
43	2.23	-	-	-	-	-	-	-	-	-	-	-	-	-	2.23	100.00%
44	0.42	-	-	-	-	-	-	-	-	-	-	-	-	-	0.42	100.00%
45	1.26	-	-	-	-	-	-	-	-	-	-	-	-	-	1.26	100.00%
46	25.31	-	-	-	-	-	-	-	0.07	4.40	0.00	-	-	-	20.84	82.34%
47	0.40	-	-	-	-	-	-	-	-	-	-	-	-	-	0.40	100.00%
48	12.85	-	-	-	-	-	-	-	-	0.45	-	-	1.00	-	11.39	88.68%
49	4.25	-	-	-	-	-	-	-	-	-	-	-	-	-	4.25	100.00%
50	0.19	-	-	-	-	-	-	-	-	-	-	-	-	0.19	0.00	0.00%
SUB-TOTAL	**599.34**	**0.00**	**1.95**	**0.00**	**15.10**	**3.50**	**1.80**	**1.50**	**13.08**	**68.70**	**12.37**	**23.68**	**20.14**	**0.89**	**436.64**	72.85%

Road Reserve																
R1 (Deep Creek Road)	1.05	-	-	-	-	-	-	-	0.82	0.23	0.00	-	-	-	0.00	0.00%
R2 (Dore Road)	2.24	-	-	2.19	-	-	-	-	0.00	-	0.05	-	-	-	0.00	0.00%
R3 (Mt. Ararat Nth Road)	0.91	-	-	0.91	-	-	-	-	-	-	-	-	-	-	0.00	0.00%
R4 (Princes Hwy)	21.14	13.02	-	-	-	-	-	-	8.12	-	-	-	-	-	0.00	0.00%
R5 (Ryan Road)	2.55	-	-	2.48	-	-	-	-	0.07	-	-	-	-	-	0.00	0.00%
R6 (Canty La)	1.32	-	-	0.38	-	-	-	-	0.93	-	0.00	-	-	-	0.00	0.00%

R7 (Unnamed)	0.34	-	-	0.33	-	-	-	-	0.00	-	0.00	-	-	-	0.00	0.00%
R8 (Mt. Ararat Sth Road)	0.92	-	-	0.92	-	-	-	-	-	-	-	-	-	-	0.00	0.00%
SUB-TOTAL	**30.48**	**13.02**	**0.00**	**7.22**	**0.00**	**0.00**	**0.00**	**0.00**	**9.95**	**0.23**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00%**
TOTALS PSP 1210	**629.82**	**13.02**	**1.95**	**7.22**	**15.10**	**3.50**	**1.80**	**1.50**	**23.03**	**68.93**	**12.42**	**23.68**	**20.14**	**0.89**	**436.64**	**69.33%**

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4.2 APPENDIX B: Local Town Centre Design (LTC) Design and Local Convenience Centre (LCC) Principles

Principles	Application
• ATTRACTING INVESTMENT AND SUPPORTING THE COMMUNITY	
Principle 1 Provide a full range of local community and other facilities, including a supermarket, shops, medical and recreation uses.	• Uses within the LTC should be located generally in accordance with the locations and land use terms identified in the LTC Concept Plan (Figure 2). • The design of the LTC and LCC and adjacent land uses should facilitate a high degree of community interaction and provide a vibrant mix of retail, recreation and community facilities. • The LTC should encourage smaller scale individual tenancies, particularly along Main Street, to attract investment and encourage greater diversity and opportunities for local business investment. • The LTC should be anchored by a full-line supermarket and supported by speciality stores and peripheral commercial uses. • Active building frontages should address the Boulevard Connector Street, Main Street and Hancock's Gully landscaped waterway corridor. • Medical centres and peripheral commercial uses should be located at the edge of the LTC to contribute to the activity of the centre. • Car parking areas should be located centrally to the site and to the side of street based retail frontages. • Car parking areas should be designed to accommodate shared use/functionality. • Mixed use buildings should provide retail and/or commercial at ground level and office and residential above ground level. • Public toilets should be provided in locations which are safe and accessible and within the managed area of the property. • Shopfronts should have varying widths and floor space areas to promote a diversity of trading opportunities throughout the LTC. • Site servicing areas of development must not front the main street/s and must be located to the rear and/or side street and sleeved or screened. • Local Convenience Centre should be planned for neighbourhoods that contain less than 8,000 people and are located more than 1km away from a local town centre or higher order town centre.
• FOSTERING EMPLOYMENT	
Principle 2 Integrate local employment and service opportunities in a business friendly environment	• A variety of employment and business opportunities should be provided 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 LTC and LCC • Services and facilities to support home based and smaller businesses are encouraged within the LTC and LCC • Appropriate locations for small office/home office (SOHO) housing options which maximises the access and exposure of activity occurring in the LTC should be considered as part of the housing design process • The medium density residential area adjoining Hancock's Gully should be designed with a flexible floor height, to allow conversion of residential to commercial uses if required over time.
• DELIVERING HOUSING OPTIONS	
Principle 3 Include a range of medium and high density housing and other forms of residential uses within and	• The Future Urban Structure identifies the location and extent of medium density housing required surrounding the LTC and CC in areas of high amenity and accessibility with strong pedestrian and cycle links. • Provide a range of housing types for a cross section of the community in and around the LTC and LCC. • Refer to the Small Lot Housing Code and Practice Note for further information about housing requirements for small lots around the LTC and CC.

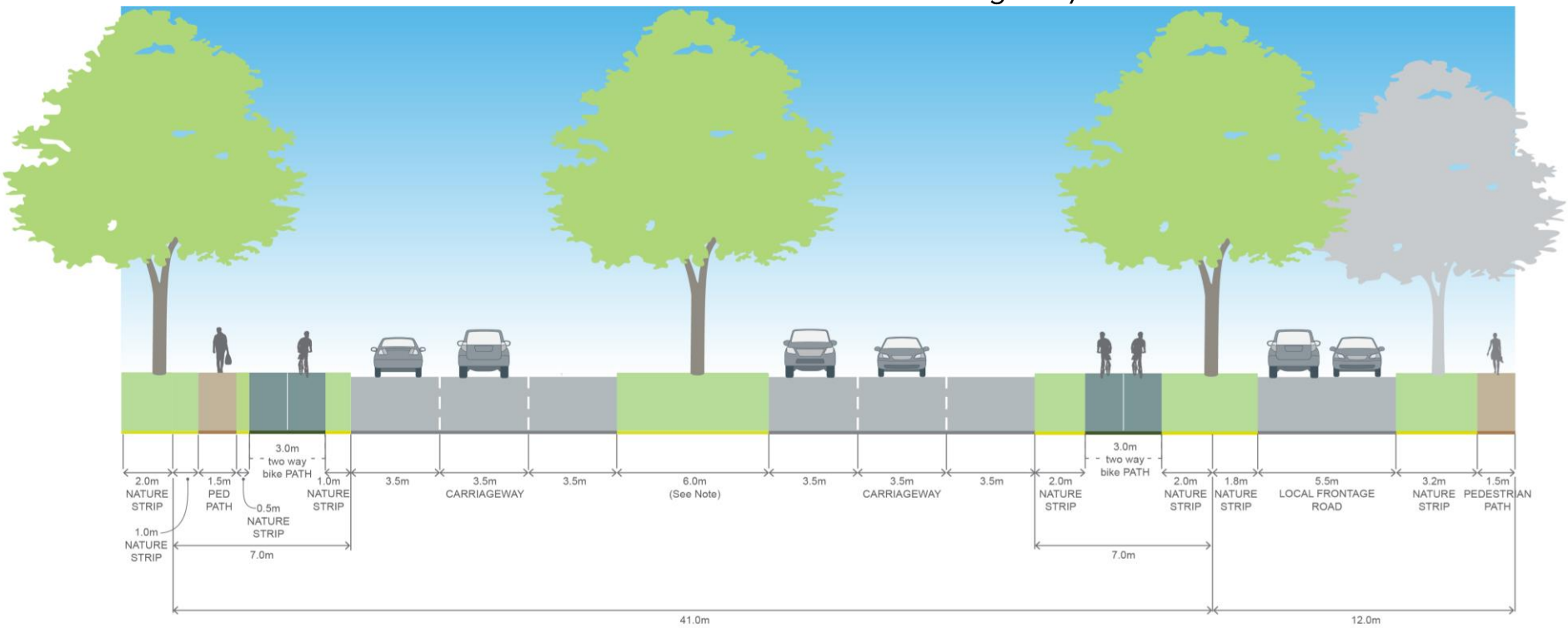
surrounding the LTC and LCC	
• CONNECTING THE REGION	
Principle 4 Locate the LTC and LCC in an attractive setting so that most people live within a walkable catchment of both centres and relate to the centre as the focus of the neighbourhood	• Should be located to maximise the number of dwellings living within a walkable catchment. • The LTC and LCC should have a distinctive character and sense of place by addressing Hancock's Gully (proposed landscaped waterway corridor) and Canty Lane. • The design of LTC and LCC should respect exiting views and vistas to and from each centre.
Principle 5 Design the LTC and LCC to be pedestrian friendly and accessible by all modes including public transport, while enabling private vehicle access	• The LTC and LCC should be easily, directly and safely accessible for pedestrians, cyclists, public transport users, private vehicles, service and delivery vehicles with priority given to pedestrian movement, safety, convenience and amenity. • The LTC should provide a permeable network of streets, walkways and public spaces that provides linkages throughout the centre and designated pedestrian crossing points. • Any streets should be designed to comply with relevant street cross sections provided in this Precinct Structure Plan. • A speed environment of 40km/hr or less should be designed for the street network surrounding the LTC and LCC. • Public transport facilities should be located in convenient locations within and/or near to the LTC to the satisfaction of the Department of Transport. • Bus stops should be provided in accordance with the Public Transport Victoria's Public Transport Guidelines for Land Use and Development to the satisfaction of Department of Public Transport. • Bicycle parking should be provided within the street network and public spaces in highly visible locations close to pedestrian desire lines and key destinations. • Buildings should be located to encourage pedestrian movement along the length of the street through public spaces. • The design of buildings within the LTC and LCC should have a positive relationship with and interface to the street network. • Car parking areas should be designed to ensure passive surveillance and public safety through positioning in relation to buildings and streets and adequate lighting. • Car parking areas should be designed to provide dedicated pedestrian routes and areas of landscaping. • Car parking entry and exit crossovers should be limited. • Car parking entry and exit and car parking areas accommodating heavy vehicle movements should be designed to limit pedestrian/vehicle conflict. • Heavy vehicle loading and unloading should be located to the rear of street based retail frontages. • Street, public spaces and car parks should be well lit to Australian standards and with pedestrian friendly light. Lighting should be designed to avoid unnecessary spill to the side or above. • All public space should respond appropriately to the design for mobility access principles.
Principle 6	• Facilitate safe and efficient operation of bus services. • Encourage use of public transport by locating bus stops in locations which are accessible, safe and convenient.

Promote Public Transport use	
Principle 7 Locate the LTC on a connector street intersection with access to an arterial road and transit stop.	• The LTC should be located on a connector/arterial level intersection that is central to the residential catchment it services while optimising opportunities for passing trade. • The LTC and LCC should be serviced by a bus route. The LTC will be designed to maximise accessibility to the town centre from the proposed bus stop locations.
• CREATING VALUED DESTINATIONS	

Principle 8
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 LTC and LCC location and its surrounds.
	• The design of each building should contribute to a cohesive and legible character for the LTC and LCC as a whole.
	• Sites in prominent location (such as intersections, adjacent to open space) should be identified as significant buildings or landmark structure
	• The design of building frontages should incorporate the use of a consistent covered walkway to provide for weather protection
	• Street facades should be well articulated and be finished in suitable materials and colours that contribute to the character of the LTC and LCC.
	• The design of each centre must consider the Urban Design Guidelines for Victoria to ensure public spaces increase community usage, are more liveable and enhance safety..
	• Corner sites where the main streets intersect should:
	  ○ Be designed to provide a built form that anchors the main street to the intersecting road. This can be achieved through increased building height, scale and articulated frontages
	  ○ Incorporate either 2 storey buildings or two storey parapet design elements and not be single storey.
	  ○ Be developed to have a ground floor active frontage and active floor space component to the main street frontage
	• Materials and design elements should be compatible with the environment and landscape character of the precinct.
	• The supermarket should be sleeved by retail uses and have entry directly from the street so that the use integrates with and promotes activity on the street.
	• Supermarkets or retail uses with a frontage directly to the Main Street and use clear glazing to allow for view lines into the store from the street. (Planning permits for buildings and works should condition against the use of white washed windows, excessive advertising that prevents view lines and obtrusive internal shelving or 'false walls' offset from the glazing).
	• Secondary access from car parking can be considered where it does not diminish from the role of the primary access from the main street or plaza.
	• Retail and commercial buildings should generally be built to the property line
	• Public spaces should be oriented to capture the north sun and protect from prevailing winds and weather.
	• Landscaping of all interface areas should be of a high standard to complement the built form design.
	• Street furniture should be located in areas that are highly visible and close to or adjoin pedestrian desire lines and gathering spaces.
	• 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 façade.
Principle 9 Focus on a public space as the centre of community life	• A public space that acts as a central meeting place within the LTC must be provided. This should be a minimum of 400m2 in size and may take the form of a town square, town park, public plaza space or similar locally responsive option. Smaller public spaces which are integrated, surrounded by active frontages and facilitate pedestrian movement are encouraged. • The public space should address Hancock's Gully and the street based retail frontages. • The public space should be designed to function as an identifiable 'centre' to the LTC, with a distinctive local character that responds to the surrounding environment. • The public space should be flexibly designed to allow a range of uses to occur at any one time, for example shopping and accessing businesses and providing a space where social interaction, celebrations or temporary uses can occur. • The public space should be well integrated with the pedestrian and cycle links and act as a gateway to the LTC from these links. • Bicycle parking should be provided at entry points in highly visible locations in key destinations. Weather protection, passive surveillance and lighting should be provided. • Footpath widths in and around the public space and along street based retail frontages should be sufficient to provide for pedestrian and mobility access, and provide space for outdoor dining and public gatherings.
• PROMOTE SUSTAINABILITY AND ADAPTABILITY	
Principle 10 Promote localisation, sustainability and adaptability	• The LTC and LCC should be designed to be sympathetic to its natural surrounds by: • Investigating the use of energy efficient design and construction methods for all buildings • Implementing Water Sensitive Urban Design principles such as integrated stormwater retention and reuse (toilet flushing and landscape irrigation) • Promoting safe and direct accessibility and mobility within and to and from the LTC and LCC • 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 • 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. • Ensure the LTC has capacity for growth and change to enable adaption and the intensification of uses as the community grows.

4.3 APPENDIX C: Road Cross Sections and Intersections with Princes Highway

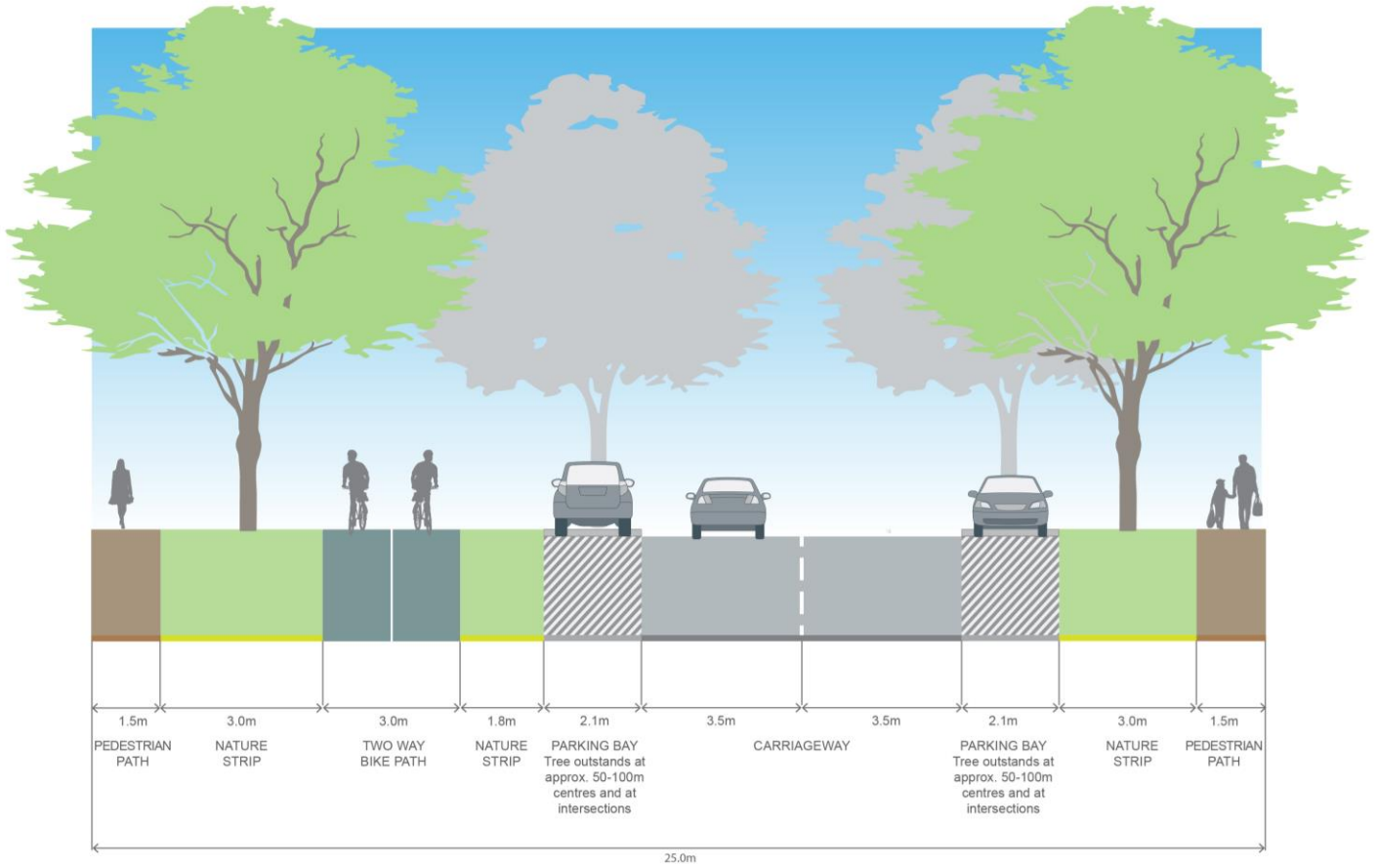


NOTES:

- Includes typical residential interface both sides
- Mature street tree size must be in accordance with Melton City Council's landscaping policy
- Kerbs for arterial carriageways are to be SM2 Semi-Mountable Kerb, and local frontage roads are to be B2 Barrier Kerb (refer 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)
- Frontage road widths may vary subject to detailed design
- Include low level plantings on the 0.5m strip, to delineate between pedestrian path and bike path.

Section 1
Primary Arterial Road (41.0m) - 6 lane - 80km/h

Victorian Planning Authority

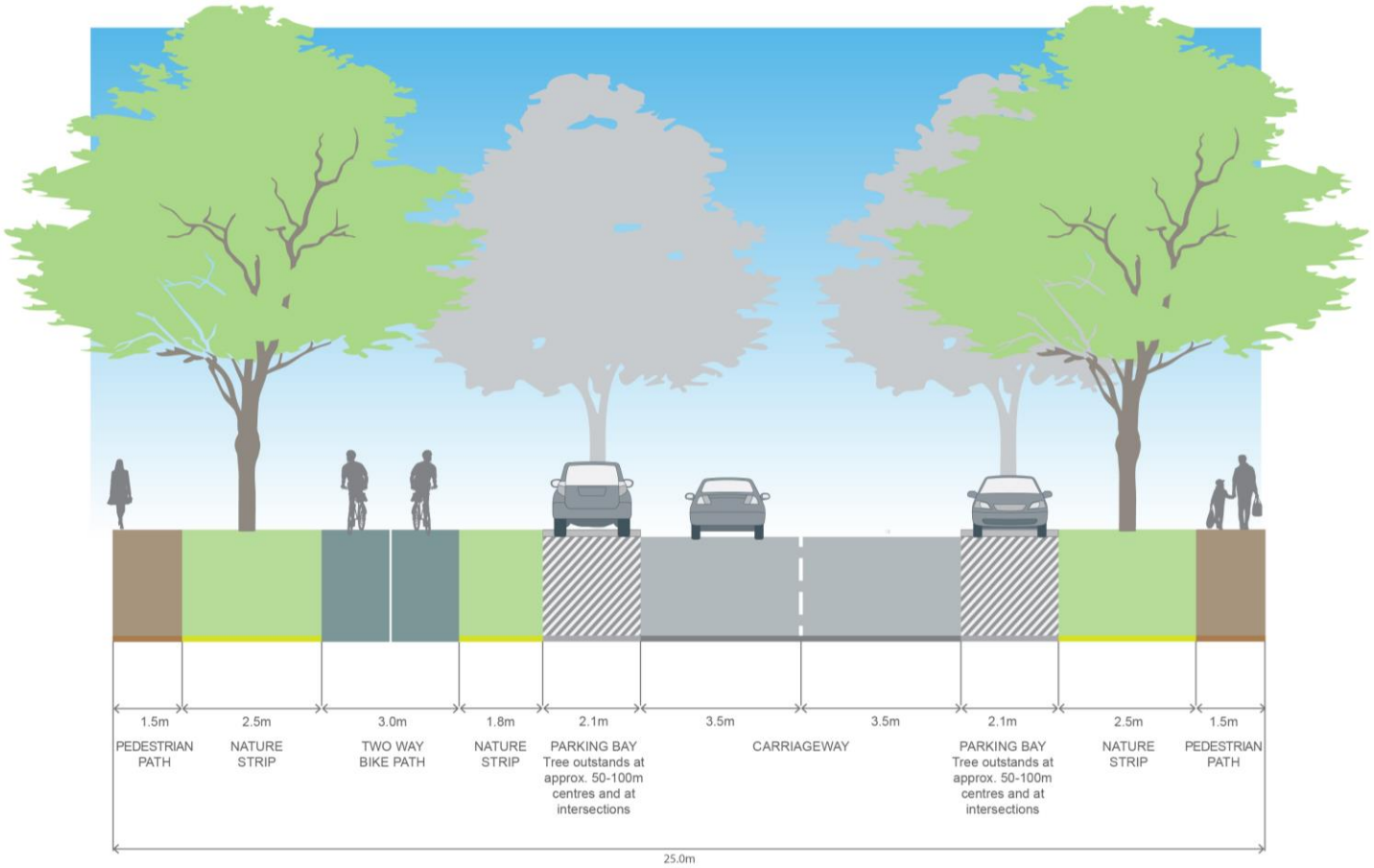


NOTES:

- 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.

Section 2
Connector Street (25.0m)
Residential

Victorian Planning Authority

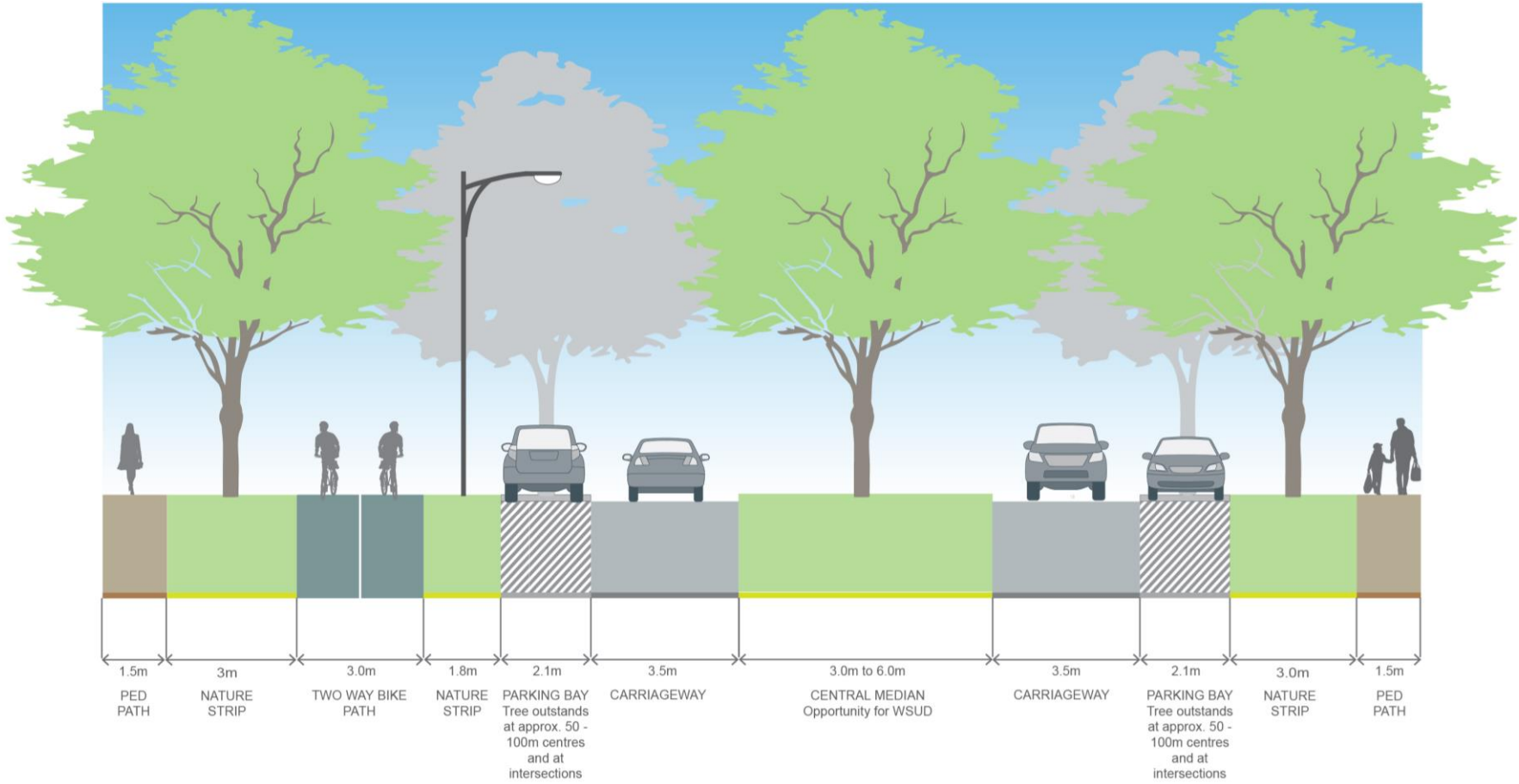


NOTES:

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

Section 3
Connector Street (24.0m) - Ryan Road
Residential

Victorian Planning Authority

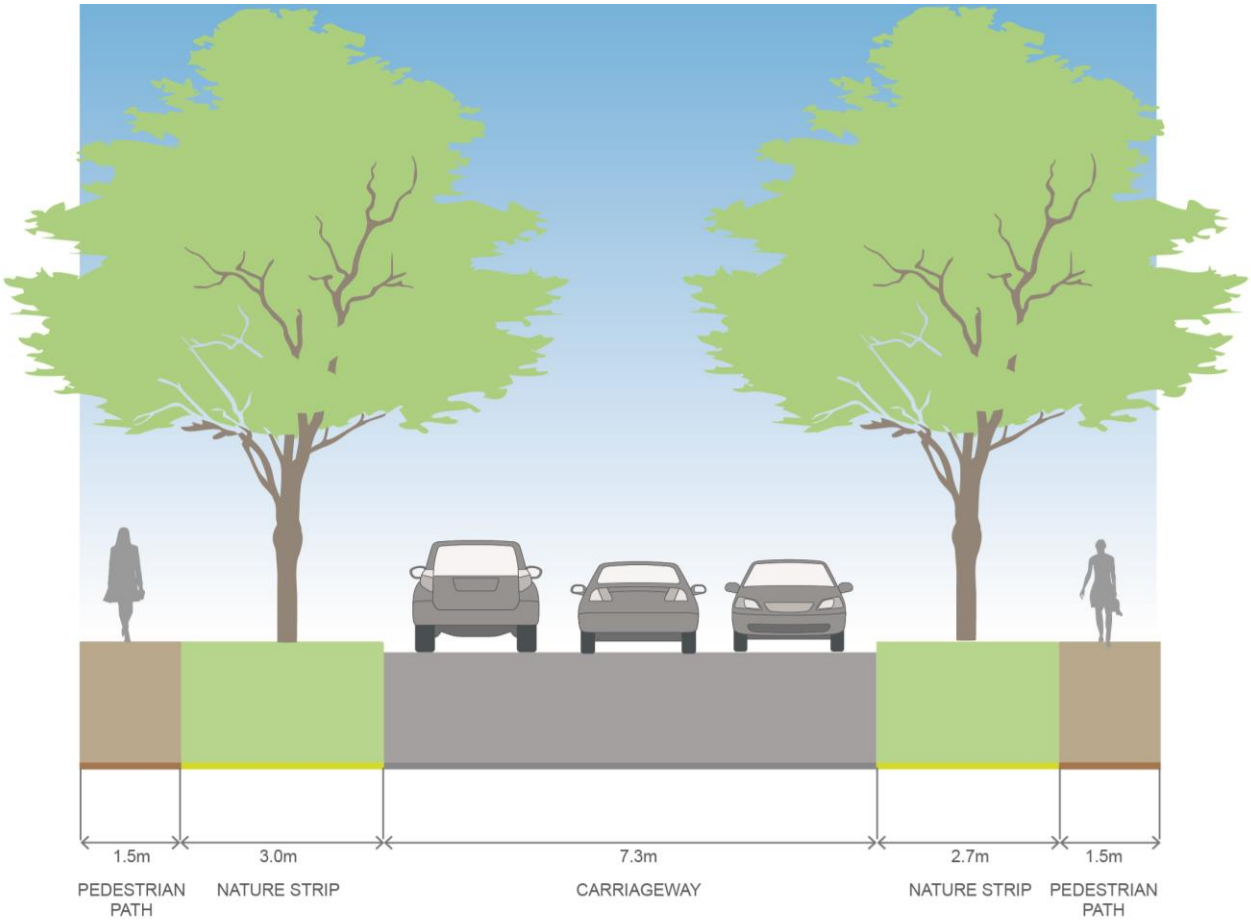


NOTES:

- 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.

Section 4
Connector Street (28.0 - 31.0m)
Standard - Boulevard

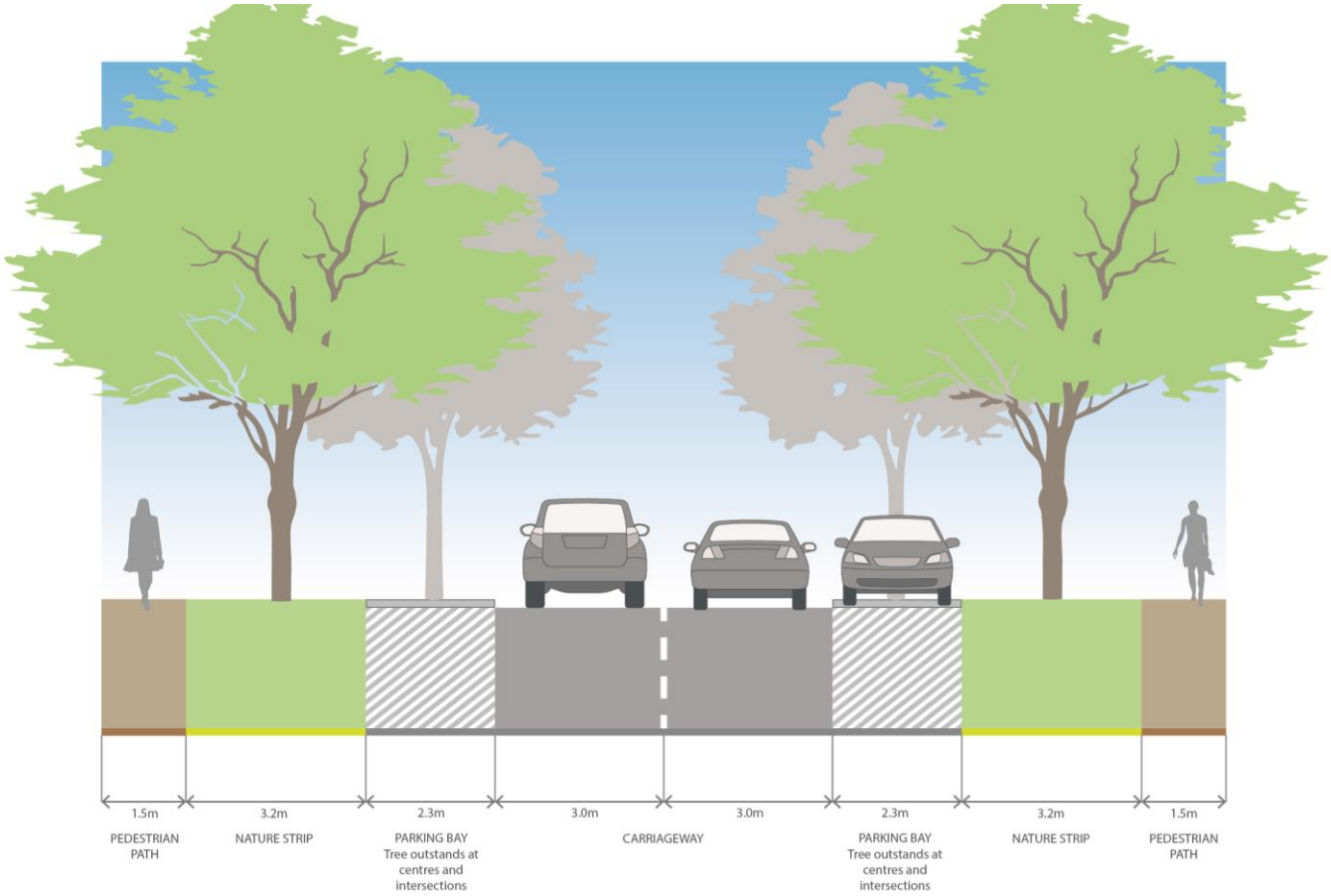
Victorian Planning Authority



NOTES:

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

Section 5
Local Access Street Level 1 (16.0m)

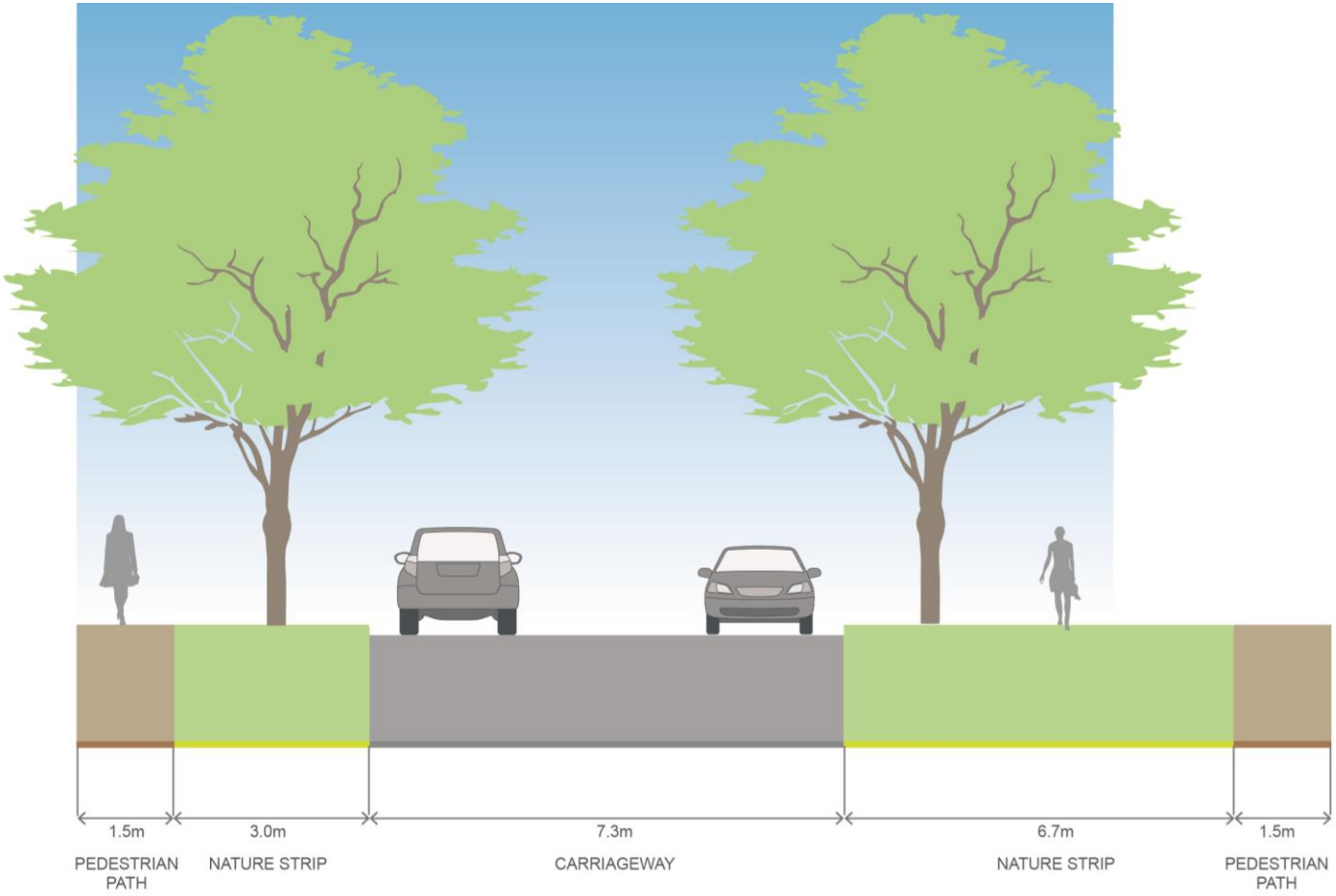


NOTES:

- Mature street tree size must be in accordance with Council's landscaping policy
- Kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas
- Where roads abut school drop-off zones and thoroughfares, grassed nature strip should be replaced with pavement. Canopy tree planting must incorporated into any additional pavement
- Local access streets abutting schools are to be local access street level 2 (20m) type roads
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority
- Tree outstands must meet a maximum interval of 100m.

Section 6
Local Access Street Level 2 (20m)

Victorian Planning Authority

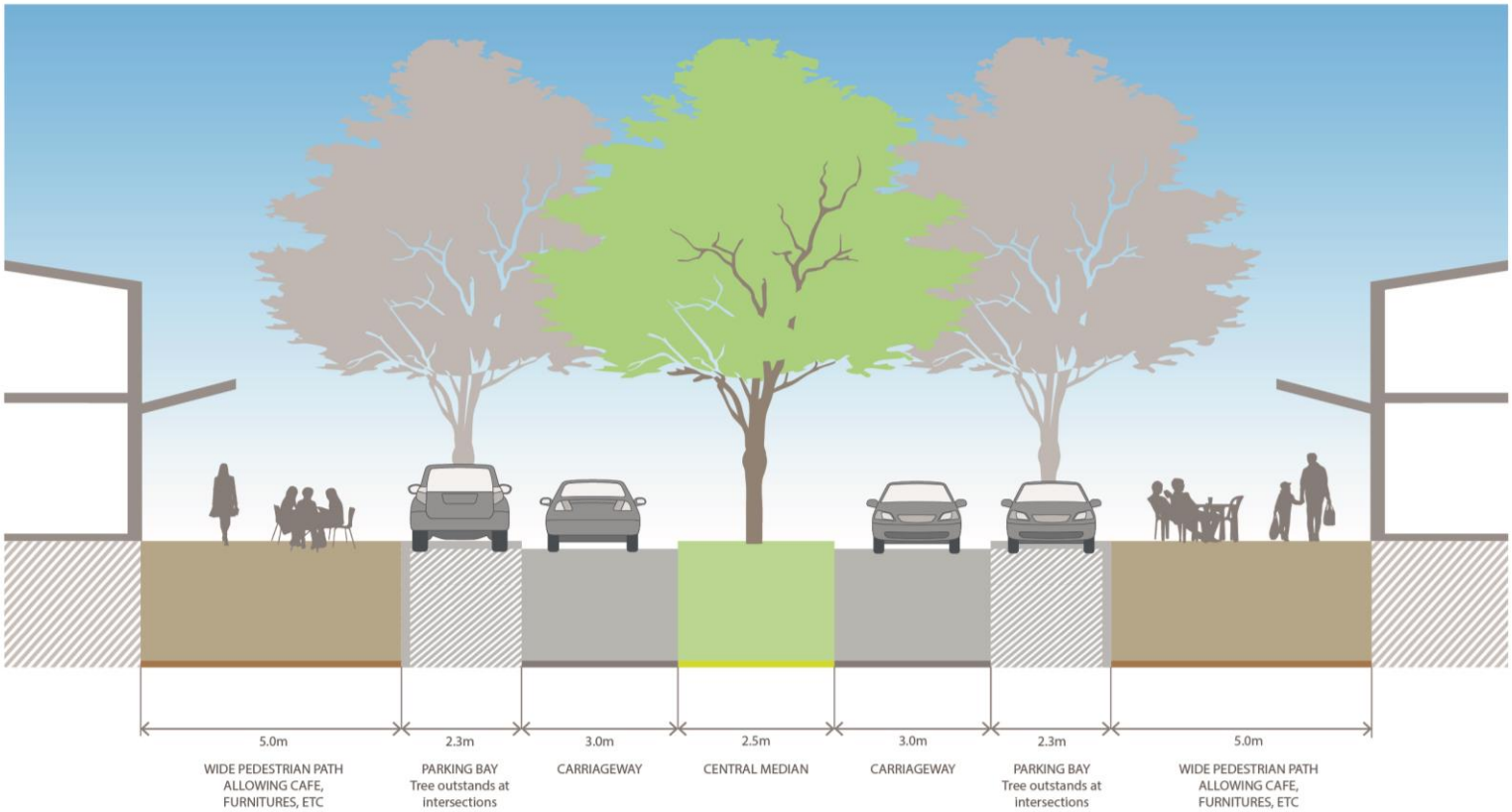


NOTES:

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

Section 7
Local Access Street Level 1 (20.0m) - Interface

Victorian Planning Authority

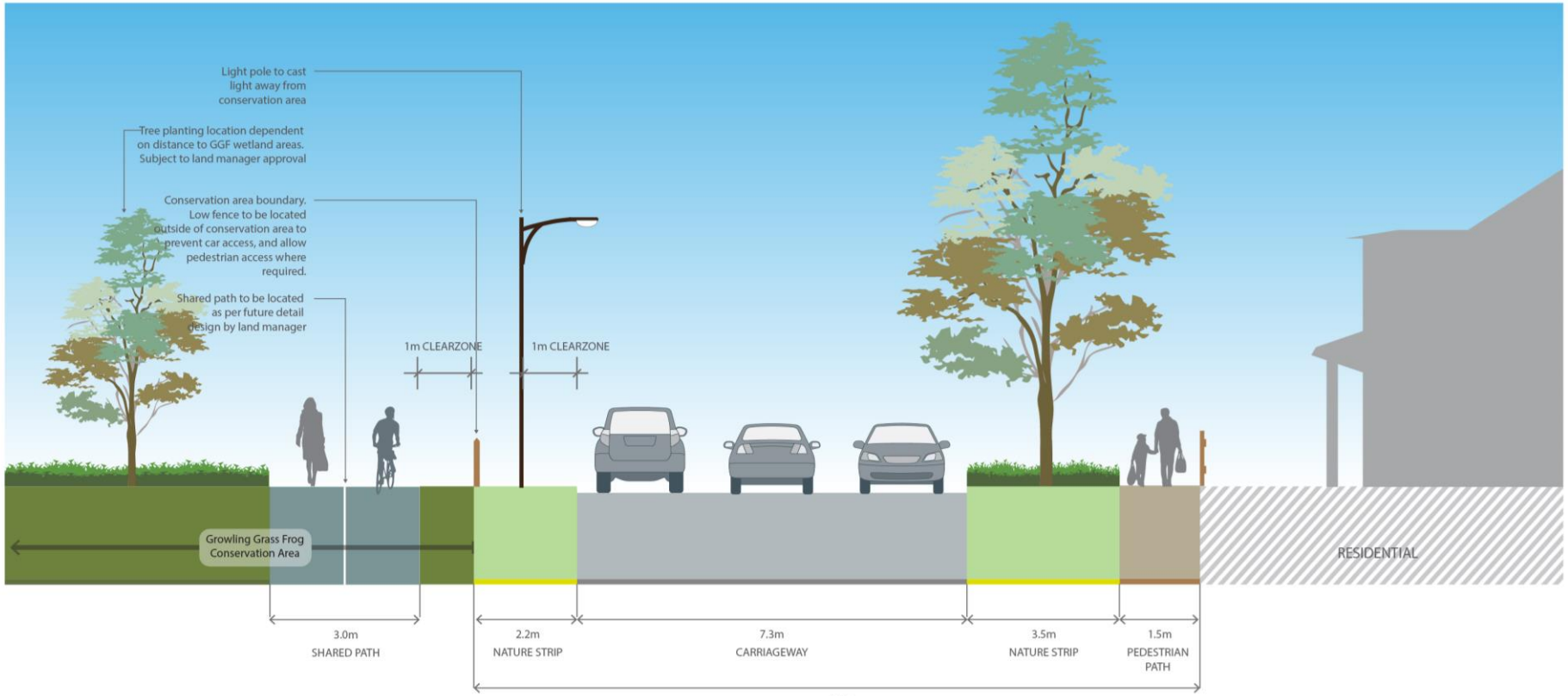


NOTES:

- Mature street tree size must be in accordance with Council's landscaping policy
- All kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority
- Road to be designed with traffic calming devices, including raised pedestrian crossings and roundabouts to achieve a speed limit of 30km/h to allow safe on road cycling
- Tree outstands must meet a maximum interval of 100m.

Section 8
Feature Main Street - Major Town Centre (23.1m)

Victorian Planning Authority

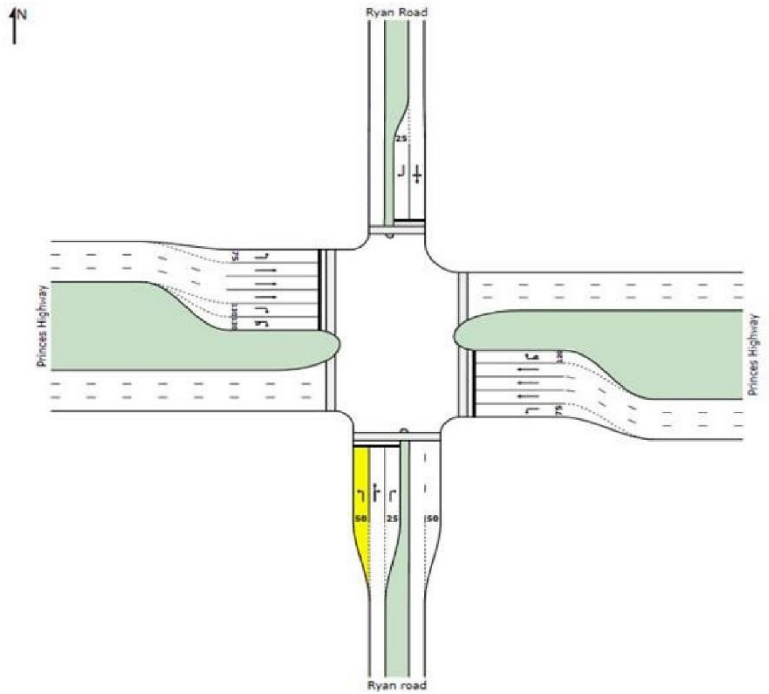


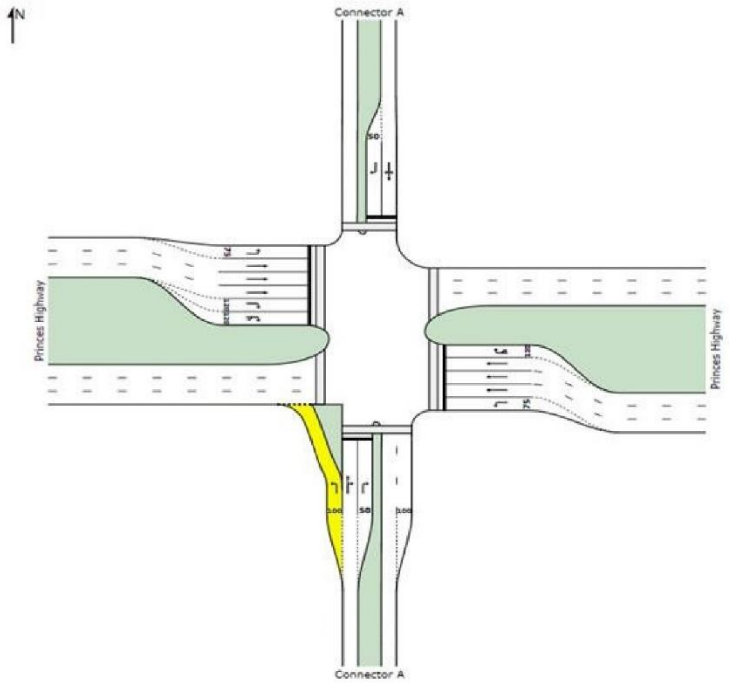
NOTES:

- All kerbs are to be B2 Barrier Kerb as per the Engineering Design and Construction Manual for Subdivision in Growth Areas
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority
- Mature street tree size must be in accordance with Council's landscaping policy
- Tree, shrub, and grass planting along the fronting streetscape and within the conservation area must be Australian natives, indigenous to the area, and to the satisfaction of the responsible authority
- Any streetscape lighting required on the conservation area side of the street must cast light away from the conservation area
- Encourage native and indigenous vegetation in the front setback of properties fronting the conservation area
- The conservation area must be fenced appropriately to protect biodiversity values to the satisfaction of the Department of Environment, Land, Water & Planning
- All necessary fire breaks must be located outside the conservation area
- Indigenous grasses preferred on nature strips adjacent to conservation areas
- Streetscape plantings and planting within the conservation area must be Australian natives and should be indigenous to the area adjacent to conservation areas to the satisfaction of the responsible authority.

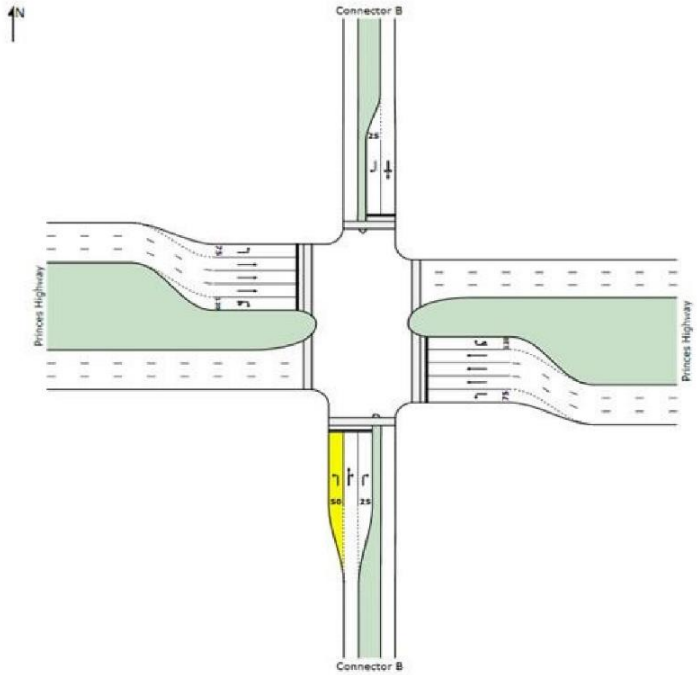
Section 9
Conservation Interface
Local Access Street - GGF Conservation Area

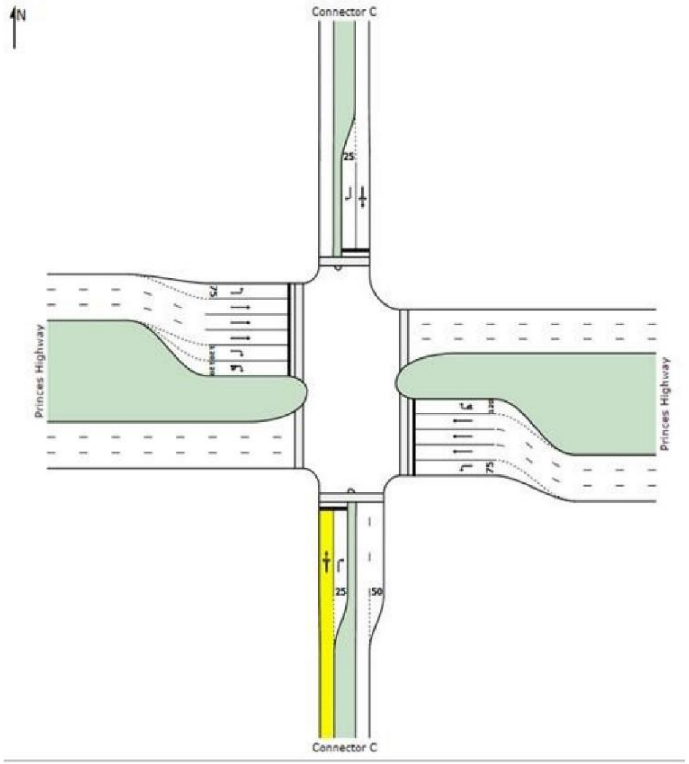
Victorian Planning Authority





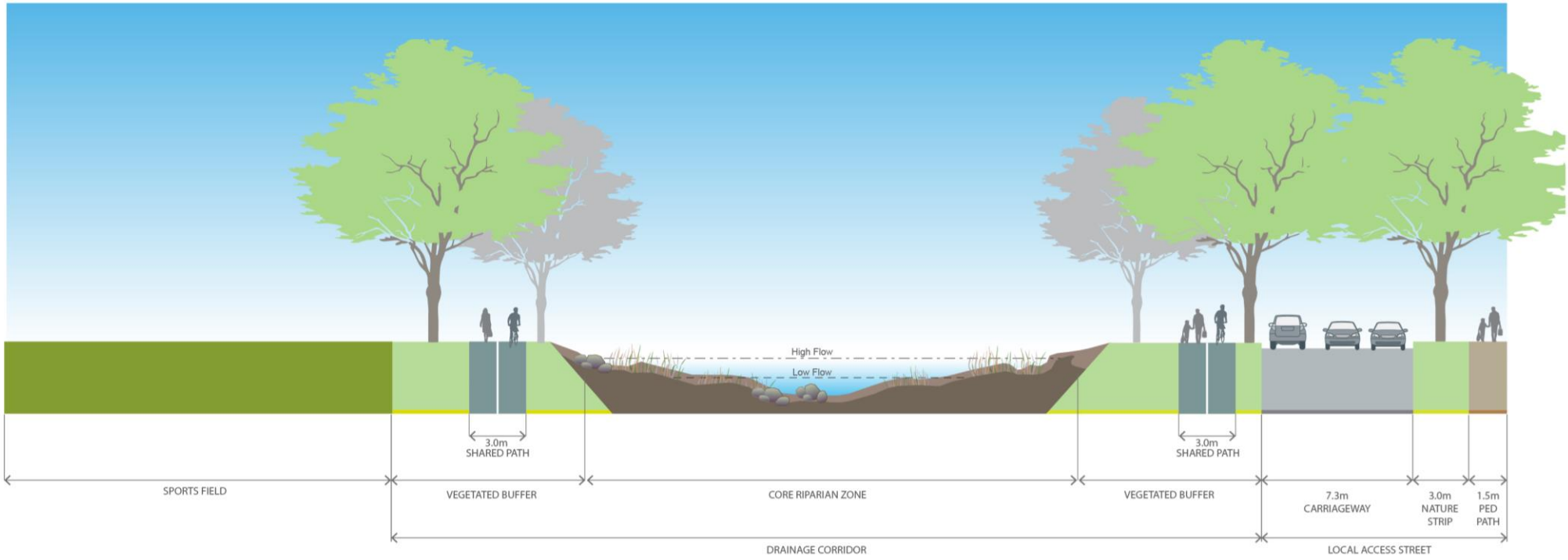
Intersections 1 & 2
IN-01 (left) & IN-02 (right)





Intersections 3 & 4
IN-03 (left) & IN-04 (right)

4.4 APPENDIX D: Waterway Cross Section



NOTES:

- Waterway widths subject to Melbourne Water approval
- Shared path placement is shown for both sports field and local access street interfaces for indicative purposes. The shared path network is shown on Plan 9
- Mature street tree size must be in accordance with Melton City Council's landscaping policy
- All kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas
- Verge widths may be reduced where roads abut open space with the consent of the responsible authority and relevant service authority
- Residential lots may directly face or side onto the drainage corridor with vehicular access to the lots provided from rear lanes and roads.

Section 10
Waterway Interface
Interface - Sports Field or Residential

Victorian Planning Authority

4.5 APPENDIX E: Easement Cross Sections

- 2x existing 500KV lines
- Future additional proposed 500KV (east side) and 220KV (west side of easement).

NOTES:

- Easement uses vary; refer power lines easement table possible use and development
- Indigenous shrubs and plants should be used
- Part local access street may be provided within easement subject to easement owners approval
- Mature street tree size must be in accordance with Council's landscaping policy
- All kerbs are to be B2 Barrier Kerb as per Figure 008 in Engineering Design and Construction Manual for Subdivision in Growth Areas
- Verge widths may be reduced where roads abut open space or easement with the consent of the responsible authority.

Section 11
Local Access Level 1
Powerlines Easement without Drainage Corridor (Typical)

Victorian Planning Authority

4.6 APPENDIX F: Service Placement Guidelines

The *Engineering Design and Construction Manual for Subdivision in Growth Areas* (April 2011) outline placement of services for a typical residential street environment. This approach is appropriate for the majority of the 'standard' road cross sections outlined in *APPENDIX C: Road Cross Sections and Intersections*, containing grassed nature strips, footpaths and road pavements.

Non-standard cross sections

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

For non-standard road cross sections where service placement guidance outlined in Figure 003 and 004 in is not applicable, the following service placement guidelines will apply.

General Principles for Service Placement

- Place gas and water on one side of road, electricity on the opposite side.
- Place water supply on the high side of road.
- Place services that need connection to adjacent properties closer to these properties.
- Place trunk services further away from adjacent properties.
- Place services that relate to the road carriageway (e.g. drainage, street light electricity supply) closer to the road carriageway.
- Maintain appropriate services clearances and overlap these clearances wherever possible.

Table 10 Servicing Guidelines

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

NOTES

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

4.7 APPENDIX G: Open Space Delivery Guidelines

Park Hierarchy

The open space network is made up of a diverse range of spaces which will vary in sizes, shape and function. The hierarchy outlined below provides information and guidance on the key open space categories listed in *Table 6 – Open Space Delivery Guide*, of this PSP and what role and function they generally have in the network. Parks within the PSP will generally fall into one of the following categories:

Pocket Parks (<0.2ha)

These parks are small more intimate spaces that can provide incidental and spontaneous recreation and relaxation such as sitting, resting and eating lunch within a short safe walking distance of residents and workers. In built up or planned urban renewal areas, they increasingly incorporate significant hard and / or high standard soft landscaping to accommodate more intensive use.

Pocket parks will also complement the role of neighbourhood parks and may sometimes be designed to have a neighbourhood park role (including a play space), again often when associated with built up areas.

Metrics Guidance:

- Size = <0.2ha
- Catchment = 200-400m safe walking distance / 2-5 minute walk
- Stay length = <0.5hr.

Neighbourhood Parks (0.2-1Ha)

Defined as Local Parks and Pocket Parks in the Cardinia Shire Council's Recreation Open Space Strategy.

Neighbourhood parks are typically small to medium in size and primarily provide opportunities for informal and opportunistic recreation, relaxation or play to local residents within short safe walking distance. Such reserves typically include basic facilities such as seats, walking paths and a small playground and may also incorporate natural and heritage features.

In built up areas, the role, function and importance of these spaces may increase and they may include more intensive infrastructure to support greater use. In this way, neighbourhood parks can complement the role of pocket parks.

Metrics Guidance:

- Size = 0.2-1ha
- Catchment = 400m safe walking distance / 5 minute walk (potentially closer in high density areas)
- Stay length = 0-1hr.

Community Parks (1-5Ha)

Defined as Neighbourhood Parks in the Cardinia Shite Council's Recreation Open Space Strategy

Medium parks, often with more diverse facilities and landscape characteristics that supports a range of informal recreation, relaxation or play opportunities for short to medium time periods. Facilities for organised recreation may also be provided for. These parks service residents within a short to medium safe walking catchment and may also incorporate natural and heritage features.

In built up areas, the role, function of importance of these spaces may increase and they may carry more intensive infrastructure to support greater use.

Community parks are also the neighbourhood park for local residents.

Metrics Guidance:

- Size = 1-5ha
- Catchment = 800m safe walking distance / 10 minute walk
- Stay length = 0.5-2hrs.

District Parks (5-15Ha)

Defined as District Parks in the Cardinia Shire Council's Recreation Open Space Strategy

Medium to large parks that serve a medium suburb scale catchment accessible via longer walks, short cycle rides and short vehicle trips. These park types may include natural and heritage features but will often mainly be designed to provide for organised sports or informal recreation and longer stay social gatherings, or a combination of both. Infrastructure may also support staging of community events.

District parks are also the neighbourhood park for local residents.

Metrics Guidance:

- Size = 5-15ha
- Catchment = 1.2km safe walking distance / 15-20 minute walk / 5 minute bike ride
- Stay length = 1-4+ hours.

Regional Open Space

Municipal Parks (15-50ha)

Defined as Municipal Parks in the Cardinia Shire Council's Recreation Open Space Strategy

Large to very large Council owned and / or managed parks that can accommodate high visitation from a broad municipal or greater catchment. Will often integrate a wide range of formal and informal functions and include facilities (such as car-parking, toilets, shelters and picnic facilities, walking trails and larger playgrounds) to support longer stays, multiple social gatherings and staging of large scale community events. Higher order organised sporting infrastructure is typically a dominant feature of such reserves, however significant natural features such as waterways or native vegetation may also form a significant component.

Municipal parks are also be the neighbourhood park for nearby residents.

Metrics Guidance:

- Size: 15-50ha+
- Catchment: - +-5km / 15-20 minute bike ride / 5-10 minute drive
- Stay length: 1-5+ hours

Metropolitan Parks (50Ha+)

Defined as Regional Park in the Cardinia Shire Council Council's Recreation Open Space Strategy

Large to very large State owned and / or managed parks (usually via Parks Victoria) that accommodate and promote high visitation from a broad regional and / or metropolitan catchment. Metropolitan parks generally provide facilities

for informal and nature based recreation in natural and / or semi natural settings and will often be associated with significant waterways and extensive areas of native, and / or historically important exotic vegetation. Infrastructure in these parks will usually include car-parking, toilets, shelters and picnic facilities, walking trails and larger playgrounds and even cafes to support longer stays, multiple social gatherings and staging of large scale community events. Organised sporting infrastructure may sometimes be strategically incorporated with these parks.

Metropolitan Parks are also the neighbourhood park for nearby residents.

Metrics Guidance:

- Size: 50ha+
- Catchment: - =>15km / 20 minute drive / 45-60 minute bike ride
- Stay length: 2-5+ hours

Linear Parks

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