CLYDE NORTH PRECINCT STRUCTURE PLAN

(Including the Clyde North Native Vegetation Precinct Plan)

September 2011

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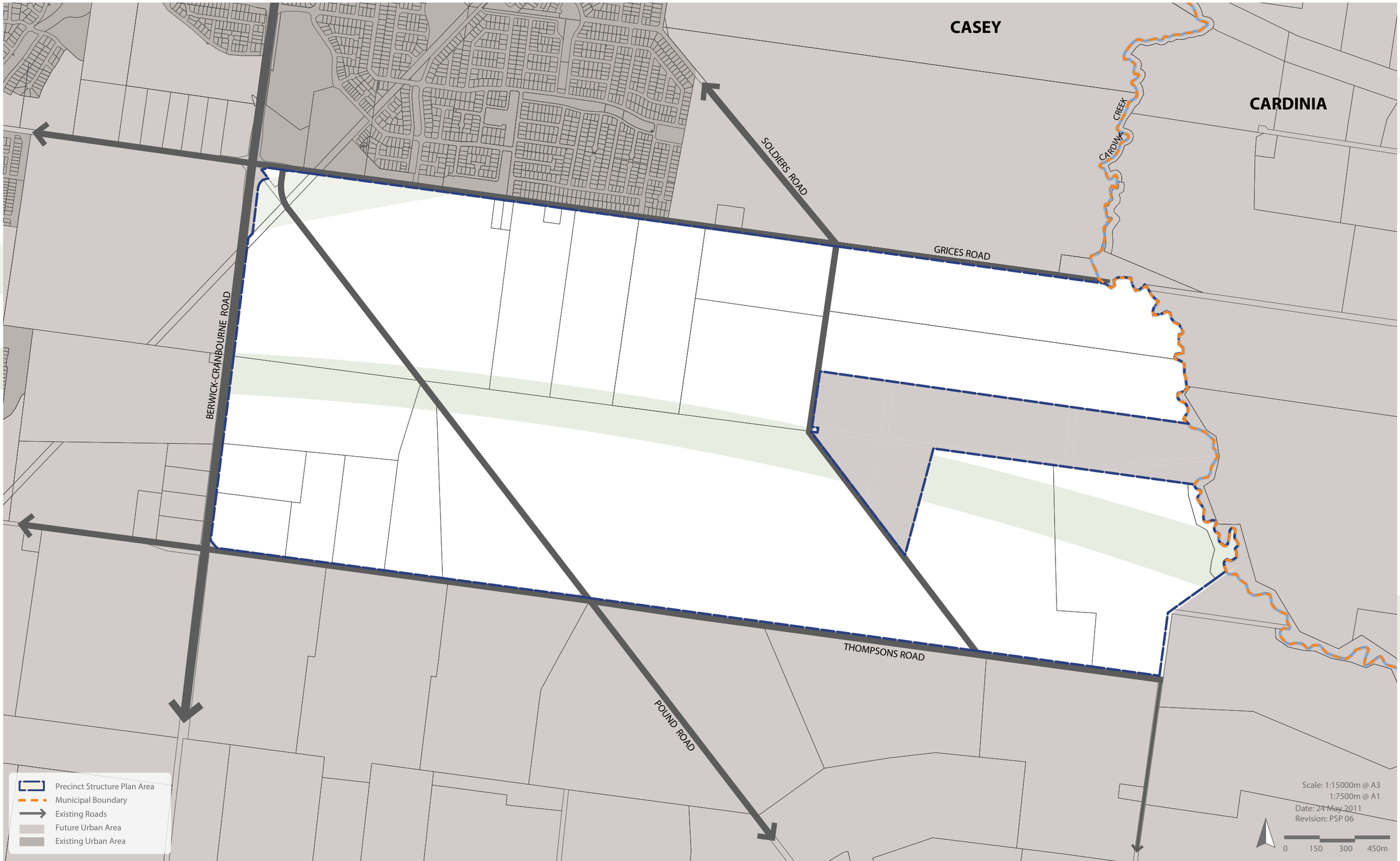


plan 1

precinct structure plan area

clyde north precinct structure plan

1.0 INTRODUCTION

1.1 ROLE OF THE PRECINCT STRUCTURE PLAN

The Clyde North Precinct Structure Plan (the PSP) has been prepared by the Growth Areas Authority (GAA) with the assistance of the City of Casey, Government agencies, service authorities and major stakeholders.

The Clyde North Precinct Structure Plan Development Contributions Plan has been prepared concurrently with this document. It sets out requirements for development proponents to make a contribution toward infrastructure required to support the development of the precinct.

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

The Precinct Structure Plan:

- Is a Strategic Plan which guides the delivery of quality urban environments in accordance with the Victorian Government guidelines;
- Enables the transition of non-urban land to urban land;
- Sets the vision for how land should be developed and the objectives to be achieved;
- Outlines projects required to ensure that future residents, visitors and workers within the area can be provided with timely access to services and transport necessary to support a quality, affordable lifestyle;
- Details the form and conditions that must be met by future land use and development;
- Provides the basis for the use and development controls that apply in the Schedule to the Urban Growth Zone and what permits may be granted under the Schedule to the zone;
- Provides developers, investors and local communities with certainty about future development.
- Enables the assessment, protection and enhancement of biodiversity values in the precinct.

The Precinct Structure Plan is informed by:

- The State Planning Policy Framework set out in the Casey Planning Scheme, including the Growth Area Framework Plans and the Precinct Structure Planning Guidelines; and,
- The Local Planning Policy Framework of the Casey Planning Scheme and other local policies and strategies (in Clause 21 and 22).

1.2 LAND TO WHICH THE PRECINCT STRUCTURE PLAN APPLIES

The PSP applies to approximately 612 hectares of land as shown on Plan 1.

The PSP area is generally bound by Grices Road to the north and Thompsons Road to the south. The eastern boundary follows Cardinia Creek and Berwick-Cranbourne Road forms the western boundary.

1.3 ROLE OF THE NATIVE VEGETATION PRECINCT PLAN

The Clyde North Native Vegetation Precinct Plan has been prepared for the purposes of Clause 52.16 of the Casey Planning Scheme. It identifies:

- Native vegetation which may be removed without a planning permit
- The offsets that must be provided to remove the native vegetation which can be removed; and
- Native vegetation that cannot be removed, without a permit.

The Clyde North Native Vegetation Precinct Plan has been included within this Precinct Structure Plan in accordance with Clause 52.16.The Clyde North Native Vegetation Precinct Plan is one of the planning tools that is used to facilitate development in accordance with the Clyde North Precinct Structure Plan. However, the Clyde North Native Vegetation Precinct Plan is a separate incorporated document notwithstanding it is found within the Clyde North Precinct Structure Plan.

The statutory basis for the Clyde North Native Vegetation Precinct Plan is Clause 52.16 of the Casey Planning Scheme and not Schedule 3 to the Urban Growth Zone. Users of this document should note that the Clyde North Native Vegetation Precinct Structure Plan has a different statutory basis to the Clyde North Precinct Structure Plan.

The Clyde North Native Vegetation Precinct Plan applies to the land identified in Map 1 of the NVPP.

1.4 IMPLEMENTATION

The PSP is implemented by:

- Development proponents who develop land generally in accordance with this PSP;
- The Victorian Government and the City of Casey by funding, delivering and managing a range of infrastructure and services to support the development of the precinct; and,
- Non-government service providers and individuals, such as volunteers, who manage and deliver services.
- The PSP is implemented through the Casey Planning Scheme including:
- The Schedule to the Urban Growth Zone at Clause 37.07;
- The Schedule to the Special Use Zone at Clause 37.01;
- The Clyde North Development Contributions Plan at Clause 45.06;
- The Clyde North Native Vegetation Precinct Plan incorporated in the Scheme at Clause 52.16 (Note: This document is included within and forms part of this PSP);
- Open space requirements under Clause 52.01 of the Scheme; and,
- Application of Public Aquisition Overlay
- Other requirements of the Planning Scheme.

1.5 FURTHER REFERENCE MATERIAL

A Glossary and other information such as technical studies supporting the preparation of this PSP are listed in Section 6.3 – Supporting Information.

1.6 MONITORING AND REVIEW

The GAA and City of Casey will jointly monitor the implementation of the PSP. Its effectiveness will be evaluated regularly, at least every five years. The PSP may be revised and updated following review.

SANDRINGHAM
SOUTHLAND
CHELTENHAM
MENTONE
MORDIALLOC
CHELSEA
CARRUM DOWNS
PORT PHILLIP BAY
FRANKSTON
MOUNT ELIZA
LANGWARRIN
CRANBOURNE
ROYAL BOTANIC GARDENS
CLYDE
BLIND BIGHT
TOORADIN
DANDENONG
ENDEAVOUR HILLS
CARDINIA RESERVOIR
UPPER BEACONSFIELD
FOUNTAIN GATE
NARRE WARREN
HAMPTON PARK
BERWICK
CASEY CENTRAL
OFFICER
PAKENHAM
To Drouin/ Warragul
HEATHERTON RD
LOWER DANDENONG RD
SPRINGVALE RD
DANDENONG BYPASS
PRINCES FWY
PRINCES HWY
POUND RD
SHRIVES RD
HALLAM RD
NEPEAN HWY
FRANKSTON FWY
EASTLINK
SOUTH GIPPSLAND HWY
NARRE WARREN - CRANBOURNE RD
THOMPSONS RD
CARDINIA RD
WESTERN PORT HWY (FUTURE FREEWAY)
BALLARTO RD
CRANBOURNE RD
MORNINGTON PENINSULA FWY
FRANKSTON BYPASS
BERWICK-CRANBOURNE RD
CLYDE CREEK
CLYDE - FIVEWAYS RD
KOOWEE RUP RD
20km
10km
5km

- Clyde North Precinct Structure Plan Area
- Existing Major Road Network
- Future Road
- Railway Line
- Major Waterways & Waterbodies
- Central Activities Area (CAA)
- Principal Activity Centre (PAC)
- Major Activity Centre (MAC)
- Major Employment Areas
- Public Parks / Recreation
- Urban Growth Boundary
- Existing Urban Area
- Future Urban Area

Date: 24 May 2011
Revision: PSP 05

0 5 10 km

plan 2

precinct structure plan area

clyde north precinct structure plan

2.0 LOCAL CONTEXT AND SITE DESCRIPTION

2.1 METROPOLITAN AND REGIONAL CONTEXT

The Casey-Cardinia Growth Corridor extends beyond the established urban areas of Dandenong and Narre Warren, and includes the suburbs of Cranbourne, Berwick, Lynbrook and Lyndhurst in the City of Casey, and Officer and Pakenham in the Cardinia Shire.

The growth area is bound by a number of natural constraints, including: areas of high landscape and biodiversity value to the north (Dandenong Ranges foothills); areas of poorly drained and flood prone land in the Western Port catchment to the south and the Cardinia Creek environs; and a narrowing band of developable land along the Gippsland rail and road corridor.

The corridor is Melbourne's fastest developing growth area and is expected to accommodate between 68,000 to 85,000 more households and grow to provide between 100,000 and 140,000 jobs by 2031.

The area has existing infrastructure and resources that make it attractive for urban development. In terms of transport infrastructure, the area has access to two suburban rail lines (Cranbourne and Pakenham), the Princes Freeway, and the South Gippsland and Western Port Highways. The area also contains significant employment and industrial areas adjacent to Dandenong along the Princes Freeway and Western Port Highway (as well as proposed employment areas in Cardinia), and a thriving rural based economy in the hinterland. The area is supported by a network of two principal and four major activity centres offering a range of community services with room to grow. The amenity of the area is promoted by environmental features such as Cardinia Creek, regional attractions including the Royal Botanic Gardens and direct access to tourism and recreation in the Dandenong Ranges, Gippsland, Phillip Island and the Mornington Peninsula.

The region is served by the Cranbourne and Pakenham metropolitan railway lines, which extend from the CBD through Dandenong. Berwick and Beaconsfield railway station are located approximately 3km and 2km respectively to the north of the northern boundary of the PSP area.

The Princes Freeway and South Gippsland Highway provide the key links from the region to Dandenong and Melbourne. Other key regional roads include Berwick-Cranbourne Road, Narre Warren-Cranbourne Road, and Thompsons Road which provide connections to the Princes Freeway, South Gippsland Highway and EastLink.

Significant existing employment areas are located in Dandenong and along the Monash corridor. New employment areas are planned for the Minta Farm north of the PSP area and in Officer to the east, in addition to new employment areas planned for Cranbourne West and Cranbourne North. These new employment areas in Casey in association with those in Cardinia as well as within the PSP will form part of a greater regional economy.

The City of Casey contains two designated Principal Activity Centres; the Cranbourne Town Centre and the Narre Warren-Fountain Gate CBD. Dandenong and Frankston have also recently been nominated as Central Activities Area, and are planned to incorporate additional employment to service the growth area long term.

2.1.1 Local Context

2.1.2 History

Clyde North lies with lands considered as traditional Bunurong and also possibly Woiworung land.

Since European settlement, the area has predominantly been used for farming and agricultural purposes, with a long history of agricultural and pastoral activity dating back to the 1840–50s.

Remnant features from the agricultural period include ageing windrows, former homestead sites and one significant house and garden dating from the late Victorian period.

2.1.3 Surrounding neighbourhoods

A number of residential neighbourhoods exist within the immediate surrounding context of the Clyde North PSP area. These are:

- Berwick South, which is located to the north-west of the PSP area. Berwick South is approximately two-thirds developed and is expected to accommodate a population of approximately 24,000 people. Clyde North will integrate with Berwick South and the future Minta Farm area to form a community entity with a population of almost 45,000 south of Princes Freeway.
- Cranbourne North (Stage 1), which is located to the west of the PSP area, is currently under construction and will support a population of approximately 8,000 people. Stage 2 will have a population of an additional 6,000 people.
- Minta Farm area, occupies almost 300ha to the north of Grices Road. This area will have a significant employment focus with a smaller residual residential area. Planning has yet to commence for this precinct.
- The rural community of Clyde North and Clyde is located to the south. This area is identified as a potential future urban growth area.

2.1.4 Transport and movement

The PSP area is located to the south of the Princes Freeway, a major regional transport route, and to the east of Berwick-Cranbourne Road which is a major north–south arterial which provides access between the Princes Freeway to the north and the South Gippsland Highway to the south. Both routes provide the major road transport links to central Melbourne, the wider metropolitan network and interstate routes.

The Principal Public Transport Network (PPTN) in the form of bus services is proposed along Glasscocks/Grices Road and Berwick Cranbourne Road northern and western boundaries of the PSP area. Train services are accessed by the Pakenham rail line via Beaconsfield railway station approximately 2kms to the north.

A major north-south arterial, partly utilising the existing alignment of Soldiers Road, is proposed to provide direct access to the proposed Beaconsfield interchange on the Princes Freeway approximately 1.6 kilometres north of Grices Road.

Pound Road will be downgraded so as to limit access through and beyond the PSP area. It will function as a local street with closures anticipated ultimately at its mid point to the east-west connection and at Thompsons Road and Grices Road.

Berwick-Cranbourne Road will form the main north-south arterial.

Other important roads include:

- Grices Road: A low capacity existing road with potential to function as a local arterial, linking Cranbourne to Pakenham and Cardinia Shire. Ultimately Grices Road is likely to function as a major arterial with a northern service road. To enable this, land will be required from some parcels to the north for road widening. This will be formalised through application of a Public Acquisition Overlay (PAO).
- Thompsons Road: A major metropolitan east-west link which will ultimately function as a major arterial road and freight route for the south-east growth corridor and may serve as an important future public transport route . Thompsons Road is located outside the PSP area.
- In addition, the Casey-Cardinia Growth Area Framework Plan provides for the transport needs of the growth area by:
- Making provision for a future public transport network including both the Principal Public Transport Network (rail and bus) and other local bus services;

plan 3

metropolitan & regional context

clyde north precinct structure plan

- Proposing public transport investments including bus services between major activity centres;
- Supporting improved road and public transport connections with future employment precincts; and,
- Supporting access to jobs through improved east-west arterial
road connections.

2.1.5 Employment and activity centres

The hierarchy of Activity Centres within the Casey-Cardinia region is established by State Planning Policy, the Growth Areas Framework Plans and Casey planning policies.

The hierarchy includes:

1. Central Activities Area – Dandenong and Frankston.
2. Principal Activity Centre – Narre Warren (Fountain Gate) and Cranbourne.
3. Major Activity Centres – Berwick, Endeavour Hills, Casey Central, and Hampton Park.
4. Neighbourhood Centres (medium) – Cranbourne East, Cranbourne West, Eden Rise and Thompson Parkway.

The new residents moving into the PSP area will form part of the core catchment for a new medium Local Town Centre which will be located central to the plan area.

Local employment opportunities are anticipated to develop concurrently with new residential growth in the south-east growth corridor.

Employment opportunities will exist in the future Minta Farm to the north, and the Service Business Precinct proposed in Cranbourne North along Thompsons Road to the west. In addition, an extensive employment precinct has been identified immediately to the east of the PSP in Officer South, within the Shire of Cardinia. Grices Road and Thompsons Road are planned to provide direct access from the PSP area to this future employment precinct across Cardinia Creek.

2.1.6 Open Space

The PSP area will have access to a range of active open space and passive open space networks, and builds on Cardinia Creek as a regional identity by enhancing its status as a waterway and open space corridor and supporting the protection of other creeks for environmental and recreation purposes.

Cardinia Creek will be improved to provide a linear and local passive open space reserve, and will be integrated with Ti-Tree Creek through a wetlands network which will run through the PSP area. The function of the open space will be mutually beneficial by providing key recreation areas and trails, and improving habitats, biodiversity and water quality.

The Cardinia Creek Parklands Future Directions Plan (Parks Victoria, 2002) identifies land north of Thompsons Road as 'Conservation and Recreation', although this land is on the eastern side of the Creek and outside of the PSP area. The PSP process provides the opportunity to secure land to the west of the creek to complete the enhancement and protection of Cardinia Creek as a regional environmental resource with walking and cycling trails at its edge. Additional land proximate to the plan area is currently being investigated by DSE as potential regional parkland.

Within the PSP, a major waterway feature will be created to manage Ti-Tree Creek's natural drainage characteristics and stormwater and create a biodiversity link, with the capacity to provide for usable open space and linear trails.

Active open space will be provided within the plan area at four distinct locations to a size capable of accommodating a diverse range of sports activity able to be adapted to the needs of the growing community.

Local parks are sited central to walkable catchments and incorporate individual and small stands of existing trees and view corridors where possible, for the benefit of the local and broader community.

2.1.7 Community facilities

The areas to the north and west of the PSP area include significant existing and planned social, health, and community infrastructure.

The area contains a number of existing primary and secondary education facilities, including St Francis Xavier College, Kambrya College, Hillcrest Christian College, Berwick Chase Primary School and Hillsmeade Primary School. Higher Education Facilities are located at Monash University, Berwick Technical Education Centre, and Chisholm Institute of TAFE (Berwick Campus). A number of locations in the region also support kindergartens, maternal and child health services and childcare services. Health services are provided at Casey Hospital and Casey Cardinia Health Services, Berwick.

Additional community services are planned for the adjacent Cranbourne North PSP area, including a government primary school, a P-12 school in Stages 1 and 2, and a Council community centre and library. The Clyde North PSP area is planned to provide two primary schools (each co-located with a triple kindergarten), a secondary school, and a multipurpose community centre in the central Medium Neighbourhood Activity Centre.

2.2 PRECINCT FEATURES

2.2.1 Heritage

The traditional indigenous owners of the precinct were the Bunurong and possibly the Woiworung people.

Three Aboriginal sites have been previously recorded in the PSP area proximate to Cardinia Creek. These include two stone artefact scatters and one scarred tree. The area within 200 metres of the Cardinia Creek and the Koo Wee Rup Plain are also identified as being areas of potential cultural heritage significance.

A preliminary assessment of cultural heritage values on land east of Pound Road is contained in the document, 'Clyde North and C21 Precinct Structure Plan Desktop Cultural Heritage Assessment, HV Report No 3500, Tardis Enterprises Pty Ltd, March 2009'. At the date of approval of this precinct structure plan, the desktop assessment has no formal status under the Aboriginal Cultural Heritage Act 2006. However, the document may be used as a starting point for proponents undertaking an assessment under the Aboriginal Cultural Heritage Act 2006.

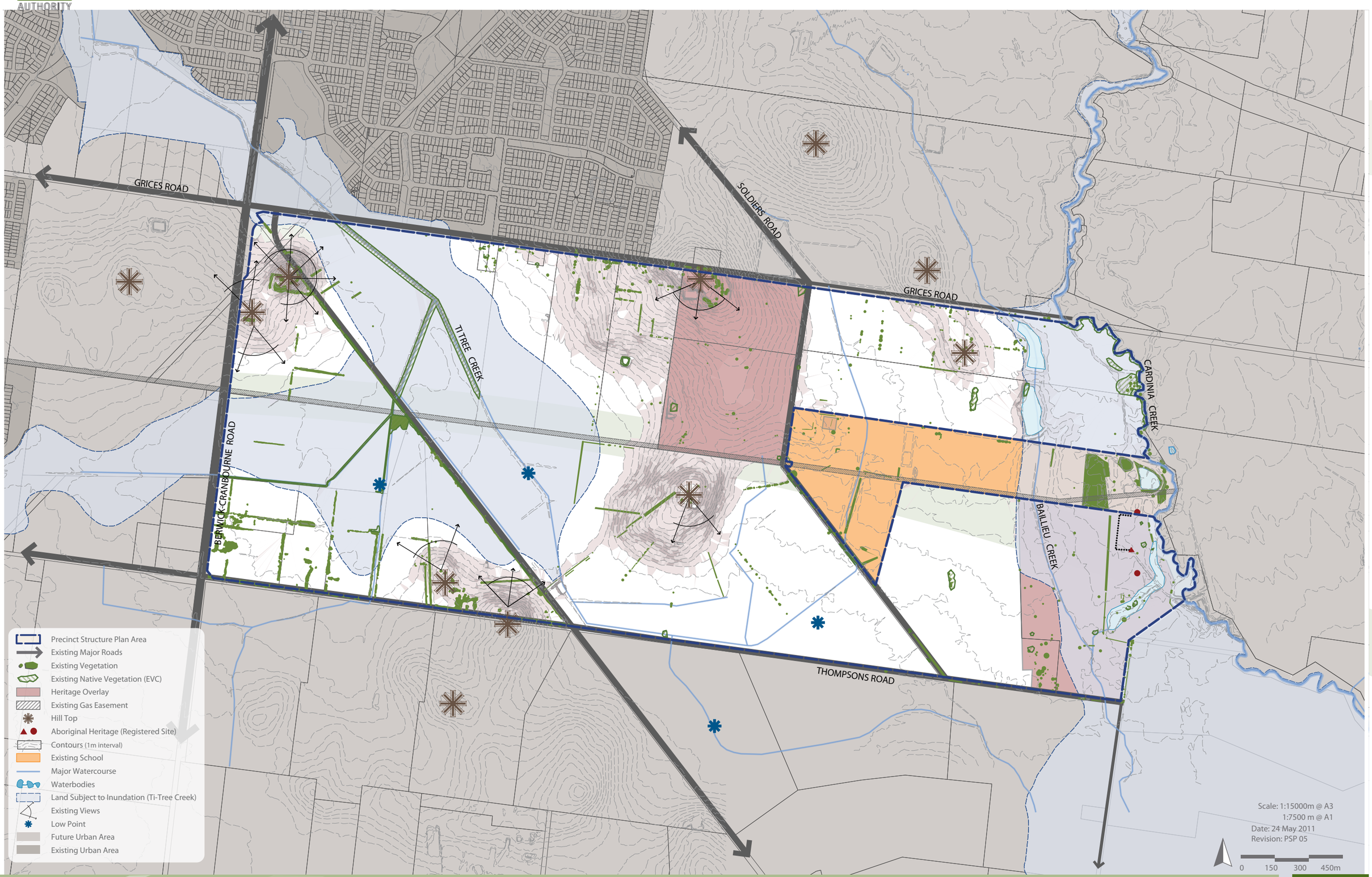
There are three post-settlement heritage sites within the plan area of local significance. These are:

- Heritage Overlay reference HO129 – House (Eyrecourt) located at 211 Grices Road, Clyde North;
- Heritage Overlay reference HO132 – House and associated plantings located at 2175 Smiths Lane, Clyde North; and,
- Heritage Overlay reference HO187 – rural homestead and associated buildings located at 500 Soldiers Road, Clyde North.

An updated Heritage Assessment of the Heritage Overlay properties HO129 and HO132 has been undertaken as part of the Precinct Structure Plan preparation. This Assessment confirms that the original house at 2175 Smiths Lane has been demolished and there is nothing of significance on the property covered by HO132, and as such this overlay should be deleted.

The Assessment of HO129 confirmed the heritage significance of 'Eyrecourt' at a local level and subdivision of H0129 is not anticipated.

Based on the Assessment, the Heritage Overlay HO129 will be amended to encompass the homestead, coach house and associated cultivated garden areas and mature trees, and an appropriate curtilage of land to the east and south of the house and garden. This boundary will generally take the alignment of the 50 metre contour level and will define the future property boundary for 'Eyrecourt' as further subdivision of H0129 is not anticipated.



plan 4

precinct features

clyde north precinct structure plan

2.2.2 Biodiversity

The Precinct contains biodiversity values along drainage lines, roadsides, wetlands, and the Cardinia Creek riparian zone. The remainder of the study area comprises large areas of cleared agricultural land with little or no native vegetation cover.

Cardinia Creek corridor is a habitat corridor and refuge for wildlife including significant species such as the Growling Grass Frog, Dwarf Galaxias, Australian Grayling, Southern Brown Bandicoot that are protected under the Environmental Protection and Biodiversity Conservation Act 1999, Glossy Grass Skink that is near threatened in Victoria, Southern Toadlet and Hardhead that is vulnerable in Victoria (Casey Biodiversity Enhancement Strategy 2003). The vegetation along the creek is connected to remnant vegetation further north associated with Cardinia Reservoir and Beaconsfield Flora and Fauna Reserve and remnant vegetation to the south associated with Western Port, an internationally significant RAMSAR site.

Biodiversity values of the study area are assessed in the 'Biodiversity Assessment Report: Flora and Fauna Assessment and Mapping' (Practical Ecology, 2009 and 2011).

With respect to Flora, eight EVCs were recorded and mapped within the study area. Most EVCs identified have an endangered conservation status in the Gippsland Plains bioregion. Seventy-three scattered trees were recorded within the study areas, some of which were River Red-gums *(Eucalyptus camaldulensis)*.

Habitat Zones within the study area include:

- Patches of Swamp Scrub found on roadsides and drainage lines, and within the Cardinia Creek floodplain and riparian corridor;
- Swampy Riparian Woodland and wetland EVC mosaics along the Cardinia Creek riparian corridor;
- Indigenous wetland vegetation in wetlands and drainage lines (Tall Marsh EVC); and
- Small patches of Plains Grassy Woodland at scattered sites within farm paddocks.

With respect to Fauna, the following three species of State significance were recorded during the assessment:

- Glossy Grass Skink, with habitat identified in the Tall Marsh EVC of the existing man-made drainage line;
- Southern Toadlet, with habitat including grasslands, shrubland, dry forest, woodland and heaths; and,
- Hardhead utilising wetlands and dams within the precinct.

Habitat for fauna is primarily along roadsides, wetlands, drainage lines, Cardinia Creek riparian corridor and pasture as foraging grounds.

2.2.3 Topography and landform

Most of the PSP area lies between 24m and 57m Australian Height datum, ("AHD") and slopes generally from north to south. The area is generally very open with areas of undulation. The landscape features a number of planted rows of trees, which served as wind breaks for farming purposes.

The predominant features influencing the form of the plan include:

Hilltops and ridgelines

In particular, four dominant hilltops are located within the plan area which provide extensive views to the surrounding area. Overall the plan area is undulating with four dominant rises (one at the edge of the plan area) including the central hilltop to the north and flat floodplains to the south and west.

Stormwater management features

The need to adequately manage stormwater on the flat low lying floodplains in the south and west of the plan area presents an opportunity to create a series of wetlands, water features and landscaped drainage lines that provides open space and recreated habitat as a feature of the plan area.

Windrows and significant trees

Due to age and stress caused by extended dry spells, many of the numerous plantings and windrows within the PSP area are in poor condition. There are, however, isolated stands and windrows that can contribute to the new urban form and open space network, including:

- Windrows radiating southward from the central hill;
- Isolated stands and individual trees in the south east of the plan; and,
- Remnant oak trees, in one instance forming a small row in the north of the plan area.

Cardinia Creek

Cardinia Creek is a significant topographical feature which forms the eastern boundary of the PSP area and drains to Western Port. Whilst much of the creek and its surrounds are highly modified, it contains areas of remnant riparian vegetation which represents significant ecological value. The creek and some of the surrounding wetland areas provide an opportunity for a range of passive recreational uses and the enhancement and restoration of habitat.

2.2.4 Catchments and drainage

The Clyde North PSP spans two regional drainage basins, Western Port and Port Phillip.

The eastern section of the PSP area drains to Western Port via Cardinia Creek, which is the major watercourse in the surrounding region. The bulk of the Clyde North PSP area drains westerly to the Port Phillip catchment via an excavated drainage channel and tributary known as Ti-Tree Creek.

The PSP area is located predominantly within Ti-Tree Creek drainage network and will ultimately form part of the Ti-Tree Drainage Scheme as a series of natural wetlands. The Melbourne Water Ti-Tree Drainage Scheme will need to be updated to incorporate relevant land within the PSP area.

2.2.5 Public utilities reservations

The PSP contains two existing and proposed pipeline easements that will need to be accommodated.

Gas main

Central to the plan area there is an existing 20 metre easement controlled by Gasnet Australia.

Desalination pipeline

A 21 metre water main reservation carrying desalinated water from Wonthaggi to Cardinia Reservoir is located adjacent to the north side of Pound Road. Melbourne Water has constructed the pipeline within a 15 metre easement with a 6 metre setback from Pound Road, creating a 21 metre reservation in the PSP area.

Water Easement

In the North-East corner of the plan area there is an existing diagonal water easement controlled by Melbourne Water.

2.2.6 Hillcrest Christian College

The PSP area envelopes the existing independent school, Hillcrest Christian College, which occupies a large parcel of approximately 55.36ha abutting both Cardinia Creek and Soldiers Road.

The school intends to retain its entire landholding as a school site for the foreseeable future, and has a current masterplan which provides for the future expansion of the school's facilities.

GRICES ROAD
SOLDIERS ROAD
CARDINIA CREEK
GRICES ROAD
BERWICK-CRANBOURNE ROAD
State Primary School P-6
State Primary School P-6
Independent School
Future School Campus
State Secondary School 7-12
THOMPSONS ROAD

- Precinct Structure Plan Area
- Conventional Residential
- Potential Commercial & Employment
- Local Town Centre (NAC) - Medium
- Local Town Centre (NAC) - Small
- Local Centre
- Employment
- Community Facilities
- State School
- Non-Government Education Facility (subject to permit)
- Unencumbered Active Open Space
- Unencumbered Passive Open Space
- Encumbered Open Space
- Flow Path Through School
- Indoor Centre
- Cardinia Creek Conservation Corridor
- Arterial Road
- Additional Land for Arterial Roads
- Connector Street
- Access Street
- Potential Future Road Alignment (to be determined)
- Shared Path (within open space)
- Shared Path (within widened road reserve)
- Major Gas Easement
- Desalination Pipeline
- Heritage Site
- Waterbodies
- Native Vegetation (to be retained)
- Gasnet Property
- Future Urban Area
- Existing Urban Area

Scale: 1:15000m @ A3
1:7500 m @ A1
Date: 26 July 2011
Revision.: PSP 09

0 150 300 450m

plan 5

future urban structure

clyde north precinct structure plan

3.0 VISION & FUTURE URBAN STRUCTURE

3.1 VISION

Clyde North will be a prosperous, vibrant and sustainable community offering a sense of place characterised by natural settings, quality urban infrastructure and amenities, and a strong sense of community.

A series of distinct neighbourhoods will provide housing and services catering to a broad mix of lifestyles, incomes and households. Neighbourhoods will be mixed use and walkable with diverse housing types, pedestrian friendly streets, local open spaces and access to daily needs.

A series of attractive and accessible neighbourhood centres will meet the social and economic needs of the community. Centres will offer localised services and retail functions, generate and sustain local enterprise and employment, and provide a focus for civic life and civic pride. Community facilities and civic gathering places will be central to the function of centres.

An extensive recreation circuit of linear wetlands and parkways incorporating recreation areas and walking and cycling trails will serve as the major recreation and movement corridor for the community. The corridor will connect all neighbourhoods to each other and to the wider open space network through the adjacent Ti-Tree Creek and Cardinia Creek parklands.

Clyde North will be an authentic place with a clear community focus. It will enable people to achieve their lifestyle goals and provide opportunities for their children.

3.2 URBAN STRUCTURE

The PSP area is divided into an 'Eastern Area' and 'Western Area' by the central north-south arterial. Each area contains residential, active and passive open space, and educational opportunities.

3.2.1 Establish a sense of place and community

The Clyde North PSP establishes a framework for the development of an environmentally, socially and economically sustainable urban structure. The structural elements of the plan are interlinked and combine to create a built environment which supports the development of a strong community and a sense of place for the precinct.

A sense of place is fostered through the enhancement of local attributes and careful planning for the development of community infrastructure such as schools, sporting fields and other community facilities which have a close spatial relationship with residential neighbourhoods. The timely provision of sporting/recreation, education and related facilities within the PSP area will help to facilitate community interaction among residents.

The environment for positive community interaction is further enhanced by the location of the medium Local Town Centre central to the new community. The provision of local convenience shopping through out the precint provides additional opportunities for community interaction. This is further enhanced by the specific desire to see the Local Town Centre develop over time as a place that offers more than just retail services. The centre will provide for opportunities to establish non-retail related business such as office and medical which service both the immediate community and the broader catchment, and provide a location for a broad provision of Council community services.

Clyde North will be easily identifiable and legible on approach through its distinctive central hilltops and the Cardinia Creek environment at its eastern edge establishing a known locality and sense of place that residents can identify with and take pride in for many years to come.

3.2.2 Greater housing choice, diversity and affordability

The future urban structure provides for a range of lifestyle opportunities through requirements for a diversity of housing and lot sizes throughout the precinct with a minimum density of 15 dwellings per net developable hectare across the precinct. Medium density (with potential for higher density) housing in a variety of styles will be located near services and amenity including the town centres, community facilities, public open space, and public transport services.

A mix of housing and lot sizes at more conventional residential densities, including intermixed medium density housing, will be accommodated throughout the neighbourhoods in order to achieve a diverse range of lot sizes.

3.2.3 Create highly accessible and vibrant activity centres

The PSP plans for a centrally located medium Local Town Centre containing local shops and services which will provide local employment opportunities and community based services.

A small Local Town Centre is also proposed to be located on Grices Road in the western section of the PSP area to serve both the existing and developing community.

A small commercial centre will be located on Berwick-Cranbourne Road at the intersection with the east-west connector road which will service the western PSP catchment.

The town centres will be street based centres, offering a mix of retail, non-retail commercial and other mixed use, community and employment opportunities. The centres will be serviced by bike and pedestrian trails and the public transport network.

The central location of the medium Local Town Centre and accessibility by pedestrian and cycling trails will assist in reducing dependency on motorised private transport.

The PSP also provides for three additional local centres on key corner sites within the eastern residential area.

3.2.4 Provide for local employment and business activity

The medium Local Town Centre will support a variety of local services such as public transport, child care, medical, financial, legal, retail and business services, and will provide space for other local economic development opportunities.

The medium Local Town Centre is centrally located within the precinct in order to ensure its accessibility to the entire community and long term economic strength, and to generate and add diversity to walkable destinations within the precinct. The exposure to passing trade through direct frontage at the arterial road network reinforces the centre's long term viability and encourages more efficient use of motor vehicles through the ability to make multi-purpose trips.

In the long term, the opportunity exists for the Clyde North community to access a major employment area immediately to the east of Cardinia Creek in the Cardinia Shire and to the north in the proposed Minta Farm.

Employment in the Precinct

There will be significant growth in demand for jobs in the Casey-Cardinia area across a range of industry sectors between 2006 and 2031. Table 1 provides a comparison between the types of employment engaged in by Casey residents and the types of employment occurring in the municipality. It shows that in some sectors such as Wholesale Trade, Transport, Postal and Warehousing and Health and Social Assistance, there is a strong correlation between the types of employment held by residents to the types of jobs available in the municipality. In other sectors it shows that there are greater differences between residents, employment, and job types within the municipality indicating that there are opportunities for growth in those sectors.

Based on the land uses designated within the PSP area, it is possible to estimate the job creation capacity based on the approximate number of jobs generated by each of the land uses. Table 1 illustrates that there is strong job creation potential which is generally consistent with the overall job demand illustrated in Table 2.

The employment generating land uses within the PSP will have a positive impact on minimising travel times and distances for residents. The urban structure encourages the establishment of localised employment by making room for employment generating land uses within the precinct and on directly adjoining lands.
The key employment areas will all be located on public transport routes and will have access to cycling and walking trails to provide safe and direct linkages for alternative modes of transport.

In addition to the jobs created from land uses within the PSP area, future residents of the precinct will benefit from the overall growth in job opportunities in the region. This includes the Minta Farm, Cranbourne North Service Business Precinct, Cranbourne East Employment area, Cranbourne West Employment area, Narre Warren-Fountain Gate Principal Activity Centre (PAC), and Cranbourne PAC. Outside the City of Casey, significant areas of employment land include the Cardinia Employment Corridor, Dandenong Central Activity Area (CAA) and Dandenong South industrial area.

All of these employment precincts and industrial areas are expected to fully develop over the next few decades and generate many thousands of jobs for the region. The impact of this on the travel patterns for residents in the greater south-east will result in reduced reliance on centralised employment in the central and inner Melbourne areas. This is expected to have many positive flow-on impacts such as reduced congestion on the metropolitan rail and road network, improved travel times, and reductions in greenhouse gas emissions due to more efficient vehicle movements. Significant benefits will also flow to families with more leisure and family time being available as well as reduced proportion of family budgets being committed to transport costs.

Table 1: Labour Force to jobs in Casey comparison

Employment Sectors	Resident Labour Force (%)	Jobs in Casey (%)	MSD Resident Labour Force (%)	MSD Jobs (%)
Manufacturing	20	10	13	13
Retail trade	13	19	6	12
Construction	9	10	7	5
Health care & social assistance	8	10	10	10
Transport, postal & warehousing	6	5	5	5
Wholesale trade	7	6	6	6
Education & training	5	11	8	8
Accommodation & food services	4	7	6	6
Public administration & safety	4	3	5	5
Professional, scientific & technical services	4	4	8	9
Other services	4	4	4	4
Financial & insurance services	3	2	5	5
Administrative & support services	3	2	4	3
Inadequately described/not stated	3	1	3	1
Information media & communications	2	1	3	3
Agriculture, forestry & fishing	1	2	1	1
Arts & recreation services	1	2	2	2
Rental, hiring & real estate services	1	2	1	2
Electricity, gas, water & water services	1	0	1	1
Mining	0	0	0	0
TOTAL	**99**	**101**	**98**	**101**

Table 2: Estimated Employment Demand

Land use based employment generators	Measure	Jobs	Quantity in Precinct Structure Plan	Estimated Jobs
Kindergarden	Jobs/Centre	5	4	20
Primary School	Jobs/School	40	3	120
Secondary School	Jobs/School	90	2	180
Multi Purpose Community Centre	Jobs/Centre	10	1	10
Retail	Jobs/1000sqm	30	12, 000	360
Non-retail commercial	Jobs/sqm	0.05	1000	50
Potential Commercial	Jobs/1000sqm	30	14,000	420
Office	Jobs/1000sqm	25	2,000-4,000	50-100
Medical Centre	Jobs/centre	15	2	30
Private Childcare Centre	Jobs/100 places	20	2	40
Home Based Business	Jobs/Dwelling	0.1	5101	510
Retirement Village	Jobs/Living Unit	0.125	350	43
TOTAL				**1,832-1,883**

3.2.5 Provide Better Transport Options

Travel to Work Statement

The urban structure established by the Clyde North PSP responds to the need for urban development to be more ecologically, socially and economically sustainable. A key element of creating a more sustainable urban structure is the reduction of travel distances, travel time and carbon emissions for travel to work.

The journey to work statement outlines how the development of land in the PSP area will affect the daily working lives of its residents and residents of surrounding areas. This is established by undertaking analysis of the types of jobs predicted in the area based on the land use assumptions, and understanding how the provision of local services and employment land within the PSP area can accommodate the expected job demand.

The PSP plans to reduce travel distances to work by providing:

- An efficient road and public transport network.

The location and distribution of the arterial road network grid promotes efficient movement within the precinct, with strong connections to the surrounding area in all directions. The arterial grid sets the foundations for a highly permeable and connected precinct which connects directly to the existing employment and services in the Casey Corridor, and to the future employment precincts at Minta Farm and Officer (in Cardinia Shire).

The road network supports efficient movement through the distribution of lower order roads forming an 800m sub-grid, which assists in reducing congestion at arterial/arterial intersections. This in turn provides the basis for the provision of efficient public transport by creating the ability to locate all dwellings within 400m of a future public transport service running through the arterial and connector road grid.

- A walkable street structure orientated to promote energy efficient dwelling layout.

The 1 mile and 800 metre grid facilitates an internal street layout which supports permeable and connected residential neighbourhoods, and walkable neighbourhoods with functional and viable destinations located in key strategic parts of the precinct (i.e. schools, shops and passive and active open space).

- Attractors located to promote walking to frequently used services.

The activity centre, schools, community facilities, and passive and active open space are located to maximise the number of residents within a safe and convenient walking distance of these amenities. The cycle and pedestrian network is designed to link residential areas with these key services and facilities to promote walking and cycling.

- Local employment

The provision of localised schools and community oriented services, along with retail and business opportunities within the Local Town Centres generates opportunities for local people to work locally. This has the added benefit of building a sense of place and community. Future employment opportunities will also be available in the nearby Minta Farm and Cardinia Employment Corridor.

3.2.6 Climate change and environmental sustainability

The Clyde North PSP makes provision for ecologically sustainable development which minimises environmental impacts in the short and long term. Utilising ecologically sustainable development principles supports a lesser impact on the environment through reduced energy and water usage and promoting the efficient use of resources.

Energy Statement

The future urban structure responds to climate change and environmental sustainability by:

- Reducing travel distances to 'everyday' services and facilities (refer to Travel to Work Statement).
- Encouraging travel by means other than private car by providing walking, cycling, and bus links to new residential neighbourhoods.
- Encouraging efficient movements through the creation of a road network based on the traditional 1 mile (1.6km) grid of arterial roads and a typical 800m grid of connector roads. The road grid also provides public transport access to key destinations.
- Integration of the road network with the linear open space network to encourage easy walking and cycling access to key destinations within and outside the precinct. The connector roads include dedicated on-road bike paths and pedestrian paths.
- Designing all connector roads to accommodate bus movements.
- Extending and introducing new potential local bus services throughout Clyde North (linking to key regional destinations such as Beaconsfield Station, Berwick, and Fountain Gate along the road network grid).
- At the subdivision level the urban grid encourages the design of residential lots to feature passive solar orientation, providing the ability to reduce carbon dioxide emissions per household.
- Non-residential buildings will be required to demonstrate measurable sustainability objectives which focus on energy use and greenhouse gas emissions, water and materials.

Water Sensitive Urban Design

Water Sensitive Urban Design ("WSUD") features will be incorporated into the overland flow paths and integrated within the open space network to provide for water quality treatment, retardation and high quality self-sustaining landscapes. The main water sensitive feature of the precinct is the linear creek and wetlands network running throughout the PSP, which will incorporate recreation trails and facilities, and provide a connection to Ti-Tree Creek and Berwick to the north.

Further opportunities for on-street and on site WSUD should be explored during the detailed subdivision design phase of development.

Recycled water

A 'third pipe' system has been mandated throughout the PSP area to ultimately supply recycled water to each residential lot and parklands from the Eastern Irrigation Scheme. The ability to provide suitable quality Class A recycled water to the PSP area is dependent on completion of Melbourne Water's upgrade of the Eastern Treatment Plant which has been estimated for 2013/14.

Native vegetation

Remnant native and indigenous vegetation will be retained as shown in the NVPP in Section 4.5.7 to assist in creating a distinctive landscape character for the area and enhance biodiversity values. This will be complemented by the wetlands network and landscaping using predominantly native and indigenous species throughout the precinct.

This will enhance the biodiversity characteristics of the area through the provision of vegetation which supports habitat for a variety of fauna species.

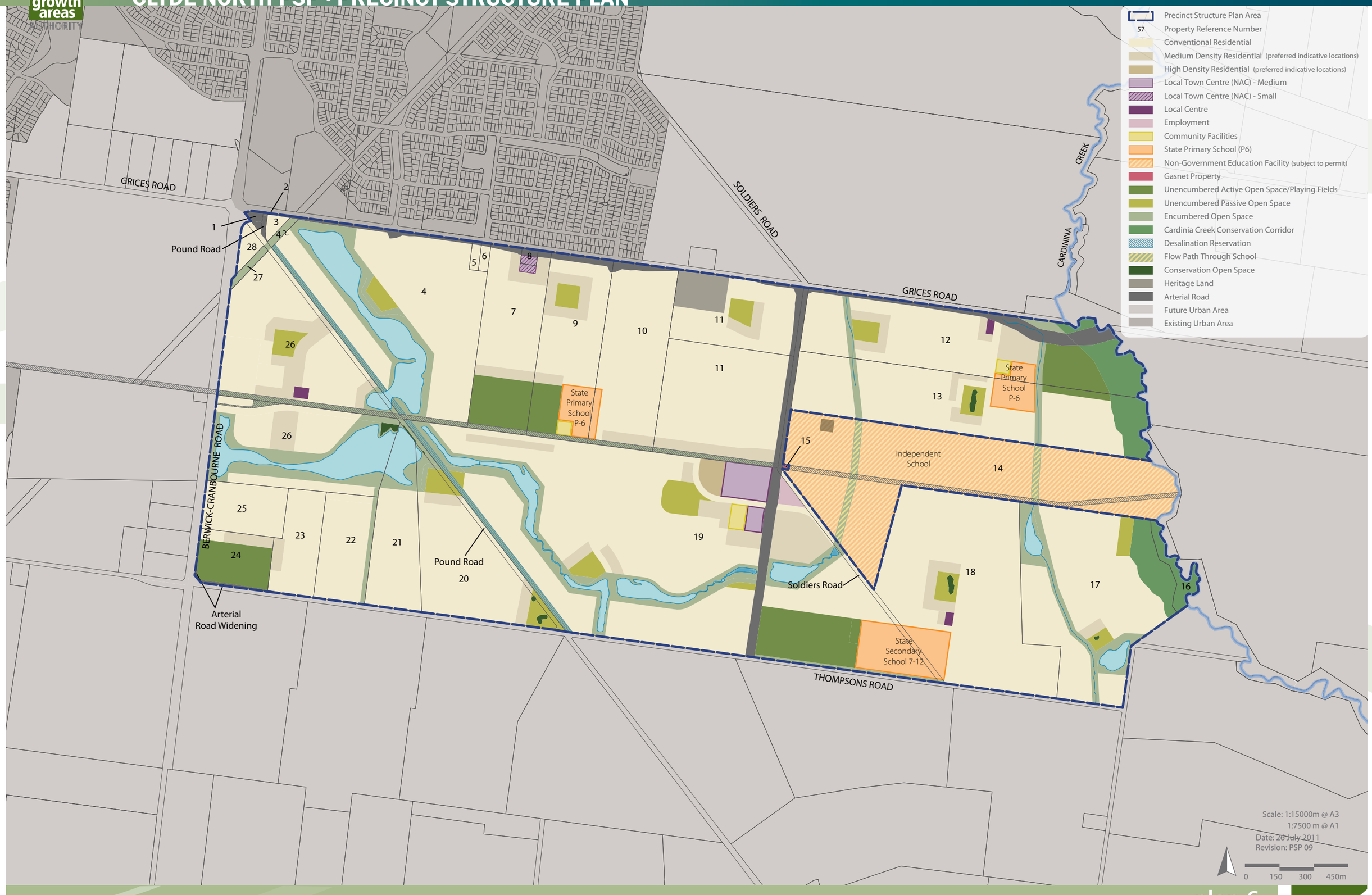
3.2.7 Deliver accessible, integrated and adaptable community facilities

The future urban structure supports walking and cycling links which are provided either as part of linear open space corridors or as dedicated paths as part of the road reserve. A wide range of local community facilities, sporting and recreational activities will be linked along these community spines.

The development of landscape features and an open space network which provides links between natural assets will shape land uses and connections within the precinct and into the surrounding areas. The open space network also contributes to the precinct having an environmental focus which residents and workers can benefit from through access to high quality, well located linear green spaces and ecological corridors.

The components of the open space network are the linear creek and wetlands network (including drainage reserves), local and linear parks, active playing fields, hilltops and high points and views. The Cardinia Creek corridor and the central drainage reserve provide recreational opportunities over and above the dedicated open space in the PSP. A draft Masterplan has been developed for the Cardinia Creek Corridor. While detailed plans for the other waterway corridors are yet to be developed, Melbourne Water will allow the development of recreational development within floodplains above the 1 in 10 year flood line, such as recreational paths (including potential equestrian trails in the Cardinia Creek corridor), sports facilities, play equipment and barbeque areas. These areas will also be important for the reinstatement and protection of biodiversity habitat areas. Together, the open space components will provide a high amenity setting for future residential development.

The PSP also provides for a major community centre within the central Local Town, in addition to preschool based centres co-located with the two primary schools. The PSP encourages additional private facilities such as private child care and medical services, particularly within or adjoining the Town Centres.



plan 6

land use budget

clyde north precinct structure plan

3.3 LAND USE BUDGET

The Land Use Budget is depicted in Plan 6: Land Use Budget and Neighbourhoods, and outlined in Table 3 Summary Land Use Budget with a more detailed property specific land use budget in Table 4 Property Specific Land Use Budget.

3.3.1 Land Use Budget Summary

The Clyde North PSP covers a total area of 612 hectares.

The Net Developable Area ("NDA") is established by deducting the land requirements for community facilities, public and private education facilities, and open space (both active and passive) from the Gross Developable Area ("GDA"). As such the NDA for the Clyde North PSP is 432.213 hectares which equates to approximately 70.59% of the PSP area.

The land budget demonstrates that the urban structure established by the PSP achieves a lot density of 15.56 dwellings per Net Developable Hectare ("NDHa"). Based on this density, the PSP Area is estimated to provide for a yield of in excess of 6,600 lots.

It should be noted that the area designated for the central Local Town Centre has been included as part of the NDA, but discounted for the purpose of calculating anticipated lot yields. Higher density housing is encouraged to be located within the Town Centre site. This is expected to see estimated housing yields exceeded over time as higher density housing is developed within the Town Centre.

3.4 DEMOGRAPHIC PROJECTIONS

The preparation of the Clyde North PSP has assumed an average household size of 2.8 persons per household to 2020 (based on Victoria in Future 2008) as the basis for estimating the future population within PSP area. In the longer term, this household size is forecast to gradually decline toward the current metropolitan average which is around 2.5 people per dwelling.

Based on the above, the future population of the PSP area is estimated at approximately 18,500 people.

The PSP plans for the following characteristics of the community (as compared to the City of Casey and Melbourne Statistical Division [MSD]):

- A higher percentage of children (0-17 years), and a much lower percentage of mature adults (65 to 84 years) and senior citizens (85+ years).
- A slightly higher percentage of people employed full time, and slightly lower percentage of people unemployed.
- Main occupation categories of intermediate clerical sales and service workers, tradespersons, and related works, and professionals.
- A high percentage of families being couples with children.

These projected demographic characteristics are based on analysis of the Berwick South and Cranbourne North areas, and are largely typical of an establishing outer growth area community.

The proportion of residents at or reaching retirement age by 2031 is projected to increase significantly in line with the metropolitan average.

Estimated Residential Lot Yield

Description	PSP Area		
Retail / Emp & Other	**Ha**		
Activity Centre (retail / office / mixed use)	5.115		
Other Employment	0.755		
Subtotal	5.870		
Residential	**NRA (Ha)**	**Dwell / NRHa**	**Dwellings**
Residential - Conventional Density Residential	386.365	15	5795
Residential - Medium Density	38.466	20	769
Residential - High Density	1.512	30	45
Subtotal Against Net Residential Area (NRA)	426.343	15.5	6610
Combined Res/ Retail / Emp / Other	NDA (Ha)	Dwell / NDHa	Dwellings
Totals Residential Yield Against NDA	**432.213**	**15.28**	**6605**

Table 3: Summary Land Use Budget

DESCRIPTION	Area		
	Hectares	% of Total Precinct	% of NDA
TOTAL PRECINCT AREA (ha)	612.314	100.00%	
Transport			
Arterial Roads	16.533	2.70%	3.83%
Tree Reserve / Buffer	1.081	0.18%	0.25%
Existing Road Reserve	4.162	0.68%	0.96%
Sub-total	21.776	3.56%	5.04%
Community Facilities			
Community Services Facilities	1.600	0.26%	0.37%
Subtotal	1.600	0.26%	0.37%
Government Education			
Government Schools	15.393	2.51%	3.56%
Subtotal	15.393	2.51%	3.56%
Open Space			
Encumbered Land Available for Recreation	0.000	0.00%	0.00%
Gas Easements	5.054	0.83%	1.17%
Desalination Pipe Easement	4.390	0.72%	1.02%
Melbourne Water Easement	1.199	0.20%	0.28%
Waterway / Drainage Line / Wetland / Retarding	67.756	11.07%	15.68%
Cardinia Creek Conservation Corridor	14.742	2.41%	3.41%
Conservation - Other	0.906	0.15%	0.21%
Sub-total	94.047	15.36%	21.76%
Unencumbered Land Available for Recreation			
Active Open Space	28.384	4.64%	6.57%
Passive Open Space	15.305	2.50%	3.54%
Subtotal	43.689	7.14%	10.11%
TOTALS OPEN SPACE	**137.736**	**22.49%**	**31.87%**
Other			
Heritage	3.540	0.58%	0.82%
Gasnet Property	0.056	0.01%	0.01%
Subtotal	3.596	0.59%	0.83%
NET DEVELOPABLE AREA (NDA) ha	**432.213**	**70.59%**	**0.00%**

Note: Hillcrest Christian College is not included in the Precinct Structure Plan Land Use Budget.

Table 4: Property specific land use budget

Property Number	Total Area (Hectares)	Transport			Community		Encumbered Land Available for Recreation								Unencumbered Land for Recreation			Heritage	Gasnet Property	Total Net Developable Area (Hectares)	Net Developable Area for calculation of Open Space (Excludes Hillcrest SC)
		Arterial Road / Widening	Tree Reserve/ Buffer (Thompsons Road)	Existing Road Reserve	Community Facilities	Government Schools	Gas Easement	Desalination Pipe Easement	Melbourne Water Easement	Waterway / Drainage Line / Wetland / Retarding	Floodplain (Creek Corridor)	Conservation - Cardinia Ck Corridor	Cardinia Ck Conservation Corridor	Conservation - Other	Active Open Space	Passive Open Space	Other- Regional Recreation (Indoor Centre)				
		Not included in NDA	Not included in NDA		Not included in NDA	Not included in NDA	Not included in OS %	Not included in OS %	Not included in OS %	Not included in OS %	Not included in NDA	Not included in OS %	Not included in OS %	Not included in OS %	Included in OS %	Included in OS %	Included in OS %	Not included in NDA	Not included in NDA	Not including Arterial, Commercial & Recreational	
Property 1	0.387	0.387	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Property 2	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Property 3	0.712	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.638	0.896
Property 4	53.140	1.171	0.000	0.000	0.000	0.000	0.558	1.942	0.473	16.047	0.000	0.000	0.000	0.000	0.000	1.004	0.000	0.000	0.000	31.945	0.601
Property 5	0.499	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.444	0.890
Property 6	0.511	0.063	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.448	0.877
Property 7	20.633	0.474	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.541	0.000	0.000	0.000	0.000	14.118	0.684
Property 8	0.485	0.225	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.260	0.536
Property 9	21.731	0.835	0.000	0.000	0.400	2.788	0.522	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.680	1.000	0.000	0.000	0.000	13.506	0.622
Property 10	22.849	0.739	0.000	0.000	0.000	0.712	0.559	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.839	0.912
Property 11	43.855	2.104	0.000	0.000	0.000	0.000	1.043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.009	0.000	3.540	0.000	36.159	0.000
Property 12	40.404	4.450	0.000	0.000	0.400	1.093	0.000	0.000	0.000	1.921	0.000	0.000	4.689	0.000	4.358	1.000	0.000	0.000	0.000	22.493	0.557
Property 13	40.348	0.000	0.000	0.000	0.000	2.407	0.000	0.000	0.000	1.595	0.000	0.000	3.494	0.220	0.893	0.999	0.000	0.000	0.000	30.740	0.762
Property 15	0.056	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.056	0.000	0.000
Property 16	2.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.340	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Property 17	43.280	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.316	0.000	0.000	4.219	0.032	0.000	1.582	0.000	0.000	0.000	30.131	0.696
Property 18	48.478	0.000	0.001	0.000	0.000	2.419	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.186	0.000	1.002	0.000	0.000	0.000	44.870	0.926
Property 19	135.225	3.610	1.046	0.000	0.800	5.382	0.000	2.448	0.000	19.485	0.000	0.000	0.000	0.000	9.309	3.937	0.000	0.000	0.000	89.208	0.660
Property 20	22.032	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.878	0.000	0.000	0.000	0.152	0.000	1.800	0.000	0.000	0.000	19.202	0.872
Property 21	13.866	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.776	0.777
Property 22	10.479	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.941	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.538	0.910
Property 23	8.467	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.416	0.994
Property 24	7.560	0.409	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.603	0.000	0.000	0.000	0.000	1.548	0.205
Property 25	7.708	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.708	1.000
Property 26	56.887	0.000	0.000	0.000	0.000	0.000	1.889	0.000	0.000	15.601	0.000	0.000	0.000	0.252	0.000	1.216	0.000	0.000	0.000	37.929	0.667
Property 27	0.666	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.666	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Property 28	1.298	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.298	1.000
Pound Road	4.515	0.217	0.000	2.694	0.000	0.000	0.056	0.000	0.060	0.742	0.000	0.000	0.000	0.064	0.000	0.682	0.000	0.000	0.000	0.000	0.000
Soldiers Road	3.895	1.661	0.034	1.468	0.000	0.592	0.000	0.000	0.000	0.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	**612.314**	**16.533**	**1.081**	**4.162**	**1.600**	**15.393**	**5.127**	**4.390**	**1.199**	**67.756**	**0.000**	**0.000**	**14.742**	**0.906**	**28.384**	**15.231**	**0.000**	**3.540**	**0.056**	**432.214**	**0.706**

Table 4: Property specific land use budget (Continued)

Property Number	Key Percentages				Open Space Development Target %	Difference	Equivalent Land Area (Hectares)
	Net Developable Area % of Precinct	Active Open Space % NDA	Passive Open Space % NDA	Total Passive & Active Open Space %			
Property 1	0.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	0.00%
Property 2	0.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	0.00%
Property 3	89.61%	0.00%	0.00%	0.00%	10.09%	-10.09%	-6.44%
Property 4	60.11%	0.00%	3.14%	3.14%	10.09%	-6.95%	-222.02%
Property 5	88.98%	0.00%	0.00%	0.00%	10.09%	-10.09%	-4.48%
Property 6	87.67%	0.00%	0.00%	0.00%	10.09%	-10.09%	-4.52%
Property 7	68.42%	39.25%	0.00%	39.25%	10.09%	29.16%	411.68%
Property 8	53.61%	0.00%	0.00%	0.00%	10.09%	-10.09%	-2.62%
Property 9	62.15%	19.84%	7.40%	27.25%	10.09%	17.16%	231.76%
Property 10	91.20%	0.00%	0.00%	0.00%	10.09%	-10.09%	-210.27%
Property 11	82.45%	0.00%	2.79%	2.79%	10.09%	-7.30%	-263.96%
Property 12	55.67%	19.37%	4.45%	23.82%	10.09%	13.73%	308.83%
Property 13	76.19%	2.91%	3.25%	6.15%	10.09%	-3.94%	-121.12%
Property 15	0.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	0.00%
Property 16	0.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	0.00%
Property 17	69.62%	0.00%	5.25%	5.25%	10.09%	-4.84%	-145.83%
Property 18	92.56%	0.00%	2.23%	2.23%	10.09%	-7.86%	-352.68%
Property 19	65.97%	10.44%	4.41%	14.85%	10.09%	4.76%	424.63%
Property 20	87.16%	0.00%	9.37%	9.37%	10.09%	-0.72%	-13.83%
Property 21	77.72%	0.00%	0.00%	0.00%	10.09%	-10.09%	-108.73%
Property 22	91.02%	0.00%	0.00%	0.00%	10.09%	-10.09%	-96.24%
Property 23	99.40%	0.00%	0.00%	0.00%	10.09%	-10.09%	-84.92%
Property 24	20.48%	361.95%	0.00%	361.95%	10.09%	351.86%	544.68%
Property 25	100.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	-77.77%
Property 26	66.67%	0.00%	3.21%	3.21%	10.09%	-6.89%	-261.33%
Property 27	0.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	0.00%
Property 28	100.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	-13.10%
Pound Road	0.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	0.00%
Soldiers Road	0.00%	0.00%	0.00%	0.00%	10.09%	-10.09%	0.00%
Total	**70.59%**	**6.57%**	**3.52%**	**10.09%**	**10.09%**	**0.00%**	**0.00%**

Table 5: Property specific land use budget - housing yields

Property Number	Total Area (Hectares)	Total Net Developable Area (Hectares)	Other Land Uses	Total Net Residential Area (Hectares)	CONVENTIONAL DENSITY (15 Dwellings/NRHa)		MEDIUM DENSITY 20 Dwellings/NRHa)		HIGH DENSITY (30 Dwellings/NRHa)		Total Combined		
			Activitiy Centre/ Commercial		NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings	NRHa	Indicative Dwellings/ NRHa	Indicative Dwellings
Property 1	0.387	0.000	0.000	0.000	0.000	0	0.000	0	0.000	0	0.000	0	0
Property 2	0.008	0.000	0.000	0.000	0.000	0	0.000	0	0.000	0	0.000	0	0
Property 3	0.712	0.638	0.000	0.638	0.638	10	0.000	0	0.000	0	0.638	15	10
Property 4	53.140	31.945	0.000	31.945	31.945	479	0.000	0	0.000	0	31.945	15	479
Property 5	0.499	0.444	0.000	0.444	0.444	7	0.000	0	0.000	0	0.444	15	7
Property 6	0.511	0.448	0.000	0.448	0.448	7	0.000	0	0.000	0	0.448	15	7
Property 7	20.633	14.118	0.241	13.877	11.119	167	2.758	55	0.000	0	13.877	16	222
Property 8	0.485	0.260	0.260	0.000	0.000	0	0.000	0	0.000	0	0.000	0	0
Property 9	21.731	13.506	0.000	13.506	10.277	154	3.229	65	0.000	0	13.506	16	219
Property 10	22.849	20.839	0.000	20.839	19.817	297	1.022	20	0.000	0	20.839	15	317
Property 11	43.855	36.159	0.000	36.159	32.453	487	3.706	74	0.000	0	36.159	16	561
Property 12	40.404	22.493	0.200	22.293	18.129	272	4.164	83	0.000	0	22.293	16	355
Property 13	40.348	30.740	0.000	30.740	29.426	441	1.314	26	0.000	0	30.740	15	467
Property 15	0.056	0.000	0.000	0.000	0.000	0	0.000	0	0.000	0	0.000	0	0
Property 16	2.340	0.000	0.000	0.000	0.000	0	0.000	0	0.000	0	0.000	0	0
Property 17	43.280	30.131	0.000	30.131	29.619	444	0.512	10	0.000	0	30.131	15	454
Property 18	48.478	44.870	0.205	44.665	42.657	640	2.008	40	0.000	0	44.665	15	683
Property 19	135.225	89.208	4.663	84.545	73.461	1102	9.572	189	1.512	45	84.545	16	1336
Property 20	22.032	19.202	0.000	19.202	17.699	265	1.503	30	0.000	0	19.202	15	295
Property 21	13.866	10.776	0.000	10.776	10.776	162	0.000	0	0.000	0	10.776	15	162
Property 22	10.479	9.538	0.000	9.538	9.538	143	0.000	0	0.000	0	9.538	15	143
Property 23	8.467	8.416	0.000	8.416	7.734	116	0.682	14	0.000	0	8.416	15	130
Property 24	7.560	1.548	0.000	1.548	0.508	8	1.040	21	0.000	0	1.548	18	29
Property 25	7.708	7.708	0.000	7.708	7.708	116	0.000	0	0.000	0	7.708	15	116
Property 26	56.887	37.928	0.301	37.627	30.671	460	6.956	139	0.000	0	37.627	16	599
Property 27	0.666	0.000	0.000	0.000	0.000	0	0.000	0	0.000	0	0.000	0	0
Property 28	1.298	1.298	0.000	1.298	1.298	19	0.000	0	0.000	0	1.298	15	19
Pound Road	4.515	0.000	0.000	0.000	0.000	0	0.000	0	0.000	0	0.000	15	0
Soldiers Road	3.895	0.000	0.000	0.000	0.000	0	0.000	0	0.000	0	0.000	15	0
Total	**612.314**	**432.213**	**5.870**	**426.343**	**386.365**	**5795**	**38.466**	**766**	**1.512**	**45**	**426.343**	**15.4**	**6606**

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4.0 ELEMENTS

This chapter sets out objectives and planning and design guidelines for the following elements:

1. Image and character

2. Housing

3. Employment and Activity Centres

4. Community Facilities

5. Open Space and Natural Systems

6. Transport and Movement

7. Utilities and Energy

Each element includes:

Objectives: an objective describes the desired outcome to be achieved in the completed development.

Plans: the plans are a spatial expression of objectives.

Planning and Design Guidelines including figures and tables that:

- must be met; or
- should be met.

Where a planning and design guideline is listed as "must be met" no alternative shall be considered.

Where a planning and design guideline is listed as "should be met" an application for an alternative design solution or outcome envisaged by the planning and design guideline, which meets the objectives, may be considered to the satisfaction of the Responsible Authority.

GRICES ROAD
SOLDIERS ROAD
CARDINIA CREEK
BERWICK-CRANBOURNE ROAD
THOMPSONS ROAD

- Precinct Structure Plan Area
- Local Town Centre (NAC) - Medium
- Local Town Centre (NAC) - Small
- Local Centre
- State Primary School (P6)
- Non-Government Education Facility
- Community Facilities
- Unencumbered Active Open Space
- Open Space
- Potentially Significant Native Vegetation
- Heritage Site
- Existing Gas Easement
- Hill Top
- Aboriginal Heritage (registered Site)
- Contours (1m interval)
- Waterbodies
- Existing Views
- Low Point
- Future Urban Area
- Existing Urban Area

Scale: 1:15000m @ A3
1:7500 m @ A1
Date: 21 July 2011
Revision: PSP 08

0 150 300 450m

plan 7

image & character
clyde north precinct structure plan

4.1 IMAGE AND CHARACTER

4.1.1 Image and character objectives

- To establish a built environment that is functional, safe, aesthetically pleasing and that promotes identity for future residents.
- To create a sense of place that responds to the landscape character and topographical features of the precinct, including significant hilltops and the Cardinia Creek environs.
- To preserve and enhance view corridors to and from significant landscape and built features and ensure development does not detract from visual amenity of the area.
- To respond appropriately to the natural land form of the area.
- To conserve and enhance recognised heritage places.
- To recreate a biodiversity habitat and recreational open space opportunity on the Cardinia Creek Corridor and on the main east-west overland flow path in the south of the PSP area.
- To encourage the use of a predominantly native and indigenous plant palette in the landscaping of public spaces.
- To provide for road and street cross-sections with sufficient width to support large trees.

4.1.2 Implementation

The objectives for image and character are met by implementation of all the following:

- Plan 5: Future Urban Structure Plan;
- Plan 7: Image and Character Plan;
- Table 11: Open Space Planning and Design Guidelines;
- Road and Street cross sections in the Transport and Movement element; and,
- Planning and design guidelines set out under 4.1.3.

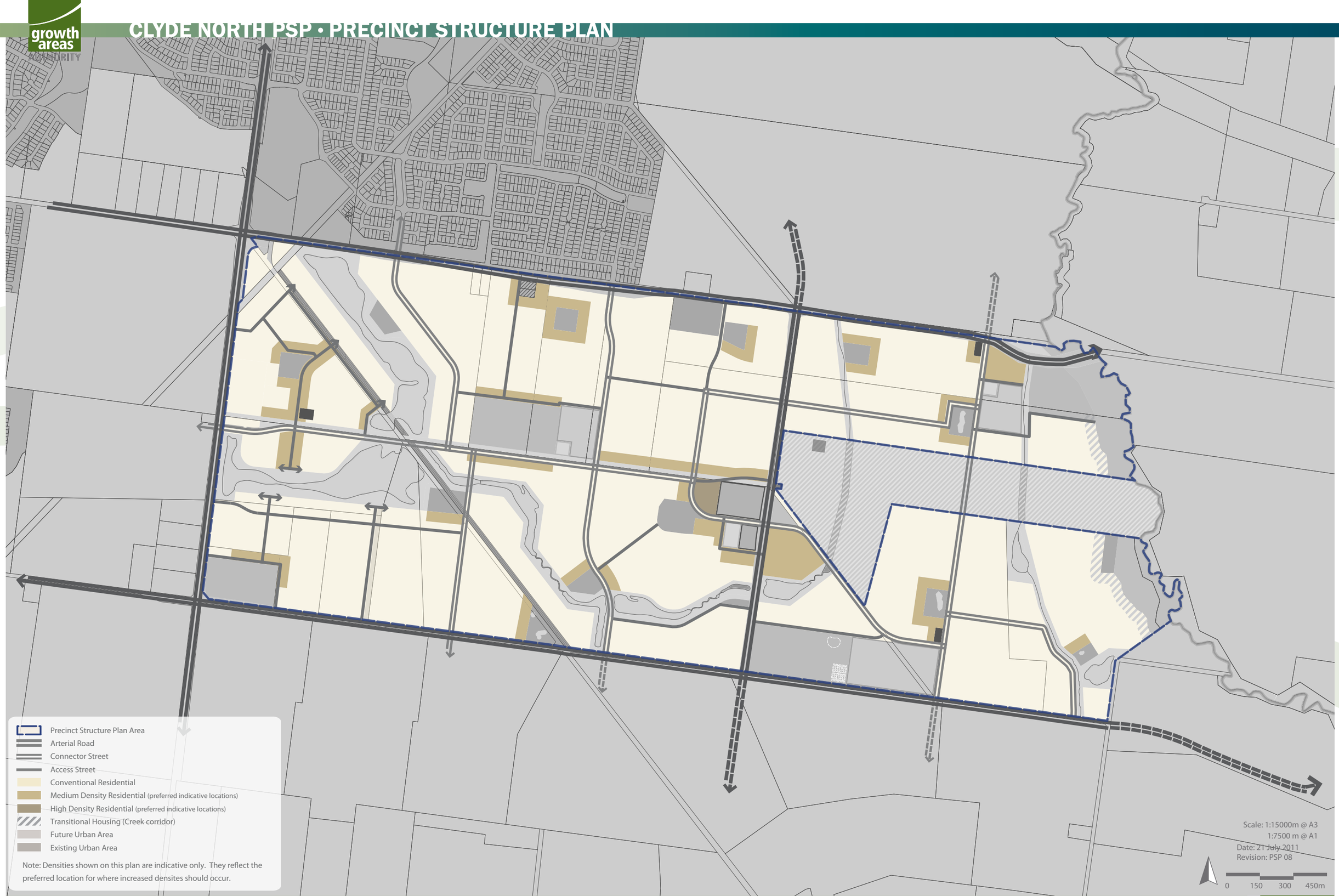
4.1.3 Street Tree Planting

The following planning and design guidelines should be met.

Street tree planting should:

- Be consistent with the relevant adopted Casey Street Tree Strategies.
- Support the general native and indigenous landscape vision of the precinct, with targeted use of exotic species on some streets and as highlight plantings.
- Be suitable to the scale of the street and the planting space available, with larger tree species chosen for wider roads.
- Form strong avenues and canopies to provide shade and definition to streetscapes.
- Be suitable for local soil and climatic conditions.
- Be chosen to provide visual cues and definition to different classes of roads, activity centres, park frontages and key intersection and entrances.
- Use appropriate indigenous trees suitable for the urban environment, particularly where a street links with or adjoins conservation areas. Use of indigenous street trees along the key precinct pedestrian and bicycle trails, within wider road reserves, is also desirable.
- On existing or proposed declared arterial roads be established in accordance with clear zone guidelines to the satisfaction of VicRoads.

Generally later developments will be required to match tree species that have already been approved or planted in roads linking to or adjoining development parcels.



plan 8

housing

clyde north precinct structure plan

4.2 HOUSING

4.2.1 Housing objectives

- To provide a range of lot sizes and housing types to satisfy the needs and aspirations of the new community and provide for the community's housing life-cycle.
- To achieve a density of 15 dwellings per Net Developable Hectare (NDHa) throughout the PSP area.
- To provide medium and higher residential housing densities close to the activity centre, community hubs and open space.
- To provide residential neighbourhoods that promote liveability through walkable neighbourhoods and accessibility to local services and facilities, high urban design standards and neighbourhood character.
- To provide lot sizes and housing types which are responsive to the character of the natural environment and respond to principles of environmental sustainability.
- To provide integrated housing sites (including for example medium density housing or other specialised housing forms) within or at the interface of the town centres, and integrate with local and linear open space.

4.2.2 Implementation

The objectives for housing are met by implementation of all the following:

- Plan 5: Future Urban Structure Plan;
- Plan 8: Housing Plan; and,
- Planning and design guidelines set out in 4.2.3.

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4.2.3 Planning and design guidelines

The following planning and design guidelines must be met.

The overall PSP area must achieve a minimum density of 15 dwellings per hectare (Net Residential Development Area). Indicative dwelling yields and density distributions for each property in the PSP area are shown in Table 5.

The following planning and design guidelines should be met.

In delivering this outcome, it is anticipated that medium density areas as identified in the Housing Plan will provide predominantly medium density (or higher density) housing, whilst conventional density areas will provide some medium density housing.

Residential development should include a full range of dwelling densities, including 'conventional' density residential lots, 'medium' density residential lots, and 'higher' density residential/ specialised housing. These terms are defined in the glossary in Section 6.1.

Flexibility has purposefully been provided to support alternative lot distribution patterns to promote greater housing diversity throughout the precinct.

The housing density distribution patterns shown on Plan 8 represent preferable locations for conventional, medium and higher density housing. Table 5 estimates the lot mix required to meet the property specific dwelling yield. An alternative lot mix and spatial distribution may be considered if the number of total combined dwellings for each specific property contained in Table 5 is still able to be achieved and the housing objectives are met.

Transitional housing with frontage to Cardinia Creek is nominated as a 'soft edge' to the creek corridor. Lots within the conventional density area with interface to the creek should be a minimum of 600m2.

Housing Density Notes

In accordance with the definitions in the PSP, an average of 15 dwellings per hectare across the PSP area is calculated on net developable area being the:

"total amount of land within the precinct that is made available for development of housing and employment buildings, including lots, local and connector streets. Total precinct area minus community facilities, schools and educational facilities and open space, arterial roads and encumbered land"…

Net Residential Area has been established in order to accurately calculate dwelling yields on land which has been identified as land to be developed for residential lots. For example, areas of land identified for non-residential land uses have been excluded from the dwelling yield projections for each parcel. The dwelling mix required to achieve the dwelling yield estimates should be achieved using the definition for Net Residential Area in this PSP.

This PSP defines the average densities for conventional, medium and high density based on achieving on overall density of 15 dwellings per hectare (NDA). In order to achieve the overall average density, the following is required.

Conventional Density Housing

- Conventional density housing must achieve an average of 13 lots per NRHa.

Medium and High Density Housing

- Medium density housing must achieve an average of 23 dwellings
- High density housing should be greater than 35 dwellings per NRHa, and
- Development of medium density housing is encouraged in the following circumstances:

- As part of an integrated development site,
- As part of a specialised housing project such as retirement living or an aged care facility,
- Generally in areas within 400m walkable catchment of the main street core of a local town centre,
- Overlooking, abutting or within close proximity of public open space and community hubs, and
- Be provided in a variety of forms such as shop top, terrace/ townhouse development, smaller 'town' lots, shared driveway housing, integrated development sites as well as retirement villages/nursing home care facilities.

The PSP encourages high density housing to be achieved for individual development sites above the minimum requirements specified.

Dwelling and lot densities are distributed across the PSP area as a percentage of total area available for residential development.

Transitional housing

Transitional housing with interface to the Cardinia Creek Corridor must:

- Create a transitional housing environment that is integrated with the biodiversity qualities of the Cardinia Creek Corridor;
- Provide biodiversity links through indigenous planting within housing allotments adjoining the Cardinia Creek Corridor. The planting of advanced indigenous trees is encouraged;
- Create cohesion between public and private landscapes that reinforce the biodiversity nature of the Cardinia Creek Corridor;
- Incorporate existing indigenous trees into landscaped areas for housing allotments where practical;
- Incorporate a front planting zone (front setback) that supports and complements the biodiversity objectives of the Cardinia Creek Corridor through the appropriate use of indigenous tree species (endemic where practical);
- That a vegetation management buffer zone be established (including the road adjacent to the creek corridor and front yards of adjacent housing) of a width to ensure the radiant heat flux imposed on any building is in accordance with CFA assessment and requirements (which would be resolved in detail at subdivision permit stage).
- Ensure continuous landscaping to avoid fencing along front/street boundaries;
- Ensure that side fencing returns are parallel to the primary frontage of each dwelling and at least 1.0m behind the relevant front wall/corner of the dwelling to enable appropriate canopy tree plantings with front yards.

An illustration of the Transitional Housing treatment is shown in Figure 1.

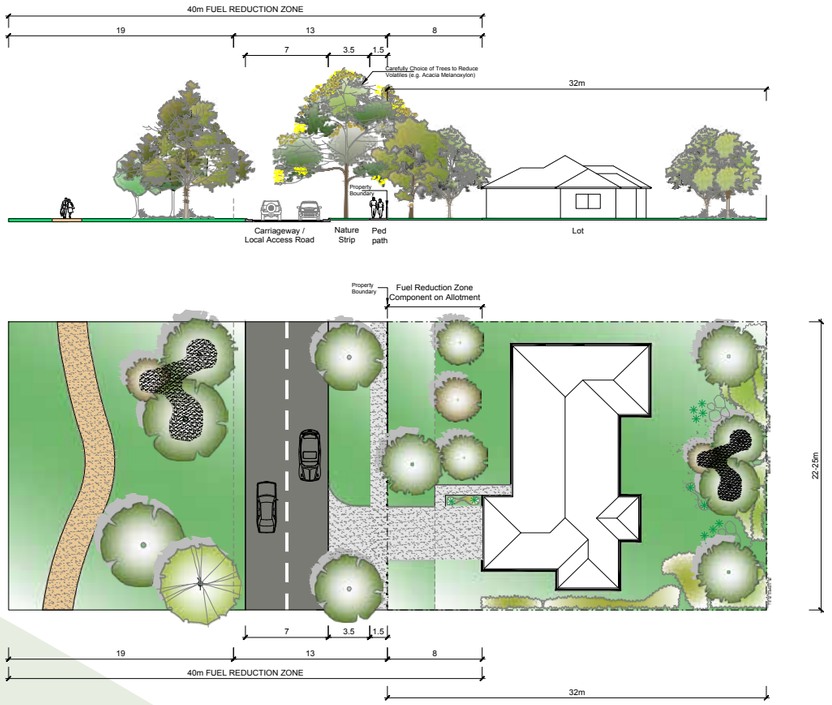
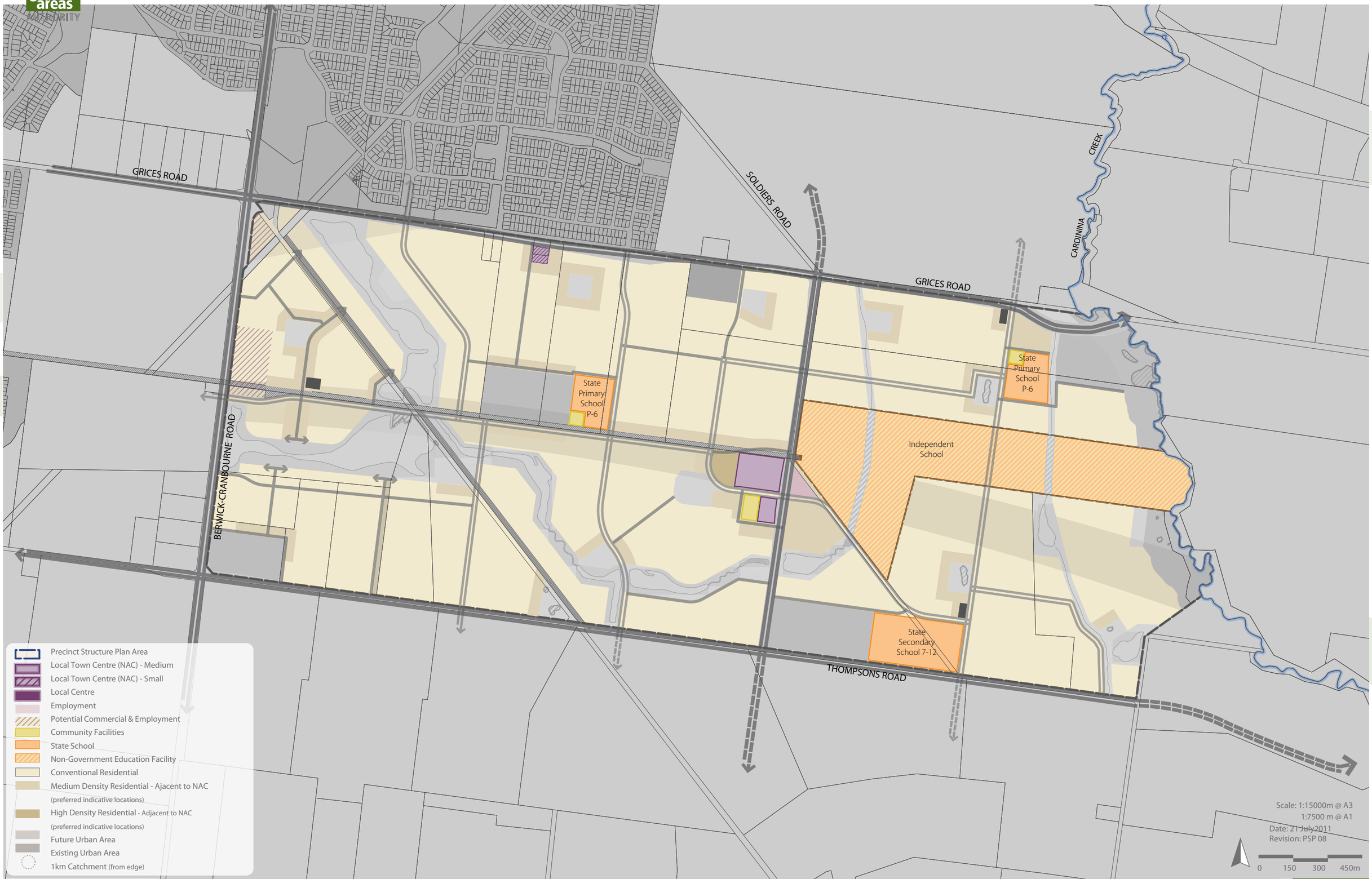


Figure 1 Transitional Housing



plan 9

employment and activity centres

clyde north precinct structure plan

4.3 EMPLOYMENT AND ACTIVITY CENTRES

4.3.1 Employment and activity centre objectives

- To increase opportunities for employment in the Precinct and the broader area in order to:
- Move away from the historical trend of the 'dormitory suburb';
- Promote a quality of life and community participation;
- Reduce transport costs for households and businesses; and,
- Reduce the imposition of demand on existing metropolitan road and rail transport infrastructure.
- To facilitate the development of services and small offices located within and at the edge of the medium Local Town Centre.
- To encourage the development of home based businesses.
- To boost local employment opportunities through:
- The development of a network of neighbourhood and local centres providing a mix of retail, commercial, leisure and community services activities; and,
- The establishment of community services network throughout the precinct and the provision of other activities (such as childcare centres) which provide employment as well as services to the local community.
- To make provision for the development of retail, commercial, leisure and other support services required to meet the needs of local workers, business and industry.

4.3.2 Implementation

The objectives for employment areas are met by implementation of all the following:

- Plan 5: Future Urban Structure Plan;
- Plan 9: Employment and Activity Centres Plan;
- Table 9: Hierarchy of Activity Centres; and,
- Table 10: Local Town Centre Urban Design Framework Guidelines.

Opportunities for employment within and outside the PSP are outlined in Tables 7 and 8.

Table 6: Employment opportunities within the PSP

Employment opportunities within the PSP	
Activity Centre	**Role and function**
Medium Local Town Centre	• Indicative retail floorspace of up to 8,000 sqm. • Office provision of 2,000 to 4,000sqm. • Provides for one supermarket and a variety of shops, offices with opportunities for a tavern. • Includes the opportunity for a second retail anchor to the satisfication of the Responsible Authority. • Includes key community facilities including a multi-purpose community centre, medical centre, and private childcare. • Anchors activity along the main east-west street that runs through the precinct. • Provides opportunities to maximise the intensity of development around the centre. • Provides an opportunity to locate private services and employment opportunities.
Small Local Town Centre	• Located in western precinct on Grices Road • Indicative retail floorspace of up to 2,500sqm.
Local Centre	• Two centres located in the eastern precinct, one on Grices Road and the other to the north of the secondary school. • Indicative retail floor space of up to 1,000sqm each.
Commercial Centre	• Berwick-Cranbourne Road at intersection of east-west connector
Employment Land	• 0.5ha of employment land opposite the medium Local Town Centre
Hillcrest Christian College	• Regional Private School
Government Schools and Community Hubs	• Employment opportunities in schools, child care centres, maternal and child health etc.

Table 7: Employment opportunities outside the PSP

Employment opportunities outside the PSP	
Activity Centre	**Role and function**
Minta Farm	• Mixed use/office employment activity
Officer South and Cardinia Employment Area	• Industry, logistics and services function
Cranbourne North	• Service Business

Table 8: Hierarchy of Activity Centres

Activity Centre	Role and function
Cranbourne Town Centre Principal Activity Centre	Cranbourne Town Centre has a significant catchment extending to areas of South Gippsland. Regional education, sport (including racing), recreation and tourism and health activities already exist.
Casey Central Town Centre Major Activity Centre	A large MAC with a supermarket and supporting specialty shops with a floor area of approximately 7,500 square metres of retail with a planned expansion bringing the total floor area to approximately 29,000 sqm.
Eden Rise Neighbourhood Activity Centre	A large NAC with a single supermarket and supportive retail services and amenities. A second supermarket and associated additional retail services has been approved and is currently under construction.
Clyde North Medium Local Town Centre	A medium sized street-based centre of approximately 8,000 square metres of retail consisting of one supermarket, a second anchor and a variety of shops, with opportunities for a tavern.
Minta Farm Neighbourhood Activity Centre	A small sized street based centre at the heart of the future integrated research, business, learning and residential neighbourhood.
Clyde North Small Local Town Centre	A small centre with retail floorspace of up to 2,000 square metres containing a small supermarket and a number of small specialty shops.
Clyde North Local Centre	Small local centres with retail floorspace of up to 1,000 square metres containing a small supermarket and related services.

4.3.3 Potential Commercial Opportunity - Berwick-Cranbourne Road

An opportunity exists to provide a higher order commercial facility (focusing on trade sales or similar).

While retaining an underlying residential zone, an area is highlighted within this precinct structure plan, fronting Berwick-Cranbourne Road and at the intersection of the main East-West Connector Road to provide for a commercial use subject to a town planning permit under the specific zone provisions.

Any approval for development and use should have regard to:

- The nature of commercial activity proposed,
- The ability of the use to serve the local community including the precinct structure plan area, and
- Local employment opportunities.

4.3.4 Urban Design Frameworks Guidelines

The following planning and design guideline should be met when preparing an Urban Design Framework for a Local Town Centre.

The Urban Design Framework should:

- Address the whole of the Town Centre site;
- Address any relevant design guidelines prepared by the Victorian Government or City of Casey;
- Demonstrate an appropriate design response that addresses the Local Town Centre Urban Design Framework Guidelines outlined in Table 9 and for the medium Local Town Centre, the indicative plans illustrated at Figures 2 & 3.
- Explain how the Framework responds to feedback received following consultation with infrastructure agencies including VicRoads and the Department of Transport and landowners within the Town Centre.
- Show how the Town Centre relates to existing or approved development in the area.
- Include an overall landscape concept for the Town Centre.
- Set out guidelines to positively address environmental sustainability including integrated water management and energy conservation.
- Set out provisions for car parking including the location and design of car parking areas, and car parking rates for proposed uses within the Town Centre.
- Set out design guidelines for the provision of advertising signs.
- Set out arrangements for the provision of service areas for deliveries and waste disposal including access for larger vehicles and measures to minimise the impact on the amenity of the activity centre and adjoining neighbourhoods.

Table 9: Local Town Centre Urban Design Framework Guidelines

Design Issue	Planning and Design Guidelines
Public realm	• Footpath widths should be sufficient to provide for pedestrian and mobility access, outdoor dining and gathering spaces along the 'main street' frontages. • The main street through the medium Local Town Centre should be generally in accordance with the Town Centre Connector Road Cross Section in the Transport and Movement Element. • The design of building frontages should incorporate the use of a consistent covered walkway or verandah that will provide adequate shade and shelter for pedestrians. • Screening of centralised waste collection points should minimise amenity impacts with adjoining areas and users of the centre. • Side building facades (excluding shopfronts) and continuous walls, should not exceed 10m without articulation, fenestration, activity or visual interest. • Street facades and all visible side or rear facades should be visually rich, interesting and well articulated. • Sites in prominent locations on arterial and connector road intersections should support significant buildings, heights and design quality. • The medium Local Town Centre urban structure should provide a permeable network of streets, walkways and public spaces that provide linkages throughout the centre. • Bus stops should be provided in accordance with the Department of Transport Guidelines. • Urban art should be incorporated into the design of the public realm. • Streets, public spaces and car parks should be well lit with pedestrian-friendly light. • Public toilets should be provided in locations which are safe and accessible. • The design of each building should contribute to a cohesive and legible character for the centre as a whole. • All public spaces should respond appropriately to the design of mobility access principles. • Pedestrian access crossing points are incorporated into the overall design of the centre. • Street furniture should be located in areas that are highly visible and close to or adjoining pedestrian desire lines/gathering spaces and design to add visual interest to the centre.
Design Response	• Set out building design guidelines including building heights, material and architectural features. • Include a street network through the medium Local Town Centre which facilitates safe pedestrian and cycling links to the surrounding area. • Facilitate development which creates a high degree of community interaction and a vibrant and viable mix of retail, commercial, recreation and community facilities. • The built form should define the main street and align with the property boundary. • Development should complement and enhance the character of the surrounding area by responding appropriately to key visual cues associated with the topography of the site and surrounds. • Key view lines/sight lines into and out of the activity centre should be incorporated in the overall design. • Plant structures on the roof should be included within roof lines or otherwise hidden.

Interface with the road network	• The design of buildings should respond appropriately to the street network.
	• Landscaping of all interface areas is to be of a high standard and is considered to be an important element to complement the built form design.
	• Corner sites, where the 'main street' meets an arterial road:
	  • Should be designed to provide built form that anchors the 'main street' to the arterial road, this could be achieved through the use of a substantial multi-storey building located at the corners;
	  • Should not be developed for standard single storey fast food outlets; and,
	  • Should be developed to have an active ground floor that addresses the 'main street' frontage.

Land Use Conflict	• The centre design should avoid potential land use conflicts between residential and commercial uses by focusing retail operations on the main street and locating residential uses predominantly at the edge of the centre and at upper levels. • Centre design should seek to minimise amenity and noise impacts resulting from the mix of uses by maintaining separation and transitional areas between retail and housing activities, such as open space, road networks, and community facilities.

Table 10: Local Town Centre Urban Design Framework Guidelines (cont.)

Design Issue	Planning and Design Guidelines
Distribution of uses	• Supermarkets and other commercial/community anchors within the medium Local Town Centre should be located diagonally opposite one another across the 'main street' to promote 'desire lines' that maximise pedestrian movement along the length of the street. • Building frontages should address the 'main street' to maximise exposure to passing trade, activate streets and the 'public green', and enhance pedestrian interaction. • Shopfronts should have varying widths and floor space areas to promote a diversity of trading opportunities throughout the Town Centre. • Flexible floorspace (including floor to ceiling heights) should be incorporated into building design to enable localised non-retail commercial uses to be integrated within the 'main street'. • A variety of employment and business opportunities should be planned through the provision of a broad mix of land uses and commercial activities. • The mix of uses should include retail and office at ground level, and office, non-retail commercial and residential above ground level. • Childcare and medical centres are encouraged within the Town Centre. • The creation of land use precincts within the Town Centre is encouraged to facilitate the clustering of uses. For example, a 'medical precinct' where similar or synergistic uses are sited together to promote stronger trading patterns.

Design Issue	Planning and Design Guidelines
Supermarket and other large format retail uses	• Supermarkets within Town Centres should not impede the movement of people. • Supermarkets or large format retail uses and anchors with a frontage to the 'main street' should use clear glazing to allow view lines into the shop from the street. (Planning permits for buildings and works should condition against the use of white washed windows and excessive window advertising to ensure view lines are protected). • The design and siting of supermarkets and other 'large format retail uses' should provide an appropriate response to the entire public domain. This includes but is not limited to car parking areas, pedestrian routes and streets. • Secondary access to the supermarket from car parking areas is appropriate where it facilitates convenient trolley access and does not diminish the role of the primary access from the 'main street'.
'Main street' traffic in Town Centre	• Traffic should be managed to ensure pedestrian safety. • The 'main street' cross section must prioritise pedestrian movements and be generally in accordance with the Town Centre Cross Section (cross section 5). • A speed environment of 40km/h should be designed for.

Design Issue	Planning and Design Guidelines
Parking	• Car parking areas should be located centrally to the site and to the rear and side of the street-based retail frontages. • Car parking areas should be designed to ensure passive surveillance and public safety through adequate positioning and lighting. • Car parking areas should be designed to accommodate flexible uses. • On-street parking should be provided as either parallel or angle parking to encourage short stay parking. • Car park ingress and egress crossovers should be grouped and limited. • Car park ingress and egress and car parking areas including heavy vehicle movements should be designed to limit pedestrian/vehicle conflict. • Heavy vehicle movements (i.e. loading and deliveries) should be located to the rear and or side of street based retail frontages. • Car parking areas should provide for appropriate landscaping and planting of canopy trees. • Bicycle parking should be located in highly visible locations and close to pedestrian desire lines/ gathering spaces.
Public transport	• Access to bus stops within the 'main street' should be designed to incorporate the public transport network outlined in Plan 16 in consultation with the Department of Transport. • Provision should be made to locate public transport infrastructure/facilities at commuter friendly and convenient locations within the activity centre.
Service Areas (e.g. loading and waste storage)	• An Urban Design Framework should demonstrate that the provision of service areas are internalised wherever possible. • Where internalised service areas cannot be provided, they are to be secured and screened at the rear of buildings. • Where service areas are accessible from car parks, they should present a well designed and secure façade to public areas.

Table 10: Local Town Centre Urban Design Framework Guidelines (cont.)

Design Issue	Planning and Design Guidelines
Sustainable Design	An Urban Design Framework should be accompanied by a sustainability management plan which demonstrates how the following considerations have been incorporated into the design of the medium Local Town Centre: • Use of energy efficient design and construction methods is encouraged for the development of all buildings. • Water Sensitive Urban Design such as integrated stormwater retention and reuse (e.g. toilet flushing and landscape irrigation) is encouraged. • Access and mobility, safe pedestrian movement should be demonstrated within and to and from the centre. • Shade and shelter through a combination of landscape treatment and built form features. • Natural ventilation of all buildings to reduce the reliance on plant equipment for heating and cooling. • Passive solar orientation in the configuration and distribution of built form (e.g. north south orientation of the 'main street' to maximise natural daylight to shop fronts) is encouraged where practical. • Waste collection points should be grouped to maximise opportunities for recycling and reuse. • Solar energy for water and space heating, electricity generation and internal and external lighting is encouraged. • How, in ways other than those listed above, the design of built form reduces greenhouse gas emissions associated with the occupation and the ongoing use of buildings.

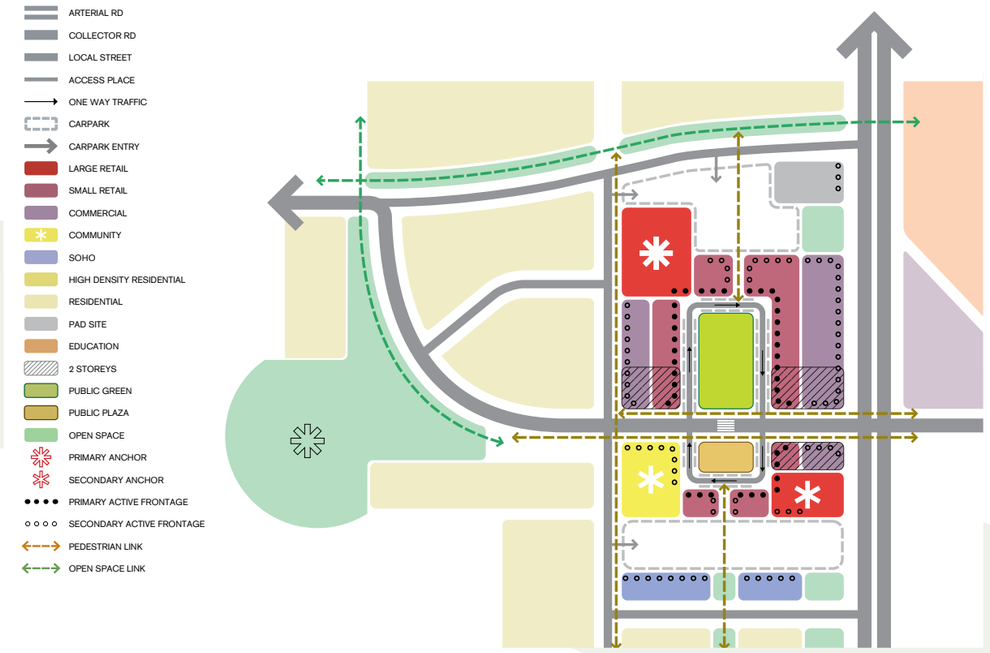


Figure 2 Indicative Medium Local Town Centre Plan - Option 1

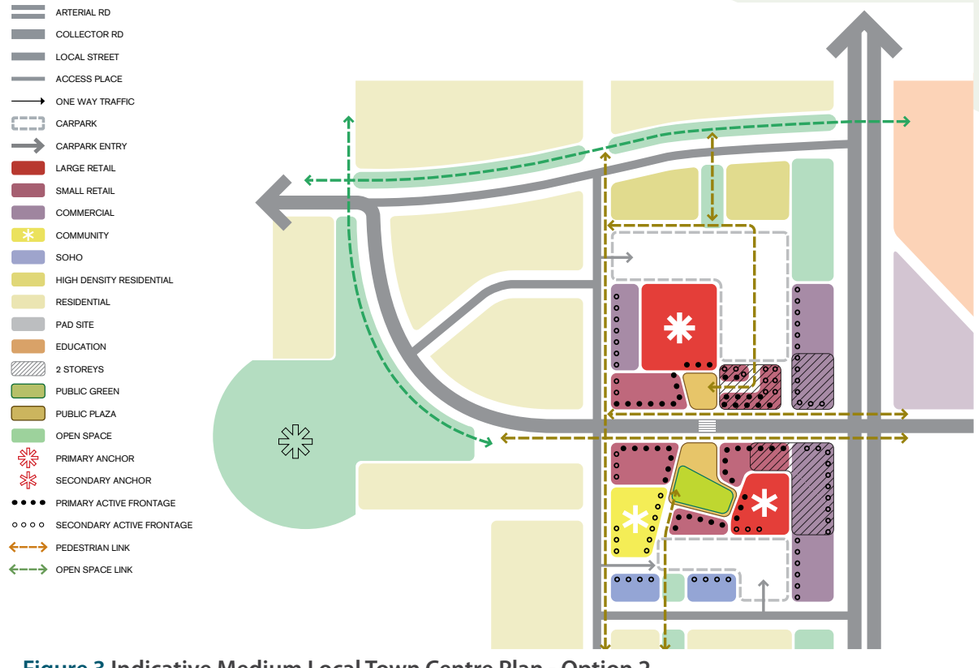


Figure 3 Indicative Medium Local Town Centre Plan - Option 2

GRICES ROAD
SOLDIERS ROAD
CARDINIA CREEK
GRICES ROAD
BERWICK-CRANBOURNE ROAD
THOMPSONS ROAD
AOS3
State Primary School P-6
AOS1
State Primary School P-6
Independent School
AOS4
AOS2
State Secondary School 7-12

Precinct Structure Plan Area
Community Facilities
State School
Unencumbered Active Open Space
Indoor Centre
Shared Path (within open space)
Shared Path (within widened road reserve)
Future Urban Area
Existing Urban Area

Scale: 1:15000m @ A3
1:7500 m @ A1
Date: 21 July 2011
Revision: PSP 08

0 150 300 450m

plan 10

community facilities

clyde north precinct structure plan

4.4 COMMUNITY FACILITIES

4.4.1 Community facilities objectives

- To provide for a network of community hubs across the precinct at specified locations as the focal point for community activity and interaction within each neighbourhood.
- To support the town centre built form objectives.
- To support the provision of community building facilities such as schools, children's services, health services and formal recreation facilities as the population thresholds are reached and funding becomes available.
- To plan for a range of community facilities, cultural venues and services to meet the varying needs of local residents.
- To plan and design for community facilities to reflect high quality architecture and flexible design for a range of uses to accommodate changing community needs over time.
- To plan for community facilities to be located proximate to the town centre, and co-located with active and passive open space.
- To plan for community facilities to be accessible by public transport, walking and cycling.

4.4.2 Implementation

The objectives for community facilities are met by implementation of all the following:

- Plan 5: Future Urban Structure Plan;
- Plan 10: Community Facilities;
- Plan 17: Public Transport Network;
- Table 11: Community Facilities Table;
- Table 12: Open Space Planning and Design Guidelines;
- Figures 5&6: Indicative Community Hub Plans; and,
- Planning and design guidelines set out in 4.4.3.

Table 11: Community Facilities

Eastern Area		
Facilities and services	**Location**	**Responsibility**
State Primary School (P-6)	North-Eastern Community Hub	DEECD
State Secondary School	South Eastern Recreational Area	DEECD
Independent School (P-12)	Soldiers Road	Hillcrest Christian College
Kindergarten	North-Eastern Community Hub	City of Casey
Maternal and Child Health	North-Eastern Community Hub	City of Casey
Active Open Space (1) - 5.251ha : • 1 x full size AFL/cricket ovals • Cricket pitch and nets • Pavilion	North-Eastern Community Hub	City of Casey
Active Open Space (2) 8.91ha: • 2 x full size AFL/cricket ovals • Cricket pitch and nets • 6 x tennis courts • 2 x netball courts • District playground • Pavilion	South Eastern Recreational Area	City of Casey
Passive Open Space (inc. but not limited to: Skate/BMX facility, Playgrounds, Basketball ½ court, BBQ facilities, shelters and walking trail)	Distributed throughout the precinct and generally within 400m of most residents	City of Casey
Neighbourhood Indoor Sports Centre 1.0ha	Within Secondary School, Thompsons Road	City of Casey

Western Area		
Facilities and services	**Location**	**Responsibility**
State Primary School P-6	Western Community Hub	DEECD
Kindergarten	Western Community Hub	City of Casey
Maternal & Child Health	Western Community Hub (to relocate to Medium Local Town Centre once catchment reaches 70%)	City of Casey
Community meeting space & Non government organisation consulting rooms	Medium Local Town Centre	City of Casey
Active Open Space (3) 8.22ha: • 2 x full size AFL/cricket ovals • Cricket pitch and nets • 2 x netball courts • District playground • Pavilion	Western Community Hub	City of Casey
Passive Open Space (inc. but not limited to: Skate/BMX facility, Playgrounds, Basketball ½ court, BBQ facilities, shelters and walking trail)	Distributed throughout the precinct and generally within 400m of most residents	City of Casey
Active Open Space (4) 5.603ha: • 3 x soccer pitches • Pavilion	Corner Thompsons Road and Berwick-Cranbourne Road	City of Casey

4.4.3 Planning and design guidelines

The following planning and design guidelines should be met:

General

- Community infrastructure should be integrated with council facilities and/or open space areas.
- Community centres should be co-located with children's playgrounds, recreation infrastructure and kindergartens.
- Education and community services (public and private) and other activities (such as childcare centres and nursing homes) should be located:

- Within and/or adjoining community hubs;
- Within and/or on the edge of the town centre; or,
- On either connector streets or arterial roads where access can be provided safely.
    - Where a new school is located on an arterial road, there must be no vehicular or pedestrian access to that road, or any adjacent service or frontage road. All vehicular and pedestrian access the school must be via the internal local street network.

Western Neighbourhood Community Hub – Concept Plan

The draft concept plan is provided as an indicative design solution. Alternative approaches may be considered, that meet the objectives for Community Infrastructure, to the satisfaction of the Responsible Authority.

North-Eastern Neighbourhood Community Hub - Concept Plan

The draft concept is provided as an indicative design solution. Alternative approaches may be considered, that meet the objectives for Community Infrastructure, to the satisfaction of the Responsible Authority.

South-Western Recreational Concept Plan

The draft concept is provided as an indicative design solution. Alternative approaches may be considered, that meet the objectives for Community Infrastructure, to the satisfaction of the Responsible Authority.

South-Eastern Recreational Concept Plan

The draft concept is provided as an indicative design solution. Alternative approaches may be considered, that meet the objectives for Community Infrastructure, to the satisfaction of the Responsible Authority.

Hillcrest Christian College

Hillcrest Christian College has indicated its desire to retain its entire holding for the purposes of a school. A Connector Road is proposed to bisect the Hillcrest landholding. This road will benefit both Hillcrest (in providing an additional point of access) and the broader community by providing north south connectivity.

The construction for the road has been costed into the Development Contributions Plan (DCP). There are distinct benefits to the community in providing this road (and confirming it's location) early in the life of the precinct and enabling its delivery through future development of the landholding.

Due to the ultimate upgrade of Soldiers Road to an arterial road, access to this road in future is likely to be limited. Access arrangements from the adjoining future connector street to the south (the existing Soldiers Road reserve) should ultimately provide full access to the existing school site.

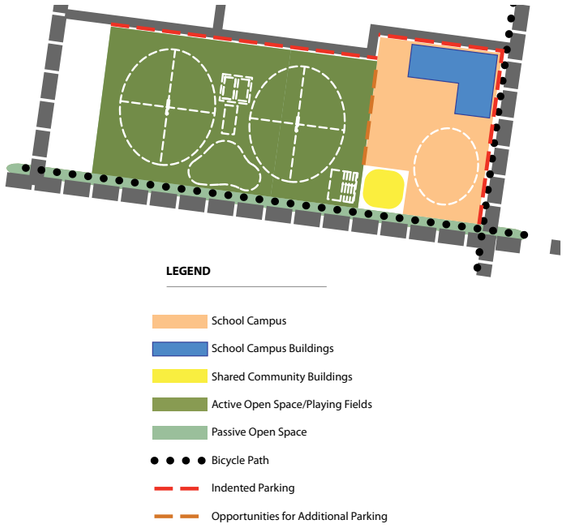


Figure 5 North-Western Neighbourhood Community Hub - Concept Plan

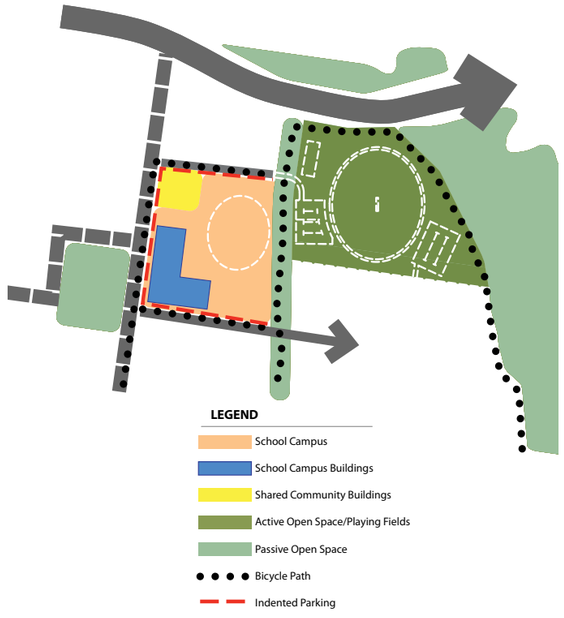


Figure 6 North-Eastern Neighbourhood Community Hub - Concept Plan

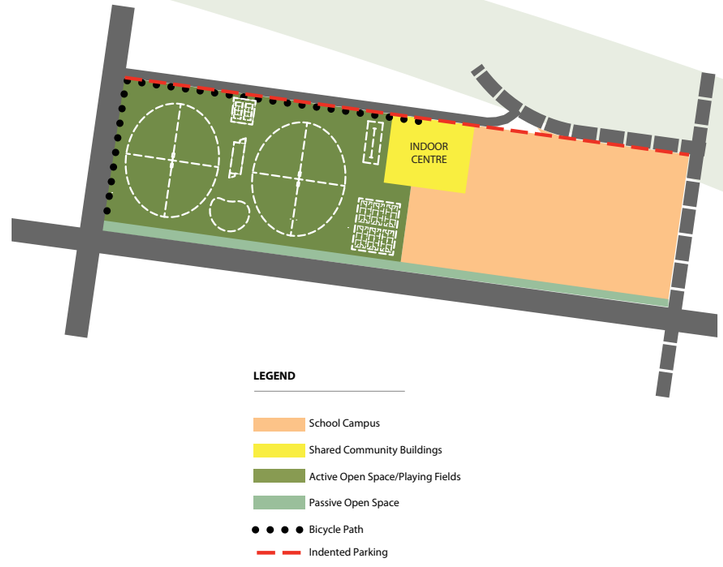


Figure 7 South-Eastern Recreational Concept Plan

4.4.4 Community Facilities Delivery Statement

It is important that community facilities are delivered in an integrated and co-ordinated manner to maximise both early and cost effective provision. The following statements guide these outcomes.

Integrated, efficient and timely facility provision

- Funding opportunities and partnerships should be sought to support the early provision of community facilities.
- The Growth Areas Authority will work closely with the City of Casey through infrastructure working groups to explore and pursue opportunities for partnership approaches to support integrated and timely provision of key community facilities.
- Potential funding sources to be considered include:
- Clyde North Development Contributions Plan.
- City of Casey Capital Works Program.
- Development Proponent Funding. This may include an injection of additional funding, or potential for a development proponent to deliver an item in the Development Contributions Plan through in-kind works. Provision of in-kind works requires approval by the City of Casey as the Collecting Agency (refer to the Clyde North Precinct Structure Plan Development Contributions Plan 2009).
- State Grants Programs. The State Government has many grants programs with funding potential across a broad range of community facilities and services.
- Growth Areas Development Fund. The City of Casey may make application to the Growth Areas Authority for funding to support the provision of community infrastructure in the precinct.
- Non-government organisations. Some community infrastructure may be able to be delivered by the Council working in partnership with non-government organisations.

Community Hub Concept Planning

Delivery of integrated and timely community facilities is a complex and evolving task that takes place in stages over a long period of time. It is evolving in the sense that it involves many stakeholders with priorities that are subject to change. Models for service delivery and the facilities designed to implement those models also change over time as new approaches are adopted. The Precinct Structure Plan has been designed to be flexible enough to be able to accommodate change.

Co-ordination and delivery will be greatly assisted by the establishment of:

- A governance model for the concept and master planning. One approach is for this to be facilitated by Casey Council through a community hub steering committee.
- The development of community hub concept plans.
- Master plans that provide detail for the delivery of the concept plans.

The governance arrangements and engagement is an important part of identifying, discussing and resolving issues around facility design, ownership, leasing, capital works funding, service delivery funding, management and maintenance and upgrade over time.

The opportunities for integrated facility delivery apply equally to sporting facilities as they do to items such as community centres and schools. Opportunities for shared use of clubhouse and pavilion buildings should be investigated, and if appropriate accommodated through flexible facility design and integration through hub master planning.

Where facilities are associated with schools, they should be designed concurrently to ensure integrated facility delivery and maximise sharing opportunities.

Local Town Centre Urban Design Framework

The aforementioned planning and governance approaches should be adopted for the preparation of the urban design framework for the medium Local Town Centre as it includes a community hub component. (Refer to Table 10 for more information about Urban Design Framework requirements).

Open space improvements

Individual development proponents are required to provide basic improvements to local parks and passive open space including earthworks, fencing, water tapping, grassing, tree planting, local playgrounds and shared paths and footpaths, furniture and paving.

The City of Casey may add to these basic improvements over time with the provision of additional facilities through its Capital Works Program.

The active open space areas will benefit from the preparation of master plans by City of Casey to guide their staged delivery over time. Consistent with the establishment of the community hubs discussed above, these processes will benefit from a governance model being established to support the master planning and the ongoing implementation and management of the reserves consistent with other approaches across the municipality.

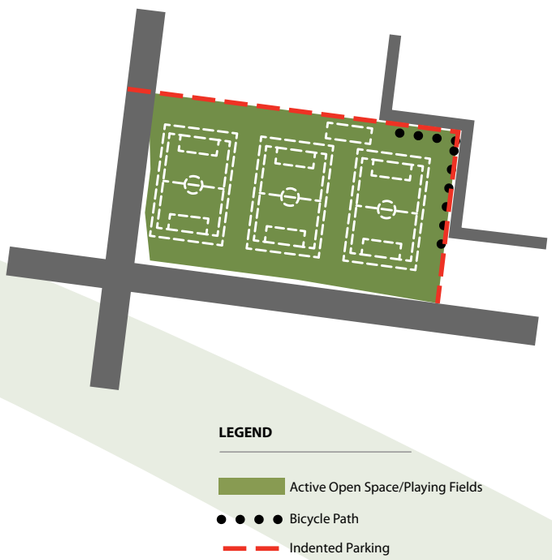


Figure 8 South-Western Recreational Concept Plan

GRICES ROAD
SOLDIERS ROAD
CARDININA CREEK
BERWICK-CRANBOURNE ROAD
THOMPSONS ROAD
NP1
NP2
NP3
NP4
NP5
NP6
NP7
NP8
NP9
NP10
NP11
NP12
NP13
NP14
NP15
AOS1
AOS2
AOS3
AOS4
8.22Ha (386m X 213m)
5.25Ha (300m X 137m)
5.6Ha (322m X 182m)
9.32Ha (438m X 213m)

Precinct Structure Plan Area
NP4 Open Space Reference Number
Unencumbered Active Open Space/Playing Fields
Unencumbered Passive Open Space
Encumbered Open Space
Cardinia Creek Corridor
Desalination Reservation
Conservation Open Space
Indoor Centre
Waterbodies
400m Walkable Catchment (from edge)
Future Urban Area
Existing Urban Area

Scale: 1:15000m @ A3
1:7500 m @ A1
Date: 21 July 2011
Revision: PSP 08

0 150 300 450m

plan 11
open space network
clyde north precinct structure plan

4.5 OPEN SPACE AND NATURAL SYSTEMS

4.5.1 Open Space and Natural Systems Objectives

- To provide for a variety of open space types to meet the active and passive recreation needs of the community and protect and restore environmental values and features.
- To establish a network of appropriately sized, connected and distributed open spaces to meet local and district open space needs.
- To protect and enhance areas of environmental significance and to integrate these areas with open space systems where practicable.
- To establish an attractive urban environment with a strong sense of place through the provision of well designed landscaping of open spaces that integrate with the road and corridor networks.
- To implement open space development standards which provide for a sustainable future maintenance regime.
- To support the early development of open space through a range of funding sources.

4.5.2 Implementation

The objectives for open space and natural systems are met by implementation of all the following:

- Plan 5: Future Urban Structure Plan;
- Plan 11: Open Space Network Plan;
- Plan 12: Biodiversity Plan;
- Plan 12a: Potential Habitat for Threatened Species;
- Plan 14: Cardinia Creek Master Plan;
- Plan 18: Walking and Trails Plan;
- Table 6: Community Facilities Table;
- Table 12: Open Space Planning and design guidelines; and
- Clyde North Native Vegetation Precinct Plan at 4.5.8.

4.5.3 How to make a public open space contribution in this precinct

Clause 52.01 of the Casey Planning Scheme specifies a public open space contribution which must be made upon the subdivision of the land. Because the PSP seeks a particular distribution of public open space, all landowners must provide the public open space shown in Plan 11 of the PSP as part of their public open space contribution and make a payment or receive a payment as necessary to ensure that each landowners' open space contribution is the same or equal. This process is referred to as equalisation.

Table 4 of this PSP is the Property Specific Land Budget and identifies the amount of open space to be provided as land and the payment in respect of equivalent land area that must be paid by or paid to the land owner. In this PSP, public open space contributions under Clause 52.01 are described as 'passive open space' in Table 4. Unless otherwise indicated land for 'active open space' as shown in Table 4 is provided through a development contributions plan.

All land within the Clyde North Precinct Structure Plan must make a public open space contribution equal to 3.54% of Net Developable Area (NDA).

Where land is required for public open space purposes as shown in Plan 11 of the PSP and specified in Table 4 of the PSP and that area of land is less than or equal to 3.54% of NDA that land is to be transferred to Council at no cost.

Where no land or less than 3.54% of NDA is shown in Plan 11 and Table 4 for unencumbered open space purposes, a cash contribution is to be made to Council to bring each property's total open space contribution up to an amount equal to 3.54% of NDA.

Where the land required for unencumbered open space purposes as shown in Plan 11 and Table 4 of the PSP is more than 3.54% of NDA, Council will pay an amount equivalent to the additional land being provided by that property but Council will not pay an amount for land which is in excess of the land required to be set aside as specified in Table 4 for Public Open Space.

The value of the land for equalisation purposes is to be assessed on an area proportion of the site value, in accordance with Section 18 of the Subdivision Act 1988, of the whole of the land.

Table 12: Open Space Planning and Design Guidelines

Design Issue	Planning and Design Guidelines
General	• Open spaces should be designed and constructed to a fit for purpose standard with an appropriate mix of facilities. • Open space should be designed to consider and reflect context, history and the future use of the space. • Design of open spaces should be contemporary in nature and innovative. • Passive parks should cater for a broad range of users by providing a mix of spaces and planting to support both structured and informal recreational activities. • Active recreation reserves should be designed to maximise co-location and sharing opportunities between complementary sports and adjoining school facilities. Sharing of Council managed facilities with schools will require a formal management agreement. • Parks should contain both cleared open areas for unstructured activities, as well as areas for shade and shelter. • The appropriate mix of infrastructure in parks should be provided to the satisfaction of the Responsible Authority.
Interface with road network	• Open spaces should have a road frontage to all edges except where these are otherwise addressed by active frontage from careful design of residential, commercial or community facility development. • Streetscape planting and paths should be completed and integrated with the adjoining parkland design. • Open space corridors adjoining roads should incorporate park benches adjacent to footpaths at least every 400m.
Interface with adjoining development	• The open space network should be enhanced by careful design of residential, community and commercial development adjacent to it. The primary frontage of development that immediately abuts open space areas should address and promote use and surveillance of the parkland. • Development abutting open space should be well articulated and facilitate passive surveillance with windows, balconies, and pedestrian access points. • Development should avoid the rear of properties or blank walls abutting open spaces. • Where fencing is required it should be low scale and permeable to facilitate public safety and surveillance. • Landscaping of adjoining development should complement the park landscape design.

Design Issue	Planning and Design Guidelines
Interface with conservation areas	• The design of parks and open space corridors should enhance and preserve areas of conservation significance. • Open space containing native vegetation conservation areas should be designed to protect sensitive areas from vehicle or pedestrian traffic. • Passive or low impact activities should occur closest to offset/conservation areas, with more high impact or formal activities to be located further away.
Interface with drainage system	• Pedestrian and bicycle paths should be incorporated into the drainage system to connect the open space and street network. • Pedestrian bridges and boardwalks should be incorporated into the path network of the drainage system to facilitate permeability of neighbourhoods. • Paths, bridges and boardwalks should be designed to be at least above a minimum of the 1:10 year flood line to the satisfaction of the Responsible Authority. • Park seating should be provided along footpaths at least every 400m. • Construction of Council or shared facilities within Melbourne Water easements will require a formal agreement with Melbourne Water.
Park buildings	• Park buildings should be sited and designed to integrate with and complement landscaping and should not dominate the parkland or adjacent residential development. • Park buildings should be sited to frame park spaces and should avoid splitting up otherwise usable and effective spaces. • Park buildings should be contemporary in design with orientation, materials choices, design detailing and plant and equipment to minimise resource use and maximise sustainability performance. • Material choice should complement the proposed landscape character.

Design Issue	Planning and Design Guidelines
Public safety and lighting	• Open spaces should be designed to be safe and comfortable places that encourage use by a wide range of people. • The use of the design principles known as "Crime Prevention Through Environmental Design" ("CPTED") must guide the design of open spaces and the infrastructure it contains. • Surrounding land uses should provide passive surveillance to adjoining open space and planting design should promote a highly visible public realm. • The detailed design of open spaces that immediately abut development should complement and enhance the function and safety of that development. • Open space path systems should facilitate clear, direct and easy movement to and from key destinations. • Lighting in open spaces should be restricted to key pedestrian thoroughfares to encourage safe pedestrian movement throughout the network, but discourage inappropriate use of main parkland areas after dark. • Lighting fittings should be energy efficient and reduce unnecessary spill to sides or above. • Light fittings should be compact fluorescent or similar that emit white light, and should be energy efficient.
Landscape character and vegetation	• A predominantly indigenous and Australian native planting theme supporting the biodiversity values of the precinct should characterise the open space network. Exotic species may be supported in key locations with the approval of the Responsible Authority. • Species chosen should be appropriately robust to perform adequately in the local urban environment prior to finalising plant schedules. • Target use of exotic and Australian native species and cultivars to achieve particular planting effects throughout the precinct such as highlight planting at entries and key focal points as well as avenues. • Advice should be sought from qualified Council staff regarding the suitability of proposed species prior to confirming plant schedules.

Design Issue	Planning and Design Guidelines
Other park landscaping elements and infrastructure	• The design and siting of landscape elements and infrastructure should complement the area. • Park infrastructure such as playgrounds, shelters, BBQ's, picnic tables, toilets etc should be clustered in nodes. Parking planting themes should enhance and complement these nodes. • Park seating should be provided at appropriate intervals along any open space path networks. • Public toilet facilities should be integrated with pavilion and clubhouses. • Park infrastructure should be contemporary in design. • Use of bollards and fencing should be well targeted, maximise transparency and generally kept to a minimum. • Where car parking is required within parks, it should be sensitively designed to minimise large areas of hard surfaces and maximise tree and ground level planting. Safe pedestrian access should be integrated within car park designs.
Signs	• Parks and sports fields should be clearly signed. • Generally, signs within parks should be kept to a minimum with locations focussed on key access or heritage/biodiversity or conservation interpretation points and major pedestrian/cycle routes. • Design and material choice should be contemporary and should complement other park design elements.

Design Issue	Planning and Design Guidelines
Water sensitive urban design	• The design and layout of open spaces should maximise water use efficiency, stormwater quality and long term viability of vegetation through the use of Water Sensitive Urban Design ("WSUD") initiatives. • WSUD principles should be used so that excess run-off water from within, or where appropriate, external to the park, is directed to support park planting and/or rain gardens rather than being diverted to drains. • Warm season grasses should be used within passive reserves and sports fields to minimise potable water use. • The design and layout of open spaces should maximise water use efficiency and stormwater quality should meet best practice standards.

Transfer of land requirements	• All parks must be finished to the following level of development to the satisfaction of the Responsible Authority prior to the transfer of land:
	  • Cleared of all existing disused structures, foundations, pipelines or stockpiles;
	  • Cleared of all rubbish and environmental weeds, leveled, top soiled and grassed with warm climate grass (unless in a conservation reserve);
	  • Provided with water tapping;
	  • Drought resistant planting;
	  • Vehicle exclusion devices (fence or other suitable method) with controlled access points;
	  • Constructed with a 2.5 metre concrete shared path around the perimeter of the reserve, connecting and linking into any other surrounding paths or points of interest; and
	  • Installation of park furniture including BBQs, shelters, tables, playgrounds and rubbish bins.

GRICES ROAD
SOLDIERS ROAD
CARDINIA CREEK
GRICES ROAD
BERWICK-CRANBOURNE ROAD
THOMPSONS ROAD

- Precinct Structure Plan Area
- Scattered Trees
- Native Vegetation (to be retained)
- Unencumbered Passive Open Space (indigenous planting to support habitat)
- Encumbered Open Space (indigenous planting to support habitat)
- Cardinia Creek Corridor (indigenous planting to support habitat)
- Conservation Open Space
- Waterbodies
- Future Urban Area
- Existing Urban Area

Scale: 1:15000m @ A3
1:7500 m @ A1
Date: 21 July 2011
Revision: PSP 08

0 150 300 450m

plan 12

biodiversity

clyde north precinct structure plan

4.5.4 Biodiversity Objectives

- To plan for the long term conservation management of areas of significant native vegetation and fauna habitat in accordance with the Clyde North Native Vegetation Precinct Plan.
- To plan for biodiversity values to be retained and enhanced within the precinct, in particular the Cardinia Creek corridor and drainage line, as they function in part to link habitats across the landscape and provide a focus for revegetation activities.
- To enhance the biodiversity of the area to provide habitat and ecological connectivity throughout the precinct particularly for threatened species as the area develops in accordance with the Clyde North PSP.

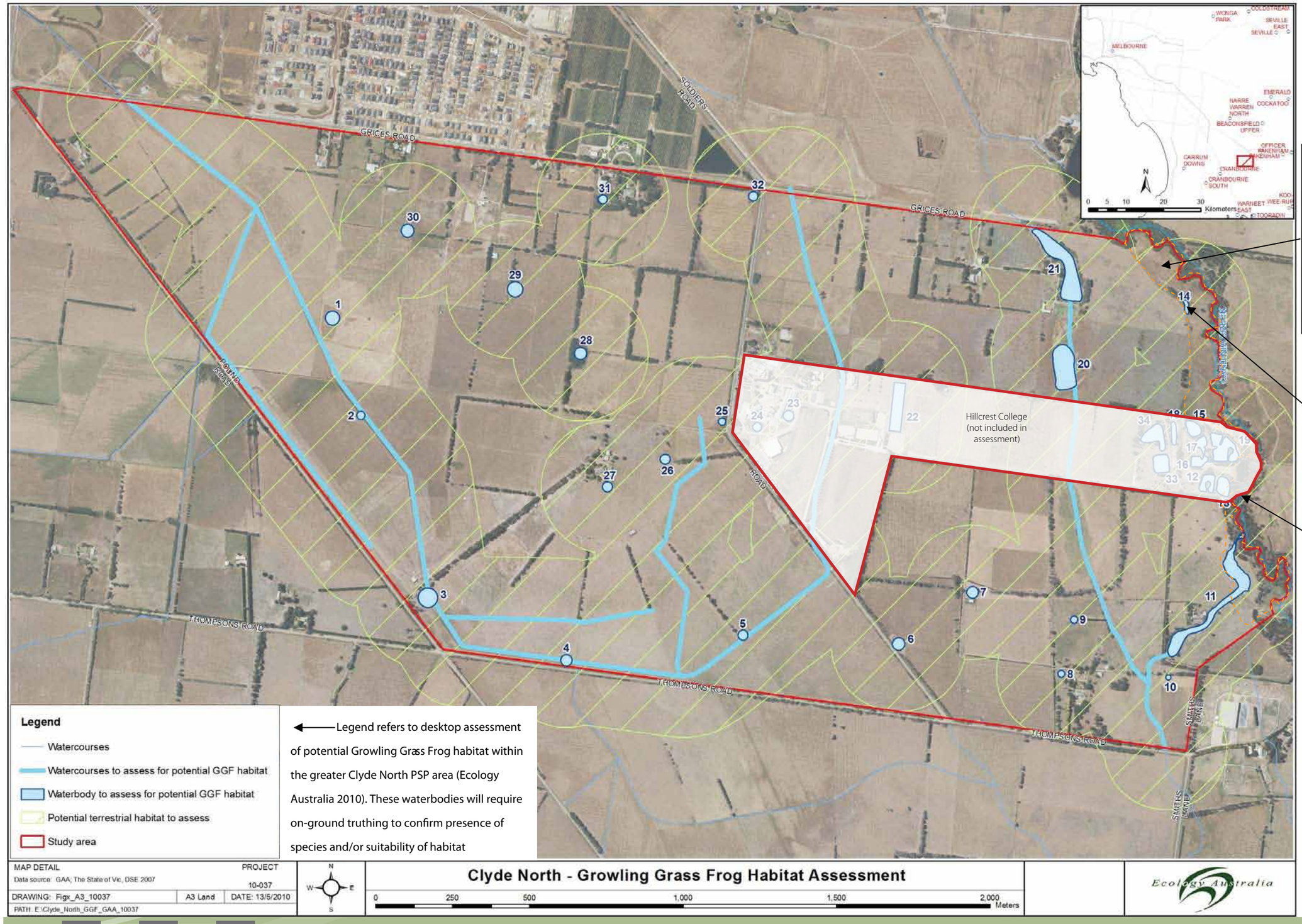
4.5.5 Implementation

The objectives for biodiversity are met by implementation of all of the following:

- Plan 12: Biodiversity Plan;
- Plan 14: Cardinia Creek Master Plan;
- Plan 12a: Potential Habitat for Threatened Species ;
- Section 4.5.6: Biodiversity Conservation Planning and Design Guidelines;
- Section 4.5.8: The Clyde North Native Vegetation Precinct Plan;
- Table 13: Open Sapce Values Matrix; and,
- Conservation Management Plan Cardinia Creek, Clyde North (Dwarf Galaxias, Australian Grayling, Growling Grass Frog).

Table 13: Open Space Values Matrix

Neighbourhood Park	Associated Values	Additional Attributes	Specific Requirements
NP01	Adjacent Drainage Reserve	"Metropolitan Shared Trail Network Shared Path Bike Trail"	Must provide direct interface with drainage reserve to maximise passive function of open space.
NP02	"Adjacent Drainage Reserve Encumbered Land with Local Passive Park Function"	Metropolitan Shared Trail Network	Must provide direct interface with drainage reserve to maximise passive function of open space.
NP03	Exotic Vegetation		Must incorporate line of Oaks Trees (No. 89- 94 inclusive) as identified in the background Treelogic Arboricultural Assessment Report December 2008. Preference to locate these trees on periphery of park to ensure most efficient use of space.
NP04	Adjacent Drainage Reserve	"Metropolitan Shared Trail Network Shared Path Bike Trail"	Must provide direct interface with drainage reserve to maximise passive function of open space.
NP05	"Adjacent Heritage Features Retention of Heritage Views to the east and south"		Must retain important views to heritage site and provide and protect interface with heritage site.
NP06	Hilltop topography with views to the south-west and east tree canopy		Must be located in hilltop location. Ensure views to south and east are retained.
NP07	"Adjacent Drainage Reserve Encumbered Land with Local Passive Park Function"	"Metropolitan Shared Trail Network Shared Path Bike Trail"	Must provide direct interface with drainage reserve to maximise passive function of open space.
NP08	Adjacent Drainage Reserve		Must provide direct interface with drainage reserve to maximise passive function of open space.
NP09	Conservation		Must incorporate Habitat Zone 5 (Grassy Woodland) as identified in the NVPP Table 1.
NP10	Conservation	"Metropolitan Shared Trail Network Shared Path Bike Trail"	Must preserve Scattered Trees (No. 15- 34) as identified in the NVPP Table 2.
NP11	"Adjacent Drainage Reserve Conservation"	"Metropolitan Shared Trail Network Shared Path Bike Trail"	Must preserve Scattered Trees (No. 50) as identified in the NVPP Table 2.
NP12	Adjacent Cardinia Creek Core EVC revegetation area	Metropolitan Shared Trail Network	Must provide direct interface with Cardinia Creek reserve to maximise passive function of open space and provide buffer to core EVC.
NP13	Conservation		Must incorporate Scattered Trees (No 65-73) as identified in the NVPP Table 2. Incorporates closure of Pound Road.
NP14	Adjacent Drainage Reserve	"Metropolitan Shared Trail Network Shared Path Bike Trail"	Must provide direct interface with drainage reserve to maximise passive function of open space.
NP15			Flexible location subject to approriate distribution.



Legend

- Watercourses
- Watercourses to assess for potential GGF habitat
- Waterbody to assess for potential GGF habitat
- Potential terrestrial habitat to assess
- Study area

Legend refers to desktop assessment of potential Growling Grass Frog habitat within the greater Clyde North PSP area (Ecology Australia 2010). These waterbodies will require on-ground truthing to confirm presence of species and/or suitability of habitat

MAP DETAIL		PROJECT
Data source: GAA, The State of Vic, DSE 2007		10-037
DRAWING: Figx_A3_10037	A3 Land	DATE: 13/5/2010
PATH: E:\Clyde_North_GGF_GAA_10037		

N W E S

Clyde North - Growling Grass Frog Habitat Assessment

0 250 500 1,000 1,500 2,000 Meters

Ecology Australia

Field assessed: CMP study area. Identification of suitable habitat and/or known records for threatened fauna species

Lecky Road Cardinia Creek anabranch and entire floodplain to the south is identified as supporting suitable habitat for Dwarf Galaxias when inundated. The floodplain also provides suitable dispersal, movement, foraging and over-wintering habitat for Growling Grass

Wetland B (identified during field assessment) supports suitable breeding habitat for Growling Grass Frog and Dwarf Galaxias.

Cardinia Creek - The entire reach within the study area provides known habitat for Australian Grayling.

The creek supports potential habitat for Dwarf Galaxias.

The entire corridor provides suitable dispersal, movement, shelter and foraging habitat for Growling Grass Frog.

4.5.6 Biodiversity Conservation Planning & Design Guidelines

The following planning and design guidelines should be met:

- Protection, rehabilitation and enhancement of an ecological corridor along the Cardinia Creek should be pursued by maintaining setbacks of at least 100m in accordance with Plan 14 (Cardinia Creek Masterplan). This ecological corridor will provide connection between the Beaconsfield Flora and Fauna Reserve and other biodiversity values in the north and the vegetation around Western Port. This corridor should be revegetated in line with Swampy Riparian Woodland and Swamp Scrub and other appropriate Ecological Vegetation Communities to provide habitat for flora and fauna species including the Growling Grass Frog, Southern Brown Bandicoot, Southern Toadlet, Glossy Grass Skink, and waterbirds such as Hardhead.
- Green links should be created in line with Plan 12 through the drainage corridor and linear parks system, and should be vegetated with indigenous species to provide habitat for local species.
- Street trees and public open space landscaping in pocket parks and local reserves should contribute to habitat for indigenous fauna species in particular arboreal animals and avifauna (birds). The use of indigenous trees is encouraged along streets and in parks. Lower level indigenous planting is encouraged where it can be demonstrated that it is compatible with the planning and design guidelines for street tree planting and delivery of public open space.
- Development should be staged to provide constructed habitat (as part of the wetland drainage system) for threatened species prior to the removal of existing habitat within the precinct.
- The following planning and design guidelines must be met to the satisfaction of the Department of Sustainability and Environment and the satisfaction of the Responsible Authority:
- Prior to the removal of dams and native vegetation, a Salvage Plan for likely threatened species must be created and implemented to the satisfaction of the Department of Sustainability and Environment.
- Retained water bodies that provide for threatened species including Growling Grass Frog, Dwarf Galaxias, and Australian Grayling must be adequately buffered as per the requirements of the Conservation Management Plan (CMP).
- Permits for development of public open space and drainage works are to include design requirements for fauna habitat, as appropriate, in line with Conservation Management Plans (CMP) for threatened species.

Legend

1. Proposed sports oval and netball court, as per PSP requirement
2. Possible car parking for sports and trail based activities
3. Proposed protected wetlands within existing drainage system providing protected fauna habitat
4. Passive recreation area
5. Existing excavation area reshaped to provide a variable depth wetland habitat with connection to Cardinia Creek during annual flood flows
6. Existing creek bypass channel and fish ladder. A 50m buffer is to be provided between the bypass channel and fish ladder and main Cardinia Creek trail.

X Wetland reference for Conservation Management Plan

- Proposed wetlands
- Existing wetlands
- Cardinia Creek Conservation Corridor
- Scattered Native trees
- Grices Road Cardinia Creek Anabranch
- Melbourne Water Waterway Reserve
- 1m contour
- Main Cardinia Creek trail (shared use/DDA accessible)
- Passive recreation area
- Drainage Channel / open space link
- Habitat Zone
- Proposed stormwater retarding basin
- Existing creek bypass channel and fish ladder
- Possible future addition to Corridor
- Area outside Clyde North precinct structure plan

Notes:

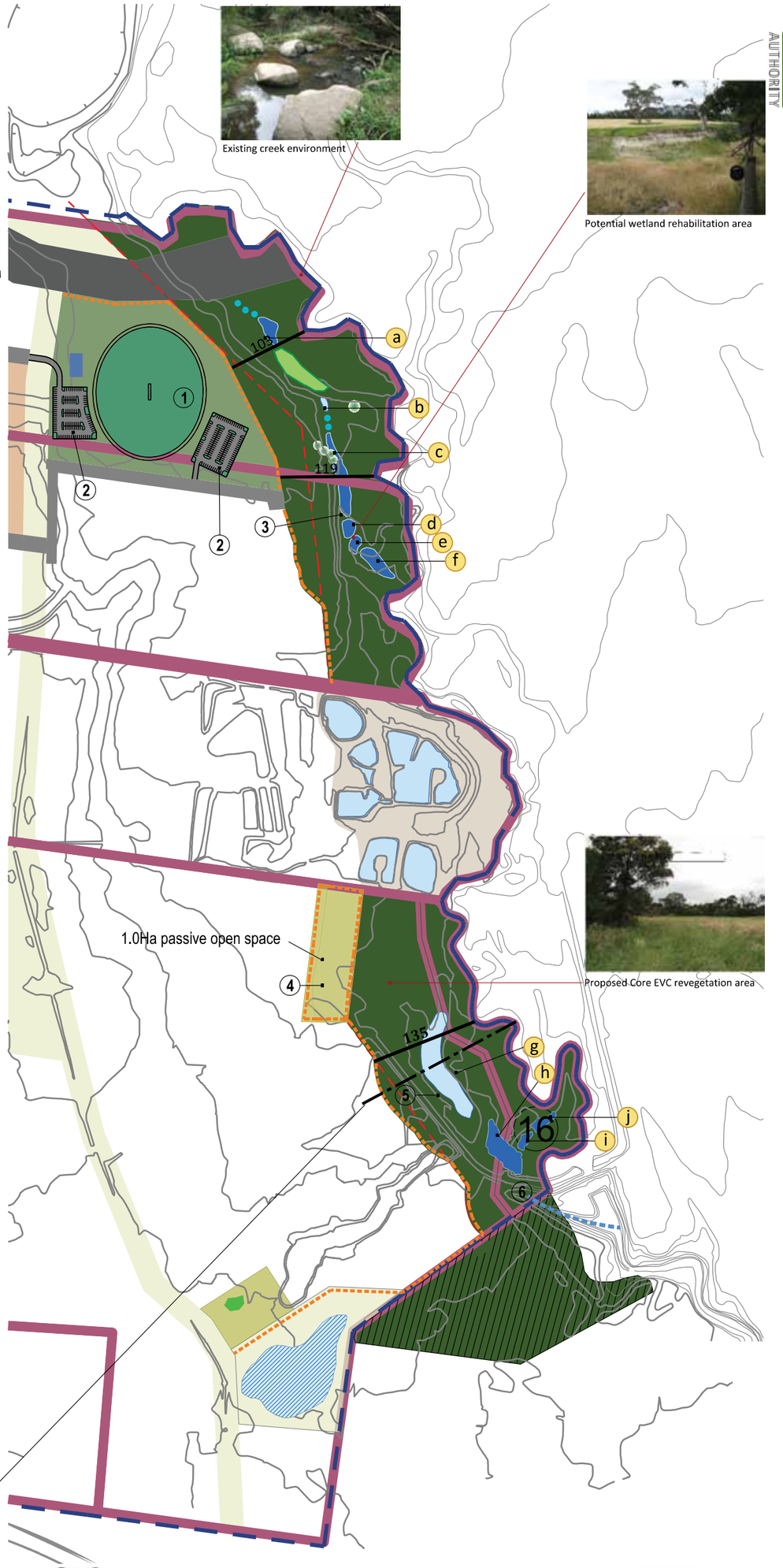
Final alignment of Grices/Lecky Road creek crossing subject to future investigation and will require a separate Conservation Management Plan to address threatened species.

Pedestrian crossing points of creek subject to future investigation

The Fuel Reduction Zone shown in the section on this plan is indicative only. A vegetation management buffer zone is to be established (including roads adjacent to the creek corridor and front yards of adjacent housing) of a width to ensure the radiant heat flux imposed on any building is in accordance with CFA assessment and requirements. This would be resolved in detail at subdivision permit stage.

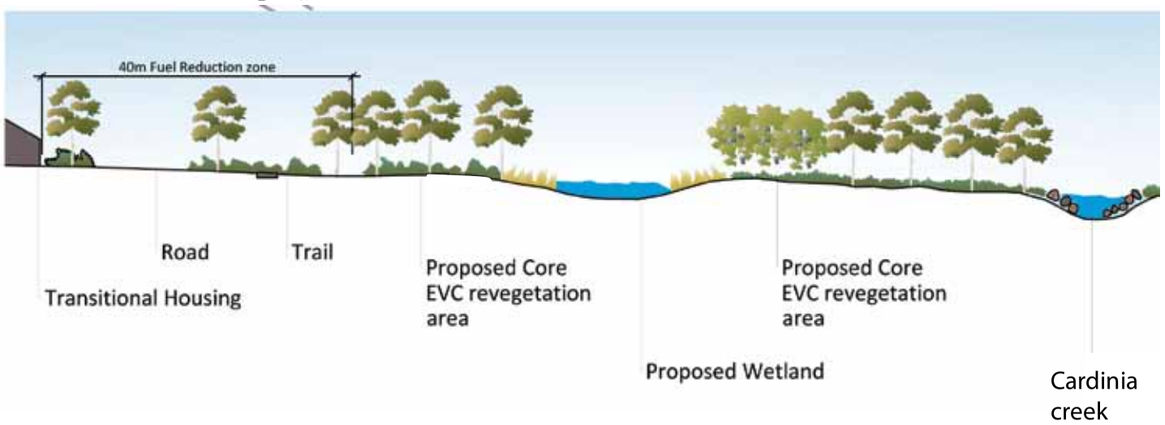
Existing creek environment

Potential wetland rehabilitation area



Proposed Core EVC revegetation area

Section



Scale: 1:6,000 @ A3
Date: 23 June 2011
Revision: 05

0 10 50 100m

4.5.7 Cardinia Creek Corridor Masterplan

The Cardinia Creek Draft Master Plan relates to the creek reserve corridor and its function as a water course. The purpose of the plan is to identify a possible approach to developing the creek corridor as a biodiversity conservation resource and open space reserve.

The Draft Master Plan is based on the following key design and management themes:

- Creek Reserve boundaries, where possible, should be located by reference to landform, flood levels and natural site features rather than arbitrary setbacks. The minimum reserve area should be determined by habitat conservation requirements.
- Development areas adjoining the creek reserve should be designed with site layouts and landscape treatments that complement the conservation values and objectives of the creek reserve and act as a buffer to high value habitats.
- Areas of high conservation significance should be protected and enhanced through additional planting, new wetland development and fencing where necessary. Pedestrian movement should be controlled or separated in areas of high conservation value.
- Planting schedules should be developed in consultation with Melbourne Water.
- The creek bypass channel and fish ladder near the channel drop structure should be further developed to maximise habitat value and fauna movement potential.
- Existing dams and floodways should be redeveloped where practical to provide additional wetland habitats and open space links.
- The main Shared Use Path network (DDA compliant) should be located above the 1:10 year flood zone and designed to fit with the natural landform of the floodplain. Minor paths within passive recreation areas are designed to provide access to wetland edges, view points and other key site features. Paths will be placed so as not to impact upon the core EVC. They may be in the transition area between the core EVC and EVC revegetation areas.
- A horse trail system should be investigated at the edge of the creek corridor .
- Potential pedestrian and cycle creek crossings should be investigated. The location of these should minimise crossing distances and impacts on existing vegetation. Crossing locations are intended to link passive recreation settings and provide return pedestrian loops.

4.5.8 Clyde North Native Vegetation Precinct Plan

This is the Clyde North Native Vegetation Precinct Plan (NVPP) listed under the Schedule to Clause 52.16 of the Casey Planning Scheme.

The Clyde North NVPP applies to all land shown in NVPP Map 1. The removal, destruction or lopping of native vegetation in accordance with this NVPP, does not require a permit, provided conditions and requirements specified in this NVPP are met.

Purpose

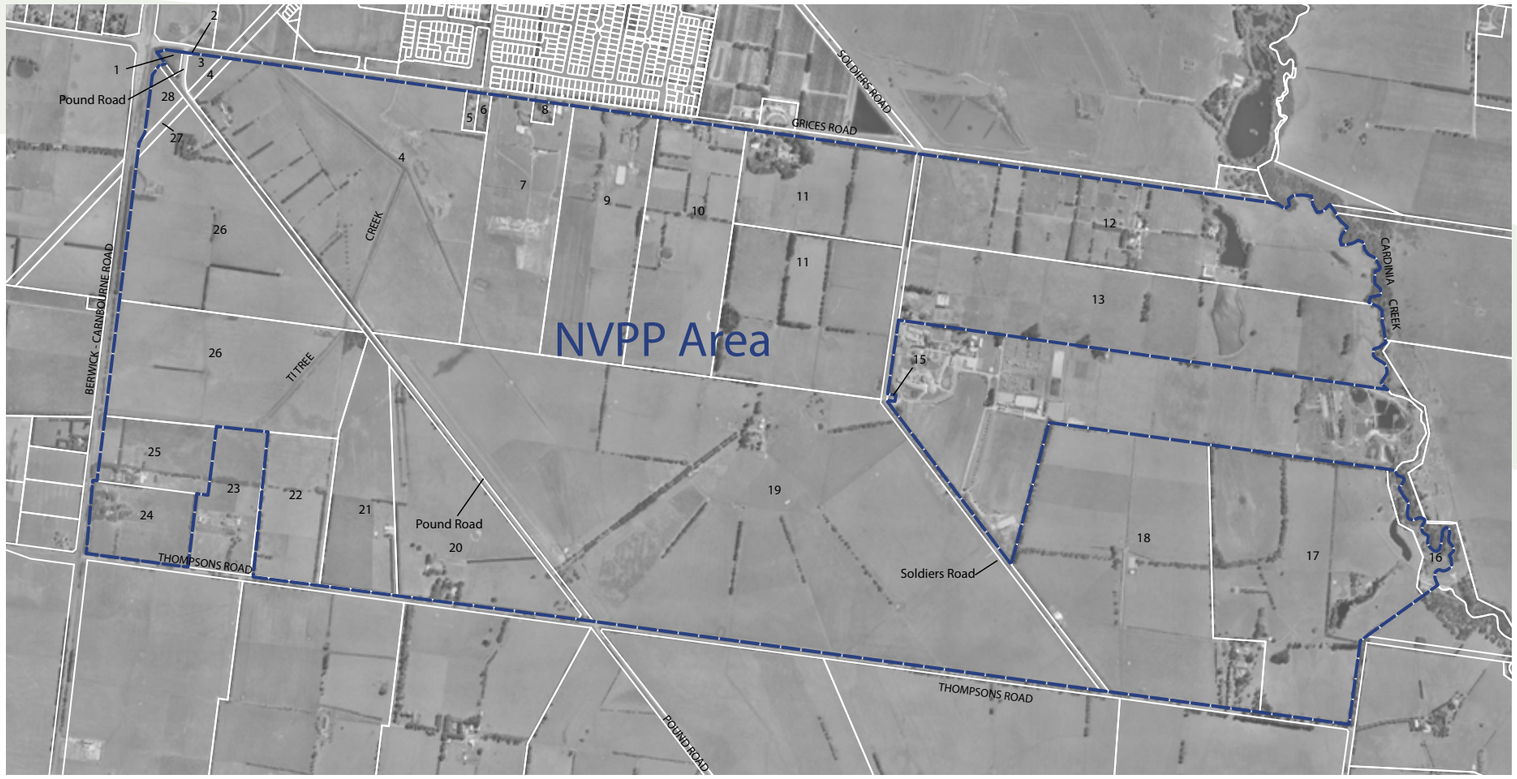
The purpose of the Clyde North Native Vegetation Precinct Plan is to:

- Specify the native vegetation to be protected and the native vegetation that can be removed, destroyed or lopped;
- Ensure that areas set aside to protect native vegetation are managed to conserve ecological values in accordance with the Clyde North Precinct Structure Plan;
- Ensure that the removal, destruction or lopping of native vegetation species specified to be protected is consistent with conserving the ecological values of these areas and is in accordance with the three-step approach to net gain as set out in Victoria's Native Vegetation Management – a Framework for Action 2002;
- Set out the works or other necessary actions required to offset the removal, destruction or lopping of native vegetation; and,
- Streamline the planning approvals process through a precinct wide landscape approach to native vegetation protection and management.

Vegetation Protection Objectives

- To manage the vegetation to be retained for conservation and allow for passive recreation on the periphery of habitat zones, without damaging native vegetation, such as walking and cycling trails, and passive recreation facilities;
- To protect and manage the habitat zones and scattered trees identified to be retained along the Cardinia Creek Corridor, as they represent the genetic lineage of site-adapted local plant species and communities, provide existing habitat for indigenous fauna species, function to link habitat in a major ecological corridor that has been identified as an important link for fauna including threatened species such as Southern Brown Bandicoot, Growling Grass Frog, Dwarf Galaxias, Southern Toadlet , Glossy Grass Skink and Hardheads and provides a focus for revegetation activities;
- To improve the long-term health and habitat value of the native vegetation specified to be retained and identified offset areas; and,
- To provide for the protection of revegetation areas of native vegetation as required by the Responsible Authority.

NVPP Map 1: NVPP Plan Area



Native vegetation to be protected

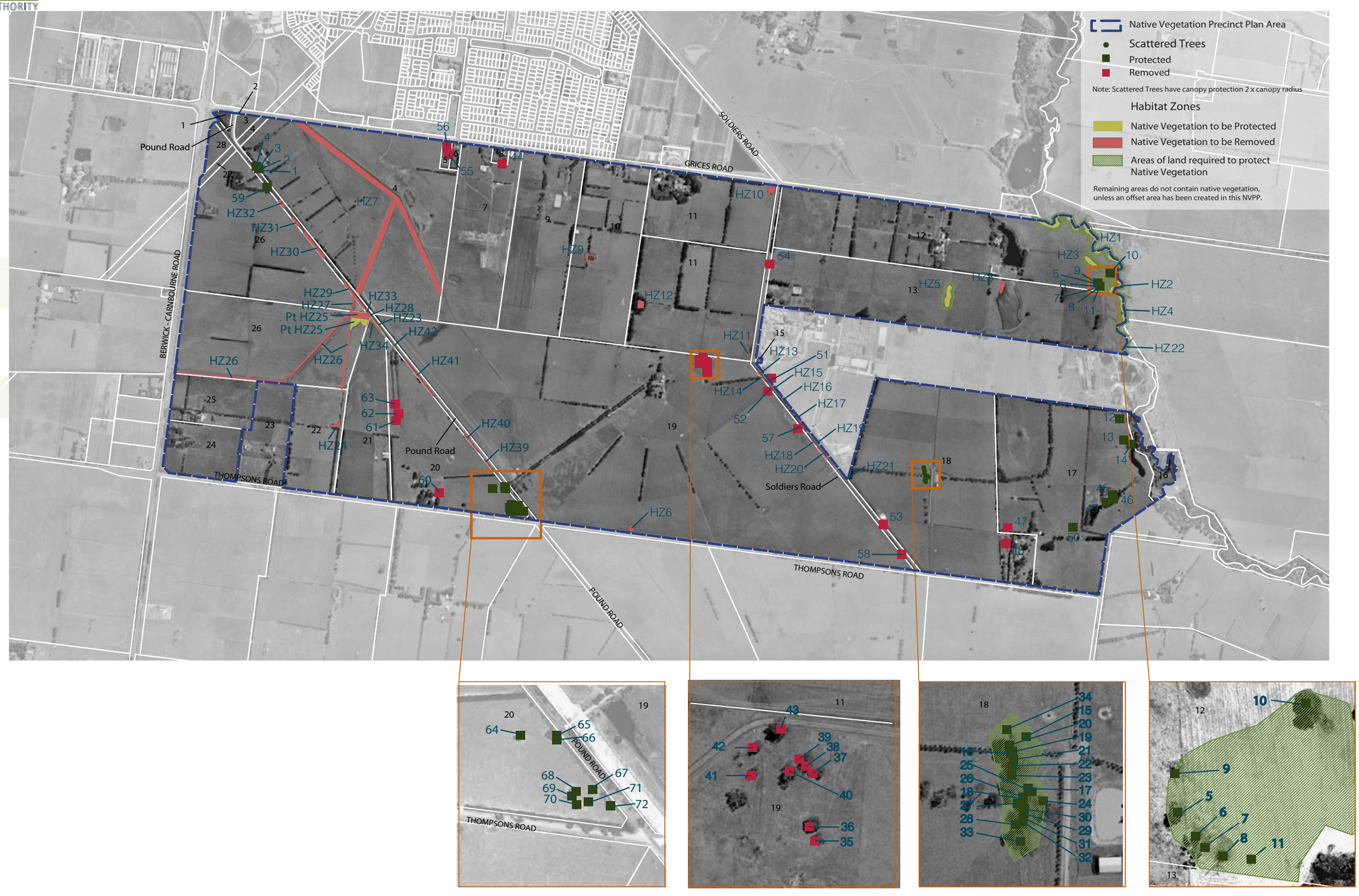
The native vegetation to be protected is described in NVPP Tables 1 and 2 and shown in NVPP Map 2.

NVPP Table Legend

EVC Acronym	EVC Full name
GW	Grassy Woodland
PGW	Plains Grassy Woodland
SRC	Swampy Riparian Complex
SRW	Swampy Riparian Woodland
SS	Swamp Scrub
SW	Sedge Wetland
TM	Tall Marsh
WF	Wetland Formation

NVPP Table 1: Habitat Zones to be protected

Property Details	Habitat Zone ID	EVC No. and Initials	Size (ha)	Conservation Significance	Conservation status
335 Grices Road, Clyde North (Allot.60A Parish of Cranbourne)	HZ1	EVC 53: SS	0.84	Endangered	Very high
As above	HZ2	EVC 83: SRW	0.14	Endangered	Very high
As above	HZ3	EVC 53: SS	0.13	Endangered	Very high
490 Soldiers Road, Clyde North (Lot 1 TP819098)	HZ4	EVC 83: SRW	0.21	Endangered	Very high
As above	HZ5	EVC 174: GW	0.22	Endangered	Very high
As above	HZ22	EVC 83: SRW	0.02	Endangered	Very high
1845 Thompsons Road, Clyde North	HZ23	EVC 53: SS	0.04	Endangered	High
1100 Pound Road, Clyde North	Part HZ25	EVC 53: SS	0.45	Endangered	High
1865 Thompsons Road, CN	HZ42	EVC 53: SS	0.01	Endangered	High



NVPP Map 2: Native Vegetation to be protected or removed

Applications for removal of native vegetation to be protected

The native vegetation described and shown in Table 1 and Map 2 of this NVPP as native vegetation to be protected should not be removed.

The native vegetation described and shown in Table 1 and Map 2 has been identified as to be protected because a landscape wide approach to retention and removal of native vegetation has been adopted in the preparation of this NVPP rather than a site by site approach.

Decisions relating to the removal of areas of native vegetation have been made in a holistic manner taking into account habitat zones which are proposed to be protected. The ad hoc removal of native vegetation which is identified as to be protected may undermine the holistic and landscape wide approach to the preparation of the NVPP.

NVPP Table 2: Scattered Trees to be protected

Property Details	Tree ID	Species	EVC no. & Initials	Conservation Status	Conservation Significance	Co-ordinates (X-latitude, Y-longitude)
1095 Pound Road, Clyde North (Lot 1 LP208772)	1	Eucalypt ovata	EVC 55:PGW	Endangered	High	354235, 5784327
As above	2	Eucalypt ovata	EVC 55:PGW	Endangered	High	354233, 5784328
As above	3	Myoporum insulare	EVC 55:PGW	Endangered	High	354227, 5784335
As above	4	Myoporum insulare	EVC 55:PGW	Endangered	High	354222, 5784343
335 Grices Road, Clyde North (Allot.60A Parish of Cranbourne)	5	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357848, 5783836
As above	6	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357866, 5783799
As above	7	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357878, 5783799
As above	8	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357899, 5783799
As above	9	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357933, 5783802
As above	10	Eucalyptus ovata	EVC 55: PGW	Endangered	High	357903, 5783865
As above	11	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357858, 5783809
2175 Thompsons Road, Clyde North (Lot 2 PS431277)	12	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357946, 5783215
As above	13	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357963, 5783121
As above	14	Eucalypus viminalis	EVC 55: PGW	Endangered	High	357997, 5783101
2125 Thompsons Road, Clyde North (Lot 1 PS431277)	15	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357112, 5782994
As above	16	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357103, 5782984
As above	17	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357113, 5782963
As above	18	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357110, 5782957
As above	19	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357103, 5782984
As above	20	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357102, 5782988
As above	21	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357104, 5782980
As above	22	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357104, 5782976
As above	23	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357103, 5782970
As above	24	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357121. 5782955
As above	25	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357115, 5782961
As above	26	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357110, 5782957
As above	27	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357106, 5782954
As above	28	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357105, 5782941
As above	29	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357110, 5782948
As above	30	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357110, 5782950
As above	31	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357110, 5782945
As above	32	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357110, 5782943
As above	33	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357108, 5782931
As above	34	Eucalyptus camaldulensis	EVC 55: PGW	Endangered	High	357100, 5782998
2175 Thompsons Road, Clyde North (Lot 2 PS431277)	45	Eucalyptus pryoriana	EVC 55: PGW	Endangered	High	357917, 5782861
As above	46	Eucalyptus ovata	EVC 55: PGW	Endangered	High	357916, 5782859
As above	49	Eucalyptus viminalis	EVC 55: PGW	Endangered	High	357891, 5782842

NVPP Table 2: Scattered Trees to be protected (Continued)

Property Details	Tree ID	Species	EVC no. & Initials	Conservation Status	Conservation Significance	Co-ordinates (X-latitude, Y-longitude)
As above	50	Eucalyptus ovata	EVC 55: PGW	Endangered	High	357742, 5782731
1100 Pound Road, Clyde North	59	Eucalyptus ovata	EVC 55: PGW	Endangered	High	380778, 1453384
1865 Thompsons Road, Clyde North	64	Eucalyptus camalduensis (River Red Gum)	EVC 55: PGW	Endangered	High	380900, 1453492
As above	65	Eucalyptus camalduensis (River Red Gum)	EVC 55: PGW	Endangered	High	380900, 1453498
As above	66	Eucalyptus camalduensis (River Red Gum)	EVC 55: PGW	Endangered	High	380901, 1453498
As above	67	Eucalyptus camalduensis (River Red Gum)	EVC 55: PGW	Endangered	High	380908, 1453504
As above	68	Eucalyptus camalduensis (River Red Gum)	EVC 55: PGW	Endangered	High	380908, 1453501
As above	69	Eucalyptus camalduensis (River Red Gum)	EVC 55: PGW	Endangered	High	380908, 1453500
As above	70	Eucalyptus ovata (Swamp Gum)	EVC 55: PGW	Endangered	High	380910, 1453501
As above	71	Eucalyptus ovata (Swamp Gum)	EVC 55: PGW	Endangered	High	380910, 1453503
As above	72	Eucalyptus ovata (Swamp Gum)	EVC 55: PGW	Endangered	High	380910, 1453507

Native vegetation which can be removed, destroyed or lopped

The native vegetation described in NVPP Table 3 and shown as native vegetation that can be removed in NVPP Map 2 may be removed, destroyed or lopped subject to the requirements and conditions set out under "The works payment or other actions necessary to offset the removal, destruction or lopping of native vegetation"., in this NVPP under Clause 52.16.

NVPP Table 3: Habitat Zones which can be removed

Property Address	Habitat Zone ID	EVC no. & initials	Size (ha)
1275 Thompsons Road, Clyde North (Lot 1 TP392956)	HZ6	EVC 821: TM	0.05
1095 Pound Road, Clyde North (Lot 1, LP208772)	HZ7	EVC 821: TM	3.43
490 Soldiers Road, Clyde North (Lot 1 TP819098)	HZ8	EVC 74: WF	0.09
181 Grices Road, Clyde North (Lot 2 TP679465)	HZ9	EVC 74: WF	0.07
211 Grices Road, Clyde North (Lot 1 PT341390)	HZ10	EVC 83: SRW	0.09
As above	HZ11	EVC 74: WF	0.02
As above	HZ12	EVC 74: WF	0.09
Soldiers Road Reserve adjacent to 1275 Thompsons Road, Clyde North (Lot 1 TP392956)	HZ13	EVC 55: PGW	0.04
As above	HZ14	EVC 55: PGW	0.03
Soldiers Road Reserve adjacent to 1275 Thompsons Road, Clyde North (Lot 1 TP392956)	HZ15	EVC 55: PGW	0.02
As above	HZ16	EVC 83: SRW	0.02
As above	HZ17	EVC 55: PGW	0.05
As above	HZ18	EVC 83: SRW	0.02
As above	HZ19	EVC 83: SRW	0.01
As above	HZ20	EVC 83: SRW	0.05
Soldiers Road Reserve adjacent to 2125 Thompsons Road, Clyde North (Lot 1 PS431277)	HZ21	EVC 83: SRW	0.01
1825 Thompsons Road, Clyde North	HZ24	EVC 136: SW	0.05
1100 Pound Road, Clyde North	Part HZ25	EVC 53:SS	0.45
1100 Pound Road, Clyde North	HZ26	EVC 136: SW	0.66
As above	HZ27	EVC 136: SW	0.04
As above	HZ28	EVC 53: SS	0.01
As above	HZ29	EVC 53: SS	0.12
As above	HZ30	EVC 53: SS	0.14
As above	HZ31	EVC 53: SS	0.05
As above	HZ32	EVC 53: SS	0.04
As above	HZ33	EVC 53: SS	0.01
1845 Thompsons Road, Clyde North	HZ34	EVC 53: SS	0.06
1865 Thompsons Road, Clyde North	HZ39	EVC 53: SS	0.02
As above	HZ40	EVC 53: SS	0.03
As above	HZ41	EVC 53: SS	0.08

NVPP Table 4: Scattered trees which can be removed

Property Address	Tree ID	Species	EVC no & initials	Co-ordinates (X-latitude, Y longitude)
1275 Thompsons Road, Clyde North (Lot 1 TP392956)	35	*Eucalyptus ovata*	EVC 55: PGW	356168, 5783423
As above	36	*Eucalyptus ovata*	EVC 55: PGW	356165, 5783431
As above	37	*Eucalyptus ovata*	EVC 55: PGW	356167, 5783463
As above	38	*Eucalyptus ovata*	EVC 55: PGW	356163, 5783467
As above	39	*Eucalyptus ovata*	EVC 55: PGW	356159, 5783472
As above	40	*Eucalyptus ovata*	EVC 55: PGW	356154, 5783464
As above	41	*Eucalyptus ovata*	EVC 55: PGW	356132, 5783462
As above	42	*Eucalyptus ovata*	EVC 55: PGW	356132, 5783478
As above	43	*Eucalyptus ovata*	EVC 55: PGW	356149, 5783490
125 Grices Road, Clyde North (Lot 2 LP127655)	44	*Eucalyptus viminalis*	EVC 55: PGW	355283, 5784353
2175 Thompsons Road, Clyde North (Lot 2 PS431277)	47	*Eucalyptus ovata*	EVC 55: PGW	357463, 5782727
2125 Thompsons Road, Clyde North (Lot 1 PS431277)	48	*Eucalyptus pryoriana*	EVC 55: PGW	357454, 5782658
Soldiers Road Reserve adjacent to 1275 Thompsons Road, Clyde North (Lot 1 TP392956)	51	*Eucalyptus ovata*	EVC 55: PGW	356439, 5782731
As above	52	*Eucalyptus ovata*	EVC 55: PGW	356435, 5783385
Soldiers Road Reserve adjacent to 2125 Thompsons Road, Clyde North (Lot 1 PS431277)	53	*Eucalyptus ovata*	EVC 55: PGW	356925, 5782741
Soliders Road Reserve adjacent to 490 Soldiers Road, Clyde North (Lot 1 TP819098)	54	*Eucalyptus ovata*	EVC 55: PGW	356435, 5783905
105 Grices Road, Clyde North (Lot 2 LP208772)	55	*Eucalyptus goniocalyx*	EVC 175: GW	355052, 5784395
As above	56	*Eucalyptus melliodora*	EVC 175: GW	355045, 5784434
Soldiers Road Reserve adjacent to 2175 Thompsons Road, Clyde North (Lot 2 PS431277)	57	*Eucalyptus ovata*	EVC 83: SRW	356569, 5783179
As above	58	*Eucalyptus ovata*	EVC 83: SRW	357008, 5782608
1865 Thompsons Road, Clyde North	60	*Eucalyptus camalduensis*	EVC 55: PGW	380902, 1453466
As above	61	*Eucalyptus camalduensis*	EVC 55: PGW	380872, 1453446
As above	62	*Eucalyptus ovata*	EVC 55: PGW	380870, 1453447
As above	63	*Eucalyptus ovata*	EVC 55: PGW	380866, 1453445

NVPP Table 5: Offset Requirements for Habitat Zones which can be removed

Property Address	Habitat Zone ID	EVC no. & initials	Conservation Significance	Loss (Habitat Hectares)	Net Gain Multiplier	Gain Target (Habitat Hectares) Offset to be achieved
1275 Thompsons Road, Clyde North (Lot 1 TP392956)	HZ6	EVC 821: TM	Very High	0.011	2	no offset required
1095 Pound Road, Clyde North (Lot 1 LP208772)	HZ7	EVC 821: TM	Very High	0.793	2	no offset required
490 Soldiers Road, Clyde North (Lot 1 TP819098)	HZ8	EVC 74: WF	Very High	0.014	2	no offset required
181 Grices Road, Clyde North (Lot 2 TP679465)	HZ9	EVC 74: WF	Very High	0.014	2	no offset required
211 Grices Road, Clyde North (Lot 1 TP341390)	HZ10	EVC 83: SRW	Very High	0.022	2	0.044
As above	HZ11	EVC 74: WF	Very High	0.007	2	0.014
As above	HZ12	EVC 74: WF	Very High	0.04	2	no offset required
Soldiers Road Reserve adjacent to 1275 Thompsons Road, Clyde North (Lot 1 TP392956)	HZ13	EVC 55: PGW	High	0.007	1.5	0.0105
As above	HZ14	EVC 55: PGW	High	0.005	1.5	0.0075
Soldiers Road Reserve adjacent to 1275 Thompsons Road, Clyde North (Lot 1 TP392956)	HZ15	EVC 55: PGW	High	0.004	1.5	0.006
As above	HZ16	EVC 83: SRW	Very High	0.005	2	0.01
As above	HZ17	EVC 83: SRW	Very High	0.016	2	0.032
As above	HZ18	EVC 83: SRW	Very High	0.003	2	0.006
As above	HZ19	EVC 83: SRW	Very High	0.001	2	0.002
As above	HZ20	EVC 83: SRW	Very High	0.009	2	0.018
Soldiers Road Reserve adjacent to 2125 Thompsons Road, Clyde North (Lot 1 PS431277)	HZ21	EVC 55: PGW	High	0.002	1.5	0.003
1825 Thompsons Road, Clyde North	HZ24	EVC 136: SW	High	0.05	1.5	0.075
1100 Pound Road, Clyde North	Part HZ25	EVC 53: SS	High	0.45	1.5	0.675
1100 Pound Road, Clyde North	HZ26	EVC 136: SW	High	0.66	1.5	no offset required
As above	HZ27	EVC 136: SW	High	0.04	1.5	0.06
As above	HZ28	EVC 53: SS	High	0.01	1.5	0.015
As above	HZ29	EVC 53: SS	High	0.12	1.5	0.18
As above	HZ30	EVC 53: SS	High	0.14	1.5	0.21
As above	HZ31	EVC 53: SS	High	0.05	1.5	0.075
As above	HZ32	EVC 53: SS	High	0.04	1.5	0.06
As above	HZ33	EVC 53: SS	High	0.01	1.5	0.015
1845 Thompsons Road, Clyde North	HZ34	EVC 53: SS	High	0.06	1.5	0.09
1865 Thompsons Road, Clyde North	HZ39	EVC 53: SS	High	0.02	1.5	0.03
As above	HZ40	EVC 53: SS	High	0.03	1.5	0.045
As above	HZ41	EVC 53: SS	High	0.08	1.5	0.12

NVPP Table 6: Offset Requirements for scattered trees which can be removed

VLOT - Very large old tree LOT - Large old tree MOT - Medium old tree

Property Address	EVC no & name	Conservation Significance	Loss: no. of VLOTs	Loss: no. of LOTS	Loss: no. of MOTs	Loss: no. small trees	Offset to be achieved Recruitment/Revegetation target	Offset to be achieved Protection of trees target
1275 Thompsons Road, Clyde North (Lot 1 TP392956)	EVC 55: PGW	High	-	-	1 (ID 43)	8 (ID 35, 36, 37, 38, 39, 40, 41, 42)	260	2 MOTs
125 Grices Road, Clyde North (Lot 2 LP208772)	EVC 55: PGW	High	-	1 (ID 44)	-	-	20	4 LOTs
2175 Thompsons Road, Clyde North (Lot 2 PS431277)	EVC 55: PGW	High	1 (ID 47)	-	-	-	30	5VLOTs
2125 Thompsons Road, Clyde North (Lot 1 PS431277)	EVC 55: PGW	High	-	1 (ID 48)	-	-	20	4 LOTs
Soldiers Road Reserve adjacent to 1275 Thompsons Road, Clyde North (TP392056)	EVC 55: PGW	High	-	-	-	1 (ID 51)	30	-
Soldiers Road Reserve adjacent to 1275 Thompsons Road, Clyde North (TP392056)	EVC 55: PGW	High	-	-	1 (ID 52)	-	20	2 MOTs
2125 Thompsons Road, Clyde North (Lot 1 PS431277)	EVC 55: PGW	High	-	-	1 (ID 53)	-	20	2 MOTs
Soldiers Road Reserve adjacent to 490 Soldiers Road, Clyde North (Lot 1 TP819098)	EVC 55: PGW	High	-	-	-	1 (ID 54)	30	-
105 Grices Road, Clyde North (Lot 2 LP127655)	EVC 175 GW	High	-	-	1 (ID 55)	-	20	2 MOTs
105 Grices Road, Clyde North (Lot 2 LP127655)	EVC 175 GW	High	-	-	-	1 (ID 56)	30	-
2175 Thompsons Road, Clyde North (Lot 2 PS431277)	EVC 83: SRW	High	-	1 (ID 57)	-	-	20	4 LOTs
Soldiers Road Reserve adjacent to 2175 Thompsons Road, Clyde North (Lot 2 PS431277)	EVC 83: SRW	High	-	-	-	1 (ID 58)	30	-
1865 Thompsons Road, Clyde North	EVC 55: PGW	High	-	1 (ID 61)	-	-	20	4 LOTs
As above	EVC 55: PGW	Low	1 (ID 62)	-	-	-	30	5VLOTs
As above	EVC 55: PGW	Low	-	-	-	1 (ID 63)	30	-
As above	EVC 55: PGW	High	-	-	-	1 (ID 64)	30	-

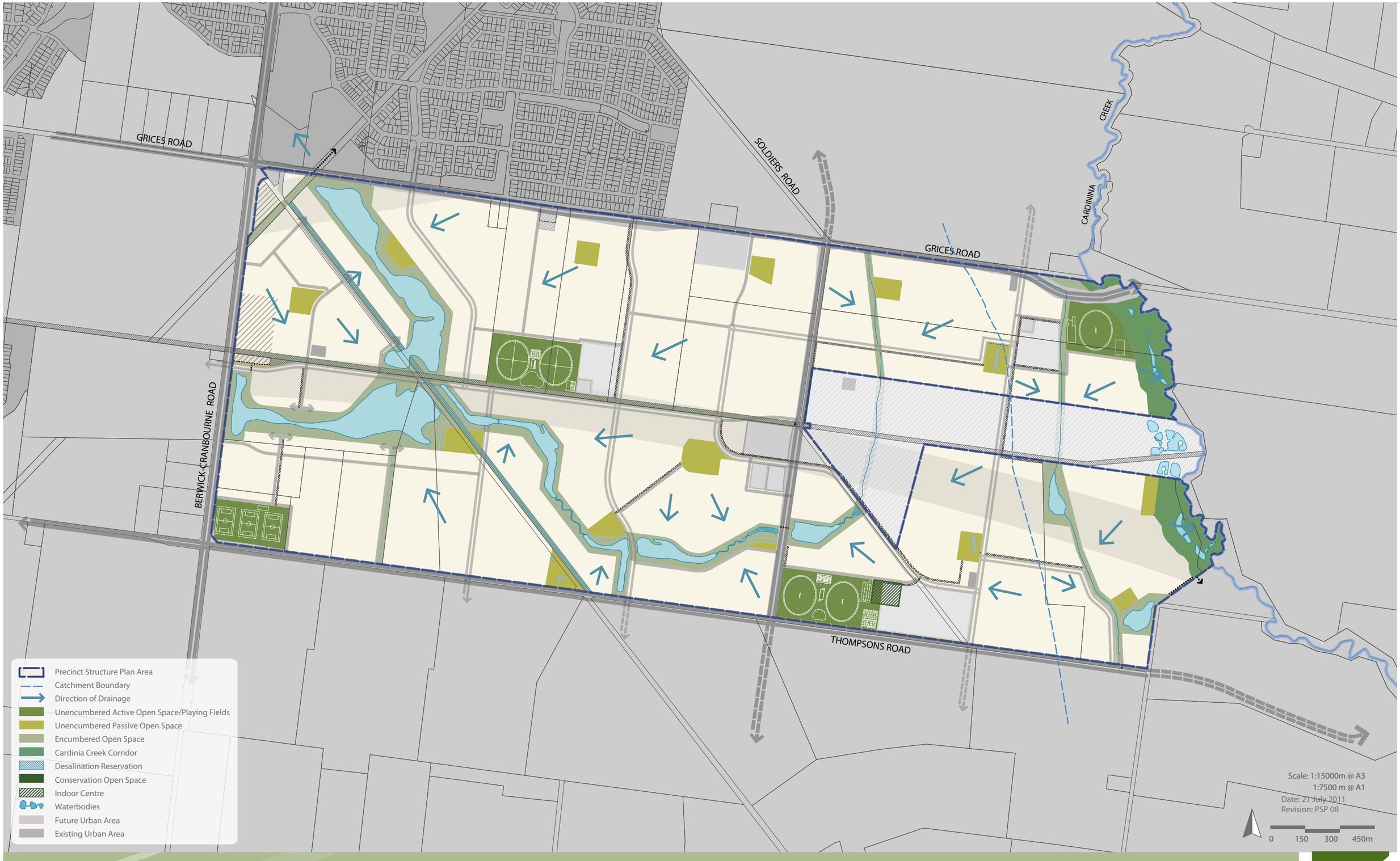
Conditions

The following conditions apply from the gazettal of the Native Vegetation Precinct Plan:

- Prior to the removal, destruction or lopping of any native vegetation within any property (based on the property number in Map 1 of the NVPP), offsets must be provided, and a legal agreement entered into, in relation to all of the native vegetation within that property which this Native Vegetation Precinct Plan allows to be removed, destroyed or lopped, to the satisfaction of the Secretary to the Department of Sustainability and Environment. In determining the offset to be required in relation to any property , the Secretary to the Department of Sustainability and Environment will seek to give effect to Victoria's Native Vegetation Management: A Framework for Action and will be guided by the offsets identified in Table 5 and Table 6, in relation to the relevant vegetation authorised to be removed.
- Prior to commencement of any works including vegetation removal a highly visible vegetation protection fence must be erected around twice the canopy distance of each scattered tree and more than 2 metres from areas of all other native vegetation which have been identified to be protected unless otherwise agreed to in writing by the Secretary to the Department of Sustainability and Environment and to the satisfaction of the Responsible Authority.
- Any construction stockpiles, fill and machinery must be placed away from areas supporting native vegetation and drainage lines to the satisfaction of the responsible authority.
- Prior to felling any tree which may be removed, the tree must be examined by a suitably qualified zoologist for the presence of fauna in hollows or external nests. If native fauna species are located, they must be salvaged and relocated to the closest suitable vegetation, in consultation with the Department of Sustainability and Environment.
- All earthworks must be undertaken in a manner that will minimise soil erosion and adhere to Construction Techniques for Sediment Pollution Control, EPA 1991.
- Only indigenous plants of local provenance may be used in revegetation works of conservation areas.
- Water run-off must be designed to ensure that native vegetation to be protected is not compromised.
- Any native vegetation to be removed (in accordance with this NVPP) must be clearly marked on site to the satisfaction of the Responsible Authority whilst works are being undertaken in the vicinity.

Procedures for the collection of any payment

No payments are necessary or specified.



plan 15

integrated water management plan

clyde north precinct structure plan

Reference Documents

Biodiversity Assessment Report: Flora and Fauna Assessment and Mapping. Precinct Structure Plan area 13, Clyde North (Practical Ecology 2009).

Biodiversity Assessment Report: Flora and Fauna Assessment and Mapping. Precinct Structure Plan area 43, Clyde North (Practical Ecology 2011).

4.5.9 Integrated Water Management Objectives

- To plan for the future drainage needs of the new urban environment.
- To mitigate flooding of urban areas.
- To manage the flows of storm water runoff into the Western Port and Port Phillip catchments.
- To reduce and filter sediment and nitrogen levels through an integrated water sensitive urban design system.
- To enhance the biodiversity and habitat values of the precinct.

4.5.10 Implementation

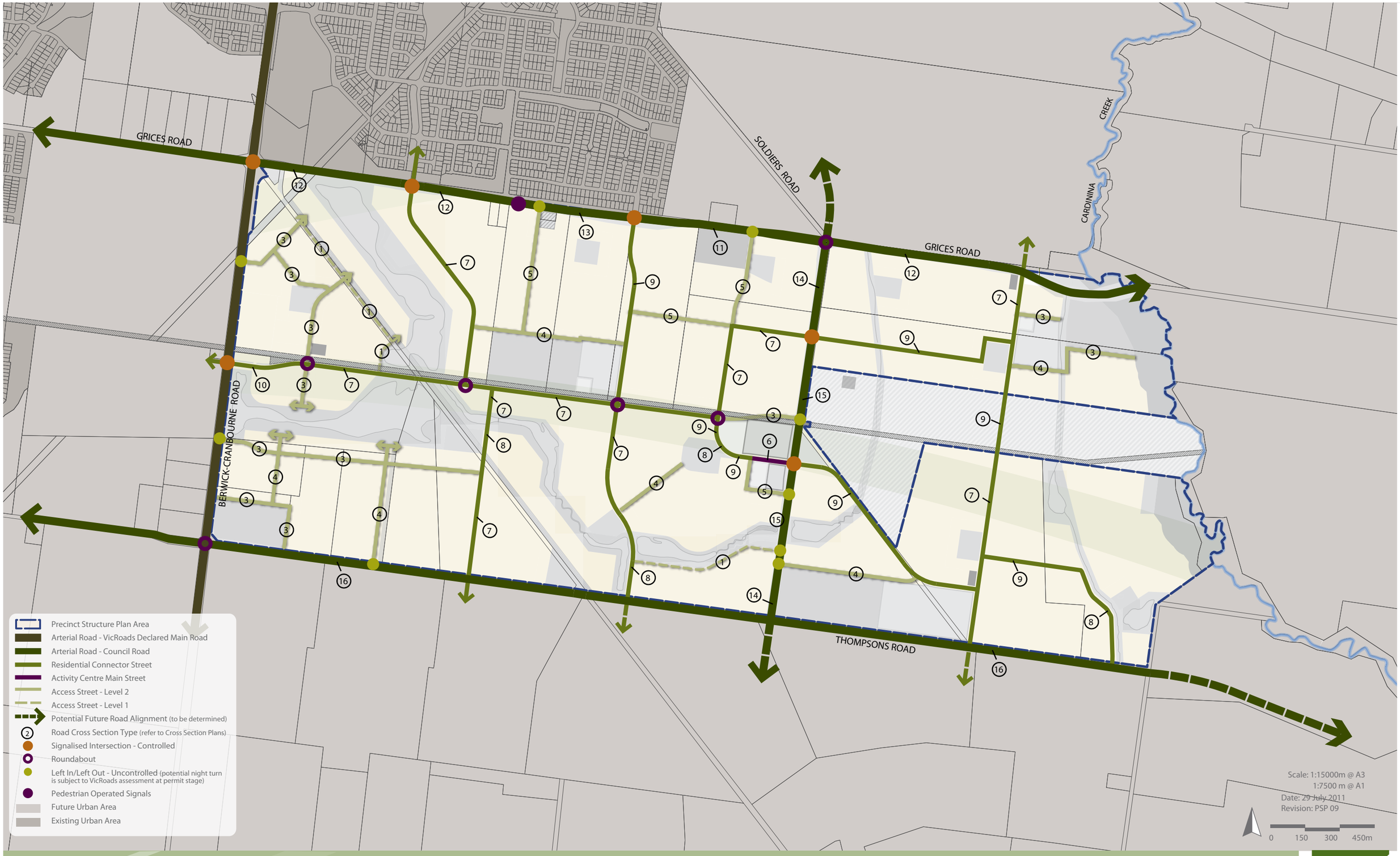
The objectives for the integrated water management are met by implementing the following:

- Planning and design guidelines set out in 4.5.11;
- Plan 5: Future Urban Structure;
- Plan 12: Biodiversity Plan; and,
- Plan 15: Integrated Water Management Plan.

4.5.11 Integrated Water Management Planning and Design Guidelines

The following planning and design guidelines should be met:

- Drainage systems should provide for a suitable buffer from urban development and contain ephemeral water bodies to enable the replication of natural flows and provide habitat for local species;
- Planting of drainage areas should promote the establishment of habitat for local species;
- Drainage systems should seek to reduce sediment flows into Cardinia Creek and the Western Port catchment;
- A drainage scheme should ensure that downstream flows are not increased beyond the capacity of the system.
- Drainage systems must be designed to ensure that storm water quality is enhanced to best practice standards prior to discharge to the drainage lines;
- Stormwater systems should be designed to prevent adverse effects upon natural environments that may be sensitive to changes in the natural water cycle, particularly natural waterways;
- Drainage systems should maintain flow regimes from the precinct area (including flow intensity and duration) at pre-development levels.
- Drainage and Waterway reserve sizes are indicative only, and final sizes will be subject to further detailed design. All drainage and waterway reserve areas must meet the requirements of Melbourne Water at the time of submission.



plan 16

road network

clyde north precinct structure plan

4.6 TRANSPORT AND MOVEMENT

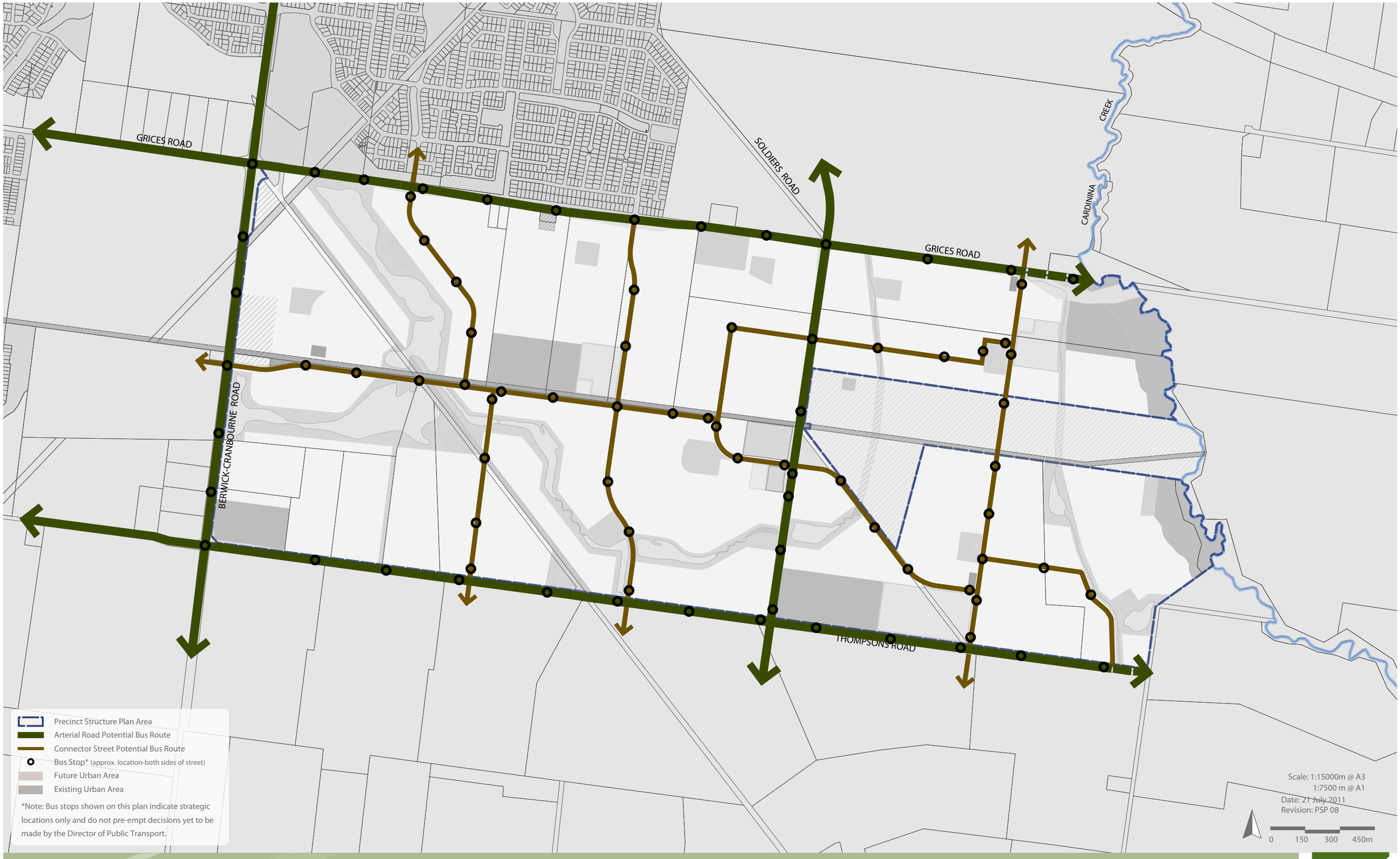
4.6.1 Transport and movement objectives

- To create an integrated and sustainable transport network that reduces dependency on the use of private vehicles, maximises access to public transport and encourages walking and cycling within and between neighbourhoods.
- To establish a bus network that connects residential areas to the Beaconsfield and Berwick rail stations and other key destinations, and provides for the safe and efficient operation of bus movements.
- To support the early provision of local bus services and walking and cycling links through the sequential staging of the development of the area.
- To ensure that more than 95% of households are located within 400 metres of public transport services by establishing an 800 metre spaced grid of arterial roads and connector streets.
- To promote the early provision of safe and efficient pedestrian and bicycle paths and links which are connected to the key features of the precinct and which link to regional networks outside the precinct.
- To provide for the landscaping of roads, transport and movement corridors to help create safe and attractive urban environments.
- To ensure that the transport network provides for the safe and efficient operation of the existing and future arterial road network both in the short and long term.
- To limit access to arterial roads to protect their function and safety.
- To ensure that the transport network is planned to provide for the safety of all road users.
- To facilitate the delivery (and specifically the land required) for the north-south connector road that bisects the Hillcrest Christian College, as soon as is practicable to both Hillcrest Christian College and Casey City Council.

4.6.2 Implementation

The objectives for Transport and Movements are met by implementation of all the following:

- Plan 5: Future Urban Structure Plan;
- Plan 16: Road Network Plan;
- Plan 17: Public Transport Plan;
- Plan 18: Walking and Trails Plan;
- Table 12 Road Hierarchy;
- Cross Sections 1-18; and,
- Planning and design guidelines set out in 4.6.3 including the road and street cross sections.



plan 17

public transport

clyde north precinct structure plan

Table 14: Road Hierarchy

Road/street	Existing reserve	Ultimate reserve	Indicative vehicles per day	Traffic Lanes	Indicative Speed limit	Bus	Property access and parking	Tree reserve	Cycle path	Responsibility
Thompsons Road (6 lane arterial)	20 metres	41 metres	30,000	6	80km/h	Yes	No	Yes (in part)	On road/within reserve	Council (Potential VicRoads in the future)
Central North-South Arterial (6 lane arterial)	20 metres in part	41 metres	11,200*	6	80km/h	Yes	No	No	On road/frontage road	Council (Potential VicRoads in the future)
Grices Road (4 lane arterial)	20 metres	34 metres (31 metres in part)	23,600	4	70km/h	Yes	No	No	On road/frontage road	Council (Potential VicRoads in future)
Central North-South Connector	-	26 metres	4,000	2	50km/h	Yes	Yes	No	On Road	Council
Eastern North-South Connector 1 (closest to Cardinia Creek)	-	26 metres	6,200	2	50km/h	Yes	Yes	No	On Road	Council
Western North-South Connector 2 (closest to Berwick-Cranbourne Road) (Northern Section)	-	26 metres	6,900	2	50km/h	Yes	Yes	No	On Road	Council
East-West Connector	-	25-31 metres (22 metres in Local Town Centre)	8,600	2	50km/h (40km/h in Local Town Centre)	Yes	Yes	No	On Road and shared path	Council
Southern East-West Connector		25-31 metres	Up to 7,000	2	50km/h	Yes	Yes	No	On Road	Council
Western North-South Connector (Southern Section)		25-31 metres	Up to 7,000	2	50km/h	Yes	Yes	No	On Road	Council
Northern East-West Connector Street, residential	-	25-31 metres	Up to 7,000	2	50km/h	Yes	Yes	No	On Road	Council
Connector Street, residential (Shared Path)		37m	Up to 7,000	2	50km/h	Yes	No	No	On Road and shared path	Council
Access Street – Level 2 (Shared Path)	-	25 metres	Up to 3,000	2	50km/h	No	Yes	No	Shared path	Council
Access Street – Level 2	-	20 metres	Up to 3,000	2	50km/h	No	Yes	No	No	Council
Access Place/Access Street – Level 1		16 metres	Up to 1,000	2	50km/h	No	Yes	No	No	Council
Access Place/Access Street - Reserve Frontage	-	13 metres	Up to 1,000	2	50km/h	No	Yes	No	No	Council

**Note: Ultimate traffic volumes to be confirmed on completion of Growth Corridor Plans.*

4.6.3 Planning and design guidelines

Connector street construction

The following planning and design guidelines must be met:

- Connector streets (including any culverts) are to be constructed by the development proponents as part of the subdivision works (prior to the issue of statement of compliance for the relevant stage).

Construction of intersections with arterial roads

The following planning and design guidelines must be met:

- All intersections with existing or proposed arterial roads must be designed, constructed and controlled to the satisfaction of the Roads Corporation and the City of Casey, with the main design objective being to allow for a minimum 10-year design life having regard to the anticipated traffic growth on the affected roads from both the ultimate development of the Precinct Structure Plan area and the external traffic.
- Intersection layouts provided in the DCP are concepts only, prepared to inform budget cost estimates. All reasonable variation in scope resulting from the preparation of detailed functional layout drawings is to be fully funded by the development proponent.
- Staging of subdivisions is to provide for the timely connection of road links between properties and to the arterial road network to support timely transport connections (i.e. bus, cycle and walking), to the satisfaction of the Responsible Authority.
- Land must be provided for right of way flaring at all arterial road connections to existing or proposed arterial roads for the ultimate design of the intersection in accordance with VicRoads' standards.

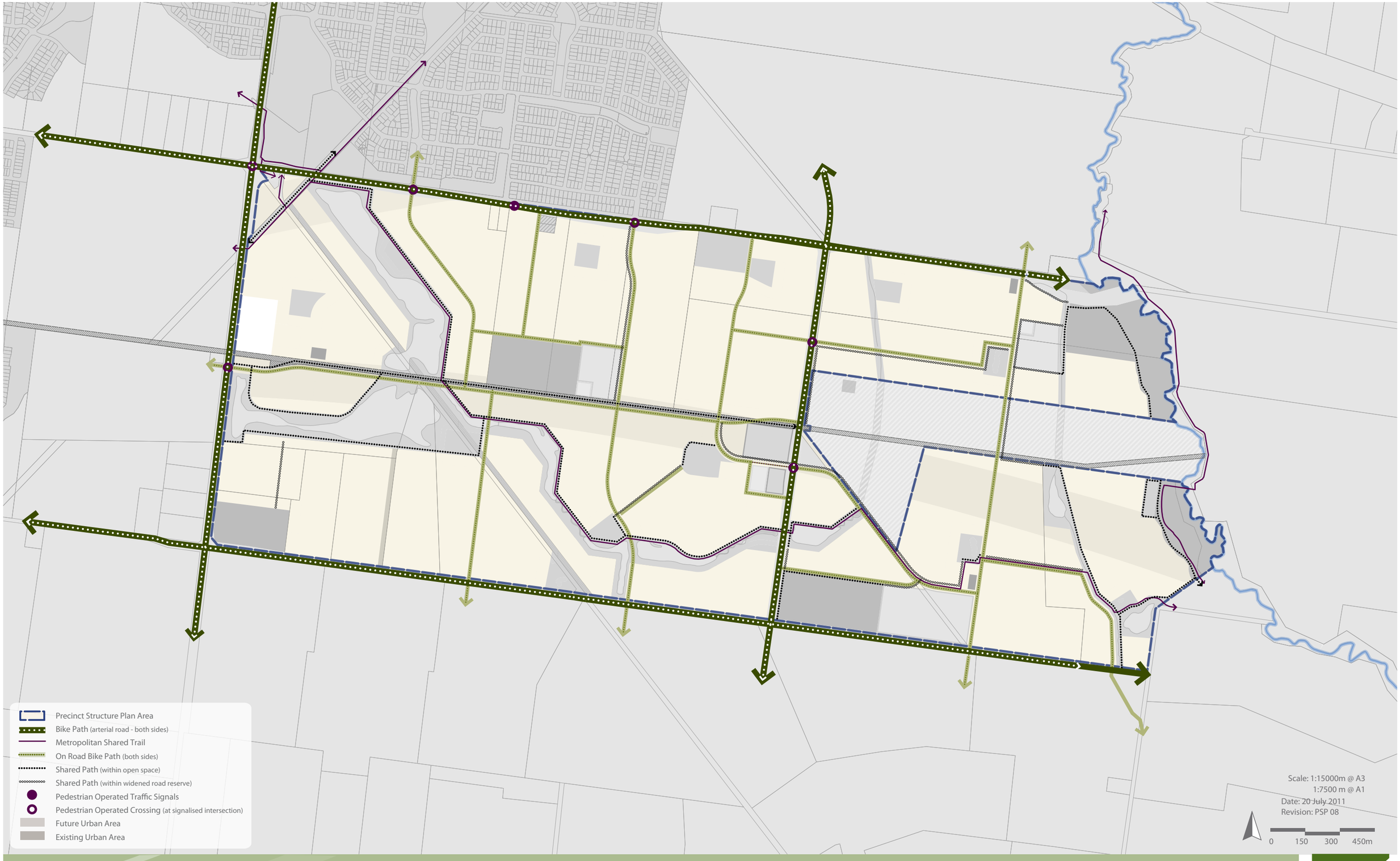
The following planning and design guidelines should be met:

- Prior to the preparation of planning permit applications that require access to an existing or proposed arterial road as shown on Plan 5 and 16, permit applicants should consult with VicRoads to determine the appropriate extent of Right of Way flaring required for the intersection.

Arterial road connections – general requirements

The following planning and design guidelines should be met:

- Residential lots fronting the arterial road network should be accessed via internal loop roads rather than by a service road.
- Access to streets connecting to an arterial road should be considered within the context of the requirements of traffic management, safety, urban design and its urban environment.
- Intersection design should provide for the safe and efficient operation of the arterial road and the side road to the satisfaction of VicRoads, with consideration to vehicle speeds, vehicle queues and conflicting movements on approach to and departure from the intersection. Other than Berwick-Cranbourne Road, the requirement for slip lanes will be considered subject to the preparation of a Traffic Impact Assessment Report (TIAR) by a qualified traffic consultant to the satisfaction of VicRoads ;
- Access points (temporary and permanent) to the existing or proposed arterial road network beyond those shown on Plan 16, will be considered on a case by case basis in accordance with VicRoads access management policies.



plan 18

walking & trails plan

clyde north precinct structure plan

Road connections – specific requirements for Local Town Centre intersection treatment

The following planning and design guidelines should be met:

- The Local Town Centre intersection design is to provide for the safe and efficient operation of the arterial road whilst also ensuring the safety of vulnerable road users (specifically pedestrians and cyclists) and recognise the importance of providing an appropriate urban design outcome for all users of the Local Town Centre.
- A Traffic Impact Assessment Report (TIAR) must be prepared to the satisfaction of the responsible authority and VicRoads. The TIAR is to provide functional layout plans and a feasibility / concept road safety audit.
- Slip lanes at this intersection will be discouraged unless it can be demonstrated that they will not disadvantage pedestrians and will not impact on an appropriate urban design outcome for all users of the Local Town Centre.

East-west connector – central connector road

The following planning and design guidelines must be met:

- A staging plan must be submitted with the first application for subdivision of Properties 19, 21 and 26 respectively and approved by the responsible authority. This staging plan must provide for the timely delivery of the connector road and bridge (including culverts and roadworks) across the Ti -Tree Creek drainage reserve between properties 19, 21 and 26 shown in the Clyde North Precinct Structure Plan to the satisfaction of the responsible authority.
- The staging plan must be implemented through an agreement under Section 173 of the Planning and Environment Act 1987 between the responsible authority and the relevant landowner/s prior to the certification of the first plan of subdivision.

Hillcrest Christian College

The following planning and design guidelines must be met:

- The future development of the Hillcrest Christian College must not prejudice the delivery of the north-south connector road that is proposed to bisect the site.

Employment land access

The following planning and design guidelines must be met:

- Access to the Employment land will be provided via the Connector Street to the south of the land. No direct access to this land will be provided from the north-south arterial.

Pound Road

The following planning and design guidelines must be met:

- Pound Road is to be progressively downgraded so as to limit access through and beyond the PSP area. It will function as a local street with closures anticipated ultimately at the mid point and at Thompsons Road and Grices Road.

Thompson Road

The following planning and design guidelines must be met:

- The intersection of Thompson Road and the North-South arterial road will be controlled by a give way/stop signing with complementary median island as an interim treatment, to the satisfaction of the Responsible Authority.

Bus Network

The following planning and design guidelines must be met:

Where a requirement for a bus route or bus stop has been nominated by the Director of Public Transport:

- Bus stop facilities must be constructed by development proponents as part of the subdivision works (prior to the issue of a statement of compliance for the relevant stage) in accordance with the requirements of the Public Transport Guidelines for Land Use and Development to the satisfaction of the Director of Public Transport;
- The facilities must be provided with DDA compliant direct and safe pedestrian access connected to an existing pedestrian/shared path; and,
- The facilities must be designed as an integral part of activity centres and activity generating land uses, such as schools, sports fields and employment areas.

Shared Pathways

The following planning and design guidelines must be met:

- Walking and cycling networks must be constructed by development proponents as part of subdivision works (prior to the issue of a statement of compliance for the relevant stage).
- Footpaths and cycle paths must be provided with increased width in areas expecting high foot traffic such as near schools, community centres, activity centres, public transport interchanges and bus stops.
- Pedestrian and cycle crossings must be provided at all relevant street intersections and along key desire lines, particularly along the interface between the residential and employment areas and in the vicinity of bus stops.
- Bicycle lane connections must be designed to allow for the smooth transition between on-road and off-road facilities.
- Pedestrian and cycle paths must be designed and located to maximise passive surveillance and provided in wide road verges with safe crossing points at key locations.
- The local street network must be designed to provide permeable and safe routes for walking and cycling to activity centres, community facilities, parks and open space, major trail networks and public transport.

The following planning and design guidelines should be met:

- Pedestrian and cycling trails alongside Cardinia Creek should be designed to provide access across the Grices Road and Thompsons Road creek crossings.

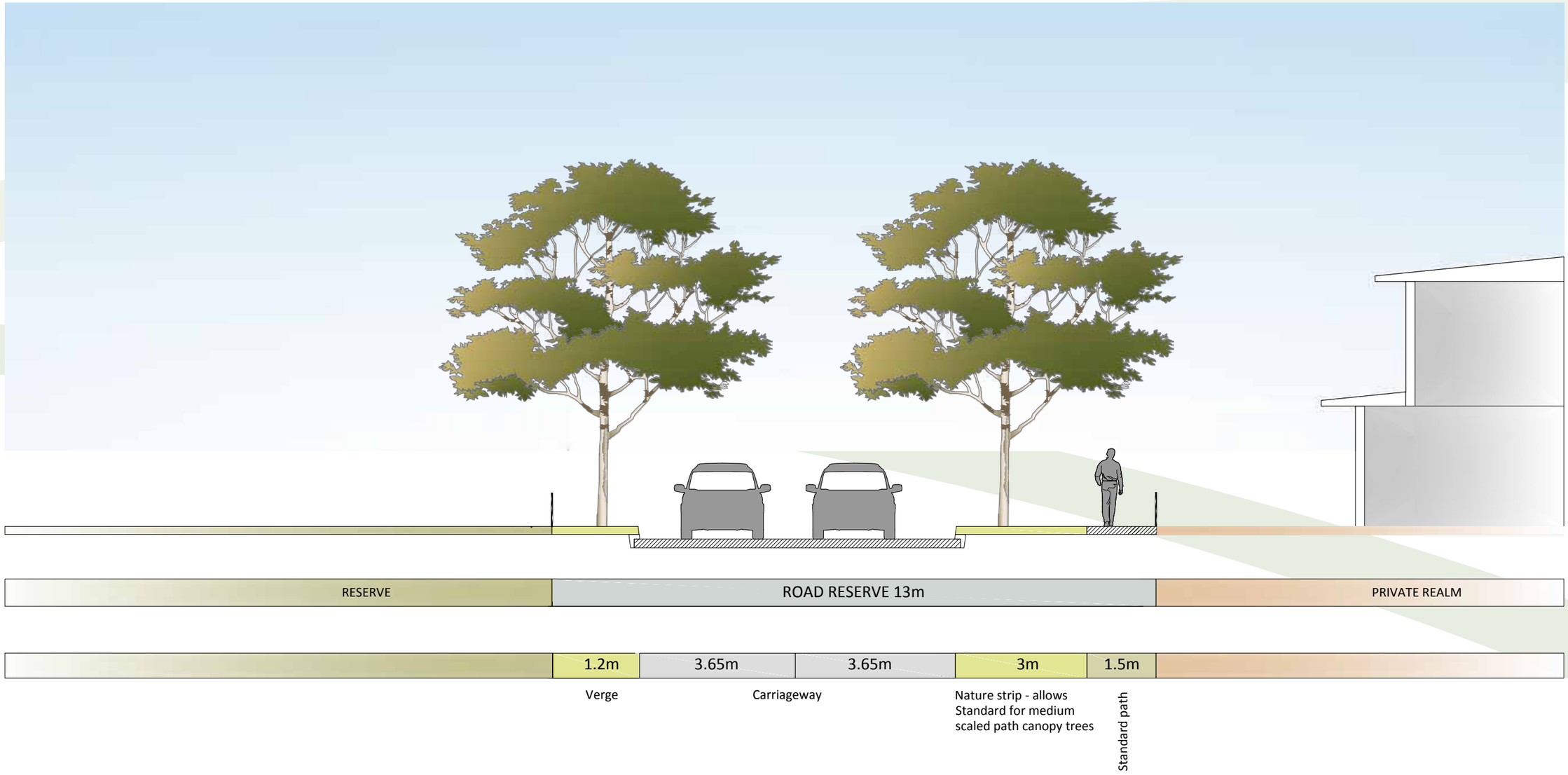
Road and Street Cross-Sections

The following planning and design guidelines must be met to the satisfaction of the responsible authority.

- Lots must be designed to address the road network to the satisfaction of the Responsible Authority.
- In accordance with the Casey Arterial Road Tree Strategy (or as amended), a tree reserve must be provided to any arterial road where an internal loop road (or service road) is not provided, to the satisfaction of the Responsible Authority.

The following planning and design guidelines should be met to the satisfaction of the responsible authority.

- Road and street cross sections should be generally consistent with the cross sections included in this Element.
- Where possible common trenching should be used to accommodate underground utilities and services.
- Where additional land is required for utilities and services, in connector streets, additional trenching may be provided within the 2.3m parking lane.



Scale
0 1m 2m 5m

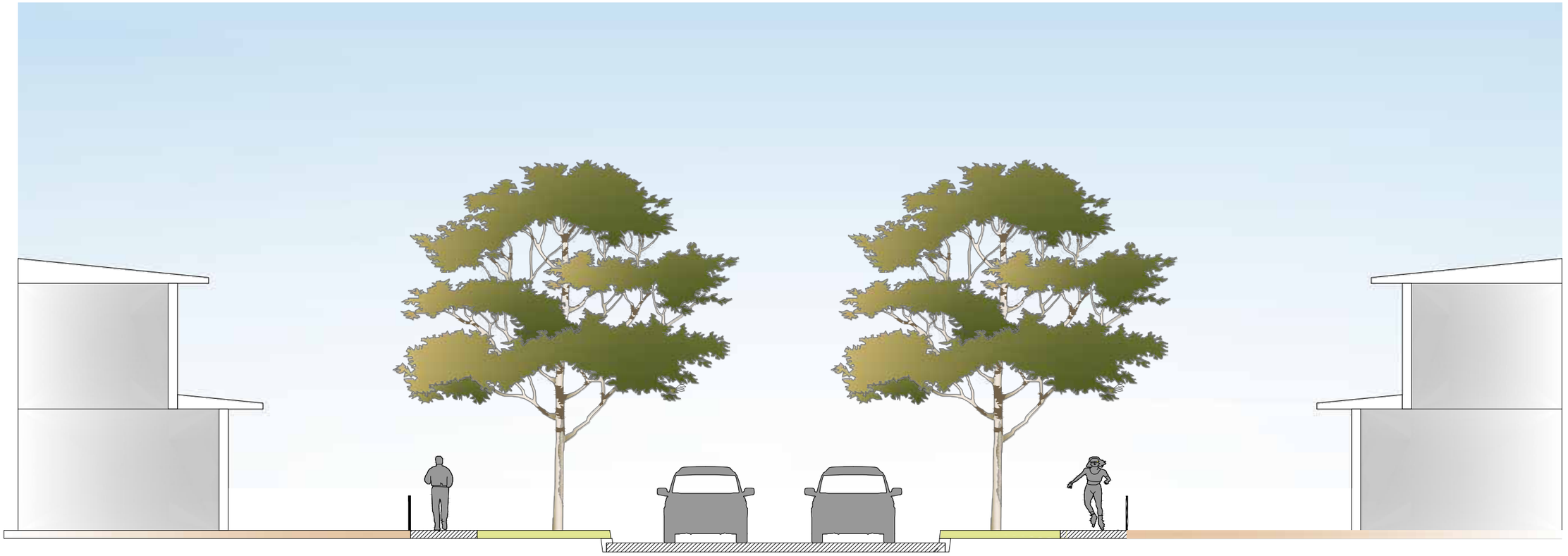
Victoria
The Place To Be

Cross Section 1

access place / access street - reserve frontage -13m

clyde north precinct structure plan

growth areas AUTHORITY



PRIVATE REALM | ROAD RESERVE 16m | PRIVATE REALM

1.5m	3m	7.3m	2.7m	1.5m
Standard path	Nature strip - allows Standard for medium scaled path canopy trees	Carriageway	Nature strip - allows Standard for medium scaled path canopy trees	Standard path

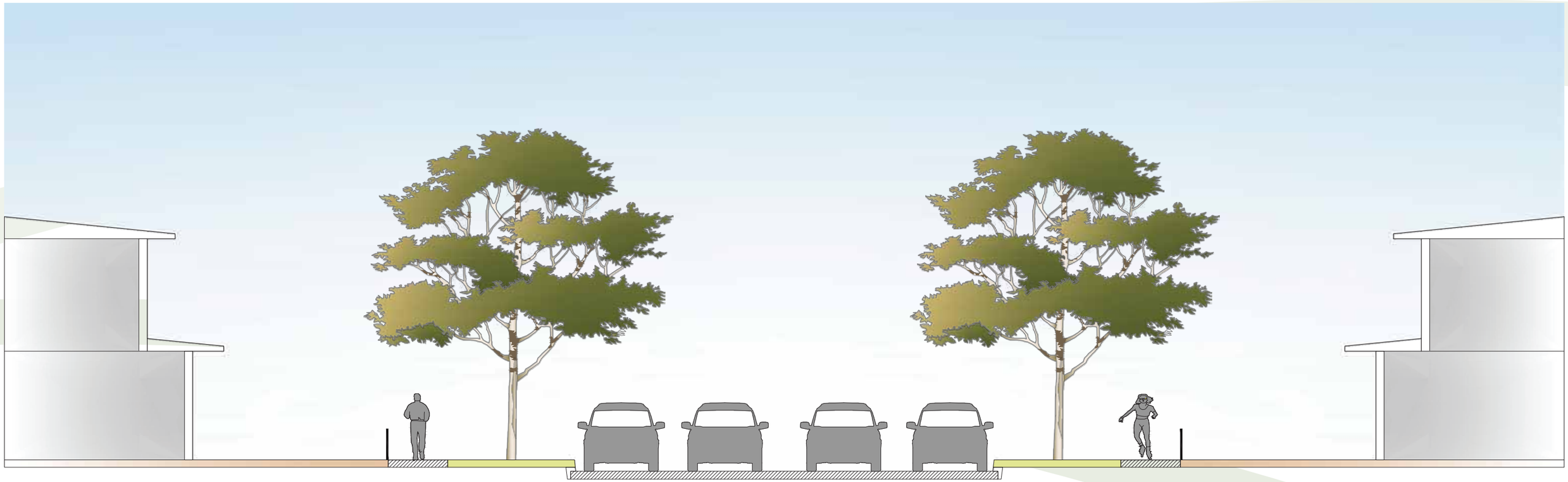
Scale
0 1m 2m 5m

Victoria
The Place To Be

Cross Section 2

access place / access street level 1 - 16m

clyde north precinct structure plan



PRIVATE REALM	ROAD RESERVE 20m							PRIVATE REALM
	1.5m	3.2m	2.3m	3m	3m	2.3m	3.2m	1.5m
	Pedestrian path	Nature strip suitable for medium to large canopy trees	Parking bay outstands at approx. 100m centres and at intersections	Carriageway - bicycles share this space with vehicles		Parking bay outstands at approx. 100m centres and at intersections	Nature strip suitable for medium to large canopy trees	Pedestrian path

Scale
0 1m 2m 5m

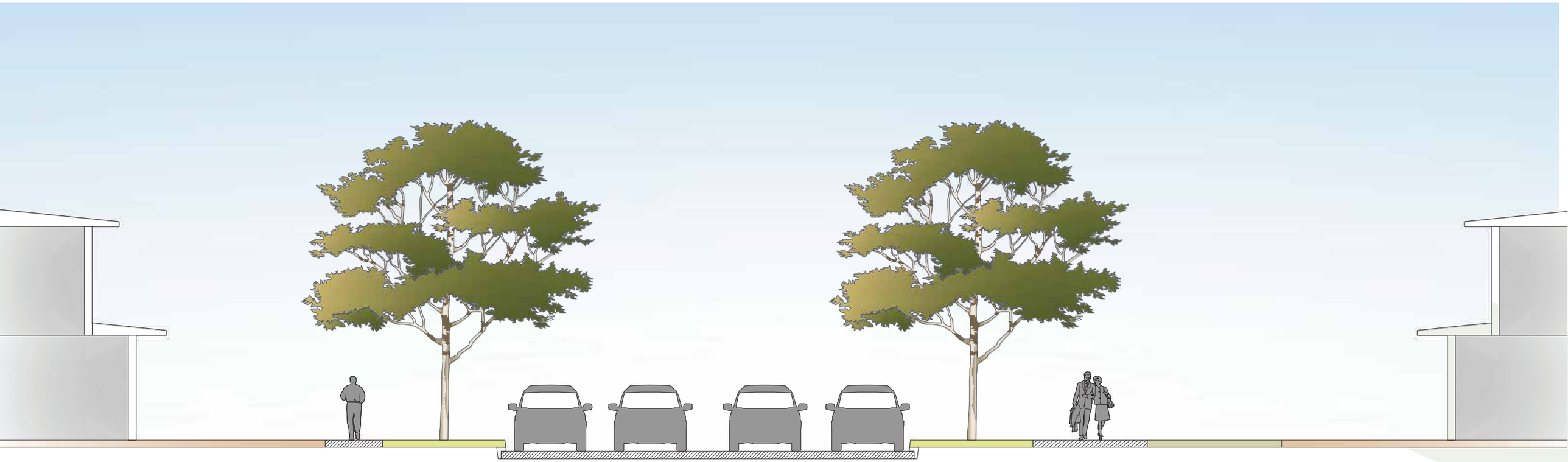
Victoria
The Place To Be

Cross Section 3

access street level 2 - 20m

clyde north precinct structure plan

growth areas AUTHORITY



PRIVATE REALM	ROAD RESERVE 25m								PRIVATE REALM
	1.5m	3.2m	2.3m	3m	3m	2.3m	3.2m	2.5m	4m
	Pedestrian path	Nature strip suitable for medium to large canopy trees	Parking bay outstands at approx. 100m centres and at intersections	Carriageway - bicycles share this space with vehicles		Parking bay outstands at approx. 100m centres and at intersections	Nature strip suitable for medium to large canopy trees	Shared path	Planted zone between property and path. if adjoining park/school, this area is not required

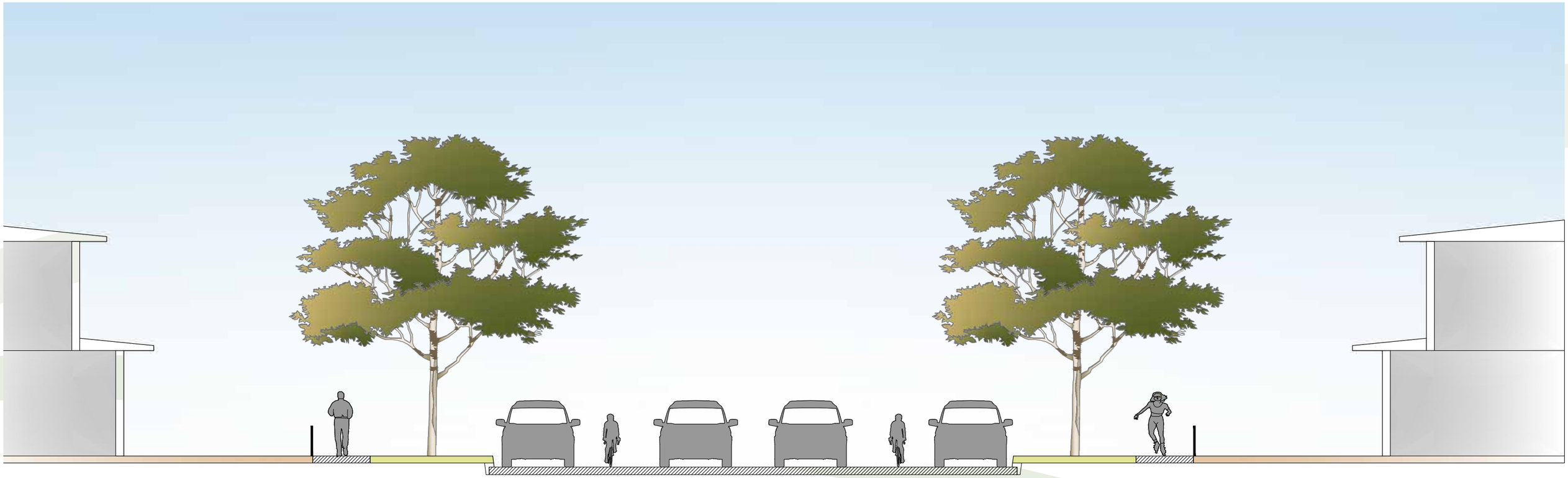
Scale
0 1m 2m 5m

Victoria
The Place To Be

Cross Section 4

access street level 2 with shared path - 25m

clyde north precinct structure plan



PRIVATE REALM	ROAD RESERVE 23m									PRIVATE REALM
	1.5m	3.2m	2.3m	1.5m	3m	3m	1.5m	2.3m	3.2m	1.5m	
	Pedestrian path	Nature strip suitable for medium to large canopy trees	Parking bay outstands at approx. 100m centres and at intersections		Carriageway - bicycles share this space with vehicles			Parking bay outstands at approx. 100m centres and at intersections	Nature strip suitable for medium to large canopy trees	Pedestrian path	

Scale
0 1m 2m 5m

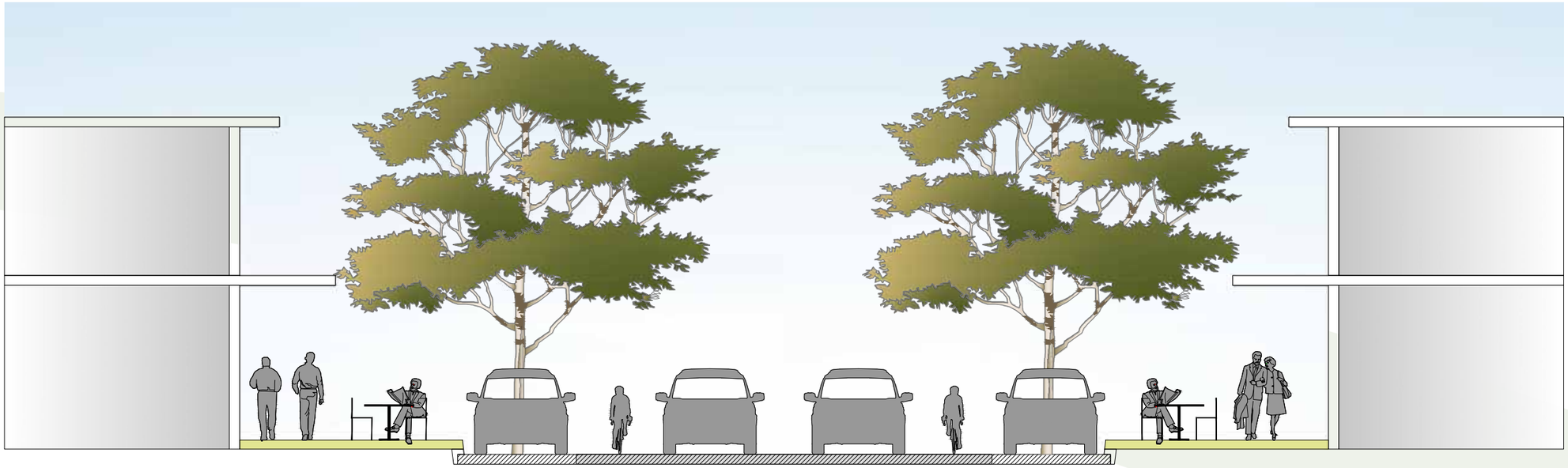
Victoria
The Place To Be

Cross Section 5

access street level 2 - 23m with dedicated bike lane

clyde north precinct structure plan

growth areas AUTHORITY



An undivided connector road through the Neighbourhood Activity Centre (NAC) must have a cross section containing a parking lane of 2.3 m, a bicycle lane of 1.7 m and a traffic lane of 3.5 m for each direction of travel (as in "Undivided Connector Road – A" of the Public Transport Guidelines for Land Use and Development 2008), unless otherwise approved in writing by the Director of Public Transport.

The Director may approve an alternative cross section providing a parking lane of not less than 2.3 m and a shared bicycle/traffic lane of not less than 4.2 m for each direction of travel (as in "Undivided Connector Road – B" of the Guidelines).

A request to construct an alternative cross section may be made where a main street Neighbourhood Activity Centre (NAC) with retail and commercial development on both sides of the connector road is proposed and:

1. a bus service is not expected to utilise that segment of the NAC connector (e.g. an alternative route is proposed); or

2. a bus service is expected to utilise that segment of the NAC connector and:

- pedestrian accessibility and safety is the primary transport objective,
- there will be no prejudicial impact on public transport services,
- the connector does not form part of the Principal Public Transport Network,
- the connector is expected to carry three (3) services or less per hour each way under current bus service provision standards,
- the posted speed limit is proposed to be 40 km/h or lower,
- the length of the "Undivided Connector Road – B" section is less than 250 m, and
- there is no proposal to locate a use which would generate significant volumes of bicycle traffic such as a school, community facility, sporting facility or place of assembly, in or adjacent to the NAC and a nearby alternative cycling route is available."

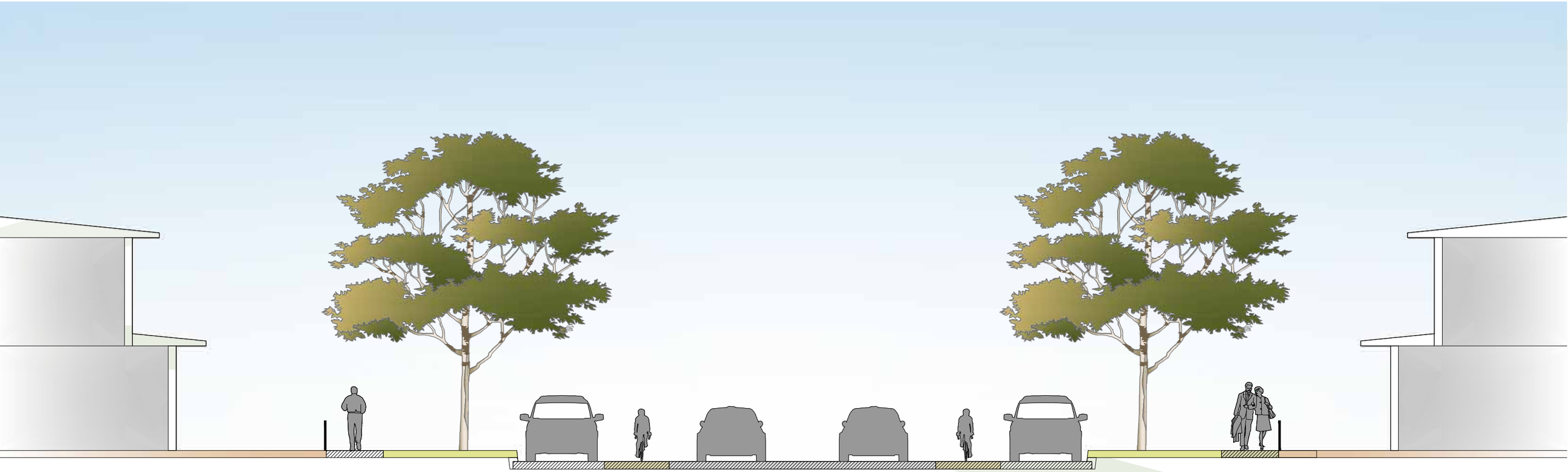
Scale
0 1m 2m 5m

Victoria
The Place To Be

Cross Section 6

medium local town centre connector street - 22m

clyde north precinct structure plan



PRIVATE REALM	ROAD RESERVE 25m									PRIVATE REALM
	1.5m	3.5m	2.3m	1.7m	3.5m	3.5m	1.7m	2.3m	3.5m	1.5m	
	Pedestrian path-up to 2m for key routes	Wider nature strip to enable larger canopy trees	Parking - with outstand at intersections	Bike	Carriageway and bike lanes accord with DOT requirements		Bike	Parking - with outstand at intersections	Wider nature strip to enable larger canopy trees	Pedestrian path-up to 2m for key routes	

Scale
0 1m 2m 5m

Victoria
The Place To Be

Cross Section 7

residential connector street - 25m

clyde north precinct structure plan

growth areas AUTHORITY

PRIVATE REALM	ROAD RESERVE 26m									Open space/ Drainage Reserve
	1.5m	3.5m	2.3m	1.7m	3.5m	3.5m	1.7m	2.3m	3.5m	2.5m
	Pedestrian path-up to 2m for key routes	Wider nature strip to enable larger canopy trees	Parking - with outstand at intersections	Bike	Carriageway and bike lanes accord with DOT requirements		Bike	Parking - with outstand at intersections	Wider nature strip to enable larger canopy trees	Shared path

Scale
0 1m 2m 5m

Victoria
The Place To Be

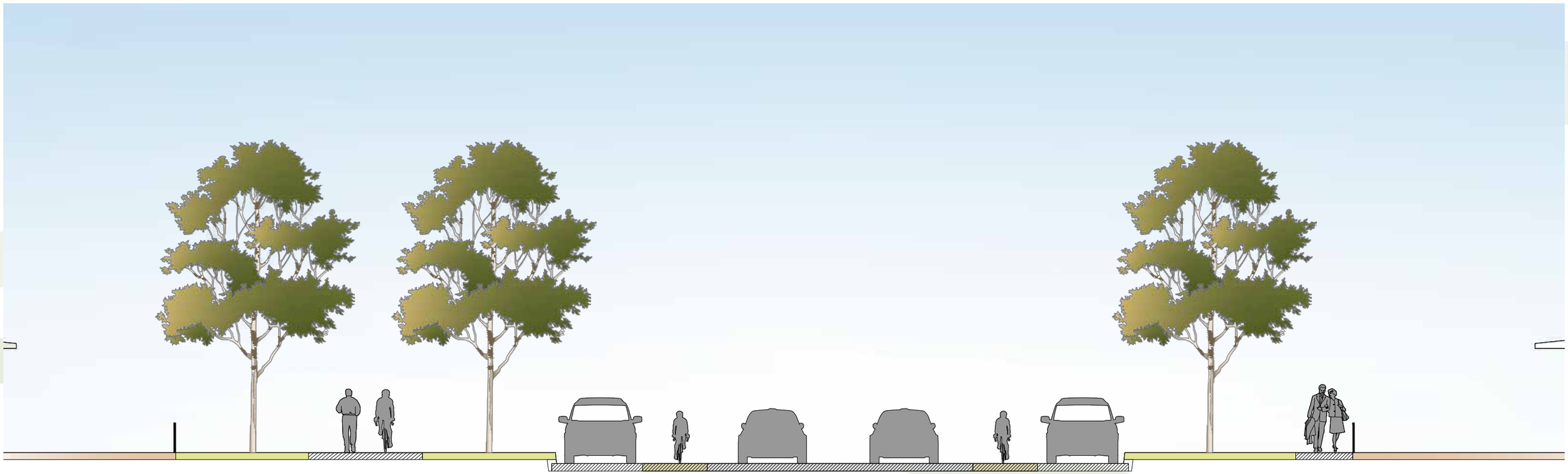
Cross Section 8

residential connector street with shared path - 26m

clyde north precinct structure plan

growth areas AUTHORITY

INTERIM DESIGN SOLUTION



PRIVATE REALM	ROAD RESERVE 31m										PRIVATE REALM
	4m-4.5m	2.5m	3.5m-4.5m	2.3m	1.7m	3.5m	3.5m	1.7m	2.3m	3.5m-4.5m	1.5m
	Planted zone between property and path - suggested minimum 4m	Shared path	Wider nature strip to enable larger canopy trees	Parking - with outstands at intersections	Bike	Carriageway and bike lanes accord with DOT requirements		Bike	Parking - with outstands at intersections	Wider nature strip to enable larger canopy trees	

Scale

0 1m 2m 5m

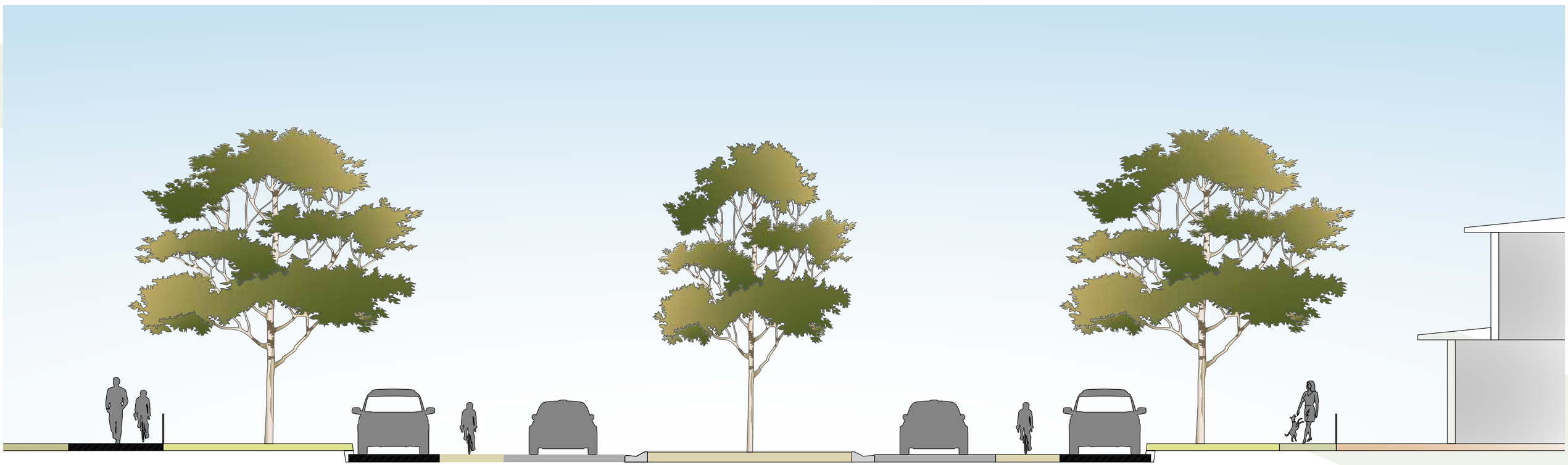
Victoria
The Place To Be

Cross Section 9

residential connector street with shared path - 31m

clyde north precinct structure plan

growth areas AUTHORITY



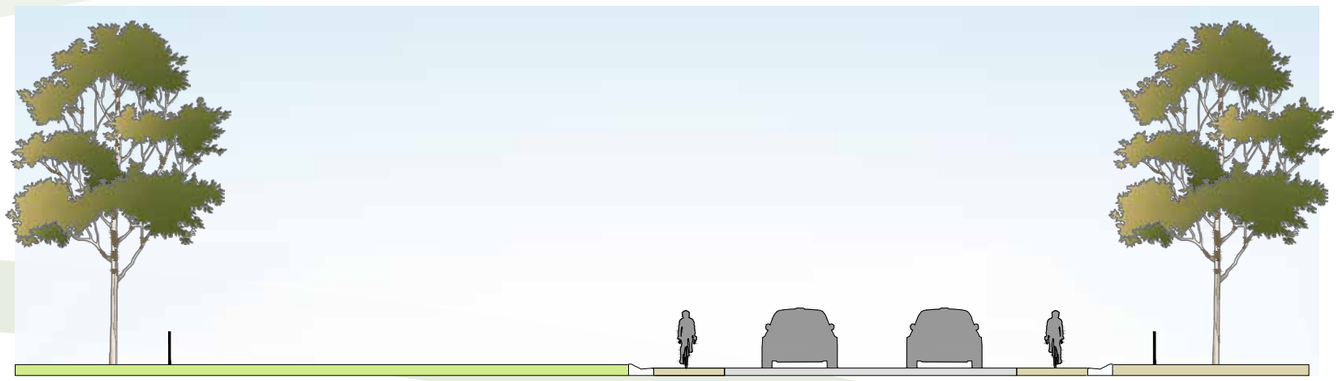
RESERVE	ROAD RESERVE 31m										PRIVATE REALM
	5m	2.3m	1.7m	3.5m	6m	3.5m	1.7m	2.3m	3.5m	1.5m	
Shared path	Wider nature strip to enable larger canopy trees	Parking - with outstand at intersections	Bike	Carriageway	Median	Carriageway	Bike	Parking - with outstand at intersections	Wider nature strip to enable larger canopy trees	Pedestrian path-up to 2m for key routes	

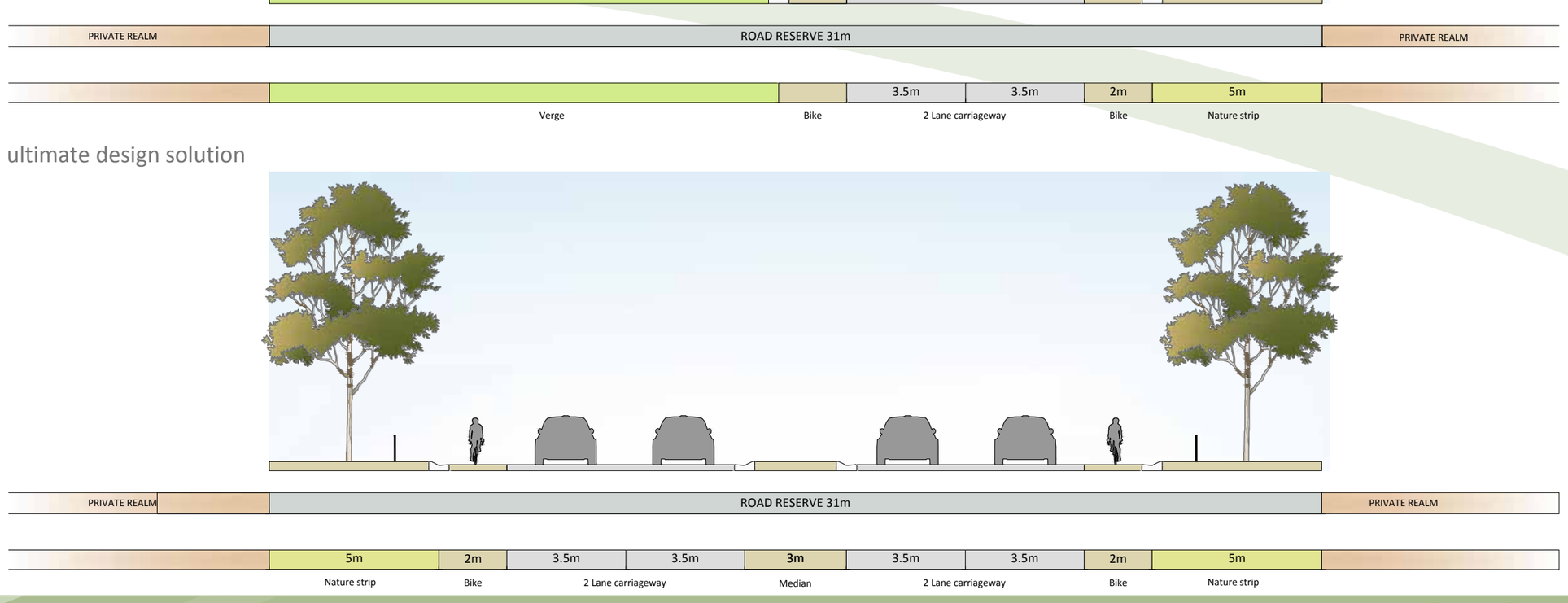
Scale
0 1m 2m 5m

Victoria
The Place To Be

Cross Section 10
boulevard connector - 31m
clyde north precinct structure plan

interim design solution





ultimate design solution

Scale
0 1m 2m 5m

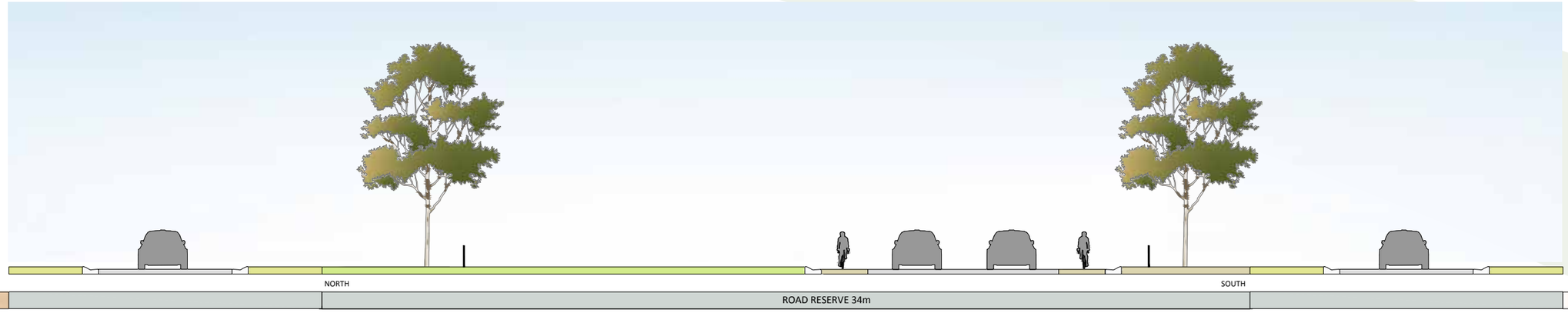
Victoria
The Place To Be

Cross Section 11

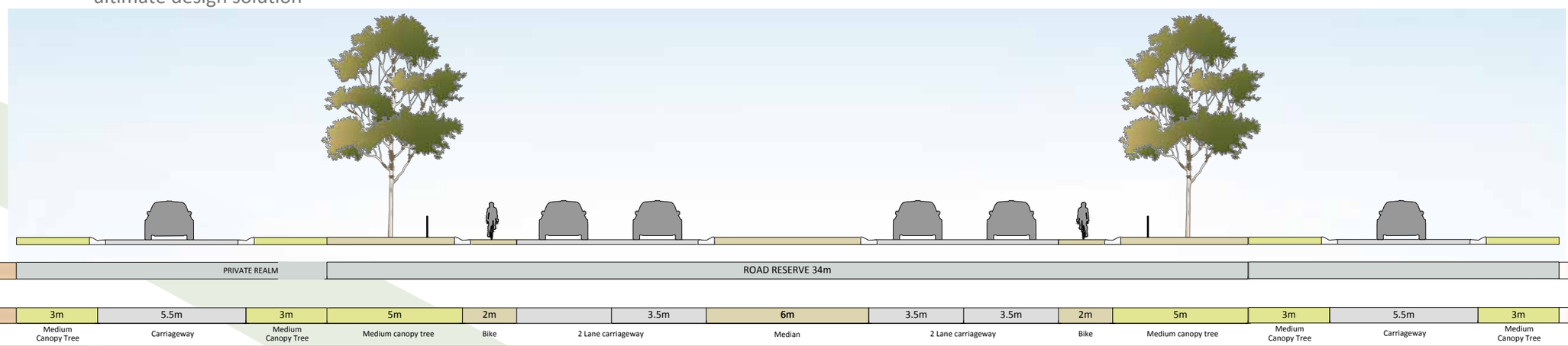
4 lane arterial - Grices Road - 31m: reduced median

clyde north precinct structure plan

interim design solution



ultimate design solution



Scale

0 1m 2m 5m

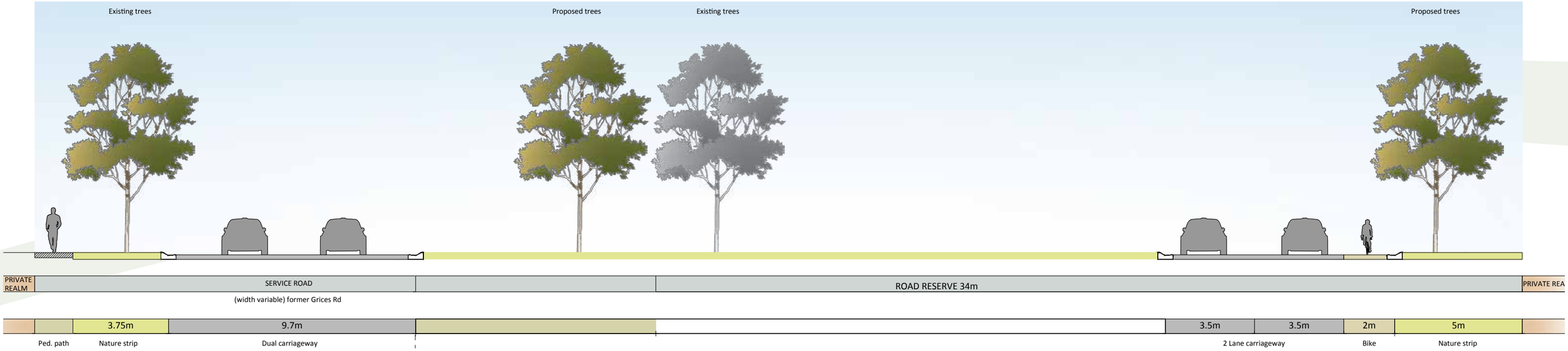
Victoria
The Place To Be

Cross Section 12 lane arterial - Grices Road - 34m

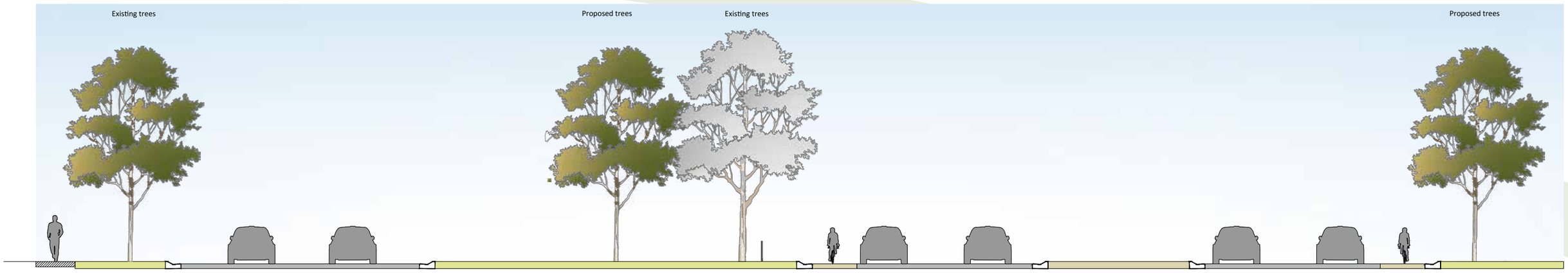
clyde north precinct structure plan

growth areas AUTHORITY

interim design solution



ultimate design solution



* Variable width to accommodate existing trees (up to 12m)

Scale
0 1m 2m 5m

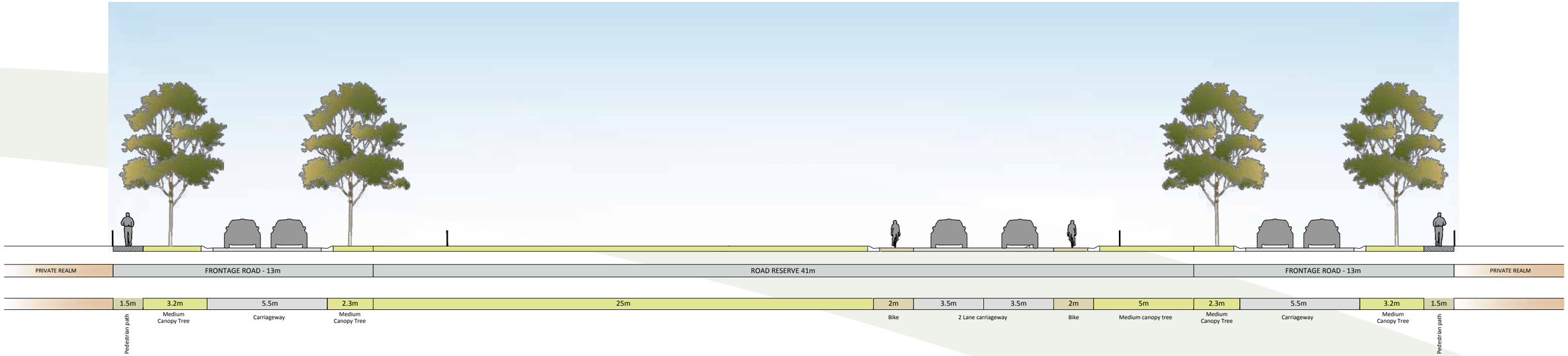
Victoria
The Place To Be

Cross Section 13

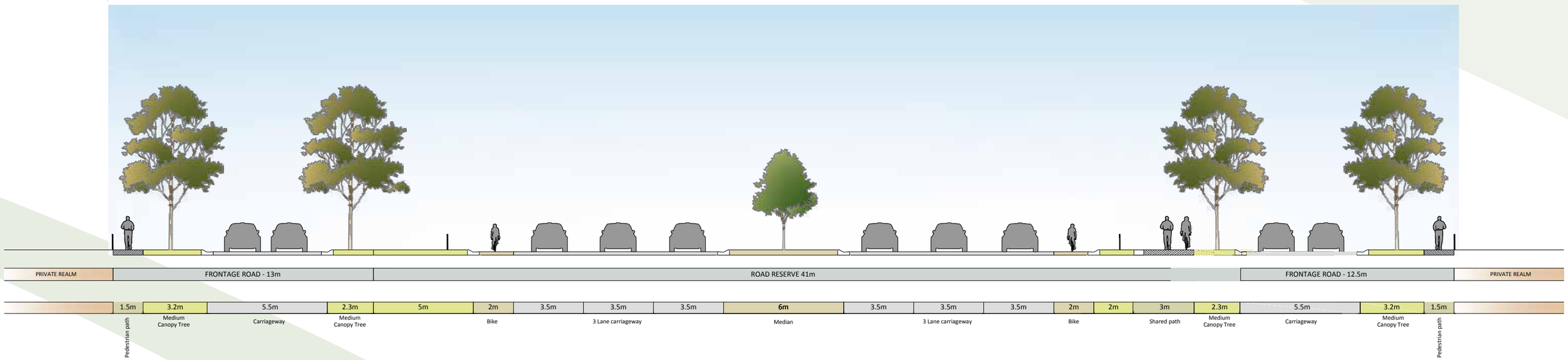
4 lane arterial adjacent former Grices Road - Grices Rd - 34m

clyde north precinct structure plan

interim design solution



ultimate design solution



Scale
0 1m 2m 5m

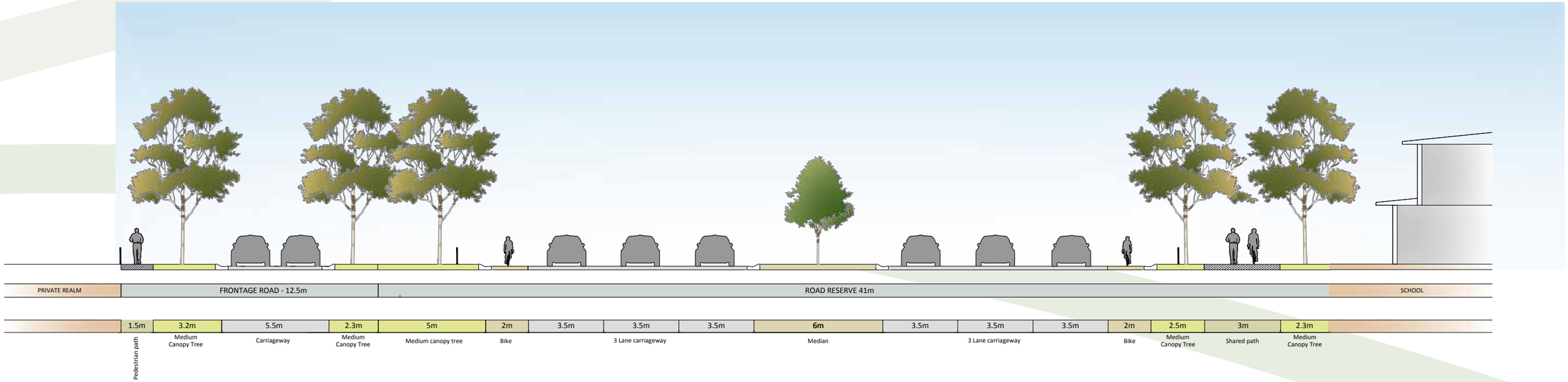
Victoria
The Place To Be

Cross Section 14

lane north-south arterial - 41m

clyde north precinct structure plan

ultimate design solution



PRIVATE REALM	FRONTAGE ROAD - 12.5m	ROAD RESERVE 41m													SCHOOL
	1.5m	3.2m	5.5m	2.3m	5m	2m	3.5m	3.5m	3.5m	**6m**	3.5m	3.5m	3.5m	2m	2.5m	3m	2.3m	
	Pedestrian path	Medium Canopy Tree	Carriageway	Medium Canopy Tree	Medium canopy tree	Bike	3 Lane carriageway			Median		3 Lane carriageway		Bike	Medium Canopy Tree	Shared path	Medium Canopy Tree	

Scale

0 1m 2m 5m

Victoria
The Place To Be

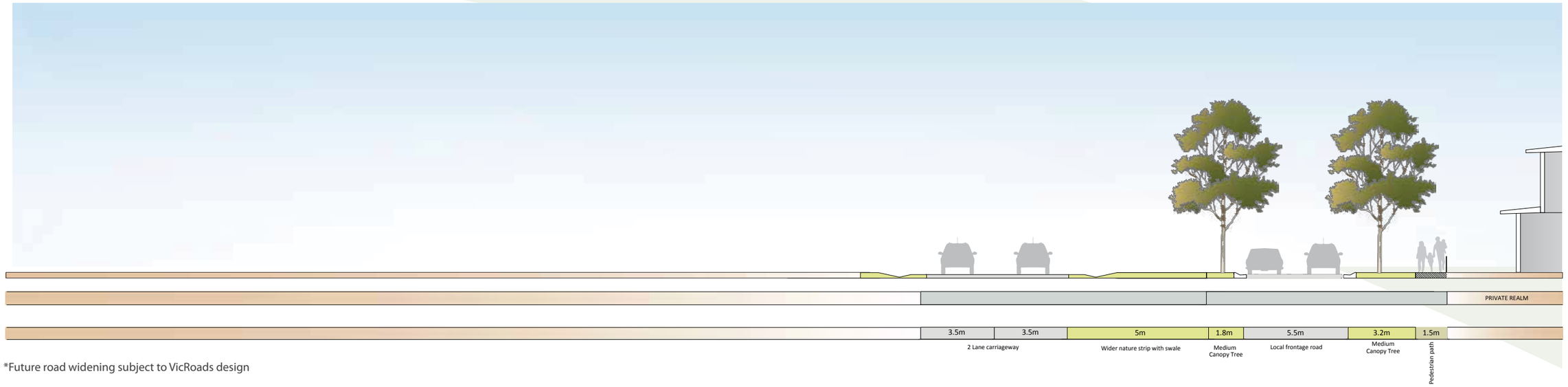
Cross Section 15

6 lane arterial with shared path adjacent Hillcrest Christian College - 41m

clyde north precinct structure plan

growth areas AUTHORITY

interim design solution



*Future road widening subject to VicRoads design

Scale
0 1m 2m 5m

Victoria
The Place To Be

Cross Section 16

Thompsons Road

clyde north precinct structure plan

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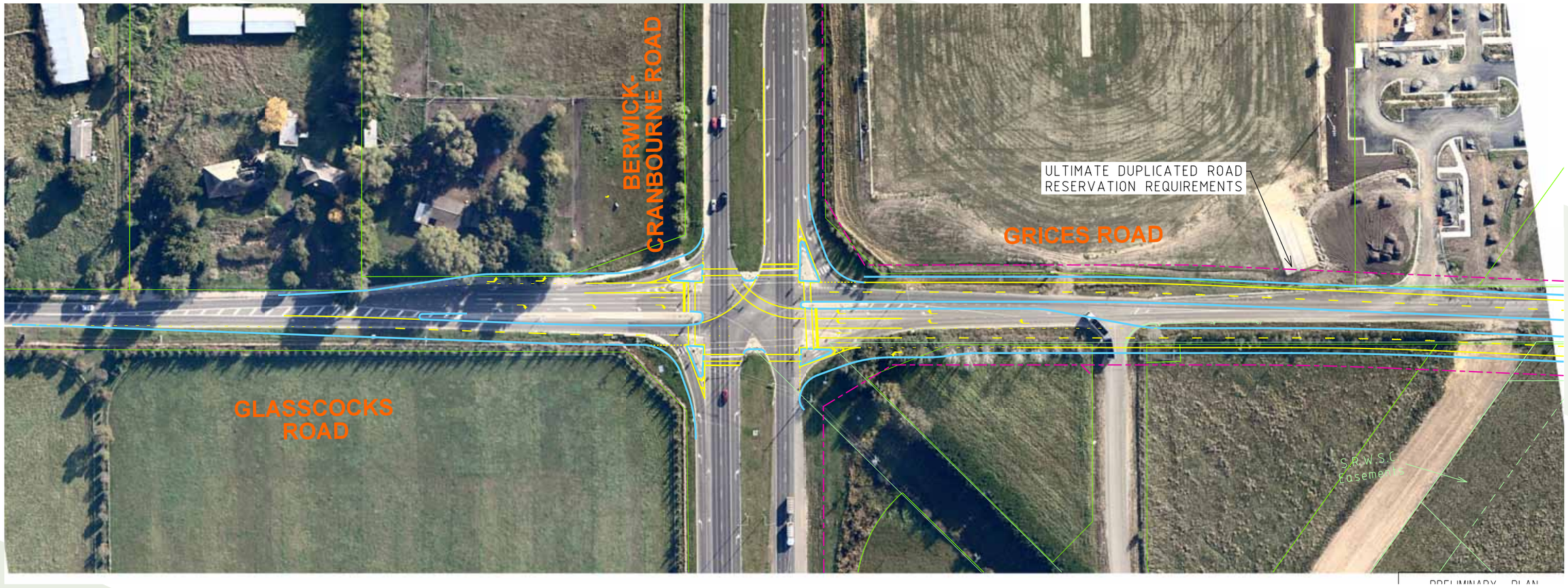


Figure 9 Intersection of Grices Road and Berwick-Cranbourne Road

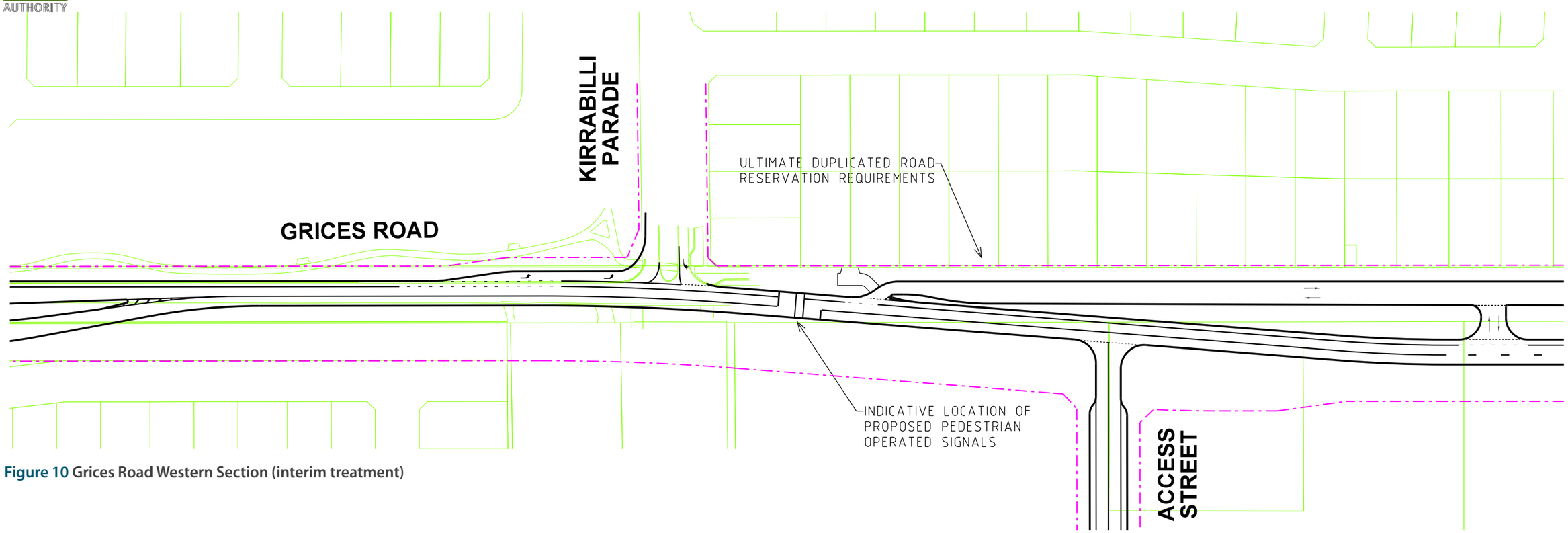


Figure 10 Grices Road Western Section (interim treatment)

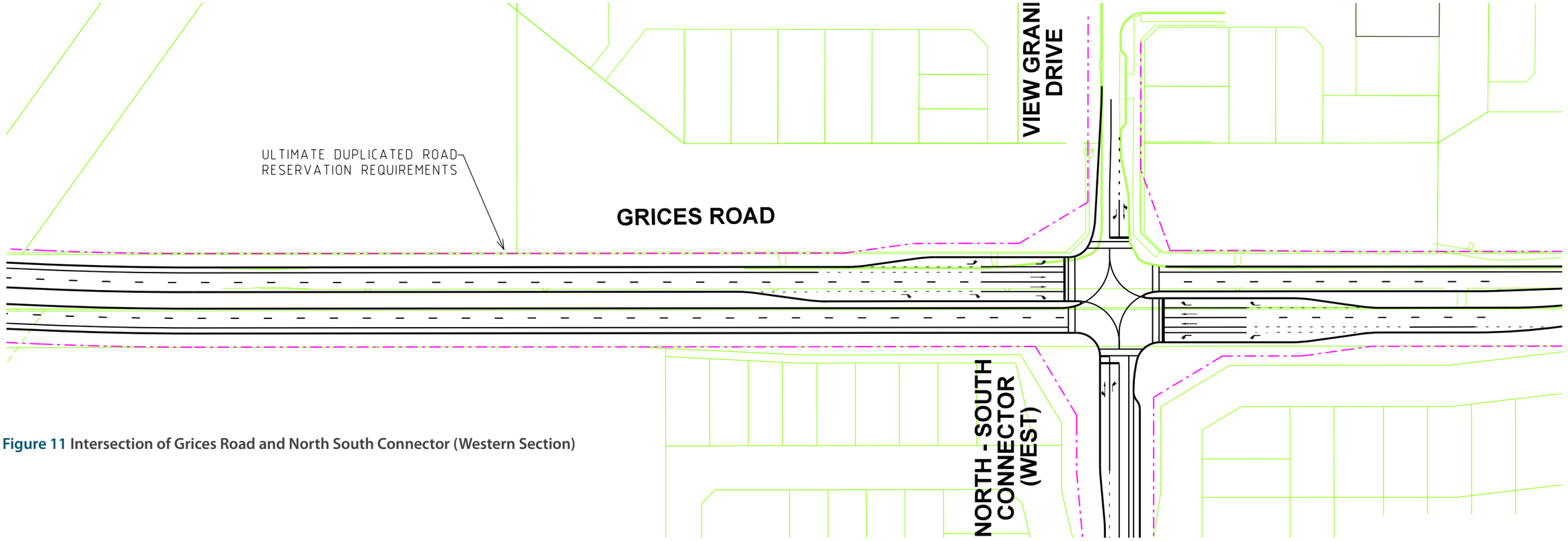


Figure 11 Intersection of Grices Road and North South Connector (Western Section)

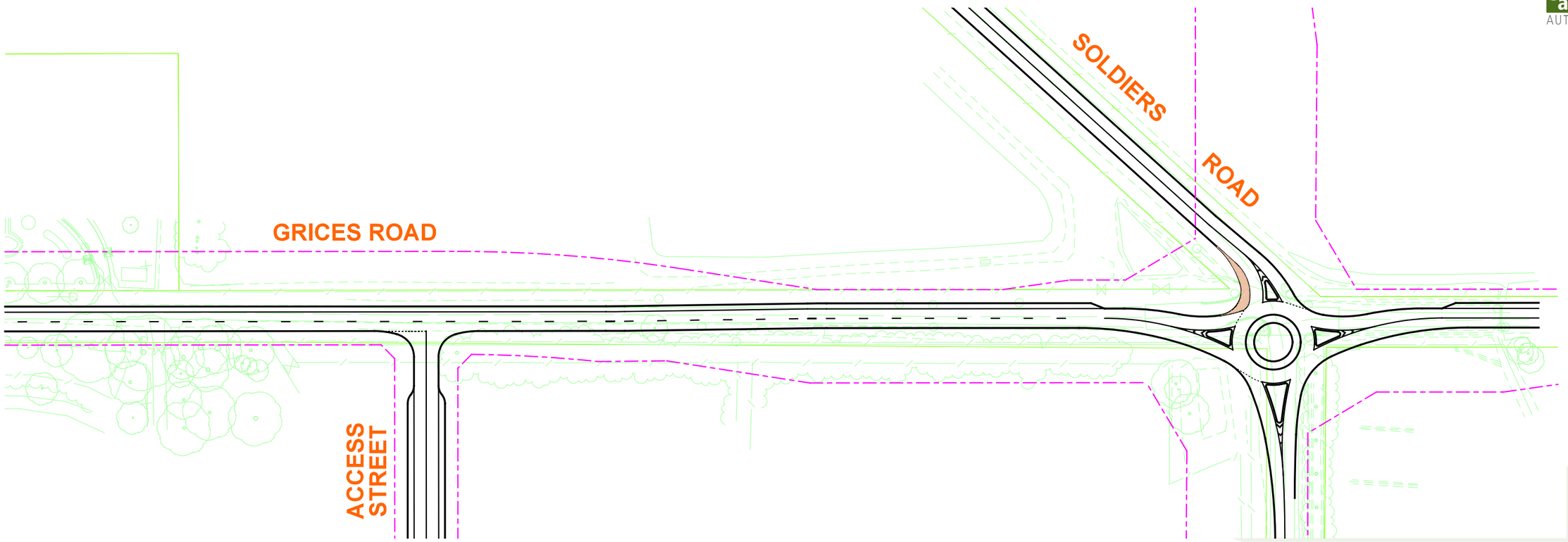


Figure 12 Intersection of Grices Road and Soldiers Road (Eastern Section)

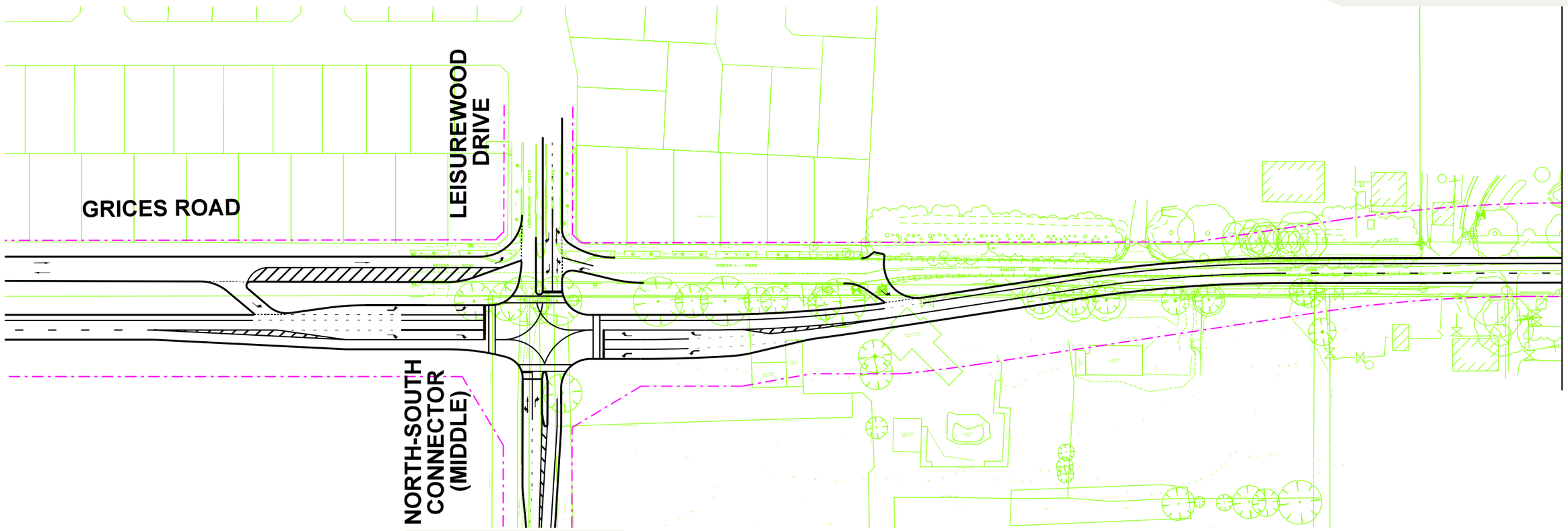
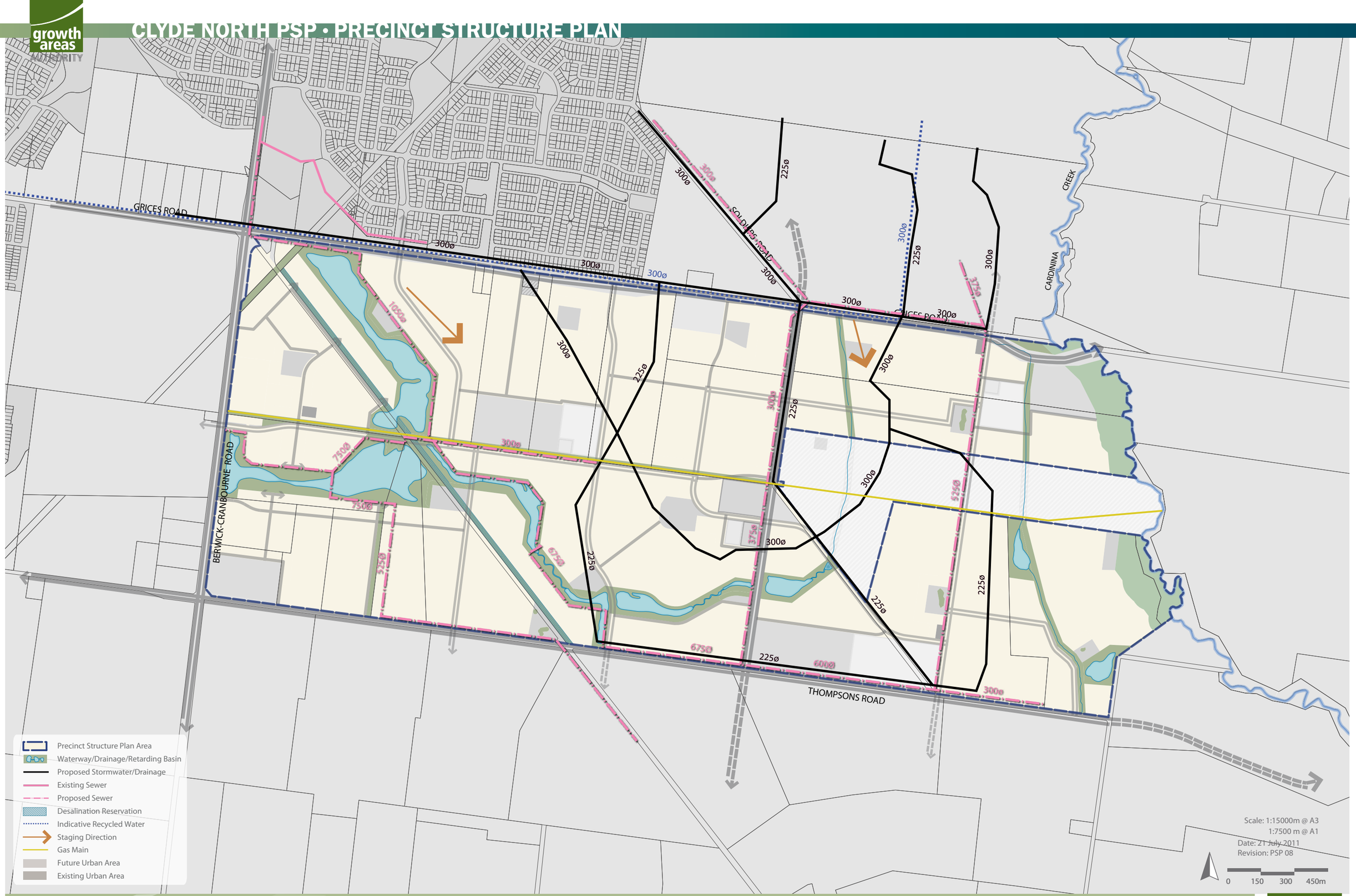


Figure 13 Intersection of Grices Road and Leisurewood Drive



plan 19

staging & utilities

clyde north precinct structure plan

4.7 UTILITIES AND DEVELOPMENT STAGING

4.7.1 Utilities objectives

To provide all developed lots, to the satisfaction of the Relevant Authority with:

- A potable water service;
- Electricity;
- A reticulated sewerage service;
- Drainage;
- Third pipe;
- Gas; and,
- Telecommunications.

4.7.2 Implementation

The objectives for utilities are met by implementation of all of the following:

- Meeting requirements of the relevant service authority/ provider;
- Planning and design guidelines at Section 4.7.3; and,
- Plan 19 Staging and Utilities Plan.

4.7.3 Planning and design guidelines

General

Provision of shared trenching within road reserves for utility service installation should be achieved.

Electricity

The following planning and design guidelines must be met:

- All new electricity supply infrastructure must be provided underground (excluding infrastructure to support cables with a voltage greater than 66kv and substations).
- New substations must be identified at the subdivision design response stage to ensure effective integration with the surrounding neighbourhood and minimise amenity impacts.
- The design of subdivision electricity infrastructure must consider the practicality of removing existing above ground electricity lines on the local and arterial road network by re-routing lines underground through the subdivision.

Development staging

Generally, staging will be determined by the development program of developers within the precinct and the availability of infrastructure services. Within this context, the following planning and design guidelines must be met:

- Development staging must not create circumstances in which residents will be unreasonably isolated from commercial and community facilities or public transport;
- Development staging must, to the extent practicable, be integrated with adjoining developments, including the timely provision of connecting roads and walking/cycling paths; and,
- Access to each new lot must be via a sealed road.

Table 15: Infrastructure and services required within the precinct to support the development of the precinct

Project Reference.	Project Description	Lead Agency	Timing: S = 2011–13 M = 2014–18 L = 2019+	Indicative Costs (2011)
Transport				
RD01	North-South Arterial – Land to achieve a 41 metre road reserve. Total land required is 7.69 hectares.	Council	M	$4,765,000
RD02	Grices Road (West) – Land required to achieve a 34 metre road reserve (including a 31m narrowing point at the heritage site) between Berwick Cranbourne Road and the North-South Arterial. Total land required is 6.135 hectares.	Council	S	$4,897,000
RD03	Grices Road (East) – Land required for the construction of a 34 metre road reserve between the North –South Arterial and Cardinia Creek. Total land required is 4.430 ha.	Council	S	$2,950,000
RD04	North-South Arterial – Construction of road, 2 lanes urban standard. Includes the construction of one culvert.	Council	S	$3,219,298
RD05	Grices Road (West) – Construction of Grices Road between Viewgrand Drive and the North-South Arterial, 2 lanes urban standard, including connections to the northern service road and pedestrian crossing point.	Council	S	$2,908,884
RD06	Grices Road (East) Construction of Grices Road between North-South Arterial and the Eastern Connector Road, 2 lanes urban standard.	Council	S	$2,265,708
RD13	Thompsons Road - Berwick Cranbourne Road to Soldiers Road. Construction to 2 lanes.	Council	L	$2,576,700
RD14	Grices Road (West) Duplication from Berwick-Cranbourne Road to Viewgrand Drive, 4 lanes urban standard.	Council	S	$1,989,298
RD15	Land for additional lane at Berwick-Cranbourne Road and Thompsons Road roundabout.	Council/VicRoads	L	$491,000
RD16	North-South Connector Road, Hillcrest Christian College	Council	M	$1,770,894
Intersections				
RD07	Grices Road West, Western Connector Road – Signalised Intersection 1. Construction.	Council	S	$3,817,307
RD08	Grices Road West, Eastern Connector Road – Signalised Intersection 2. Construction.	Council	S	$3,398,465
RD09	Grices Road/North South Arterial - Construction of roundabout.	Council	M	$1,581,831
RD10	North-South Arterial/Town Centre (Medium) – Signalised Intersection 3. Construction.	Council	M	$2,551,278
RD11	North-South Arterial/East-West Connector Road - Signalised Intersection 4. Construction.	Council	M	$3,192,761
RD12	East-West Collector Road/Mid-Block Berwick Cranbourne Road - Signalised Intersection 5. Construction. (56% total cost $3,312,062)	Council	M	$1,862,424
RD17	Berwick-Cranbourne Road, Grices Road - Signalised Intersection 6. Construction	Council	S	$1,589,970
RD18	Intersection flaring 0.02ha	Council	L	$20,000
RD19	Intersection flaring 0.02ha	Council	L	$20,000
RD20	Intersection flaring 0.02ha	Council	L	$20,000
Community Facilities				
	Provision of new primary school in western area	DEECD	M	Undetermined
	Provision of new primary school in eastern area	DEECD	M	Undetermined
	Provision of a new secondary school eastern area	DEECD	L	Undetermined
CI01	Community Centre 1 – Local Town Centre (Medium). Land required is 0.8 hectares.	Council	M	$2,800,000
CI02	Community Centre 1 – Local Town Centre (Medium). Construction of public hall, community rooms, maternal and child health and NGO rooms (adult education).	Council	M	$3,414,211
CI03	Community Centre 2 – Western Area (co-located with school). Land required is 0.4 hectares.	Council	S	$1,400,000
CI04	Community Centre 2 – Western Area (co-located with school). Construction of centre to include triple kindergarten and maternal and child health (interim only - to be relocated to Community Centre 1 in the long term).	Council	S	$3,887,801
CI05	Community Centre 3 – Eastern Area (co-located with school). Land required is 0.4 hectares.	Council	M	$1,400,000
CI06	Community Centre 3 – Eastern Area (co-located with school). Construction of centre to include triple kindergarten.	Council	M	$3,548,933

Project Reference.	Project Description	Lead Agency	Timing: S = 2011–13 M = 2014–18 L = 2019+	Indicative Costs (2011)
active open space				
OS01	Land (5.25ha) for Active Playing Fields 1 (North-eastern area) to accommodate construction of 1 football/cricket oval, cricket nets, 2 netball courts and car park.	Council	M	$6,301,000
OS02	Land (9.32ha) for Active Playing Fields 2 (South-eastern area) to accommodate construction of 2 football/cricket ovals, cricket nets, 6 tennis courts, 2 netball courts and car park. Includes land for indoor sporting complex (0.4ha).	Council	M	$11,636,000
OS03	Land (8.22ha) for Active Playing Fields 3 (Western area) to accommodate construction of 2 football/cricket ovals, cricket nets, 2 netball courts and car park.	Council	S	$9,043,000
OS04	Land (5.60ha) for Active Playing Fields 4 (South-western area) to accommodate 3 soccer pitches and 1 pavilion	Council	M	$7,004,000
Outdoor Active Recreation				
	Basic improvements to open space including earthworks, grading, seeding, garden beds, paths and trails, local playground construction	Relevant development proponent	S-L	Determined through future approval of specific landscape construction plans
AR01	Active Playing fields 1 – North-eastern area. Construction of 1 junior football/cricket oval, cricket nets, 2 netball courts and car park.	Council	M	$1,773,536
AR02	Pavilion 1 – North-eastern area. Construction of Pavilion to serve active playing fields 1 (football/cricket/netball).	Council	M	$1,520,796
AR03	Active Playing fields 2 – South-eastern area. Construction of 2 football/cricket ovals, cricket nets, 6 tennis courts, 2 netball courts and car park.	Council	M	$4,075,167
AR04	Pavilion 2 - South-eastern area. Construction of Pavilion to serve active playing fields 2 (football/cricket/tennis/netball).	Council	M	$1,927,111
AR05	Active Playing fields 3 – Western area. Construction of 2 football/cricket ovals, cricket nets, 2 netball courts and car park.	Council	S	$3,278,738
AR06	Pavilion 3 – Western area. Construction of Pavilion to serve active playing fields 3 (football/cricket/netball).	Council	S	$1,727,569
AR07	Construction of Indoor sporting complex co-located with the secondary school. (DCP constitutes 62% of total catchment)	Council	M	$2,468,132
AR08	Active Playing Fields 4 - South Western Area. Construction of 3 soccer pitches and car park.	Council	M	$2,315,134
AR09	Pavilion 4 - South-western area. Constuction of Pavilion to serve active playing fields 4 (soccer).	Council	M	$2,245,221

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5.0 PRECINCT INFRASTRUCTURE PLAN

5.1 INTRODUCTION

The Precinct Infrastructure Plan (PIP) sets out infrastructure and services required to meet the needs of the development of the precinct. The infrastructure and services are to be provided through a number of mechanisms including:

- Subdivision construction works by developers;
- Development contributions (community infrastructure levy and development infrastructure levy);
- Utility service provider contributions; and,
- Capital works projects by Council, State government agencies and community groups.

5.1.1 Subdivision Construction Works by Developers

As part of subdivision construction works, new development must meet the total cost of delivering the following infrastructure whether or not the infrastructure is within the Urban Growth Zone:

- Connector roads and local streets.
- Local bus stop infrastructure.
- Landscaping of all existing and future roads and local streets.
- Intersection works and traffic management measures along arterial roads, connector streets, and local streets.
- Council approved fencing and landscaping (where required) along arterial roads.
- Local pedestrian and bicycle paths along local arterial roads, connector roads and local streets and within local parks (except those included in the Development Contributions Plan).
- Basic improvements to local parks / open space including levelling, grassing, tree planting and local paths consistent with the Councils required construction standards.
- Local drainage systems.
- Infrastructure as required by utility services providers including water, sewerage, drainage (except where the item is funded through a Drainage Scheme) , electricity, gas, and telecommunications.

5.2 DEVELOPMENT CONTRIBUTIONS PLAN

A Development Contributions Plan has been prepared for the Clyde North Precinct in conjunction with this PSP. The Development Contributions Plan is an incorporated document of the Casey Planning Scheme.

5.3 INFRASTRUCTURE AND SERVICES REQUIRED TO SUPPORT DEVELOPMENT OF THE PRECINCT

Table 11 sets out the list of infrastructure and services required within the precinct to support its development, including details of:

- Infrastructure Group and Category;
- Project Title and Description;
- Lead Agency. (The agency responsible for the coordination and approval of the project. Other agencies and / or developers may have an involvement in the project); and,
- Timing and Indicative Capital Cost ($2011).
- Projects that may require state funding are subject to funding availability in accordance with state budget processes.

5.4 PROJECT CO-ORDINATION

Projects can be grouped and delivered together in a co-ordinated way if the projects will deliver significant benefits to the community beyond the benefits of each project being delivered individually.

Examples of the projects that could be grouped for coordinated delivery include:

- The western State primary school, community hub, playing fields, pavilion and car parking;
- The north-eastern State primary school, community hub, playing fields, pavilion and car parking;
- The south-eastern State secondary school, playing fields, pavilion, indoor centre (as proposed) and car parking; and,
- The Medium Local Town Centre and the community hub.

5.5 DELIVERY AND MONITORING

The Growth Areas Authority and City of Casey will jointly monitor the implementation of the Precinct Infrastructure Plan.

The Growth Areas Authority has established a Casey Infrastructure Working Group to manage the monitoring, review, implementation and prioritisation of identified projects.

6.0 OTHER INFORMATION

6.1 ACRONYMS

AHD	Australian Height Datum
AFL	Australian Football League
CAD	Central Activities District
CALC	Cranbourne Aquatic & Leisure Centre
CBD	Central Business District
CHMP	Cultural Heritage Management Plan
CIL	Community Infrastructure Levy
CPTED	Crime Prevention Through Environmental Design
DEECD	Department of Education & Early Childhood Development
DIL	Development Infrastructure Levy
DPCD	Department of Planning & Community Development
DoT	Department of Transport
DSE	Department of Sustainability & Environment
ECV	Environmental Conservation Value
GAA	Growth Areas Authority
GDA	Gross Developable Area
Ha	Hectare
HO	Heritage Overlay
LFPR	Labour Force Participation Rate
MCH	Maternal & Child Health
MSD	Melbourne Statistical Division
MSS	Municipal Strategic Statement
NAC	Neighbourhood Activity Centre
NDA	Net Developable Area
NDHa	Net Developable Hectare
NRHa	Net Residential Hectare
NGO	Non Government Organisation
NVPP	Native Vegetation Precinct Plan
PAC	Principle Activity Centre
PIP	Precinct Infrastructure Plan
PPTN	Principle Public Transport Network
PSP	Precinct Structure Plan
P-6	State School Prep to Year 6
P-12	State School Prep to Year 12
RBGC	Royal Botanic Gardens Cranbourne
Sq m	Square Metres
UGB	Urban Growth Boundary
UGZ	Urban Growth Zone
VIF	Victoria in Future
VPD	Vehicles Per Day
WSUD	Water Sensitive Urban Design

6.2 GLOSSARY

Active Open Space

Land set aside for the specific purpose of formal organised/club based sports.

Activity Centre

Provide the focus for services, commercial and retail based employment and social interaction. They are where people shop, work, meet, relax and live. They are well-served by public transport, they range in size and intensity of use. In the growth areas, these are referred to as principal activity centres, major activity centres, neighbourhood activity centres and local centres. For further information refer to Melbourne 2030.

Affordable Housing

Well-located housing, appropriate to the needs of a given household, where the cost (whether mortgage repayment or rent) is no more than 30 per cent of that household's income.

Arterial Road

A higher order road providing for moderate to high volumes at relatively high speeds typically used for inter-suburban journeys and linking to freeways, and identified under the Road Management Act 2004. All arterials are managed by the State Government.

Co-location

Adjoining land uses to enable complementary programs, activities and services and shared use of resources and facilities. For example, the co-location of schools and active open space.

Community Facilities

Infrastructure provided by government or non-government organisations for accommodating a range of community support services, programs and activities. This includes facilities for education and learning (e.g. government and non-government schools, universities, adult learning centres); early years (e.g. preschool, maternal and child health, childcare); health and community services (e.g. hospitals, aged care, doctors, dentists, family and youth services, specialist health services); community (e.g. civic centres, libraries, neighbourhood houses); arts and culture (e.g. galleries, museums, performance space); sport, recreation and leisure (e.g. swimming pools); justice (e.g. law courts); voluntary and faith (e.g. places of worship) and emergency services (e.g. police, fire and ambulance stations).

Connector Street

A lower order street providing for low to moderate volumes and moderate speeds linking local streets to the arterial network. Managed by the relevant local council, (see Table C1 in clause 56).

Conventional Density Housing

Housing with an average density of 10 to 15 dwellings per net developable hectare.

Development Contributions Plan

Document that sets out the contributions expected from each individual landowner to fund infrastructure and services. Refer to Part 3B of the Planning and Environment Act 1987.

Encumbered Land

Land that is constrained for development purposes. Includes easements for power/transmission lines, sewers, gas, waterways/ drainage; retarding basins/wetlands; landfill; conservation and heritage areas. This land may be used for a range of activities (e.g. walking trails, sports fields).

Freeway

A high speed and high volume road with the highest level of access control and typically used for longer distance journeys across the metropolitan area and country Victoria. All freeways are managed by VicRoads.

Frontage

The road alignment at the front of a lot. If a lot abuts two or more roads, the one to which the building, or proposed building faces.

Growth Area

Areas on the fringe of metropolitan Melbourne around major regional transport corridors that are designated for large-scale change, over many years from rural to urban use. Melbourne has five growth areas called Casey-Cardinia; Hume; Melton-Caroline Springs; Whittlesea and Wyndham.

Growth Area Framework Plan

Government document that sets long-term strategic planning direction to guide the creation of a more sustainable community in the growth areas.

High Density Housing

Housing with an average density of more than 30 dwellings per net developable hectare.

Housing Density (Net)

The number of houses divided by net developable area

Linear Open Space Network

Corridors of open space, mainly along waterways that link together forming a network.

Land Budget Table

A table setting out the total precinct area, net developable area and constituent land uses proposed within the precinct.

Labour Force Participation Rate (LFPR)

The percentage of working-age persons in an economy who are employed or who are unemployed but looking for a job.

Local Centre

An activity centre smaller than a neighbourhood activity centre with a catchment radius of about 400 metres and may include a small supermarket or convenience store of 500 square metres to 1,500 square metres.

Lot

A part (consisting of one or more pieces) of any land (except a road, a reserve, or common property) shown on a plan, which can be disposed of separately and includes a unit or accessory unit on a registered plan of strata subdivision and a lot or accessory lot on a registered cluster plan.

Lower Density Housing

Housing with an average density of less than 10 dwellings per hectare.

Major Activity Centre

Activity centres that have similar characteristics to Principal Activity Centres but serve smaller catchment areas. For further information refer to Melbourne 2030.

Major Employment Area

Areas identified on the Growth Area Framework Plan for economic and employment growth.

Medium Density Housing

Housing with an average density of 16 to 30 dwellings per net developable hectare.

Native Vegetation

Plants that are indigenous to Victoria, including trees, shrubs, herbs, and grasses

Native Vegetation Precinct Plan

A plan relating to native vegetation within a defined area that forms part of the precinct structure plan. Native vegetation precinct plans are incorporated into local planning schemes and listed in the schedule to Clause 52.16.

Neighbourhood Activity Centre

Centres that are an important community focal point and have a mix of uses to meet local needs. Accessible to a viable user population by walking, cycling and by local bus services and public transport links to one or more principal or major activity centres. For further information refer to Melbourne 2030.

Net Developable Area

Total amount of land within the precinct that is made available for development of housing and employment buildings, including lots, local and connector streets. Total precinct area minus community facilities, schools and educational facilities and open space, arterial roads and encumbered land. Small local parks defined at subdivision stage are included in net developable area. Net Developable Area may be expressed in terms of hectare units (i.e. Net Developable Hectare ("NDHa")).

Net Residential Area

As per Net Developable Area but excludes neighbourhood activity centres, non-government schools and other existing or permitted non-residential land uses (e.g. golf course sites). Net Residential Area may be expressed in terms of hectare units (i.e. Net Residential Hectare ("NRHa"))

Passive Open Space

Open space that is set aside for parks, gardens, linear corridors, conservation bushlands, nature reserves, public squares and community gardens that are made available for passive recreation, play and unstructured physical activity including walking, cycling, hiking, revitalisation, contemplation and enjoying nature.

Precinct Infrastructure Plan

Section within the precinct structure plan that defines the priority regional and local infrastructure requirements for future planning and investment by council and government agencies.

Precinct Structure Plan

A statutory document that describes how a precinct or series of sites within a growth area will be developed over time. A precinct structure plan sets out the broad environmental, social and economic parameters for the use and development of land within the precinct.

Principal Activity Centre

Activity centres that accommodate a mix of activities that generate higher numbers of trips, including business, retail, services and entertainment. Generally well served by multiple public transport routes and on the Principal Public Transport Network or capable of being linked to that network. Has a very large catchment covering several suburbs and attract activities that meet metropolitan needs. For further information refer to Melbourne 2030.

Principal Public Transport Network

A high-quality public transport network that connects Principal and Major Activity Centres, and comprises the existing radial fixed-rail network, extensions to this radial network and new cross-town bus routes.

Public Open Space

Land that is set aside in the precinct structure plan for public recreation or public resort; or as parklands; or for similar purposes. Incorporates active and passive open space.

Public Transport Interchange

Places where people can access or change between multiple public transport routes. For example, between train and bus or a multi-route bus station at a major activity centre

RAMSAR

The Convention on Wetlands is a global intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. It was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975.

Shared or Joint Use

When councils, schools and community service organisations come together to plan, build and in some cases jointly manage a single facility to be used by multiple service providers. E.g. Using a school as a facility for wider community utilisation.

Social Housing

Non-profit housing owned and managed for the primary purpose of meeting social objectives such as affordable rents, responsible management, security of tenure and good location in relation to employment services. The term encompasses public housing and includes housing owned or managed by the community.

Social Infrastructure

Community facilities plus public open space.

Urban Growth Boundary

A statutory planning management tool used to set clear limits to metropolitan Melbourne's urban development.

Urban Growth Zone

Statutory zone that applies to land that has been identified for future urban development. The UGZ has four purposes: (1) to manage transition of non-urban land into urban land; (2) to encourage development of well-planned and well-serviced new urban communities in accordance with an overall plan; (3) to reduce the number of development approvals needed in areas where an agreed plan is in place; and (4) to safeguard non-urban land from use and development that could prejudice its future urban development.

Water Sensitive Urban Design

A sustainable water management approach that aims to

provide water-quality treatment, flood management to reduce the pollution carried to our waterways and more sustainable urban landscapes. Key principles include minimising water resistant areas; recharging natural groundwater aquifers (where appropriate) by increasing the amount of rain absorbed into the ground; encouraging onsite reuse of rain; encouraging onsite treatment to improve water quality and remove pollution, and using temporary rainfall storage (retarding basins/wetlands) to reduce the load on drains and improve landscape viability.

6.3 SUPPORTING INFORMATION

The following documents may assist in understanding the background to the vision, objectives and other requirements of this Precinct Structure Plan.

A Fairer Victoria 2008: Strong People, Strong Communities, Department of Planning and Community Development, May 2008

A Plan for Melbourne's Growth Areas, Department of Sustainability and Environment, 2005

A Strategic Framework for Creating Liveable New Communities, Growth Areas Authority, March 2008

Activity Centre Design Guidelines, Department of Sustainability and Environment, January 2005

Central Region Sustainable Water Strategy, Department of Sustainability and Environment, 2004

Design for Trucks, Buses and Emergency Vehicles on Local Roads, VicRoads, 1998

Development Contributions Guidelines, Department of Planning and Community Development, March 2007

Flora and Fauna Guarantee Strategy: Victoria's Biodiversity, Department of Natural Resources and Environment, 1997

Growing Victoria Together II, State of Victoria, March 2005

Growing Victoria Together, Department of Premier and Cabinet, 2001

Guidelines for Conducting Historical Archaeological Surveys, 2008, Heritage Council of Victoria and Heritage Victoria

Guidelines for Higher Density Residential Development, Department of Sustainability and Environment, October 2004

Healthy by Design: A planners' guide to environments for active living, National Heart Foundation of Australia, 2004

Linking Melbourne: Metropolitan Transport Plan, State of Victoria, November 2004

Linking People and Spaces: A Strategy for Melbourne's Open Space Network, Parks Victoria, 2002

Meeting Our Transport Challenges, State of Victoria, May 2006

Melbourne 2030: Planning for Sustainable Growth, State of Victoria, 0ctober 202

Our Environment, Our Future, Department of Sustainability and Environment, 2006

Port Phillip and Westernport Regional Catchment Strategy, Port Phillip Regional Catchment and Land Protection Board, 1997

Planning for all of Melbourne: The Victorian Government Response to the Melbourne 2030 Audit, State of Victoria, 2008

Planning for Community Infrastructure in Growth Areas, Australian Social and Recreation Research Pty Ltd for Growth Area Councils, April 2008

Public Transport Guidelines for Land Use Development, Department of Transport, 2008

Safer Design Guidelines for Victoria, Department of Sustainability and Environment, June 2005

Schools as Community Facilities, Department of Education and Training, November 2005

Shared Facility Partnership: A Guide to Good Governance for Schools and the Community, Department of Education and Early Childhood Development, December 2007

The Victorian Greenhouse Strategy, Department of Natural Resources and Environment, 2002

Traffic Model for the Casey-Cardinia Growth Corridor, prepared for the Growth Areas Authority, Ashton Traffic Services Pty Ltd, September 2008

Urban Development Program, Department of Planning and Community Development, annual

Urban Stormwater Best Practice Environmental Management Guidelines, CSIRO, 1999

VicRoads Access Management Policies Version 1.02, VicRoads, May 2006.

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partners in creating new communities