Amendment C119 to the Hume Planning Scheme

Greenvale North [R1] - Precinct Structure Plan

INCLUDES THE GREENVALE NORTH NATIVE VEGETATION PRECINCT PLAN

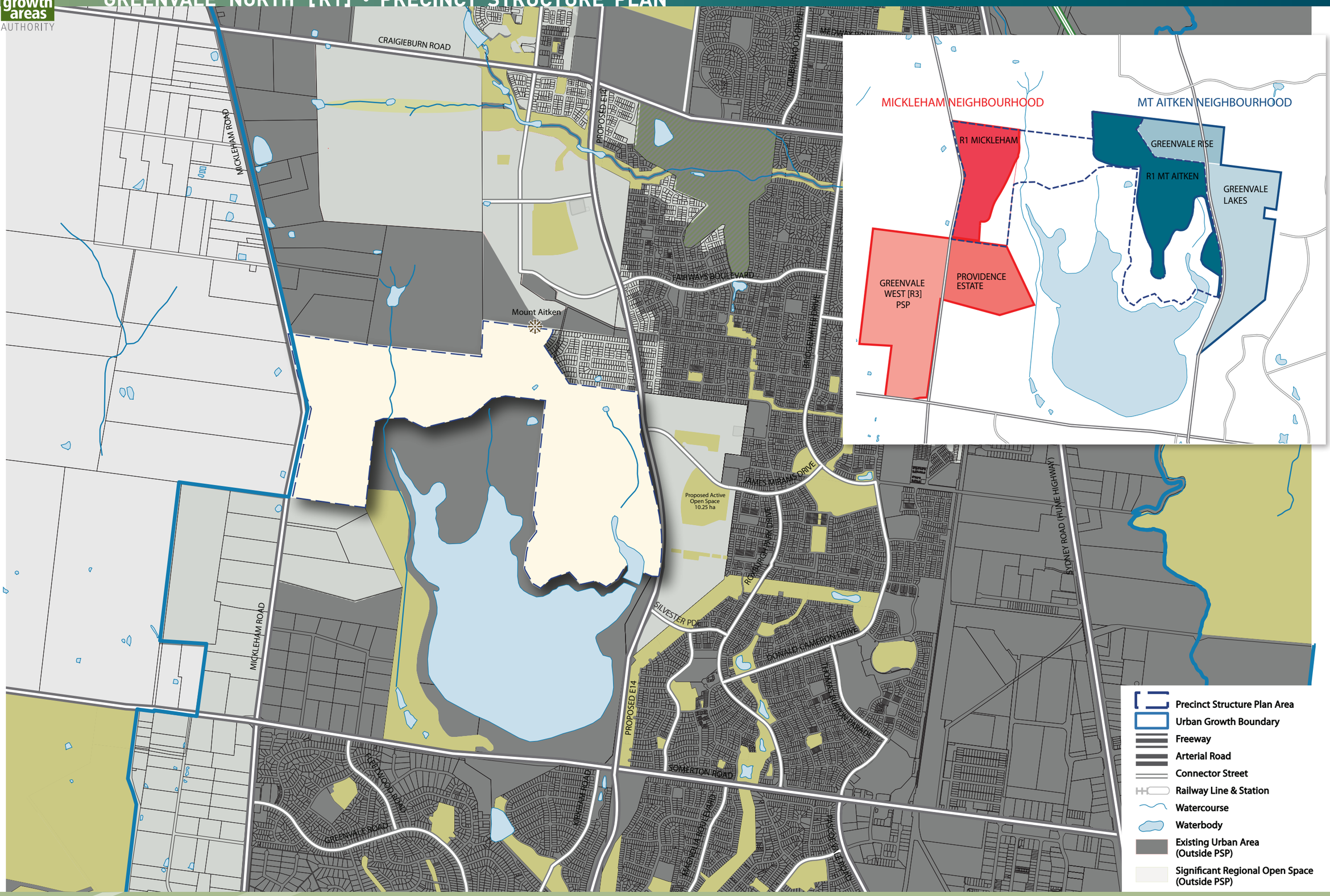
JANUARY 2011

PLANS

TABLES

CROSS-SECTIONS

CONTENTS



plan 1

precinct structure plan area

greenvale north [R1] precinct structure plan

1.0 INTRODUCTION

1.1 ROLE OF THE PRECINCT STRUCTURE PLAN

The Greenvale North R1 Structure Plan (the PSP) has been prepared by the Growth Areas Authority with the assistance of the Hume City Council, Government agencies, service authorities and major stakeholders.

The PSP is a long-term plan to guide future urban development. It describes how the land is expected to be developed, the services planned to support development and how they will be delivered.

The PSP:

- Enables the transition of non-urban land to urban land.
- Sets the vision for how land should be developed and the desired outcomes 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.
- Determines 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 context of the surrounding long term urban development.
- Protects the water quality of Greenvale Reservoir from the impacts of surrounding development by adopting Melbourne Water's requirements, including diversion of all stormwater flows with up to a 1 in 1 million Annual Exceedance Probability (AEP) .

The PSP is informed by:

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

1.2 ROLE OF THE NATIVE VEGETATION PRECINCT PLAN

The Greenvale North R1 Native Vegetation Precinct Plan (NVPP) has been prepared for the purposes of Clause 52.16 of the Hume Planning Scheme. It identifies:

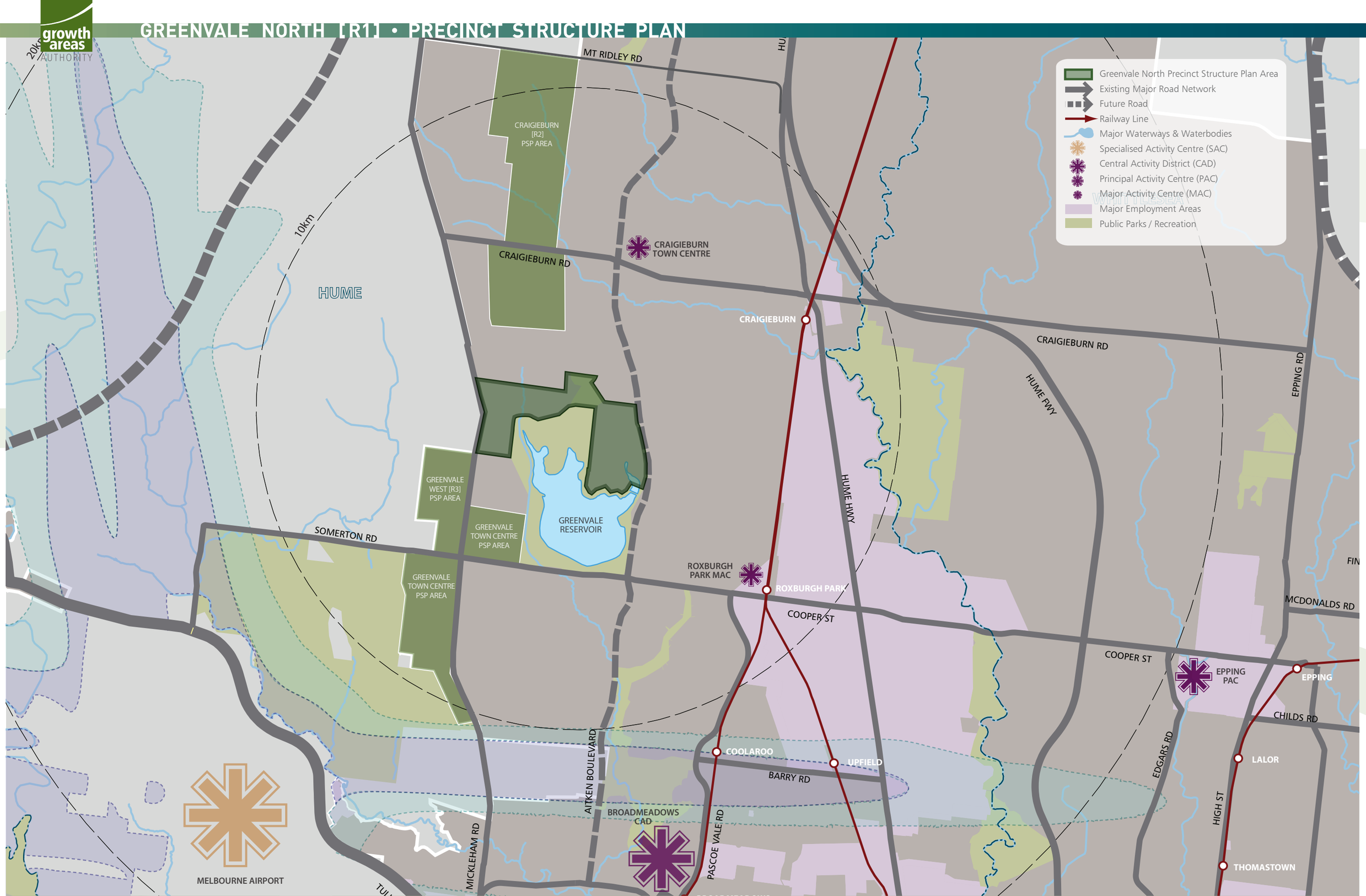
- Native vegetation which may be removed without a planning permit;
- The offsets that must be provided for the native vegetation which can be removed; and
- Native vegetation which cannot be removed without a planning permit.

The Greenvale North R1 NVPP has been included within the Greenvale North R1 Precinct Structure Plan as anticipated by Clause 52.16 of the Hume Planning Scheme.

The NVPP is contained within the Precinct Structure Plan and implements the vision as set out in the PSP. However, it is also a stand alone document which is incorporated within the Hume Planning Scheme. However, the Greenvale North (R1) NVPP is a seperate incorporated document. Not withstanding it is found within this PSP.

Clause 52.16 forms the statutory basis for the preparation and implementation of the NVPP. Users of this document should note that the statutory basis for the Greenvale North R1 Native Vegetation Precinct Plan is different to the Greenvale North R1 Precinct Structure Plan.

The Greenvale North R1 Native Vegetation Precinct Plan applies to the land identified in Map 1 of the NVPP.



plan 2

regional context

greenvale north [R1] precinct structure plan

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1.3 LAND TO WHICH THE PRECINCT STRUCTURE PLAN APPLIES

The PSP applies to approximately 237 hectares of land as shown on Plan 1.

The precinct covers an irregularly shaped area generally located to the north of Somerton Road, east of Mickleham Road, and west of the existing north-south urban front formed by Roxburgh Park and Craigieburn, in the City of Hume.

The precinct comprises two distinct areas that make up the PSP as shown on the inset of Plan 1:

- The western portion, which has direct connections with Greenvale and the Greenvale West R3 PSP which forms the future expansion of Greenvale. This portion is referred to in this PSP as the "Mickleham Neighbourhood";
- The eastern portion of the precinct has proximity and connection with the established Roxburgh Park community and is referred to in the PSP as the "Mt Aitken Neighbourhood."

Although the Greenvale Reservoir is located outside of the precinct boundary, it is considered to be a central feature of the PSP as a key component of Melbourne's water supply system for the city's north western suburbs. Development to the north of the Reservoir has the potential to lead to contaminated run-off entering the water supply without protective measures being implemented. Other features that are located adjacent to the plan area are the existing Aitken Hill Conference and Events Venue to the north of the precinct, and the Aitken Boulevard (E14) Arterial road reservation and electricity transmission line easement abutting the precinct on its eastern edge. These features play an important role in determining the future urban structure of the precinct. The precinct is proximate to existing low density residential development near the intersection of Mickleham and Somerton Roads and the Mt Aitken College.

1.4 IMPLEMENTATION

The PSP is implemented by:

- Development proponents who develop land generally in accordance with this PSP.
- The Victorian Government and the Hume City Council by funding, delivering and managing a range of infrastructure and services to support the development of the precinct.
- The Hume Planning Scheme.

The PSP is implemented through the Hume Planning Scheme including:

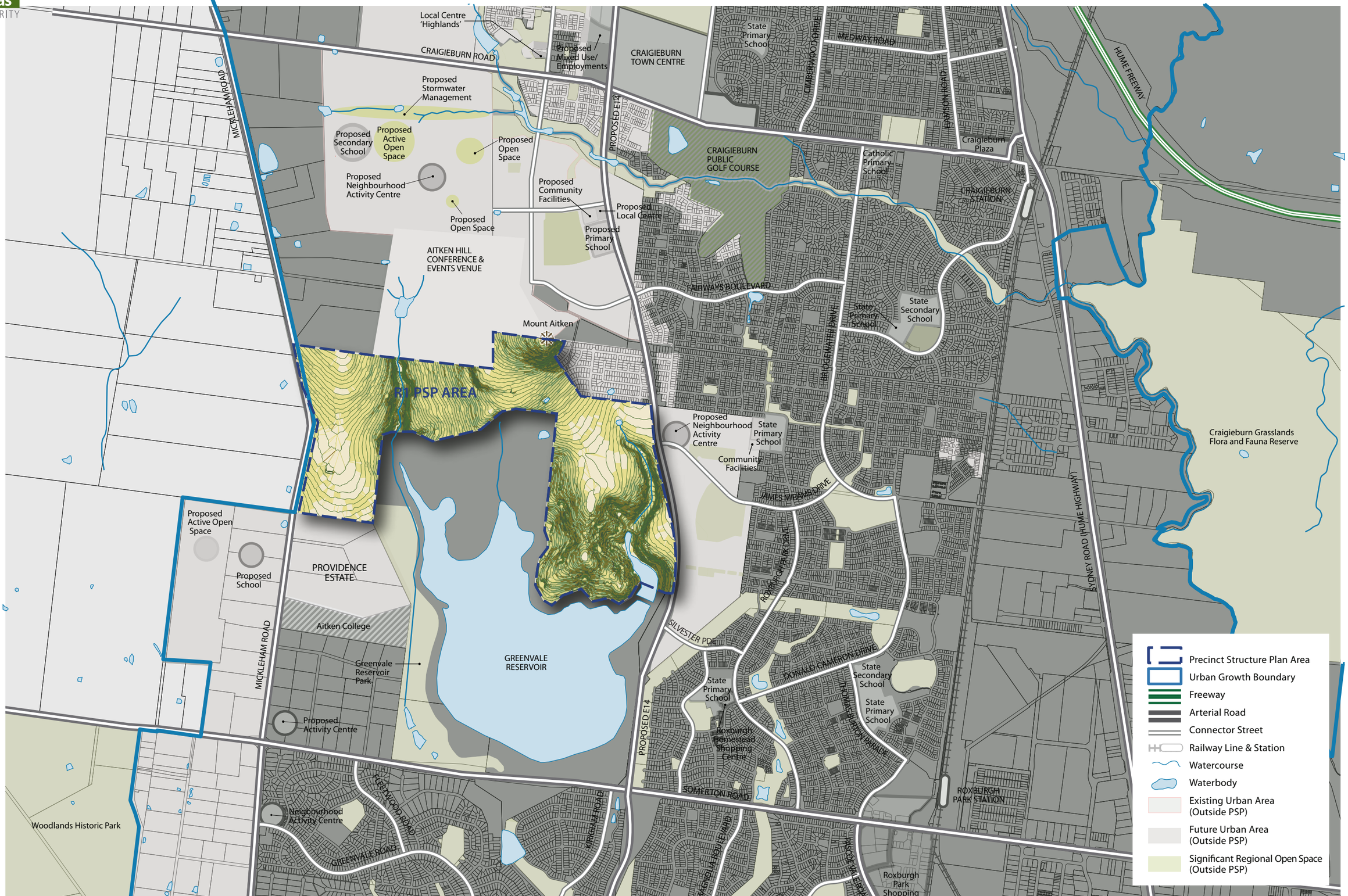
- Schedule to the Urban Growth Zone;
- The Greenvale North R1 Development Contributions Plan; and
- The Greenvale North R1 Native Vegetation Precinct Plan (which forms Part 2 of this PSP).

1.5 FURTHER REFERENCE MATERIAL

A Glossary and other information such as technical studies supporting the preparation of this PSP are listed in Section 7.3 – Supporting Information.

1.6 MONITORING AND REVIEW

The GAA and Hume City Council 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.



plan 3

existing local context

greenvale north [R1] precinct structure plan

Victoria The Place To Be

2.0 LOCAL CONTEXT AND SITE DESCRIPTION

2.1 METROPOLITAN AND REGIONAL CONTEXT

The Greenvale North R1 PSP area is located approximately 23km north of Melbourne within the Hume growth corridor. (refer Plan 2).

The Hume Growth Area extends beyond the Western Ring Road and the established urban areas of Gladstone Park and Broadmeadows and includes the suburbs of Greenvale, Roxburgh Park and Craigieburn in the City of Hume, and Donnybrook in the neighbouring City of Whittlesea. The corridor is generally bordered by the Hume Highway/Freeway to the east and Mickleham Road to the west.

The corridor is characterised by strong population growth occurring on various fronts, including Craigieburn and Greenvale. The population base of Hume City Council is projected to increase from its current level of around 170,000 residents to over 220,000 people by 2026.

The proposed Craigieburn Town Centre is planned to be a substantial centre serving existing and future residents of the growth corridor. The Craigieburn Town Centre site is situated on the north-eastern corner of Craigieburn Road and the proposed Aitken Boulevard (E14) Transit Route, making it easily accessible from the surrounding region. The town centre is planned to provide in excess of 50,000sqm of retail floorspace and local employment opportunities through service business, office and government agencies.

In addition, the Hume Growth Area:

- Is a strategic transport corridor of State and national significance;
- Functions as a gateway to Melbourne for interstate and international visitors;
- Has large areas available for development;
- Has significant water catchments, creek corridors, remnant vegetation and mineral resources on its east and west boundaries;
- Has important landscape features such as volcanic cones; and
- Has biodiversity assets including grasslands and grassy woodlands.

The Hume Growth Area Plan:

- Supports greater residential development and employment around existing rail-based transport;
- Proposes activity centres, including the Broadmeadows Transit City, Roxburgh Park and near to the Craigieburn Station;
- Identifies the E14 as a central road, helping to alleviate potential congestion on Mickleham Road and the Hume Highway;
- Links the Greenvale Reservoir regional park to both the Merri Creek corridor and the Metropolitan trails network; and
- Requires neighbourhood parks and waterway corridors with natural assets such as remnant native vegetation to be established, many within walking distance of residential areas.

The PSP incorporates part of the catchment of the Greenvale Reservoir and one of the highest elevations within Metropolitan Melbourne, Mt Aitken at 270 metres AHD. This presents a unique location with undulating topography, extensive views and the presence of a dominant hilltop which creates a landscape and sense of place to which urban form can respond.

The development constraints create potential for more isolated and remote residential neighbourhoods on the periphery of their respective community hubs, but presents an opportunity to place an urban community in a location that responds to the extensive views and topography of the site. This is a unique housing location in a metropolitan context and will provide a different urban outcome.

The PSP primarily provides for residential development representing approximately 1,300 dwellings to accommodate a future population of approximately 3,500.

The Greenvale North R1 PSP area is located 3.5km west of an important employment area aligning with the Hume Highway and the eastern seaboard rail lines. The precinct is less than 8kms to the north of the future employment area to be developed within the Melbourne Airport environs. The interrelationship between these key employment areas provides for strong and sustainable communities by placing people closer to jobs.

2.2 LOCAL CONTEXT

2.2.1 HISTORY

The traditional indigenous owners of land within the precinct were the Wurundjeri clan.

Since European settlement of the area, land in the Craigieburn and Greenvale area has been predominantly used for farming and agricultural purposes. Craigieburn and to a lesser extent, Greenvale, retained their rural character until the 1970's when greater populations moved into the newly emerging area.

2.2.2 SURROUNDING NEIGHBOURHOODS

A number of residential neighbourhoods exist within the immediate surrounding context of the Greenvale North R1 PSP area.

These are:

BROADMEADOWS

Broadmeadows, as the Principal Activity Centre for the Hume corridor, provides a range of higher order retail community and recreational services to meet both public and private needs. Recent state government announcements have designated Broadmeadows as one of the main regional activity centres and service precincts outside central Melbourne. Its role as a higher order regional services precinct will ensure its growth.

GREENVALE

Whilst the large suburb of Greenvale directly interfaces with most of the Greenvale North R1 precinct, the Greenvale Town Centre is located on Mickleham Road, just south of Somerton Road. This suburb grew rapidly in the 1980's to 1990's with growth slowing after 2000. The PSP will provide an impetus for further growth in Greenvale, and will reinvigorate activity within the commercial areas of Greenvale.

ROXBURGH PARK

Covering almost 600ha, Roxburgh Park is a recently established suburb with approximately 20,000 residents. Developed as a complete "new community" by the ULA (now VicUrban), Roxburgh Park is located directly to the east of the Greenvale North R1 PSP area and is bounded by the Railway Line to the east. Roxburgh Park is the principal community entity or community of interest to which the Mt Aitken Neighbourhood of the precinct relates.

CRAIGIEBURN

Craigieburn is located to the northeast of the Greenvale North R1 PSP area. Craigieburn currently has a population of over 20,000 and is continuing to grow. There are two Principal Activity Centres within Craigieburn with good access to the proposed Aitken Boulevard (E14) Transit Route, the Hume Freeway as well as Craigieburn Station which is part of the metropolitan train network.

HIGHLANDS ESTATE

The Highlands Estate is located immediately to the north of the Greenvale North R1 PSP area. The estate is currently under development and is expected to be completed within 5 years.

GREENVALE WEST R3 PSP AREA

The Greenvale West R3 PSP area caters for a future residential community of up to 3700 people on Mickleham Road to the south of Greenvale North R1. The Mickleham neighbourhood, in the Greenvale North R1 precinct will have a strong relationship with and effectively form part of Greenvale West R3.

PROVIDENCE ESTATE

The land immediately south of the Mickleham Neighbourhood has approval for a residential development called the 'Providence Estate', comprising a future population of approximately 1,500 residents.

GREENVALE LAKES

Greenvale Lakes comprises an approved development of approximately 1000 lots immediately east of the PSP. Greenvale Lakes forms an expansion and integrated part of Roxburgh Park. This development will provide schools, community centres and active open space for the Mt Aitken Neighbourhood, within the PSP.

GREENVALE RESERVOIR

The PSP incorporates land falling to and within the 'natural' catchment of the Greenvale Reservoir. The 'natural' catchment of the Greenvale Reservoir is shown on Plan 5 and is referred to as the Greenvale Reservoir Protection Area. The Reservoir effectively divides the two components of urban development within the precinct, reinforcing each component's orientation to the larger residential communities in Roxburgh Park and Greenvale West R3. Development in the Greenvale Reservoir Protection Area necessitates protective measures be constructed to ensure no waterborne contaminates enter the Reservoir.

MICKLEHAM

A small community of rural residential lots is established in the Mickleham precinct, north of the site. The area east of Mickleham Road now falls within the 2010 Urban Growth Boundary.

2.2.3 TRANSPORT AND MOVEMENT

The existing arterial road network includes the following key elements:

Craigieburn Road and Somerton Road provide the main east-west linkages for this section of the Hume Corridor.

Mickleham Road provides an important north-south link.

When constructed, the Aitken Boulevard (E14) Transit Route will extend from north of Donnybrook Road in the north and potentially connect with the Western Ring Road in the south.

The Principal Public Transport Network (PPTN) is accessed by the Craigieburn rail line via Roxburgh Park railway Station, 5 km to the east of the Greenvale North R1 PSP area.

In addition the Hume Growth Area 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;
- Proposing public transport investments including improved bus access to Craigieburn and Roxburgh Park Railway Station, and bus services between major activity centres;
- Supporting improved road and public transport connections with the airport precinct. This is achieved through the Aitken Boulevard (E14) Transit Route, which is namely a critical north-south transit route connecting Melbourne Airport, in the south, with the OMR and employment areas in the north. This route will be critical to enabling the public transport and road network requirements of the corridor to be met and a key source of movement for the PSP area;
- Identifying a proposed major road network including recognition of Aitken Boulevard (E14) Transit Route as a central north-south transport spine, helping to alleviate potential congestion on Mickleham Road and the Hume Highway; and
- Extending the principal bicycle network and the metropolitan trail network to key locations.

2.2.4 EMPLOYMENT AND ACTIVITY CENTRES

The hierarchy of activity centres within the Hume region is established by the Growth Areas Framework Plans and Hume planning policies.

The hierarchy includes:

- Principal Activity Centre – Broadmeadows;
- Major Activity Centres – Craigieburn Town Centre, Craigieburn, Roxburgh Park and Greenvale; and
- Neighbourhood Centres (large) – Are proposed within the Craigieburn R2 Precinct and the Highlands Estate.
- The new residents moving into the PSP areas will form part of the core catchment for the Craigieburn Town Centre.

The Greenvale North R1 PSP area has proximity to the following key employment areas:

- Hume Highway Employment Area;
- Expansion to the North of the Hume Highway Employment Area; and
- Expanded Melbourne Airport employment area.

The continued growth of both the Hume Highway Employment Area and Melbourne Airport create significant employment opportunities both east and west of the PSP area.

2.2.5 OPEN SPACE

The precinct will have unique and easy access to major metropolitan and regional parkland including Woodlands Historic Park and Greenvale Reservoir Park.

Woodlands Historic Park was established as a public park in 1980. It now totals over 700 ha. It is approximately 4km south west from the PSP area.

Greenvale Reservoir Park is approximately 3.5km south of the precinct and offers visitors 53ha of open space adjacent to the Greenvale Reservoir.

Craigieburn Public Golf Course is located 2.5km to the east of the precinct.

Hume City Council has developed a set of standards for open space provision that will be addressed in this PSP for the provision of local parks. Given the fragmented nature of urban development within the plan area, this PSP will also contribute to provision of active open space outside the plan area at Greenvale Lakes and the Greenvale West R3 PSP.

In addition The Hume Growth Area Plan provides for regional open space by:

- Linking the Greenvale Reservoir Park to both the Merri Creek corridor and the metropolitan trails network. This includes investigation of opportunities to extend the open space connection from Greenvale North to Mt Aitken;
- Utilising the Greenvale Reservoir Protection Mechanism (the bund) as a regional linear open space link between major recreational assets by providing a shared pedestrian cycle trail on the bund subject to approval by Melbourne Water;
- Providing for establishment of neighbourhood parks and waterway corridors with natural assets such as remnant native vegetation – many within walking distance of residential areas;
- Extending the principal bicycle network and the metropolitan trail network to key locations such as the upper Merri Creek Valley; and
- Identifying a number of other areas for further investigation on the basis of their potential significance for flora and fauna conservation.

2.2.6 COMMUNITY FACILITIES

The Greenvale North R1 PSP is essentially divided into two distinct residential components, east and west of the Reservoir.

WEST (MICKLEHAM NEIGHBOURHOOD)

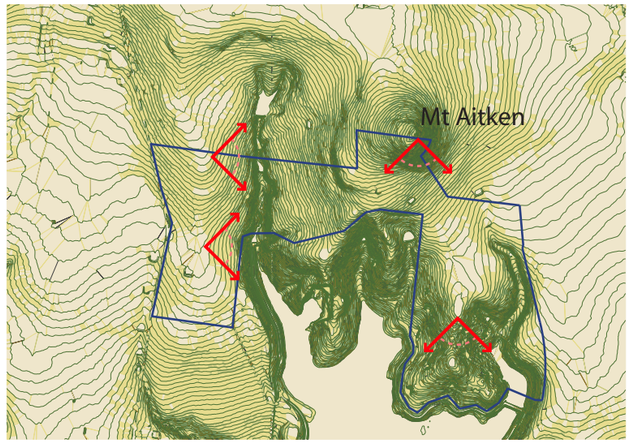
The western precinct will have a relationship to the Greenvale West R3 community which in turn represents the future expansion of Greenvale. The western precinct or 'Mickleham Neighbourhood' is likely to share infrastructure and services as part of that community with the future Greenvale West R3 community.

EAST (MT AITKEN NEIGHBOURHOOD)

The eastern precinct forms a progressive extension of Craigieburn and Roxburgh Park and has access to significant existing and proposed social, health and community infrastructure including:

- Craigieburn Leisure Centre
- Craigieburn Bowling Club
- Craigieburn Golf Course
- Craigieburn Education and Community Centre
- Craigieburn Library
- Craigieburn Health Services
- Craigieburn Functions Lounge
- Craigieburn Youth Centre
- The existing Roxburgh Rise Primary School and community facilities.

VIEW ANALYSIS



There are existing views from the site to Mt Aitken and to the south towards the Greenvale Reservoir, however, they are not deemed significant when development occurs

Proposed Neighbourhood Activity Centre
Proposed Open Space
Proposed Local Centre
Community Facilities
Proposed Primary School
CRAIGIEBURN PUBLIC GOLF COURSE
FAIRWAYS BOULEVARD
AITKEN HILL CONFERENCE & EVENTS VENUE
Aboriginal Artefact (AAV 7822-2481)
Mount Aitken
Stony Knoll Shrubland (To be retained)
R1 PSP AREA
LISTERFIELD DRIVE
Brindley Park Homestead
Proposed Active Open Space
Proposed Primary School
PROVIDENCE ESTATE
Aitken College
MICKLEHAM ROAD
Greenvale Reservoir Park
GREENVALE RESERVOIR
Historical RANAD Complex Buildings
Plains Grassy Woodland
PROPOSED T14
SILVESTER RDE
Proposed Neighbourhood Activity Centre
State Primary School
Community Facilities
JAMES MIRAMS DRIVE
ROSS CUSHMAN DRIVE
Neighbourhood Activity Centre
Roxburgh Homestead SC
DONALD CAMERON DRIVE
State Primary School
State Secondary School
State Primary School
PAPER GUMS TRAIL

- Precinct Structure Plan Area
- Urban Growth Boundary
- Arterial Road
- Connector Street
- Railway Line & Station
- Watercourse
- Waterbody
- Scattered Trees
- RANAD Complex Buildings
- Plains Grassy Woodland
- Stoney Knoll Shrubland

plan 4

precinct features

greenvale north [R1] precinct structure plan

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2.3 PRECINCT FEATURES

2.3.1 HERITAGE

ABORIGINAL

The traditional indigenous owners of the precinct were clans of the Woi Wurrung people and the clan most closely associated with the study area, was the Wurundjeri Willam.

The eastern portion of the precinct is considered to possess limited Aboriginal archaeological potential. There is one registered site within the Precinct (AAV 7822-2481).

Indigenous archaeological artefacts have been found across the site, and it is expected that complex investigations incorporating sub-surface testing will be required throughout the precinct when Cultural Heritage Management Plans are prepared.

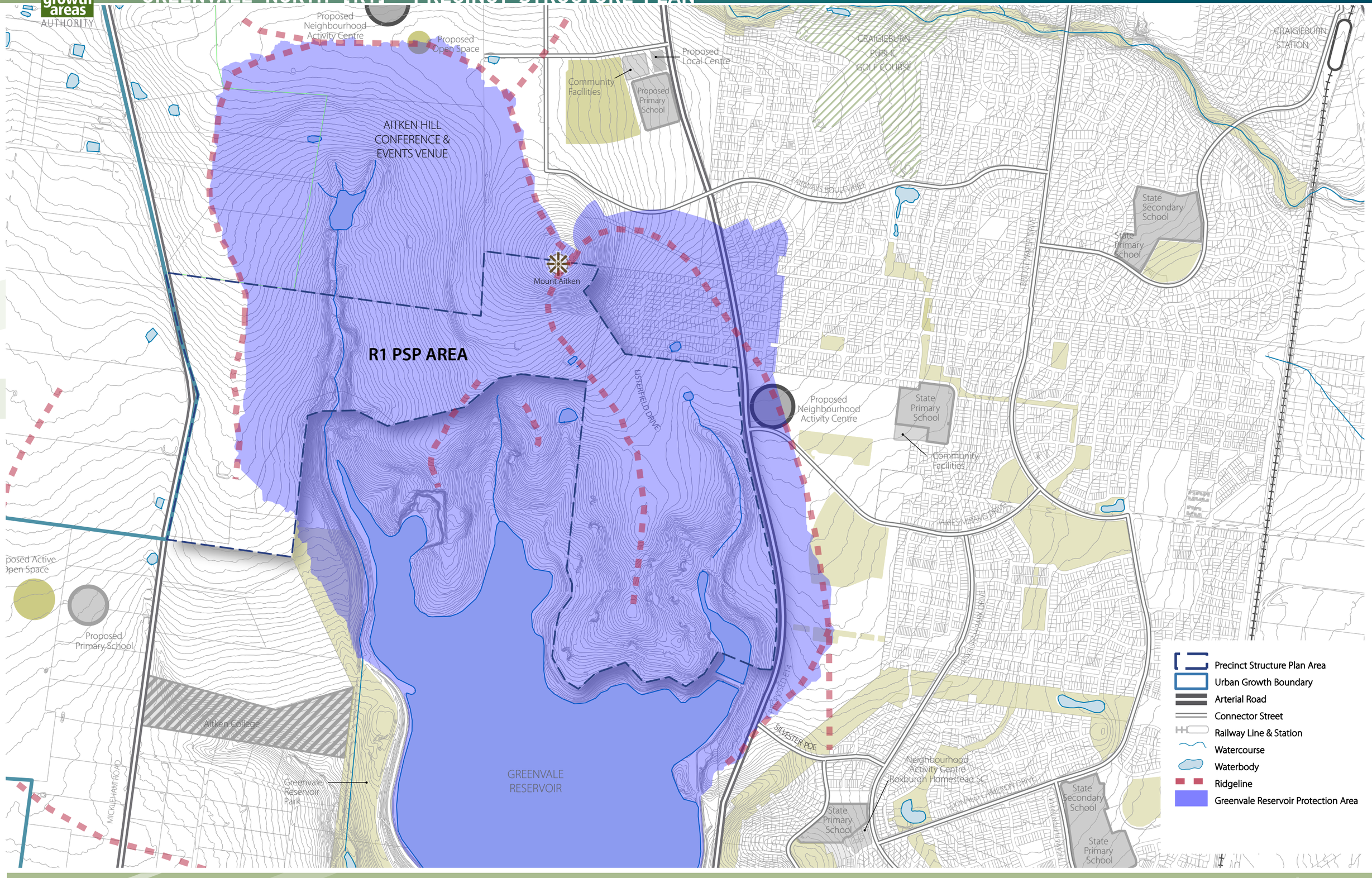
There are very few mature trees within the study area, however, all such trees were inspected for the presence of cultural scarring. No scarred trees were identified.

The land use history for much of the precinct has eliminated the potential for any in situ or scientifically significant archaeological site to exist.

However, on the basis of the existing background information including local site distribution patterns, landforms within the study area and previous activities on the land, the study area has been identified as an area of low - moderate Aboriginal archaeological potential. This result is largely due to existence of the previously recorded site (AAV 7822-1105), as well as the widespread location of sites in the local region that occur on similar landforms to those within the study area. A program of sub-surface testing will be conducted as part of the complex Cultural Heritage Management Plan for the precinct.

POST CONTACT HERITAGE

Part of the eastern portion of the PSP area was formerly used by The Royal Australian Navy for armaments testing. Environmental reports will ensure the land is not potentially contaminated. This site also contains several features that have high potential for historic heritage value and the complex has been attributed with heritage significance at a local level at least.



plan 5

greenvale reservoir protection area

greenvale north [R1] precinct structure plan

2.3.2 BIODIVERSITY

BIODIVERSITY SIGNIFICANCE

The site has historically been grazed but retains a range of biodiversity values that links to biodiversity assets of the wider landscape. It is directly adjacent to Greenvale Reservoir and its associated habitat provides for a range of aquatic and terrestrial species including the Golden Sun Moth. It also directly links to the Craigieburn R2 and Greenvale West R3 precincts. This provides an excellent opportunity to provide an extensive link of habitats within new urban precincts.

The precinct contains a minimal amount of native species and ecological communities that are listed as threatened under the Federal Environment Protection and Biodiversity Conservation Act 1999.

BIODIVERSITY ASSETS

The following biodiversity values have been identified within the precinct:

- Golden Sun Moth (Listed as Critically Endangered under the federal EPBC Act, listed under the Victorian FFG Act and with conservation status of endangered in Victoria) and habitat that supports this species. This includes both native and non-native grassland, and weeds that provide a suitable tussock formation and gaps between tussocks including bare ground that are suitable for this species;
- The EPBC listed Critically Endangered community Grassy Eucalypt Woodlands of the Victorian Volcanic Plain;
- Two endangered EVCs; Stony Knoll Shrubland (EVC 649) and Plains Grassy Woodland (EVC 55);
- Large old hollow bearing trees, both living and dead, that provide core habitat values for a range of arboreal mammals and birds that require hollows to nest and reproduce;
- One flora species (Green-top Sedge, Carex chlorantha) with a conservation status of poorly known in Victoria; and
- Three fauna species were considered to be possible residents in the precinct but were not recorded on the site, including Fat-tailed Dunnart (Conservation Status in Victoria; near threatened), Brown Toadlet (FFG Act; listed, Conservation Status in Victoria; endangered) and Striped Legless Lizard (EPBC; Vulnerable, FFG Act; listed, Conservation Status in Victoria; endangered).

2.3.3 TOPOGRAPHY AND LANDFORM

The topography of the area is diverse, encompassing hills, a variation of steep and gentle slopes, stony knolls and escarpments. The precinct contains the steep southern side of Mt Aitken, an eroded lava and scoria volcano. The central and eastern portions of the precinct drain directly into Greenvale Reservoir and the north and west portions of the precinct from part of the headwaters of Yuroke Creek.

Land in the western part of the precinct is gently undulating and the site itself houses a series of gullies and ridges that will inform the future pattern of subdivision.

2.3.4 CATCHMENTS AND DRAINAGE

Drainage of the Greenvale North R1 PSP area will be managed via two separate strategies. The western portion of the site drains to Brodies Creek that then drains in turn to the Yuroke Creek catchment downstream of the precinct area. The eastern portion of the site is within the Upper Yuroke Creek catchment. Downstream of the Aitken Hill Conference and Events Venue, Yuroke Creek enters a concrete drain that bypasses the Greenvale Reservoir.

Alternatives to the retarding basin at Mickleham Road further downstream may be explored as part of the future drainage scheme arrangement for Brodies Creek. In the event that whole or part of the area shown as retarding basin on Plan 6 is not required for such purposes, it may be able to be developed for residential purposes.

Melbourne Water has developed the Greenvale Reservoir Catchment: Drinking Quality Risk Management Plan (March 2008) pursuant to its duties under the Safe Drinking Water Act to protect the Reservoir. The PSP has support of Melbourne Water with detailed construction requirements subject to final approval from Melbourne Water.

2.3.5 AITKEN HILL CONFERENCE AND EVENTS VENUE

The Aitken Hill Conference and Events Venue currently operates to the north of the precinct. The facility is conducted on a site with an area of approximately 68 hectares and the whole of the land is identified for future urban development. The future urban development of the site will be subject of a separate Precinct Structure Plan and permit process. However the implications of future development of this land should be considered as part of the water management of the PSP Area for the protection of the Greenvale Reservoir.

2.3.6 THE CREATION OF TWO DISTINCT RESIDENTIAL ENTITIES

The topography and physical constraints identified above and particularly the need to protect the Greenvale Reservoir has necessitated the majority of the PSP to remain undeveloped. The developable components of the Plan area are in two distinct locations, east and west of the Plan. The eastern part of the precinct occupies the slopes of Mt Aitken and the higher ground and is identified as "Mt Aitken Neighbourhood". The western portion which fronts Mickleham Rd and includes the ridge that separates the Greenvale Reservoir Protection Area is identified as the "Mickleham Neighbourhood".

Proposed Neighbourhood Activity Centre
Proposed Open Space
'Green Spine'
- opportunity to combine Bund, Retarding Basin & Localised POS to create an intergrated 'Green Spine with shared off road path to providing efficient pedestrian movement around site
Proposed Local Centre
Proposed Community Facilities
Proposed Primary School
CRAIGIEBURN PUBLIC GOLF COURSE
CRAIGIEBURN STATION
Hill Top Park
- encumbered POS located at top of Mt Aitken to be intergrated with Passive POS component
- Strong viewlines to surrounds
Link to north to extended R2 PSP road network
Aitken Hill Conference & Events Venue
Localised Road Network
- link into existing road network east
Mount Aitken
State Secondary School
State Primary School
Localised POS
- as per Clause 56
Localised POS
- passive POS as per Clause 56 requirements
- viewlines to surrounds
- potential for "Green Link" to Hill Top Park
North South Link
- road located on ridge line
Lysterfield Drive
- link into existing road network
Link to Mickleham Road
- signalised intersection
R1 PSP AREA
Kolbe College
- Non-government School
Proposed Neighbourhood Activity Centre
State Primary School
Investigation Area
Localised POS
- park incorporating windrow (subject to arborist assessment)
- viewlines to east
Localised POS
- as per Clause 56
- linear park located on landscaped road with shared use path
Community Facilities
Existing Homestead
- to be removed
Retarding Basin
- subject to engineering
Localised Road Network
- to help stormwater movement in unision with Bund
- Access level road intergrated with extended landscaping with shared use path, POS & Bund to 'Green Link' between School & Bund
Proposed Active Open Space
Localised Road Network
- Access level roads to adjacent Bund
Link to south to extended R3 PSP road network
Link to E14
- left in & left out at northern & southern intersection
Inaccessible vegetated buffer to reservoir providing open outlook to residential neighbourhoods
Proposed Primary School
Reservoir Water Protection Mechanism (Bund)
- Bund to prevent contamination of Greenvale Reservoir
- Designed to 1 in 1 000 000 year standard
- subject to engineering advice
'Green Spine'
- opportunity to combine Bund, Retarding Basin & Localised POS to create an intergrated 'Green Spine with shared off road path to providing efficient pedestrian movement around site
Land to be vested with Melbourne Water
Aitken College
GREENVALE RESERVOIR
Greenvale Reservoir Park
Neighbourhood Activity Centre
Roxburgh Homestead SC
State Secondary School
State Primary School
Community Facilities
State Primary School

- Precinct Structure Plan Area
- Urban Growth Boundary
- Freeway
- Arterial Road
- Connector Street
- Railway Line & Station
- Road Connection
- Future Road Connection (Indicative)
- Future Pedestrian Link
- Ridgeline
- Drainage Line
- Future POS or Reservoir
- Protection Mechanism
- Encumbered Open Space /Stormwater Management
- Inaccessable Catchment Area (Greenvale Reservoir Land)

plan 6

design response

greenvale north [R1] precinct structure plan

3.0 VISION AND INTEGRATED NEIGHBOURHOOD DESIGN

3.1 VISION

The vision is a high-level statement of what we want to achieve for the Greenvale North R1 community that is unique to the PSP area and distinguishes the community. The vision has guided the design of the future urban structure and may inform future decisions about detailed planning, such as planning permits.

The vision for the Greenvale North R1 PSP area is to provide:

- Two distinct residential neighbourhoods with a strong sense of identity forged through their connection with the Greenvale Reservoir, which has iconic status as a local landmark and as a focal point for the broader community;
- Dual neighbourhoods that are physically separated by open space, providing a non-urban break and affording high visual amenity and recreational values to both distinct areas of the precinct;
- Residential neighbourhoods that are connected through their strong links to the Greenvale Reservoir providing highly valued vistas, and providing both neighbourhoods with a unique sense of space;
- Residential neighbourhoods that form part of two distinct communities outside of the precinct at Roxburgh Park / Greenvale Lakes to the East and the Greenvale West R3 PSP, to the south of the precinct;
- A community that integrates with the wider corridor, both supporting and utilising infrastructure provided as part of adjoining residential neighbourhoods;
- A community which has convenient access to essential goods and services and to key employment and activity centres external to the precinct;
- A community which has ready access to essential community infrastructure which meets its ongoing needs and which helps to stimulate interaction and community building provided as part of the broader community entities to which the neighbourhoods relate;
- Access to local recreation and leisure facilities that promote healthy, active lifestyles and a significant 'breathing space' for surrounding areas of urban living;
- A community with a strong connection to the environment and protection and enhancement of both natural and man-made assets; and
- A community which is developed in a logical and orderly manner providing services and facilities which not only support the community at an early stage of development, but which can be built with sufficient capacity to maintain high standards of service in perpetuity.

AITKEN HILL
CONFERENCE &
EVENTS VENUE

Mount Aitken

FAIRWAYS BOULEVARD

Kolbe College

LYSTERFIELD DRIVE

Proposed
Neighbourhood
Activity Centre

JAMES MIRAMS DRIVE

Proposed Active
Open Space
10.25 ha

ROXBURGH PARK DRIVE

PROPOSED E14

Proposed
rimary School

PROVIDENCE
ESTATE

Aitken College

- Urban Growth Boundary
- Arterial Road
- Connector Street
- Access Street - Lv2
- Access Street - Lv1
- Shared Path (within open space)
- Shared Path (within landscaped road reserve
- Railway Line & Station
- Conventional Density
- Medium Density
- Neighbourhood Activity Centre
- Local Centre
- Community Facilities
- Government Education Facilities
- Non Government Schools
- Reservoir Protection Mechanism
- Hill Top Park
- Passive Open Space
- Linear Open Space
- Encumbered Open Space /Stormwater Management
- Buffer Area
- Investigation Area
- Watercourse
- Waterbody
- Significant Regional Open Space (Outside PSP)

plan 7

future urban structure

greenvale north [R1] precinct structure plan

3.2 URBAN STRUCTURE

The Greenvale North R1 Precinct Structure Plan is unique in that it seeks to integrate additions to two separate existing (and proposed) residential neighbourhoods, with the core of each neighbourhood located outside of the precinct. It effectively incorporates two small components of larger communities into one plan.

The two separate neighbourhoods will rely upon major retail, schools, community and sports facilities located outside of the precinct but within a suitable distance to ensure convenient accessibility to these facilities.

MT AITKEN NEIGHBOURHOOD

The eastern portion of the plan area builds upon both 'Roxburgh Park' and 'Greenvale Lakes' estates, providing approximately 710 additional residential lots, to create a combined neighbourhood in the order of 1,950 lots both outside and within the plan. This part of the Precinct Structure Plan is referred to as the 'Mt Aitken Neighbourhood'.

MICKLEHAM NEIGHBOURHOOD

The western portion of the plan area forms a small part of a developing residential neighbourhood that also includes the 'Providence Estate' and the Greenvale West R3 PSP. This portion is likely to accommodate approximately 540 residential lots, to the northwest of the Greenvale Reservoir and is referred to as the "Mickleham Neighbourhood".

The vision for Greenvale North R1 will be realised through the development of the future urban structure for the PSP area as an integrated neighbourhood design.

The Future Urban Structure Plan sets out how the whole precinct will be developed over time to achieve the State Government's and Hume City Council's objectives for sustainable growth.

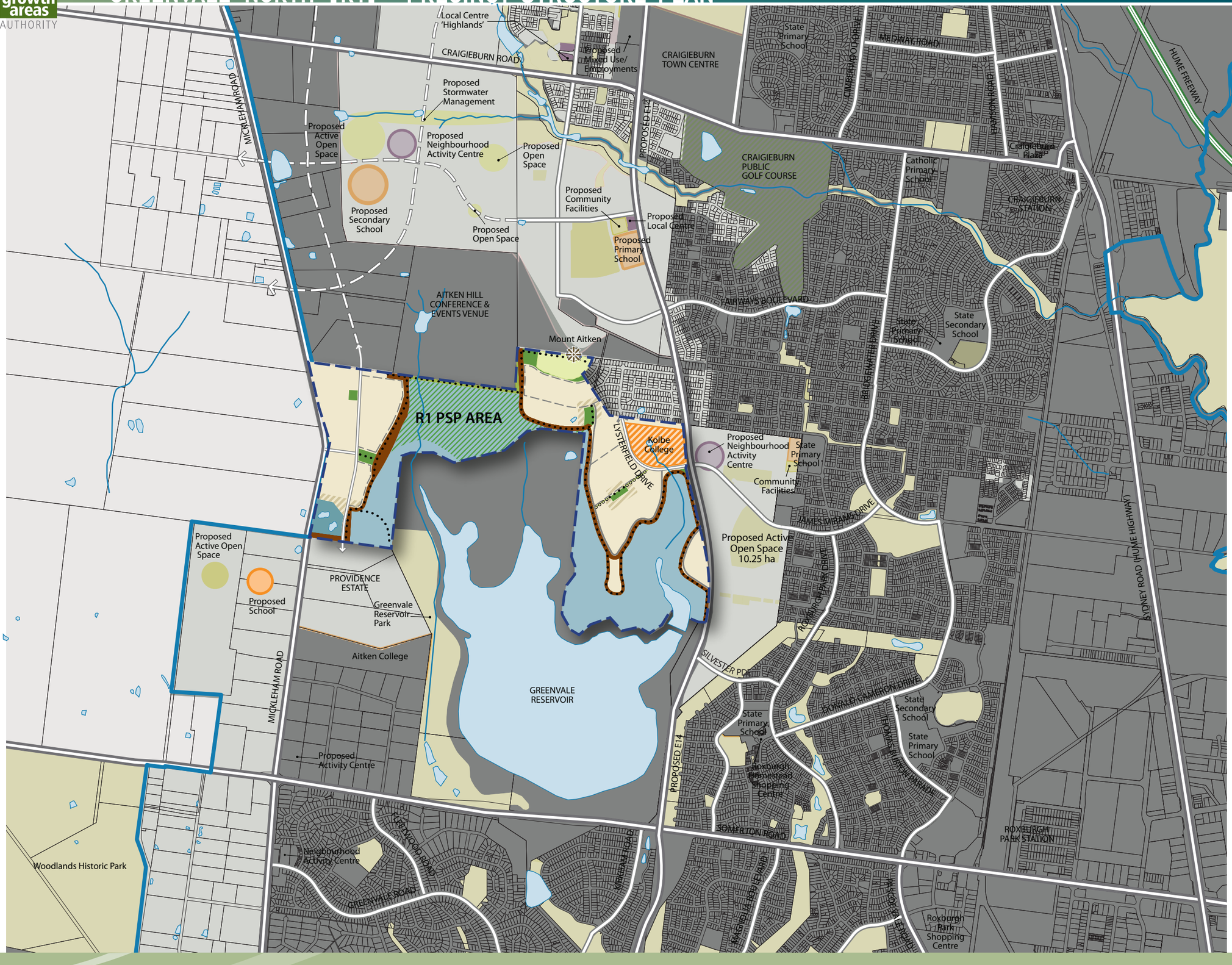
INVESTIGATION AREA

The investigation area is located in between the Mickleham and Mt. Aitken Neighbourhoods and is zoned Rural Conversation Zone.

The alignment of the catchment protection measure (bund) shown on Plan 7 has been agreed to by Melbourne Water to service the land within the PSP.

A different bund alignment may be agreed between Melbourne Water and the relevant landowners within the Greenvale Reservoir Protection Area in order to service the land within the PSP and land to the north of the PSP including the Aitken Hill Conference and Events Venue.

The land shown as 'Investigation Area' may be developed for urban purposes. It is intended that, once the development potential of this area is established via a separate PSP and amendment process and subject to an appropriate catchment protection measure being agreed to the satisfaction of Melbourne Water, the Investigation Area may be rezoned for urban development in the future.



- Precinct Structure Plan Area
- Urban Growth Boundary
- Arterial Road
- Connector Street
- Access Street - Lv2
- Access Street - Lv1
- Possible Future Road Alignment
- Shared Path (within open space)
- Shared Path (within landscaped road reserve)
- Railway Line & Station
- Conventional Density
- Medium Density
- Town Centre
- Neighbourhood Activity Centre
- Local Centre
- Mixed Use / Employment
- Conference Centre
- Community Facilities
- Government Education Facilities
- Non Government Schools
- Reservoir Protection Mechanism
- Investigation Area
- Hill Top Park
- Passive Open Space
- Linear Open Space
- Encumbered Open Space /Stormwater Management
- Buffer Area
- Watercourse
- Waterbody
- Existing Urban Area (Outside PSP)
- Future Urban Area (Outside PSP)
- Golfcourse (Outside PSP)
- Significant Regional Open Space (Outside PSP)

plan 8

proposed local context

greenvale north [R1] precinct structure plan

3.2.1 ESTABLISH A SENSE OF PLACE AND COMMUNITY

The Greenvale North R1 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 Greenvale North R1 Precinct.

The precinct is dominated by the prominent natural features of Mt Aitken and prominent ridgelines and the expansive views across the Greenvale Reservoir. While the residential components of the Plan will relate from a social and infrastructure sense to the two distinct communities, they will be linked and dominated visually by the natural features including hills, views and a significant water /CBD skyline view. In the context of Melbourne's west and north, these elements combined, present a singularly unique location.

A sense of place and community is also fostered through careful planning for the development of the 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, health, education and related facilities to which the PSP will relate will ensure a sense of place and community created for each component of the Plan as they relate to external community entities.

Greenvale North R1 will be easily identifiable and legible from a visitors point of view through its interface with the iconic Greenvale Reservoir. Residential development will occur on the eastern and western faces of the generous tract of open space located to the north of the Reservoir. An opportunity exists for the Conference Centre site (and Investigation Area to the immediate south of the conference centre) to be developed subject to further investigations via a separate PSP amendment process and the implementation of appropriate reservoir protection measures.

The Greenvale Reservoir and the Mt Aitken Conference and Events Venue site, both offer spectacular views, recreational and employment opportunities.

3.2.2 GREATER HOUSING CHOICE, DIVERSITY AND AFFORDABILITY

The future urban structure provides for a range of lifestyle opportunities to suit the needs of a variety of household sizes and budgets. The unique topography of the PSP creates a unique location for housing within Melbourne's north providing a location that can utilise views and elevation, a limited and rare opportunity in the region.

The PSP realises the potential for the Mickleham and Mt Aitken neighbourhoods within the precinct to provide for a more unique housing product incorporating hills and views.

The impacts of slope and desire to optimise views, coupled with the location of the two residential components of the Plan on the 'fringe' of the neighbourhoods or community entities to which they relate, lend the Plan to providing a lower density type of development that is the target for new growth areas generally.

Densities overall, of less than 15 lots per ha may be desirable in response to topography, creating a unique housing product and in recognising that parts of the Plan area is distant from major services.

3.2.3 CREATE HIGHLY ACCESSIBLE AND VIBRANT ACTIVITY CENTRES

The future urban structure for the broader Greenvale area will create a sustainable local network of local shops and services which will provide employment opportunities and community based services.

The PSP will rely upon retail and services provided in centres outside this plan area, particularly at Greenvale Lakes (2750m2 retail) and Greenvale Village (6500m2 retail).

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

3.2.4 PROVIDE FOR LOCAL EMPLOYMENT AND BUSINESS ACTIVITY

The relatively small size and fragmented nature of the precinct does not facilitate a location for substantial local employment within the Plan area. Other than opportunities for home occupation, the principal opportunities for local employment will be in town centres in Roxburgh Park, Greenvale Lakes and Greenvale Village. The PSP has been designed to be well connected to the existing and proposed centres and the Hume Corridor Employment Area.

The unique location of the Plan area is likely to provide higher than normal cost housing for Hume and attract a more limited market. This in turn is likely to result in a higher proportion of self-employed and white-collar employees, potentially employed at Melbourne Airport or within the Hume Corridor Employment Area

The municipality of Hume has a high ratio of resident population working within the municipality. This results from significant employment areas along the Hume Highway corridor (interfacing with residential communities of Roxburgh Park, Craigieburn and Broadmeadows) and the Melbourne airport employment area.

If Hume's high proportion of residents employed within the municipality (close to 50%) is maintained, travel times for residents within the Greenvale North R1 Precinct will be minimised because of the precincts proximity to the intensive employment areas.

3.2.5 PROVIDE BETTER TRANSPORT OPTIONS

JOURNEY TO WORK STATEMENT

The urban structure established by the Greenvale North R1 PSP responds to the need for urban development to be more ecologically, socially and economically sustainable. A key requirement to create a more sustainable urban structure is to employ urban design measures that reduce travel distances, travel times and carbon emissions for travel to work. Given the small area of this PSP, this needs to be viewed at a sub-regional level to which this PSP is part. An important component in planning for transport is to recognise and facilitate access to the extensive employment areas in Hume (along the Hume Highway employment corridor and at Melbourne Airport).

The journey to work statement outlines how the development of land in the PSP area will positively affect the lives of residents and residents of surrounding areas on a daily basis.

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

Direct physical connections with employment land

- The PSP promotes a traffic and movement layout that ensures that there are strong and efficient access links from residential areas to employment land. This road network supports public transport and cycling connections. Overall, the transport strategy promotes a reduced reliance on centralised employment;
- An efficient road and public transport network;
- The alignment of new connector roads and their relationship with existing and proposed arterial roads promotes strong connections to the surrounding area in all directions. The arterial grid sets the foundations for a highly permeable precinct which connects directly to employment and services located in the Hume rail corridor and Melbourne Airport environs. It must be recognised that the Greenvale Reservoir provides a significant barrier to east-west movement at a municipal level, however the PSP ensures road and cycling access to the existing road and cycle network from which access to employment and services can be gained.

A walkable street structure oriented to promote an energy efficient dwelling layout

- The topography and significant constraints within the precinct provide significant challenges in seeking to optimise connectivity. At the local street level, ease of movement can be optimised through the provision of a permeable connected street network. This integrates with the existing networks beyond this plan. Connecting the east and west residential components of the PSP will rely on pedestrian / cycle links across the Greenvale Reservoir Protection Area . This will be restricted to a main east west link;
- The PSP includes a Walking and Trails Plan to illustrate the location and integration of walking and cycling into the precinct. The Walking and Trails Network Plan (Plan 18) makes provision for safe and direct connections along connector and boulevard connector roads and on a network of off-road trails linking all the community features of the precinct together.

Attractors located to promote walking to frequently used services.

- The location of activity centres, schools and community facilities, open space and the trail network will promote a local street structure which facilitates safe walking and cycling for all residents. The Neighbourhood Activity Centres and other facilities will be within suitable walking distance (within 400m) for most residents and are strengthened through the walking and cycling connections provided in the PSP. As parts of the precinct fall outside of the 400m walkable catchment area these trails become vital in ensuring suitable connections are provided to activity centres.

Support for Craigieburn, Greenvale and Greenvale Lakes centres

- The urban structure, through transport and pedestrian linkages is designed to support nearby activity centres at Craigieburn, Greenvale and Greenvale Lakes in line with the role and function of each of these centres.

Role of the Bund

- The bund not only provides protection of the Greenvale Reservoir but also has a pivotal role in accommodating dedicated walking and cycling routes throughout the precinct. Its integrity must be maintained in order for it to perform its primary function of protecting the Reservoir from contamination in the 1 in 1 million AEP event.

3.2.6 CLIMATE CHANGE AND ENVIRONMENTAL SUSTAINABILITY

ENERGY STATEMENT

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

- Encouraging travel by means other than private car by providing walking, cycling, and bus links to new residential neighbourhoods;
- Encouraging efficient movements by network of roads based on the traditional 1 mile (1.6km) grid of arterial roads and connector roads typically based on an 800m grid. The road grid also provides public transport access to key destinations;
- Integration of the road network with 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 wide pedestrian paths;
- Designing all connector roads to accommodate bus movements;
- Extending and introducing new local bus services throughout Greenvale North R1 (linking to key regional destinations such as Craigieburn Town Centre) along the road network grid; and
- 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.

WATER SENSITIVE URBAN DESIGN

Water Sensitive Urban Design (WSUD) features for the open space network will provide for water quality treatment, retardation and high quality self-sustaining landscapes. The main water sensitive features of the precinct include a retarding basin in the south eastern corner of the Mickleham Road Neighbourhood. The retarding basin will include other components such as outflow structures, weirs etc that will be detailed in subsequent stages. Additionally the ultimate design may incorporate other 'at source' WSUD measures such as vegetated swales within medians that will allow size reductions of the treatment systems allowed for under the drainage concept.

Landscaping works around the conference centre site will include measures to protect the riparian areas around the gully that runs through the site. The WSUD measures within the conference centre site ensure that runoff is filtered through a series of swales, creeks and bioretention ponds.

Further opportunities for WSUD should be explored during the detailed subdivision design phase of development. This may include storage and harvesting of stormwater at the site of the retarding basin located at the southern tip of the Mickleham Neighbourhood.

NATIVE VEGETATION

Native and indigenous vegetation will inform the landscaping themes throughout the precinct to provide a strong landscape character. This will enhance the biodiversity characteristics of the area by supporting habitat for a variety of fauna species, including avifauna moving through the area.

PLANTINGS

As climate change, which is leading to reduced rainfall and less available mains water (both potable and recycled), and the loss of biodiversity are two key challenges facing the community, priority should be given to selecting species for planting (especially trees) that provide a response to these challenges. Tree species selected for planting in streets and open spaces should generally be drought tolerant native Australian species except at sites where special effects are required, such as at entrance ways or at sites of special interest.

THE ROLE OF THE BUND

The Bund will provide protection of the Greenvale Reservoir from the impacts of surrounding urban development to ensure the water quality of the reservoir is not compromised. Further detail of the environmental objectives to be achieved is provided in Section 6.0 of this Precinct Structure Plan.

3.2.7 DELIVER ACCESSIBLE, INTEGRATED AND ADAPTABLE COMMUNITY FACILITIES

The future urban structure of the precinct has been designed to support walking and cycling links to activity centres, employment areas, and areas of open space outside of the precinct. In addition the bund itself creates an opportunity to provide uninterrupted walking and cycling paths across the two components of the PSP area.

The development of landscape features and an open space network which provides links between natural assets which shape land uses and connections within the precinct and into the surrounding areas. The visual connection with open space areas contributes to the precinct having a 'city living, country feel' for residents and workers through access to high quality, well located green spaces.

The open space network comprises three neighbourhood parks located centrally within neighbourhoods, a hilltop park, a linear open space network (including a raised walking/cycling trail along road verges and along the bund). The open space network connects with pedestrian and cycle trails through Greenvale Lakes and provides access to the 10ha regional park within this development.

Proposed Neighbourhood Activity Centre

Proposed Local Centre

Proposed Primary School

CRAIGIEBU
PUBLIC
GOLF COUR

CRAIGIEBURN

AITKEN HILL CONFERENCE & EVENTS VENUE

FAIRWAYS BOULEVARD

Mount Aitken

R1 PSP AREA

1

3

2

4

Kolbe College

Proposed Neighbourhood Activity Centre

Community Facilities

JAMES MIRAMS DRIVE

Proposed Active Open Space

Proposed Active Open Space 10.25 ha

ROXBURGH PARK DRIVE

Proposed Primary School

PROVIDENCE ESTATE

Aitken College

PROPOSED E14

SILVESTER PDE

MICKLEHAM ROAD

Greenvale Reservoir Park

GREENVALE RESERVOIR

Neighbourhood Activity Centre

DONALD CAMERON DRIVE

State Secondary School

State Primary School

THOMAS BURTON PARADE

State Primary School

MICKLEHAM NEIGHBOURHOOD

MT AITKEN NEIGHBOURHOOD

R1 MICKLEHAM

GREENVALE RISE

R1 MT AITKEN

GREENVALE LAKES

GREENVALE WEST [R3] PSP

PROVIDENCE ESTATE

- Precinct Structure Plan Area
- 3 Property Boundary & ID
- Urban Growth Boundary
- Conventional Density
- Medium Density
- Non Government Schools
- Reservoir Protection Mechanism
- Investigation Area
- Hill Top Park
- Passive Open Space
- Linear Open Space
- Encumbered Open Space /Stormwater Management
- Buffer Area

plan 9

land use budget

greenvale north [R1] precinct structure plan

3.3 LAND USE BUDGET

The Summary Land Use Budget is outlined in Table 3 with a more detailed property specific land use budget in Table 4.

The Greenvale North R1 PSP covers an area of approximately 237 hectares. The Net Developable Area (NDA) for the Greenvale North R1 PSP is approximately 90ha due to the extensive areas of undevelopable land within this PSP. This equates to a developable area of approximately 38% of the PSP.

3.4 DEMOGRAPHIC PROJECTIONS

The preparation of the Greenvale North R1 PSP has assumed an average household size of 2.8 persons per household to 2031 (based on Victoria in Future 2008) as the basis for estimating the future population within the PSP area. This presents a long term average. During the early development phase, household sizes in Greenfield areas typically exceed three persons per household. In the longer term, this household size is forecast to gradually decline towards the current metropolitan average which is around 2.5 people per dwelling.

Characteristics of the community that the PSP plans for are:

- a higher proportion of families with young children than the metropolitan average;
- a higher proportion of population in the 0-9 and 30-39 age groups than the metropolitan average;
- a lower proportion of population in the 55-65 age group than the metropolitan average; and
- The proportion of residents at or reaching retirement age by 2031 is projected to increase significantly in line with the metropolitan average.

The Hume area has:

- A population younger than the Melbourne metropolitan average, with a high proportion of residents (about 29%) aged 15 years or under;
- Average per capita incomes lower than the Melbourne metropolitan average but household incomes similar or even higher than the metro average due to higher than average household sizes;
- High levels of home ownership (in the order of 90% of all households); and
- A higher than average proportion of traditional families, with about 70% of all households comprising a couple with dependent children.

Characteristic of most growth areas in the early stages of development, household size often peaks well above three persons per household. This forms the basis of infrastructure and service planning by Hume City Council and is supported by detailed analysis and population modelling that is available from Hume City Council.

3.4.1 POPULATION PROJECTIONS

The Plan area comprises two distinct residential neighbourhoods with a combined lot yield of approximately 1200 residential lots. The eastern component forms an extension of Roxburgh Park (including Greenvale Rise and Greenvale Lakes) and is made up of existing and proposed residential development. This area is called the 'Mt Aitken Neighbourhood'.

The western portion of the Plan area, on Mickleham Road, effectively contributes to a larger neighborhood comprising the 'Providence Estate' and Greenvale West R3 PSP, centred on Mickleham and Somerton Roads. This area is called the 'Mickleham Neighbourhood'.

The balance of the Plan area forms part of an 'Investigation Area'.

The two neighbourhoods, as described are identified on Plan 9.

Population modelling for the wider urban area (both future and existing development) is relevant to the efficient planning of infrastructure and services in the Greenvale North R1 PSP.

Tables 1 and 2 identify a developable land area and population projection for each new community which the PSP neighbourhoods form part. The information is based on estimated lot yields for the Greenvale North R1 precinct as well as adjoining PSP areas and the existing development approvals for the established surrounding sites.

Table 1: Mt Aitken Neighbourhood

	GROSS AREA (HA)	NET DEVELOPABLE AREA	INDICATIVE LOT YIELD (BASED ON 13.6 LOT/HA)	POPULATION AT 2.8 PPHH	PROPORTION BY TOTAL LOTS
AREA WITHIN THIS PSP					
Mt Aitken Neighbourhood	79.716	52.158	709.3488	1986.18	36.65%
SUBTOTAL:	**79.72**	**52.16**	**709.35**	**1986**	**37%**
AREA OUTSIDE THIS PSP					
Greenvale Lakes	94.39	63.36	861.696	2413	44.52%
Greenvale Rise	28.65	26.8	364.48	1021	18.83%
SUBTOTAL:	**123.04**	**90.16**	**1226.18**	**3433**	**63.35%**
TOTAL:	**202.756**	**142.32**	**1936**	**5419**	**100.00%**

Table 2: Mickleham Neighbourhood

	GROSS AREA (HA)	NET DEVELOPABLE AREA	INDICATIVE LOT YIELD (BASED ON 13.6 LOT/HA)	POPULATION AT 2.8 PPHH	PROPORTION BY TOTAL LOTS
AREA WITHIN THIS PSP					
R1 Mickleham	49.889	40.051	544.69	1,525	22.00%
SUBTOTAL:	**49.89**	**40.05**	**544.69**	**1525**	**22.00%**
AREA OUTSIDE THIS PSP					
Providence Estate*	47	30.45	567	1588	23.00%
Greenvale R3**	106.3	83.85	1,323	3704	55.00%
SUBTOTAL:	**153.3**	**114.27**	**1890**	**5292**	**78.00%**
TOTAL:	**203.19**	**154.32**	**2,435**	**6,817**	**100.00%**

* Providence Estate is based on approx 18.5 dwellings per NDHa

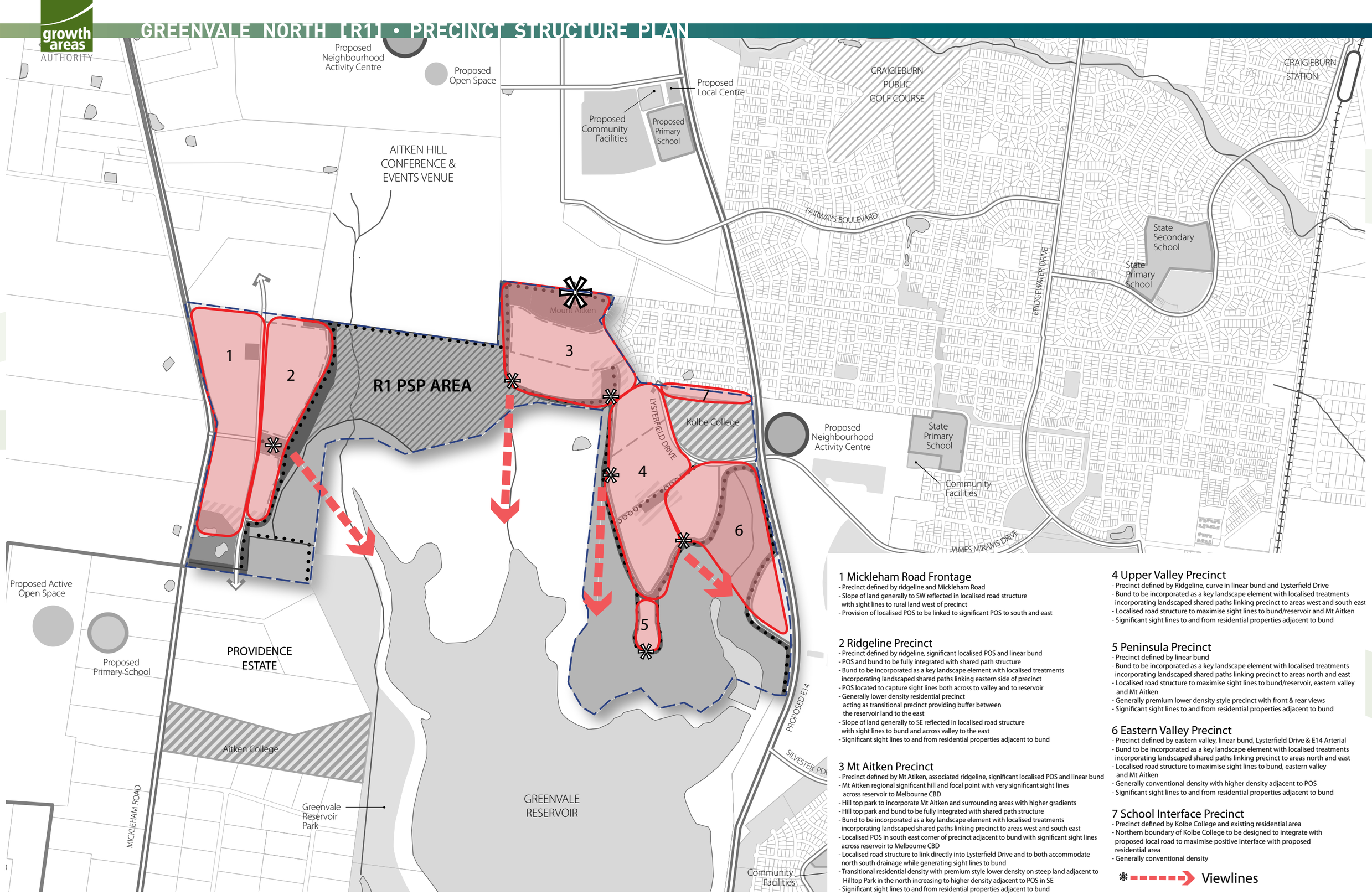
** R3 is based on approx 15.8 dwellings per NDHa

Table 3: Summary Land Use Budget

DESCRIPTION	R1 MICKLEHAM NEIGHBOURHOOD			R1 GREENVALE - MT AITKEN NEIGHBOURHOOD		
	Hectares	% of Total Precinct	% of NDA	Hectares	% of Total Precinct	% of NDA
TOTAL PRECINCT AREA (ha)	**49.889**	**100.00%**		**79.716**	**100.00%**	
NON-GOVERNMENT EDUCATION FACILITIES						
Non-government Schools and access road						
Non-government School (Kolbe College) including access				9.339	11.72%	17.91%
OPEN SPACE						
UNENCUMBERED LAND AVAILABLE FOR RECREATION						
Passive Open Space	**1.308**	**2.62%**	**3.27%**	2.821	3.54%	5.41%
ENCUMBERED LAND AVAILABLE FOR RECREATION						
Encumbered Open Space / Water Protection Management Mechanism	6.195	12.42%	15.47%	10.525	13.20%	20.18%
Hill Top Park				4.873	6.11%	9.34%
Retarding Basin	2.335	4.68%	5.83%			
Sub-total	**8.530**	**17.10%**	**21.30%**	**15.398**	**19.32%**	**28.96%**
Totals Open Space	**8.530**	**17.10%**	**20.62%**	**15.398**	**19.32%**	**29.52%**
NET DEVELOPABLE AREA (NDA) ha	**40.051**	**80.28%**		**52.158**	**65.43%**	

Table 4: Property Specific land use budgets

		TRANSPORT		COMMUNITY	NON URBAN LAND USES	ENCUMBERED LAND AVAILABLE FOR RECREATION				UNENCUMBERED LAND FOR RECREATION	TOTAL NET DEVELOPABLE AREA (HECTARES)	KEY PERCENTAGES		OPEN SPACE DEL TARGET %	DIFFERENCE	EQUIVALENT LAND AREA (HECTARES)
PROPERTY NUMBER	TOTAL AREA (HECTARES)	RESIDENTIAL CONNECTOR ROADS	LYSTERFIELD DRIVE CONNECTOR ROAD	NON GOVERNMENT SCHOOL	GREENVALE RESEVOIR	ENCUMBERED OPEN SPACE / WATER PROTECTION MANAGEMENT MECHANISM	RETARDING BASIN	HILL TOP PARK	LINEAR RESERVE	PASSIVE OPEN SPACE		NET DEVELOPABLE AREA % OF PRECINCT	PASSIVE OPEN SPACE % NDA			
		INCLUDED IN NDA		NOT INCLUDED IN NDA	NOT INCLUDED IN NDA	NOT INCLUDED IN OS %				INCLUDED IN OS %	NOT INCLUDING ARTERIAL ROADS, COMMUNITY & RECREATION					
Property 1	112.161	3.439	0.000	0.000	35.210	8.944	2.335	4.873	1.905	3.609	55.285	49.29%	6.53%	4.48%	**2.05%**	**1.133**
Property 2	5.302	0.049	0.000	0.000	4.804	0.449	0.000	0.000	0.000	0.000	0.049	0.92%	0.00%	4.48%	**-4.48%**	**-0.002**
Property 3	9.274	0.000	0.000	0.000	9.274	0.000	0.000	0.000	0.000	0.000	0.000	0.00%	0.00%	4.48%	**-4.48%**	**0.000**
Property 4	111.163	0.000	1.801	9.339	56.605	7.776	0.000	0.000	0.000	0.520	36.923	33.22%	1.41%	4.48%	**-3.07%**	**-1.134**
TOTAL PRECINCT	**237.900**	**3.488**	**1.801**	**9.339**	**105.893**	**17.169**	**2.335**	**4.873**	**1.905**	**4.129**	**92.257**	**38.78%**	**4.48%**	**4.48%**	**0.00%**	**0.000**



1 Mickleham Road Frontage

- Precinct defined by ridgeline and Mickleham Road
- Slope of land generally to SW reflected in localised road structure with sight lines to rural land west of precinct
- Provision of localised POS to be linked to significant POS to south and east

2 Ridgeline Precinct

- Precinct defined by ridgeline, significant localised POS and linear bund
- POS and bund to be fully integrated with shared path structure
- Bund to be incorporated as a key landscape element with localised treatments incorporating landscaped shared paths linking eastern side of precinct
- POS located to capture sight lines both across to valley and to reservoir
- Generally lower density residential precinct acting as transitional precinct providing buffer between the reservoir land to the east
- Slope of land generally to SE reflected in localised road structure with sight lines to bund and across valley to the east
- Significant sight lines to and from residential properties adjacent to bund

3 Mt Aitken Precinct

- Precinct defined by Mt Atiken, associated ridgeline, significant localised POS and linear bund
- Mt Aitken regional significant hill and focal point with very significant sight lines across reservoir to Melbourne CBD
- Hill top park to incorporate Mt Aitken and surrounding areas with higher gradients
- Hill top park and bund to be fully integrated with shared path structure
- Bund to be incorporated as a key landscape element with localised treatments incorporating landscaped shared paths linking precinct to areas west and south east
- Localised POS in south east corner of precinct adjacent to bund with significant sight lines across reservoir to Melbourne CBD
- Localised road structure to link directly into Lysterfield Drive and to both accommodate north south drainage while generating sight lines to bund
- Transitional residential density with premium style lower density on steep land adjacent to Hilltop Park in the north increasing to higher density adjacent to POS in SE
- Significant sight lines to and from residential properties adjacent to bund

4 Upper Valley Precinct

- Precinct defined by Ridgeline, curve in linear bund and Lysterfield Drive
- Bund to be incorporated as a key landscape element with localised treatments incorporating landscaped shared paths linking precinct to areas west and south east
- Localised road structure to maximise sight lines to bund/reservoir and Mt Aitken
- Significant sight lines to and from residential properties adjacent to bund

5 Peninsula Precinct

- Precinct defined by linear bund
- Bund to be incorporated as a key landscape element with localised treatments incorporating landscaped shared paths linking precinct to areas north and east
- Localised road structure to maximise sight lines to bund/reservoir, eastern valley and Mt Aitken
- Generally premium lower density style precinct with front & rear views
- Significant sight lines to and from residential properties adjacent to bund

6 Eastern Valley Precinct

- Precinct defined by eastern valley, linear bund, Lysterfield Drive & E14 Arterial
- Bund to be incorporated as a key landscape element with localised treatments incorporating landscaped shared paths linking precinct to areas north and east
- Localised road structure to maximise sight lines to bund, eastern valley and Mt Aitken
- Generally conventional density with higher density adjacent to POS
- Significant sight lines to and from residential properties adjacent to bund

7 School Interface Precinct

- Precinct defined by Kolbe College and existing residential area
- Northern boundary of Kolbe College to be designed to integrate with proposed local road to maximise positive interface with proposed residential area
- Generally conventional density

Viewlines

plan 10

image & character

greenvale north [R1] precinct structure plan

4.0 ELEMENTS

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

1. Image and character;
2. Housing;
3. Community Facilities;
4. Open Space and Natural Systems;
5. Employment & Activity Centres;
6. Transport and Movement; and
7. Utilities & 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: 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.

4.1 IMAGE AND CHARACTER

4.1.1 IMAGE AND CHARACTER OBJECTIVES

The image and character objectives are:

- Foster connections between the Mickleham Rd Neighbourhood and Greenvale and strengthen connections between the Mt Aitken Neighbourhood and Roxburgh Park;
- Utilise and optimise view lines from future urban development areas across the Greenvale Reservoir Protection Area from elevated parts of the plan area;
- Capitalise on view corridors to and from significant landscape features within and adjoining the PSP area and ensure development does not detract from the visual amenity of the area;
- To conserve and enhance recognised heritage places;
- To provide road and street cross-sections with sufficient width to support large trees with spreading canopies as a key;
- Recognise Mt Aitken as the dominant high point feature of the plan area as a landscape feature;
- Utilise the reservoir protection mechanism and reservation as an integrated landscape and recreation feature;
- Establish a built environment that is functional, safe, aesthetically pleasing and that promotes a strong sense of place for future residents; and
- Create streetscapes and open space landscapes designed to be sustainable in the long term requiring minimal inputs of water, energy and chemical, and which can be maintained to a high standard with minimal management intervention.

4.1.2 IMPLEMENTATION

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

» ***Plan 7: Future Urban Structure Plan***
» ***Plan 10: Image and Character Plan***
» ***Table 6: Open Space Planning and Design Guidelines Table***
» ***Planning and design guidelines set out under 4.1.3***

4.1.3 PLANNING AND DESIGN GUIDELINES

The following planning and design guidelines must be met:

The subdivision layout to respond to sensitive interfaces including public open space, native vegetation to be protected in accordance with the Greenvale North R1 NVPP, arterial roads, between different land uses and the interface to the Greenvale Reservoir Protection Area;

All dwellings must have frontage to a road or open space;

All new electricity supply infrastructure must be provided underground (excluding substations);

The design of subdivision electricity infrastructure must remove existing above ground electricity lines and place them underground;

Design measures to protect key views into and out of the precinct, particularly to and from Mt Aitken;

Design and subdivision layout that accords with the Public Transport Guidelines for Land Use and Development (Department of Transport 2008); and

Reservoir protection mechanisms to the satisfaction of Melbourne Water

The requirement to meet design guidelines may be waived or reduced at the discretion of the responsible authority.

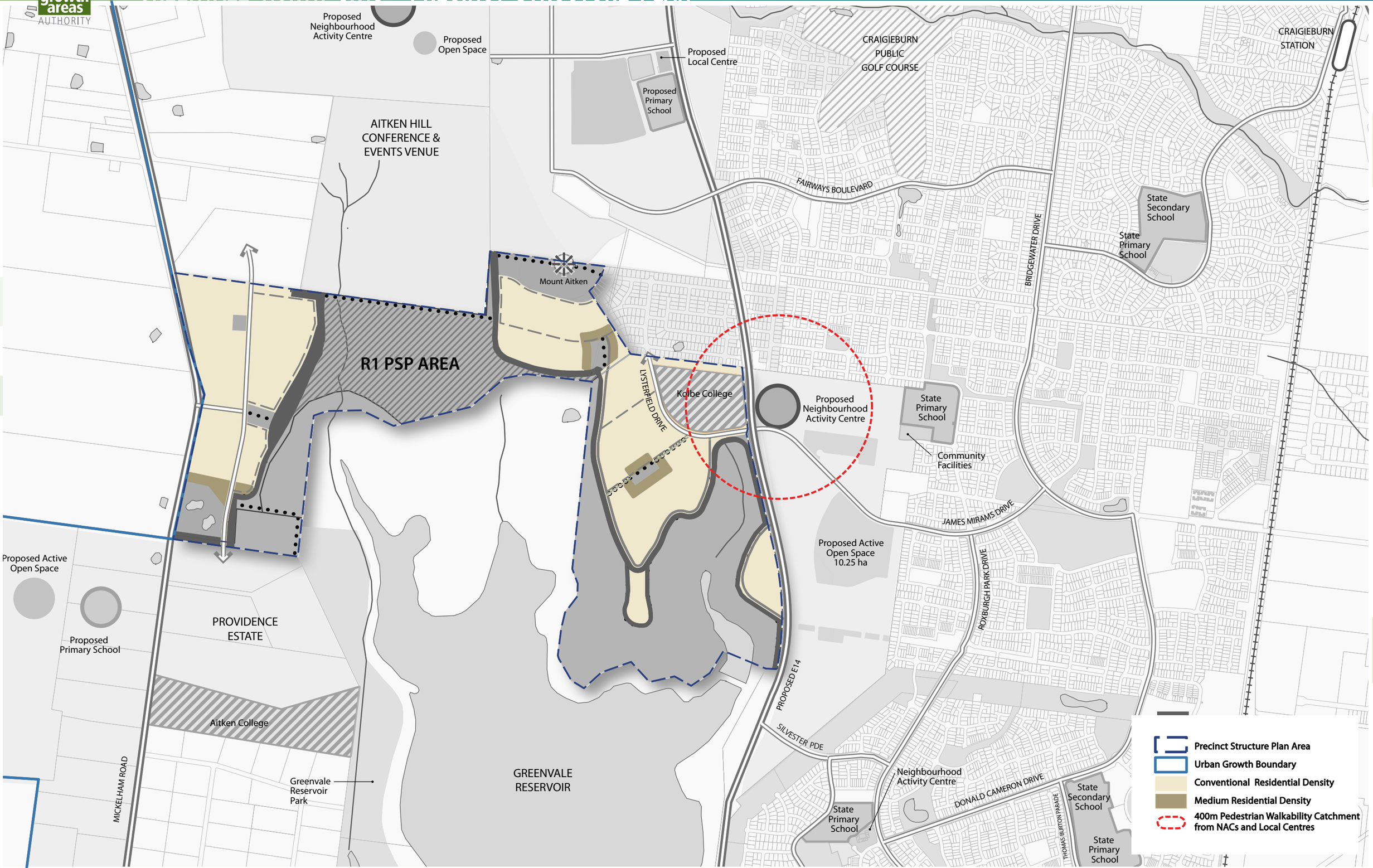
The following guidelines should be met:

- Low front fencing adjoining all open space.

THE RESERVOIR PROTECTION MECHANISM

Forming an integral component of the open space network, presenting dramatic vistas of the reservoir and Melbourne skyline, the linear reservation created by the reservoir protection mechanism is the integrating element to the whole open space network. Key criteria in designing access within the reservation include:

- Slope of land shaping to enable management vehicle access;
- Pedestrian/cycle trail at top of any bund or earth works or other treatment subject to Melbourne Water's approval;
- All landscaping to be to the satisfaction of Melbourne Water;
- Fence restricting access to the Reservoir along the alignment of the bund unless otherwise agreed by Melbourne Water;
- Where feasible the fence to be located so as to minimise visual impact from the road and urban development adjoining the reservation; and
- The specific location of all elements of the linear open space network adjoining the reservoir is to be resolved via the detailed reservoir protection mechanism design, to the satisfaction of Melbourne Water.


Proposed Neighbourhood Activity Centre
Proposed Open Space
Proposed Local Centre
Proposed Primary School
AITKEN HILL CONFERENCE & EVENTS VENUE
CRAIGIEBURN PUBLIC GOLF COURSE
CRAIGIEBURN STATION
FAIRWAYS BOULEVARD
BRIDGEWATER DRIVE
State Secondary School
State Primary School
Mount Aitken
R1 PSP AREA
LYSTERFIELD DRIVE
Kolbe College
Proposed Neighbourhood Activity Centre
State Primary School
Community Facilities
JAMES MIRAMS DRIVE
Proposed Active Open Space 10.25 ha
ROXBURGH PARK DRIVE
Proposed Active Open Space
PROVIDENCE ESTATE
Proposed Primary School
Aitken College
MICKELHAM ROAD
Greenvale Reservoir Park
GREENVALE RESERVOIR
PROPOSED E14
SILVESTER PDE
Neighbourhood Activity Centre
DONALD CAMERON DRIVE
State Secondary School
State Primary School
THOMAS BURTON PARADE
State Primary School
Precinct Structure Plan Area
Urban Growth Boundary
Conventional Residential Density
Medium Residential Density
400m Pedestrian Walkability Catchment from NACs and Local Centres

plan 11

4.2 HOUSING

4.2.1 HOUSING OBJECTIVES

The objectives for housing are to:

- Recognise that the two neighbourhoods represented in the plan (Mt Aitken and Mickleham) are part of larger neighbourhoods or community entities;
- Recognise that topographic features and views from much of the plan area provide opportunities for a more unique housing product responding to the natural form of the land, this may result in lower than average densities;
- Provide a lesser component of medium density housing reflecting the plan as a smaller part of larger communities and the remoteness from services of residential areas within the PSP;
- Provide residential neighbourhoods which meet high urban design standards and which create attractive streetscapes and a distinctive urban character;
- Provide lot sizes and housing types which are responsive to the character of the natural and built environment in the area and respond to principles of environmental sustainability;
- Avoid undue distortions of the housing market by imposing limitations on product;
- Recognise that the two neighbourhoods are effectively on the periphery of larger communities and being locations relatively remote from local service resulting in lower residential densities can be anticipated. While some medium density product can be provided, the area is likely to provide predominantly conventional densities at 13 lots per hectare;
- Recognise the potential residential development opportunity for part of the land to the immediate south of the conference centre site. The scope of development will be determined via a separate PSP process and will be subject to the resolution and implementation of appropriate reservoir protection measures; and
- Provide large integrated housing sites within or at the interface of activity centres, public transport, and overlooking local and linear open space.

4.2.2 IMPLEMENTATION

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

» ***Plan 6: Design Response***
» ***Plan 11: Housing Plan***
» ***Table 6: Open Space Planning and Design Guidelines Table***
» ***Planning and design guidelines set out in 4.2.3***

4.2.3 PLANNING AND DESIGN GUIDELINES

Residential development should include a range of dwelling densities, including: 'conventional' density residential lots, and 'medium' density residential lots. These terms are defined in the glossary in Section 7.1.

Conventional Density Housing should achieve a minimum average of 13 lots per NRHa (net residential hectare).

Medium Density Housing should achieve a minimum average of 23 dwellings per NRHa.

Development of medium density housing is encouraged to either:

- Be developed as part of an integrated development site and designed to comply with Clause 54 or 55 of the Hume Planning Scheme;
- Be developed to include specialised housing such as retirement or an aged care facility;
- Be provided in areas within convenient distance of an activity centre;
- Be overlooking, abutting or be within close proximity of public open space and community hubs;
- Be provided in a variety of forms – terrace / townhouse development, smaller 'town' lots, shared driveway housing, integrated development sites as well as retirement villages / nursing home care facilities; and
- Be located in close proximity to public transport routes.

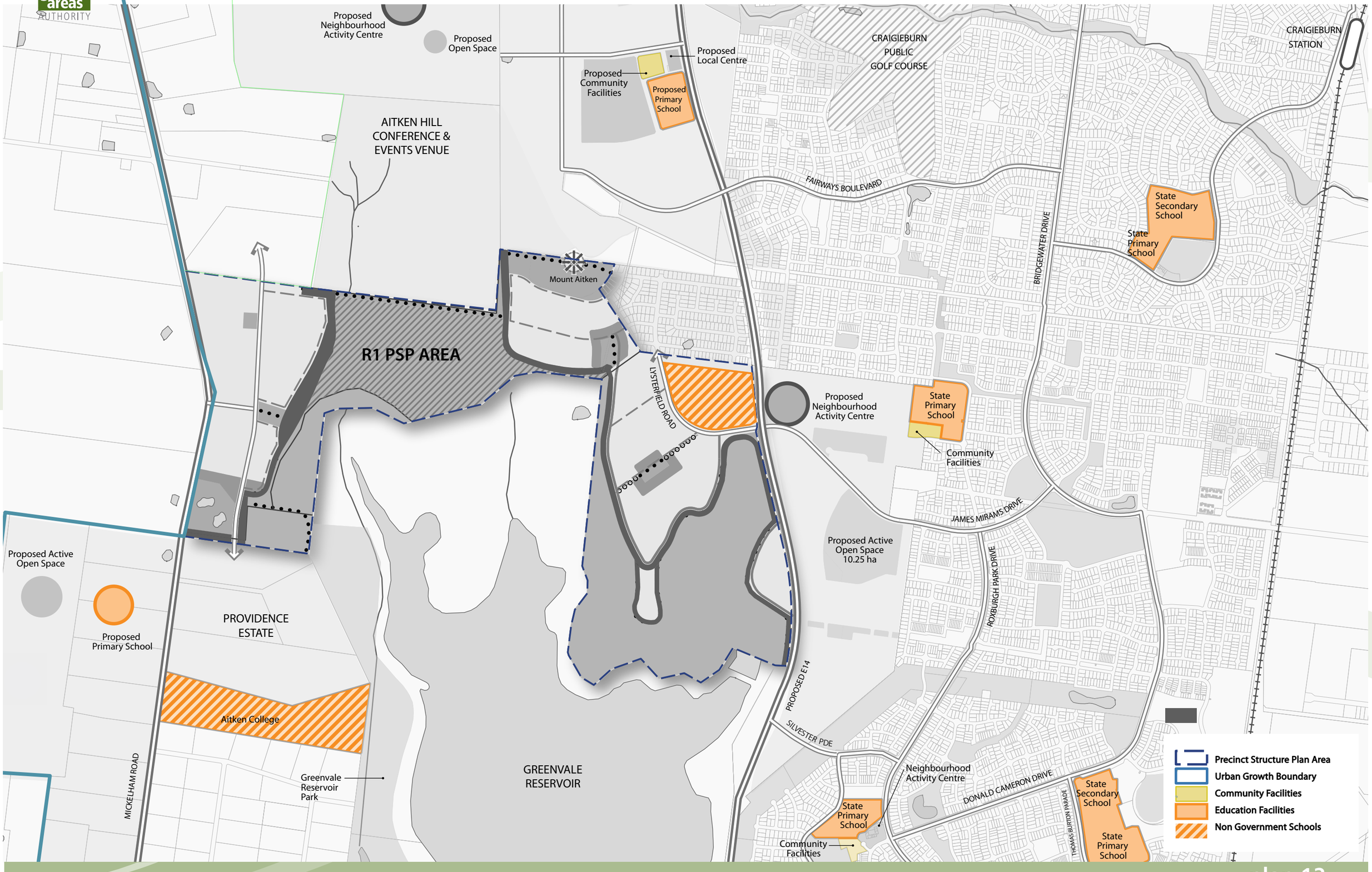
Dwelling and lot densities are distributed across the Precinct Structure Plan area as a percentage of the total area available for residential development. Plan 11 illustrates that the Precinct Structure Plan can achieve the objectives for housing diversity.

This PSP presents only a limited opportunity where such criteria can be met, principally to the east of the Plan area and adjoining Aitken Boulevard (E14) and adjoining the proposed Greenvale Lakes Town Centre.

This PSP is likely, overall, to present a high proportion of conventional density due to the residential components of the Plan area being remote from key urban services (retail, schools, community centres and active open space) provided outside the Plan area.

Mt Aitken and the Greenvale Reservoir present an opportunity to design a residential community that relates strongly to the topography and views presented within the Plan area. Residential development should:

- Relate to the Mt Aitken hilltop, optimising public access to the hill;
- Optimise views to and from the elevated areas;
- Optimise views across the Greenvale Reservoir from elevated areas; and
- Recognise that designing for stormwater management and flows across the site may compromise optimum design outcomes due to the need to protect the Reservoir from potential contamination.



plan 12

community facilities

greenvale north [R1] precinct structure plan

4.3 COMMUNITY FACILITIES

4.3.1 COMMUNITY FACILITIES OBJECTIVES

The objectives for community facilities are:

- To ensure access to sufficient community and recreational infrastructure to support the needs of the two new urban neighbourhoods to be established in the Greenvale North R1 PSP;
- To recognise that the plan proposes two new neighbourhoods that will relate to and rely upon services provided in Roxburgh Park and the Greenvale West R3 PSP area;
- To support the early provision of facilities such as local parks and playgrounds as informal community meeting places within each neighbourhood;
- To plan for community facilities to be located within proximity of activity centres, and co-located with active and passive open space;
- To plan for community facilities to be accessible by public transport, walking and cycling; and
- To contribute towards and form part of the catchment of public and private community infrastructure outside the Plan area.

4.3.2 IMPLEMENTATION

- Recognise that infrastructure and services will be provided on the basis of standards outlined in 'Planning for Community Infrastructure in Growth Areas' (April 2008) prepared for the five metropolitan growth area councils and Hume City Council's infrastructure planning standards.
- Mickleham Neighbourhood will form part of the catchment for the Greenvale West R3 PSP plan area and will contribute proportionately to community facilities and services provided as part of that plan;
- The Mt Aitken Neighbourhood will form part of the catchment for the primary school, community centre and higher order public and private services in Roxburgh Park and Greenvale Lakes.

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

» ***Plan 6: Design Response,***
» ***Plan 12: Community Facilities,***
» ***Plan 17: Public Transport Network,***
» ***Table 5: Community Facilities Table,***
» ***Table 6: Open Space Planning and Design Guidelines Table,***

4.3.3 PLANNING AND DESIGN GUIDELINES

The following planning and design guidelines should be met:

GENERAL

The provision of local community facilities, active open space and major sports facilities will significantly be provided outside of the precinct. Respective plans for Roxburgh Park, Greenvale Lakes and Greenvale West R3 will provide the majority of local services for this Plan area.

The Greenvale North R1 PSP does not seek to duplicate existing services, but rather provides population to support existing facilities available in adjoining communities. The infrastructure needs of the broader area have been subject to a community infrastructure needs assessment. The extent of community services provided for within Greenvale North R1 accords with this study that contemplates the community needs of the broader region.

MICKLEHAM NEIGHBOURHOOD

The Mickleham Neighbourhood relates closely to the existing community in Greenvale. A community hub is provided within this neighbourhood which includes the Greenvale Primary School and a public open space reserve. There is a co-located Maternal and Child Health Centre / Kindergarten at the school, located in Bradford Avenue, Greenvale.

Planning for the Greenvale West R3 precinct structure plan identifies a future community of approximately 3,700 (Greenvale West R3 only) population and the provision of enhanced local community and recreational infrastructure. The Mickleham Neighbourhood will constitute a component of the wider Greenvale West R3 PSP community and utilise the infrastructure to be provided within that plan including:-

- A State School
- Multi-purpose community centre (comprimising dual kindergarten, meeting space and visiting maternal child and health nurse);
- Enhancements to regional active open space on Somerton Road; and
- Neighbourhood Sports Ground and Active Open Space.

A proportional contribution to development contributions funding and works for the provision of local infrastructure will need to be made by the Mickleham Neighbourhood as part of the Greenvale West R3 catchment.

MT AITKEN NEIGHBOURHOOD

The residential community within the Mt Aitken Neighbourhood will relate directly to the community facilities provided within Greenvale Lakes and result in a combined population of approximately 5,400. As part of the greater Roxburgh Park Community, the Greenvale Lakes Development Plan provides for an expansion of existing community facilities that are co-located with the Roxburgh Rise Primary School. The Development Plan also provides 10.25ha of active open space and a Neighbourhood Activity Centre.

4.3.4 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 Hume City Council 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:

- Craigieburn Development Contributions Plan;
- Hume City Council 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 Hume City Council as the Collecting Agency;
- 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 Hume City Council may make application to the Growth Areas Authority for funding to support the provision of community facilities in the precinct; and
- Non-government organisations. Some community infrastructure may be able to be delivered by the Council working in partnership with non-government organisations.

Table 5: Community Facilities Table

Mickleham Neighbourhood

Facilities and services	Description	Responsibility	Within PSP	Outside PSP
State Primary School P-6	Primary school as part of R3	DEECD		x
Double Kindergarten	Dual kindergarten and childcare facilities to be provided within R3	Hume Council		x
Maternal & Child Health	Co-located with dual kindergarten in R3	Hume Council		x
Community meeting space & Non Government Organisation (NGO) consulting rooms	Available within the proposed multi-purpose facility in R3	Hume Council		x
Active Open Space	A 3.0ha facility to be provided as part of the R3 area. Additional oval also provided within the Greenvale Recreation reserve.	Hume Council		x
Passive Open Space – Local Parks	2 neighbourhood parks to be provided	Developer	x	

Mt Aitken Neighbourhood

Facilities and services	Description	Responsibility	Within PSP	Outside PSP
State Primary School P-6	Existing facilities (Roxburgh Rise Primary School and Roxburgh Homestead Primary School)	DEECD		x
Double Kindergarten	Co-located facilities at Roxburgh Rise Primary School and Roxburgh Homestead Primary School	Hume Council/ DEECD		x
Maternal & Child Health	500m^2 expansion to existing community centre adjoining Roxburgh Rise Primary School provided by Greenvale Lakes Development	Council/DEECD		x
Active Open Space	A 10.25ha facility is to be provided to the east of Aitken Boulevard (E14)	Hume Council/ Developer		x
Passive Open Space	Aitken Hill (4.8ha hilltop park)	Developer	x	
Passive Open Space – local parks	3 parks to be provided centrally within the Mt Aitken precinct	Developer	x	
Sports Pavillion	Sports Pavillion to support the provision of ovals of Greenvale Recreation Reserve	Hume Council		x
Public Amenities	Changerooms and umpire rooms to be provided adjacent active open space in R3	Hume Council		x

plan 13

open space network

greenvale north [R1] precinct structure plan

4.4 OPEN SPACE AND NATURAL SYSTEMS

4.4.1 OPEN SPACE AND NATURAL SYSTEMS OBJECTIVES:

The objectives for open space and natural systems are:

- To provide a variety of open space types to meet the active and passive recreation needs of the community and where possible 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 establish an attractive urban environment with a strong sense of place through the provision of well designed landscaping of open spaces as well as the road and corridor networks;
- To implement open space development standards which provide for sustainable future maintenance regimes requiring minimal water, chemical and energy inputs;
- To support the early development of open space, both active and passive, through subdivisional works, the development contribution plan and Council's capital works program;
- To contribute, proportionally, to active and other higher order open space outside of the precinct which will serve the future community within the Plan area;
- To plan for the long term conservation management of areas of significant native vegetation and fauna habitat;
- To utilise the reservation for the reservoir protection mechanism (the bund) as linear open space, by creating a continuous elevated pedestrian/cycling trail within the 20m bund reserve;
- To provide fencing within the internal perimeter of the reservoir protection mechanism to prevent access into the Reservoir area. Fencing should be designed and located to maintain views and minimise visual impact. The detailed design for this interface must be in accordance with the Greenvale Reservoir Catchment: Drinking Water Quality Risk Management Plan (March 2008); and
- To utilise the non-developable sections of the Reservoir area as areas for biodiversity protection and enhancement.

4.4.2 NEIGHBOURHOOD OPEN SPACE

- Community neighbourhood parks should be provided within 400-500m of all residences, with a minimum area of 0.75 hectares. Facilities provided on each area should include play equipment, pathways, signage and seating picnic facilities. The design of each area should provide for open space areas for informal play.

4.4.3 LINEAR LINKS

- As foreshadowed in the Hume Growth Area Framework Plan, a shared pedestrian/ cycling link should be provided from the Greenvale Reservoir Park to Mt Aitken. The only route that appears viable is along the boundary of the Greenvale Reservoir Protection Area. This link will also need to pass through the land south of the Greenvale North R1 area to connect to the Greenvale Reservoir Park. This linear link should continue along the full length of the bund to the east providing an east-west link through the precinct subject to Melbourne Water's Reservoir Protection requirements.

4.4.4 ACTIVE OPEN SPACE

Active open space is not provided within the Precinct itself, however the Precinct makes a contribution to the delivery of Active Open Space outside of the Precinct as follows:

Mt Aitken Neighbourhood

- Two full size ovals at Greenvale Lakes Regional Reserve.

Mickleham Neighbourhood

- An active playing field (3 hectares – as an addition to the neighborhood park) to be provided within the Greenvale West R3 Precinct.
- A full size oval at Greenvale Recreation Reserve.

4.4.5 HOW TO MAKE A PUBLIC OPEN SPACE CONTRIBUTION IN THIS PRECINCT

Further to the public open space contribution required at Clause 52.01 of the Hume Planning Scheme, this provision sets out the amount of land to be contributed by each property (refer to Plan 9 for property numbers) in the precinct and consequently where a cash contribution is required in lieu of land. Where Table 4: Property Specific Land Use Budgets (Passive Open Space) specifies:

- 0% of land as Passive Open Space ('POS'), the contribution is a cash contribution of 4.48% of the site value.
- More than 0% and less than 4.48% of the land as POS, the contribution is a land contribution equal to the percentage specified in Table 4 as POS and a further cash contribution that is equal to the difference in value between the land contribution and 4.48% of the site value.
- More than 4.48% of the land as POS, the contribution is a land contribution equal to the percentage specified in Table 4 as POS.

In the latter instance, the subdivider may request that the responsible authority reimburse the subdivider for the difference in site value between 4.48% and the amount of POS specified for that land in Table 4 to the satisfaction of the responsible authority.

4.4.6 IMPLEMENTATION

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

- ***Plan 6: Design Response;***
- ***Plan 12: Community Facilities Plan;***
- ***Plan 13 Open Space Network;***
- ***Plan 14: Biodiversity & Vegetation***
- ***Table 4: Property Specific Land Use Budgets.***

4.4.7 OPEN SPACE PLANNING AND DESIGN GUIDELINES

The guidelines outlined in the following table should be met.

- Integrating the siting and design of local parks with the reservoir protection mechanism reserve as linear open space;
- The siting and design of local parks should take advantage of extensive views provided within the plan area; and
- All open space is to meet the criteria set out in Council's Open Space Strategy (Draft 2010-2015) and Guidelines for the Planning Design and Construction of Open Space (2004).

Table 6: Open Space Planning and Design Guidelines

DESIGN ISSUE	PLANNING AND DESIGN GUIDELINES
General	• Open spaces must be designed and constructed to a fit for purpose standard with an appropriate mix of facilities. • 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. • 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 must be provided to the satisfaction of the responsible authority.
Interface with road network	• Open spaces must 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 must complement and integrate with the adjoining parkland design.
Interface with adjoining development	• The open space network will 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 must 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 parklands. • Where fencing is required it should be low scale and permeable to facilitate public safety and surveillance. • Landscaping of adjoining development must complement the park landscape design.
Interface with conservation areas	• The design of parks and open space corridors can enhance and preserve areas of conservation significance provides this does not undermine the function of the space. • Preference is to be given to the use of indigenous species in open spaces adjoining conservation areas. • Landscape master planning of open space containing native vegetation conservation areas must be designed to protect sensitive areas from vehicle or pedestrian traffic. • Appropriate buffer zones must be provided between native vegetation conservation areas and 'hard' infrastructure such as paths, furniture, picnic shelters. • Passive or low impact activities should occur closest to offset/conservation areas, with more high impact or formal activities to be located further away. • Preference is to be given to the use of indigenous species in open spaces adjoining conservation areas.
Utilisation of the reservoir protection mechanism	• Recognise that the protection mechanism for the Greenvale Reservoir constitutes land 'shaping' that enables its uses as linear open space where provided as a reservation.
Greenvale Reservoir	• The Buffer Area around the Greenvale Reservoir may provide some opportunity for public access subject to Melbourne Water's requirements. • An opportunity exists to provide a linear pedestrian/cycle link near the Aitken Hill Conference and Events Centre site between the Mt Aitken and Mickleham Road Neighbourhoods. This should be provided at a minimum 20m width.
Interface with drainage reserves	• The design of drainage reserves, retarding basins and wetlands is to integrate with the open space network. • Pedestrian and bicycle paths must be incorporated into the drainage system to connect the open space and street network. • A linear pedestrian/ cycle link should be provided between the Mt Aitken and Mickleham Neighbourhoods. This should be appropriately integrated into the planning and development of the investigation area and be provided at a minimum 20m width. • 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 above a minimum of the 1:100 year flood line to the satisfaction of the relevant authority. • Park seating should be provided access by footpaths at least every 250m.
Park Buildings	• The design standards of park buildings should make use of sustainable construction techniques (for example solar power lighting). • Park buildings should be sited and designed to integrate with and complement landscaping and should not dominate the parkland. • 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 and design detailing to minimise resource use and maximise sustainability performance. • Material choice shall complement the proposed landscape character.
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. • Light fittings should be energy efficient and 'cut-off' type to direct light where it is required and reduce unnecessary spill to sides or above. • Light fittings should be compact fluorescent or similar that emit white light. • Lighting in open spaces should be restricted to reserve entrances, activity nodes, community event gathering points and path intersections.

DESIGN ISSUE	PLANNING AND DESIGN GUIDELINES
Landscape character and vegetation	• Species planted in open space areas should be selected on the basis of their potential to grow robustly, enhance their setting and be sustainable in the long term, especially considering the difficultly of growing in the urban environment. • Australian native species should be used wherever possible with other species being considered where special effects are required such as at entrance points and other sites of significance.
Other park landscape elements and infrastructure	• The design and siting of landscape elements and infrastructure will compliment the area. • Park infrastructure such as playgrounds, shelters, BBQ's picnic tables, toilets, drink fountains, courts, soccer goals etc should be clustered in nodes. Park planting themes should enhance and complement these nodes. • Park seating should be provided at least every 250m along any open space path networks. • Park infrastructure should be contemporary in design with materials choices and design detailing complementing the planting character • 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 shade tree planting, ground level planting and incorporate water sensitive urban design measures. 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 focused on key access or heritage interpretation points and major pedestrian / cycle routes. • Design and materials choice should be contemporary and should complement other park design elements.
Water Sensitive Urban Design	• The design and layout of open spaces will 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 reserves to minimise potable water use.
Transfer of land requirements	• All parks should be finished to the following level of development to the satisfaction of the responsible authority prior to the transfer of land: • Cleared of all rubbish and environmental weeds, levelled, top soiled and grassed with warm climate grass (unless in a conservation reserve), • Water Tapping, • Drought resistant shade canopy planting • Vehicle exclusion devises with maintenance access points • All passive open space reserves are to be developed in accordance with Council's Guidelines for the Planning, Design and Construction of Open Space, with plans endorsed as required under the Planning Permit.

Proposed Neighbourhood Activity Centre
Proposed Primary School
CRAIGIEBURN PUBLIC GOLF COURSE
CRAIGIEBURN STATION
AITKEN HILL CONFERENCE & EVENTS VENUE
FAIRWAYS BOULEVARD
BRIDGEWATER DRIVE
State Secondary School
State Primary School
Mount Aitken
R1 PSP AREA
HZ1
LYSTERFIELD DRIVE
Kolbe College
JAMES MIRAMS DRIVE
ROXBURGH PARK DRIVE
HZ2
HZ3
PROPOSED E14
SILVESTER PDE
Plains Grassy Woodlands
PROVIDENCE ESTATE
Aitken College
MICKLEHAM ROAD
Greenvale Reservoir Park
GREENVALE RESERVOIR
Neighbourhood Activity Centre
DONALD CAMERON DRIVE
State Secondary School
State Primary School
THOMAS BURTON PARADE
State Primar School

- Precinct Structure Plan Area
- Urban Growth Boundary
- Reservoir Protection Mechanism
- Investigation Area
- Hill Top Park
- Passive Open Space
- Linear Open Space
- Encumbered Open Space /Stormwater Management
- Buffer Area
- Golden Sun Moth
- Scattered Trees
- HZ1 Habitat Zone - Native Vegetation to be Protected
- Watercourse
- Waterbody
- Golfcourse (Outside PSP)
- Significant Regional Open Space (Outside PSP)

plan 14

biodiversity & vegetation

greenvale north [R1] precinct structure plan

4.4.8 BIODIVERSITY

- To plan for the long term conservation management of areas of significant native vegetation and fauna habitat in accordance with this Biodiversity Plan (Section 4.4.8 of the PSP) and the Greenvale North R1 Native Vegetation Precinct Plan;
- To plan for the retention and protection of biodiversity values within the precinct to provide link habitats across the wider landscape and provide a focus for revegetation activities;
- To plan for biodiversity values unable to be retained to be offset in permanently protected areas;
- To enhance the biodiversity of the area through the provision of habitat connectivity for flora and fauna throughout the precinct as the area develops in accordance the Greenvale North R1 Precinct Structure Plan; and
- To provide a mechanism to implement the relevant prescriptions referred to in the approval of a class of actions made by the Minister administering the Environmental Protection & Biodiversity Conservation Act 1999 (Commonwealth) under section 146B of that Act on 8 July 2010.

4.4.9 IMPLEMENTATION PROVISIONS

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

» ***Plan 14 Biodiversity and vegetation***

» ***Section 4.4.10- Biodiversity Conservation Planning and Design Guidelines***

» ***Part 2 of PSP: The Greenvale North R1 Native Vegetation Precinct Plan (NVPP)***

» ***Provisions of the Urban Growth Zone Schedule 2***

4.4.10 BIODIVERSITY CONSERVATION PLANNING AND DESIGN GUIDELINES

The following planning and design guidelines must be met:

- 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 in the Native Vegetation Precinct Plan referred to in the Schedule to Clause 52.17, unless otherwise agreed to in writing by the Department of Sustainability and Environment;
- Any construction stockpiles and machinery must be placed away from areas supporting native vegetation, fill and drainage lines to the satisfaction of the responsible authority;
- 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 designated biodiversity reserves; and
- Water run-off must be designed to ensure that native vegetation to be protected is not compromised.

The following planning and design guidelines should be met:

- Street trees and public open space landscaping will provide habitat for indigenous fauna species in particular avifauna (birds). Where appropriate, the use of indigenous trees is encouraged along streets and in parks. Lower level indigenous planting is encouraged where it can be demonstrated it is compatible with the planning and design guidelines for street tree planting and delivery of public open space;
- Drainage areas will be planted with suitable species selected to tolerate site conditions, require minimal maintenance and create useable open space;
- Revegetation to use locally indigenous species complementary to indigenous Ecological Vegetation Communities where possible;
- Linear parks, waterways and widened road reserves should be designed to provide connective habitat for local flora and fauna through appropriate planting of locally indigenous species;
- Parks with connections to the Greenvale Reservoir or its protection mechanisms (as indicated on Plan 13) are to incorporate appropriate water protection methods and should support connection of areas capable of supporting flora and fauna through appropriate design and planting; and
- Development should be staged to avoid land locking Eastern Grey Kangaroos. Should this approach not be adopted, then landowners will be required to provide and implement a Kangaroo Management Plan including addressing humane and effective solutions to respond to their containment in an area with no reasonable likelihood of continued safe existence.

Proposed Neighbourhood Activity Centre
Proposed Open Space
Proposed Local Centre
Proposed Primary School
AITKEN HILL CONFERENCE & EVENTS VENUE
CRAIGIEBURN PUBLIC GOLF COURSE
CRAIGIEBURN STATION
CRAIGIEBURN TOWN CENTRE
FAIRWAYS BOULEVARD
BRIDGEWATER DRIVE
State Secondary School
State Primary School
Mount Aitken
R1 PSP AREA
LYSTERFIELD DRIVE
Kolbe College
Proposed Neighbourhood Activity Centre
State Primary School
Community Facilities
JAMES MIRAMS DRIVE
Proposed Active Open Space 10.25 ha
ROXBURGH PARK DRIVE
Proposed Active Open Space
PROVIDENCE ESTATE
Proposed Primary School
PROPOSED E14
MELBOURNE AIRPORT
Aitken College
GREENVALE MAC
SILVESTER PDE
ROXBURGH PARK MAC
Neighbourhood Activity Centre
DONALD CAMERON DRIVE
State Secondary School
State Primary School
THOMAS BURTON PARADE
State Primary School
MICKELHAM ROAD
Greenvale Reservoir Park
GREENVALE RESERVOIR

- Precinct Structure Plan Area
- Urban Growth Boundary
- Neighbourhood Activity Centre
- Local Centre
- 400m Pedestrian Walkability Catchment from NACs and Local Centres
- Shared Path

plan 15

employment & activity centres

greenvale north [R1] precinct structure plan

4.5 EMPLOYMENT AND ACTIVITY CENTRES

4.5.1 EMPLOYMENT AND ACTIVITY CENTRES OBJECTIVES

The Greenvale North R1 PSP forms part of two larger residential communities and provides limited opportunities for local employment. The Plan area will depend mainly upon employment opportunities within the Hume Highway Employment Precinct, Melbourne Airport and activity centres close to the Plan area.

The objectives for employment areas and activity centres are:

- Offer a high level of convenience for the resident population of the PSP in terms of access to a full range of activity centres across the corridor; and
- Ensure the transport network in the PSP area supports the wider network in providing access to employment areas across the broader Hume Corridor.

ACTIVITY CENTRES

The principle neighbourhood centres serving the PSP will be located outside the plan area.

MT AITKEN NEIGHBOURHOOD

The Mt Aitken Neighbourhood will adjoin the Greenvale Lakes Town Centre which is located at the junction at Aitken Boulevard (the E14) and James Mirams Drive. This centre will provide in excess of 2,500sqm retail floorspace in addition to private services and some employment.

MICKLEHAM NEIGHBOURHOOD

The Mickleham Neighbourhood will function as part of the Greenvale West R3 community and will both rely upon the town centre as the principal activity centre serving Greenvale, on Mickleham Road. The predominant retail facility serving the precinct will be located at the existing Greenvale Centre, approximately two kilometres south of the PSP boundary. Potential future retail facilities are proposed at the intersection of Somerton and Mickleham Roads.

AITKEN HILL CONFERENCE AND EVENTS VENUE

Located north of the PSP area, the Aitken Hill Conference and Events Venue is a low intensity use offering limited local employment opportunities. The future use and development of this site will be subject to a further precinct structure plan process.

4.5.2 IMPLEMENTATION

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

- ***Plan 7: Future Urban Structure Plan***
- ***Plan 15: Employment and Activity Centres Plan***
- ***Plan 16: Road Network Plan***
- ***Plan 17: Public Transport Network Plan***
- ***Plan 18: Walking and Trails Network Plan***

Proposed Neighbourhood Activity Centre
Proposed Open Space
Proposed Local Centre
Proposed Primary School
AITKEN HILL CONFERENCE & EVENTS VENUE
CRAIGIEBURN PUBLIC GOLF COURSE
CRAIGIEBURN STATION
FAIRWAYS BOULEVARD
BRIDGEWATER DRIVE
State Secondary School
State Primary School
Mount Aitken
R1 PSP AREA
LYSTERFIELD DRIVE
Kolbe College
Proposed Neighbourhood Activity Centre
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Community Facilities
JAMES MIRAMS DRIVE
ROXBURGH PARK DRIVE
Proposed Active Open Space
PROVIDENCE ESTATE
Proposed Primary School
Aitken College
MICKLEHAM ROAD
Greenvale Reservoir Park
GREENVALE RESERVOIR
PROPOSED E14
SILVESTER PDE
Neighbourhood Activity Centre
DONALD CAMERON DRIVE
THOMAS BURTON PARADE
State Secondary School
State Primary School

- Precinct Structure Plan Area
- Arterial Road - VicRoads Declared Arterial Road
- Connector Street
- Access Street - Lv2 (adjacent Reservoir)
- Access Street - Lv1
- Signalised Intersection - Controlled
- Roundabout
- Left In / Left Out
- U-turn (provided once duplicated)
- Shared Path

plan 16
road network
greenvale north [R1] precinct structure plan

4.6 TRANSPORT AND MOVEMENT

4.6.1 TRANSPORT AND MOVEMENT OBJECTIVES

The objectives for transport and movement are:

- To establish an integrated and sustainable transport network that reduces dependency on the use of private vehicles, maximizes access to public transport and encourages walking and cycling within and between neighborhoods;
- To establish a bus network that connects the future Craigieburn rail station and the existing Roxburgh Park railway station with residential areas, 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 establish an 800 metre spaced grid of arterial roads and connector streets so that more than 95% of all households can be located within 400 metres of a potential public transport service;
- To support 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 recognise the existing arterial road hierarchy, with particular attention to Mickleham Road and Aitken Boulevard (E14), as the basis for the local road network;
- No direct access from residential lots created as part of the PSP onto Mickleham Road and Aitken Boulevard (E14);
- To provide sufficient capacity for bus services to move efficiently through the plan area and link to key destinations outside the PSP; and
- To ensure that all road reserves in the precinct are provided with infrastructure designed to cater for the safe movement of people by all modes of transport i.e. in vehicles, by bicycles and on foot.

Access to the residential area, to the west of Aitken Boulevard should be provided via a left in / left out arrangement at both intersections. Additional works that are required in this area include:

- A median opening between the two access points to the crescent shaped area in order to allow u-turn movements;
- Inclusion of a pedestrian refuge island in the middle of Aitken Boulevard as an interim measure to provide a link between the new development and Greenvale Lakes east area. The ultimate long term requirement in this location is the installation of a set of pedestrian operated signals at the southern intersection.

4.6.2 IMPLEMENTATION

The objectives for transport and movement are met by implementation of all the following:

- ***Plan 7: Future Urban Structure Plan***
- ***Plan 16: Road Network Plan***
- ***Plan 17: Public Transport Network Plan***
- ***Plan 18: Walking and Trails Network Plan***
- ***Table 7: Road Hierarchy***
- ***Planning and design guidelines set out in 4.6.3 including the road and street cross sections***

4.6.3 PLANNING AND DESIGN GUIDELINES

FLEXIBILITY IN ROAD DESIGN

Road design needs to be responsive to the specific traffic needs and the interfacing development form.

While typical road section types, responding to the road network plan, are included within this Precinct Structure Plan, some flexibility in the ultimate design may be required. The arterial road cross sections reflect an agreed position between Hume City Council and VicRoads, however the internal road network and cross-sections as represented in cross-sections 1-7 should:

- Provide the basis for planning future development and preparation of subdivision plan;
- Unless with the consent of the responsible authority, be the road cross sections applied to the subdivision plan;
- Recognise that specific development proposals may generate the need for alternative road cross-sections, in addition to those identified, especially for the local street network including:
  - Interface with open space or visually sensitive areas,
  - Alternative residential housing product such as 'mews courts', rear access, medium density etc.
- Provide access to buildings fronting arterial roads from service roads, local roads or lanes only.

ARTERIAL ROADS

The Greenvale North R1 PSP area does not contain any arterial roads. It adjoins both Aitken Boulevard and Mickleham Road, which are both arterial roads.

CONNECTOR STREETS

The following planning and design guidelines should be met.

- Connector streets (including any culverts) are to be constructed by development proponents as part of the subdivision works (prior to the issue of a statement of compliance for the relevant stage);
- Intersections of connector roads and the arterial road network must be constructed to achieve a minimum ten year design life, to the satisfaction of VicRoads and the responsible authority;
- 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.

Table 7: Road Hierarchy

ROAD/STREET	EXISTING RESERVE	ULTIMATE RESERVE	INDICATIVE VEHICLES PER DAY	TRAFFIC LANES	SPEED LIMIT	BUS	PROPERTY ACCESS AND PARKING	TREE RESERVE	CYCLE PATH	RESPONSIBILITY
Aitken Boulevard	46m (56m including reservoir protection mechanism)	46m (56m including reservoir protection mechanism)	30,000	4 (+ 2 lanes for dedicated express bus services).	**70**	✓	**No Access**	**Partial**	**Off Rd (outside PSP)**	**VicRoads/HCC**
Mickleham Rd	21m	50m	36,000	6	**70**	✓	**No Access**	**No**	**On Rd (outside PSP)**	**VicRoads/HCC**
Lysterfield Drive	19 - 26m	26m (variable)	2,400	2	**60**	✓	**Direct**	**No**	**On Rd**	**HCC**
Connector Road	-	26m	Up to 5,400	2	**60**	✓	**Direct**	**No**	**On Rd**	**HCC**
Access Street Level Two (Adjacent Reservoir)	0	17m	Up to 3,000	2	**50**	**x**	**Direct**	**No**	**On Rd**	**HCC**
Access Street Level One	0	16m	Up to 1,000	2	50	**x**	**Direct**	**No**	**On Rd**	**HCC**
Access Street Level One (with landscape trail)	0	23m	Up to 1,000	2	50	**x**	**Direct**	**Yes**	**Off Rd**	**HCC**

BUS NETWORK

Buses will be the key form of public transport in the local catchment area.

The following planning and design guidelines should be met.

- Roundabouts are not favoured on bus routes as they introduce delays. Unsignalised cross-intersections should be avoided. If required, they should be controlled by signals or staggered configurations;
- Staging of road construction should allow for direct bus routes to key destinations so that bus services will operate in an efficient, reliable and timely manner;
- Higher activity generating uses should be established along potential public transport routes. The road network should be designed to accommodate bus movements;
- Bus priority treatments should be included, particularly at signalised intersections in accordance with the Bus Priority Guidelines (November 2003);
- The location of public transport routes and access into the precinct must be designed in consultation with the Department of Transport.

Bus stop facilities should be constructed by development proponents as part of the subdivision works (prior to the issue of a statement of compliance for the relevant stage) to a design standard approved by the Director of Public Transport and;

- Be designed as an integral part of activity centres and activity generating land uses, such as employment areas.
- Be provided at intervals of approximately 300 metres or to the satisfaction of the responsible authority and the Department of Transport;
- Be provided with direct and safe pedestrian access connected to an existing pedestrian/shared path.
- Include DDA compliant sealed pathway access and lighting for all bus stops along the PPTN and local bus network ad shelters at strategic locations;
- Be designed in accordance with the Draft Public Transport Guidelines for Land Use and Development (DoT, 2008).

WALKING AND CYCLING NETWORKS

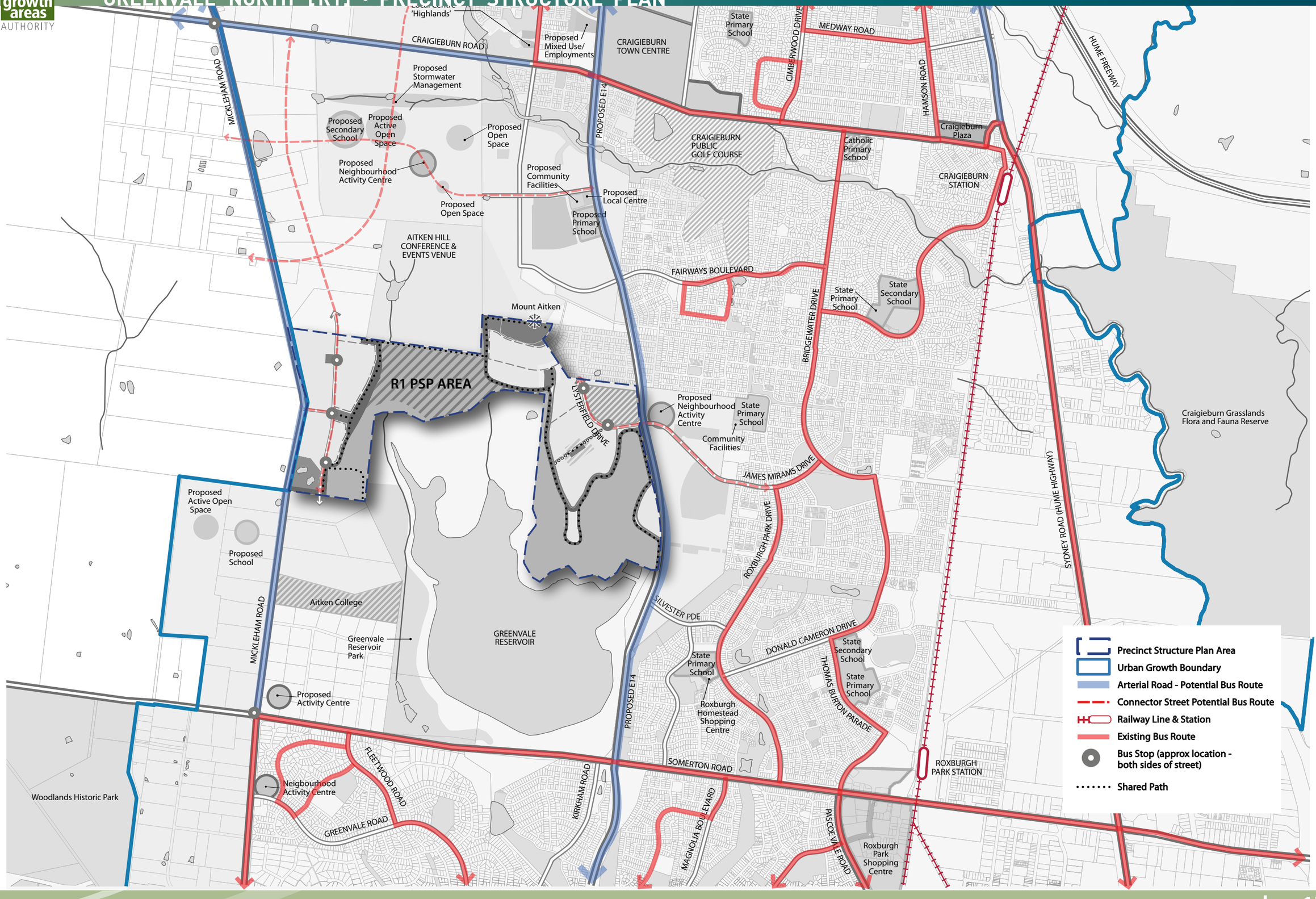
The following planning and design guidelines must be met:

- Walking and cycling networks are to be implemented early in the subdivision and construction process to ensure that these facilities are available when needed by new residents, workers and visitors;
- Footpaths and cycle paths are to be provided with increased width in areas expecting high foot traffic such as near schools, community centres, activity centres and bus stops;
- Cycle parking facilities are provided in convenient and prominent locations;
- The reservoir protection mechanism and reservation will be accessible as a linear reserve and include a shared pedestrian and cycle trail network;
- Pedestrian and cycle crossings are provided at all key street intersections and along key desire lines, particularly along the interface between the residential and employment areas and in the vicinity of bus stops;
- Shared pathways should be designed and located to maximise passive surveillance and provided in wide road verges with safe crossing points at key locations;
- Shared pathways are 2.5 metres in width;
- The local street network should 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. They should incorporate green-links in lieu of road connections onto arterials and sub arterials;
- All pedestrian and cycling infrastructure should be compliant with the Commonwealth Disability Discrimination Act (DDA);
- Footpaths be provided along all road reserves.

ROAD AND STREET CROSS SECTIONS

The following planning and design guidelines should be met to the satisfaction of the Responsible Authority:

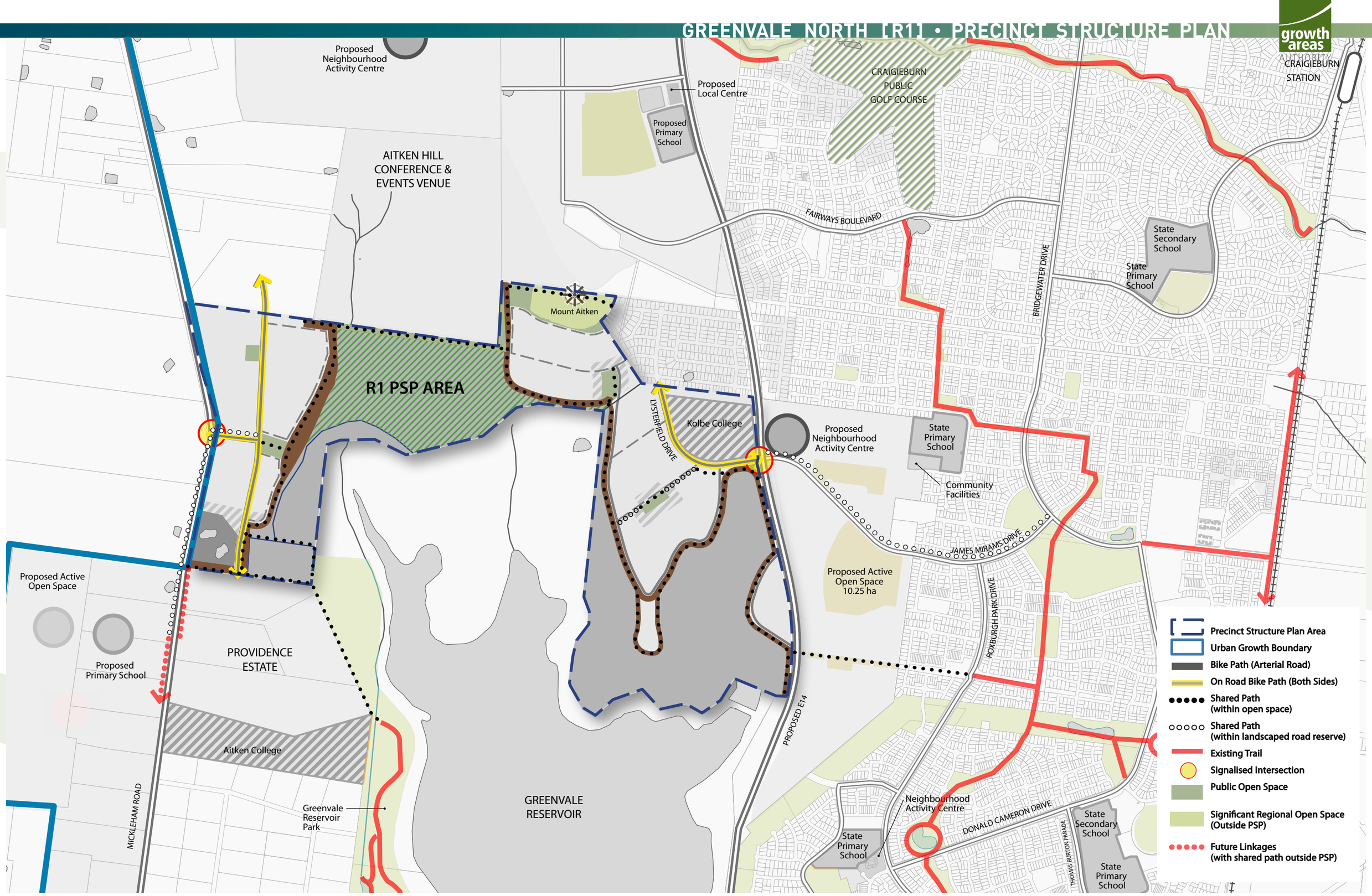
- Road and street cross sections must be consistent with the cross sections included in this Element;
- Housing is to front or otherwise address the Arterial Road network. Where this requirement is not physically achievable or desirable, a plantation reservation must be provided to the satisfaction of the responsible authority.



plan 17

public transport network

greenvale north [R1] precinct structure plan

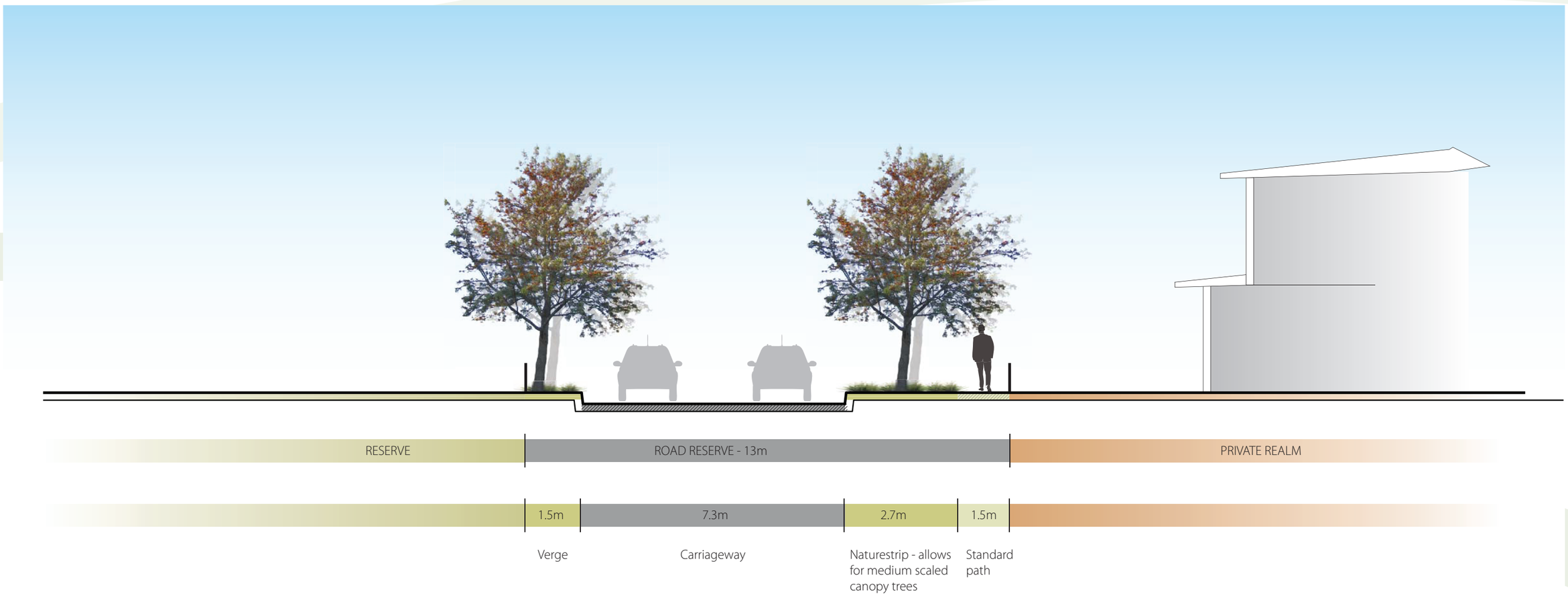


plan 18

walking & trails network

greenvale north [R1] precinct structure plan

Cross-Section 1: Access Place/Access Street - Reserve frontage - 13m

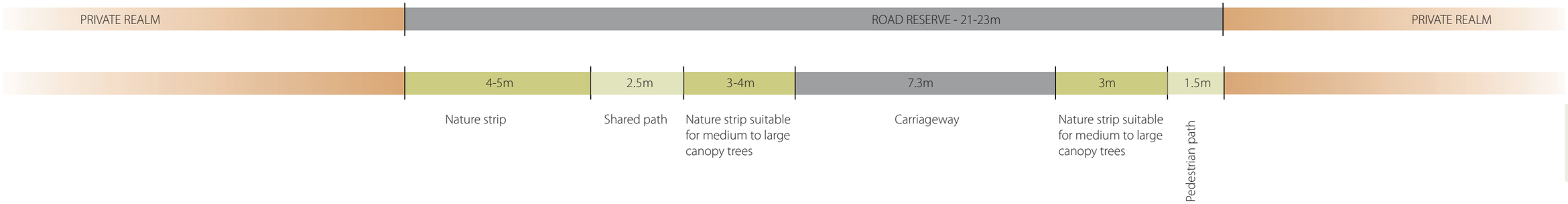


Cross-Section 2: Access Place/Access Street - Level 1 - 16m

PRIVATE REALM | ROAD RESERVE - 16m | PRIVATE REALM

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

Cross-Section 3: Access Street - Level 1 - 21-23m with Shared Landscape Trail

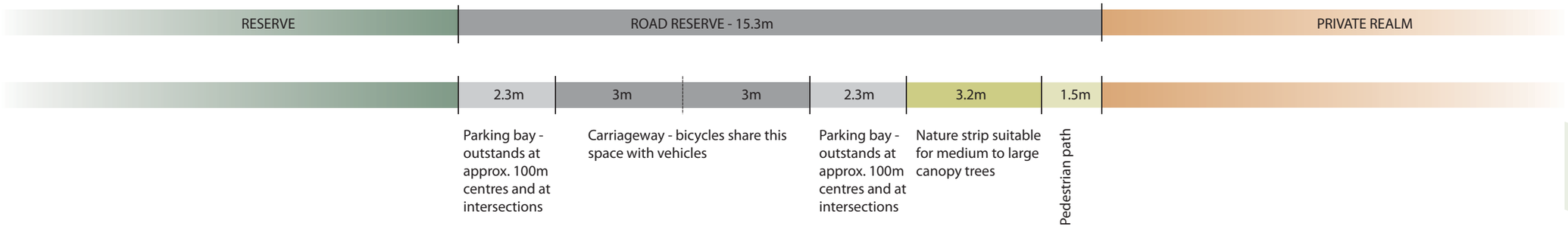


Cross-Section 4: Access Street - Level 2 - 17m (adjacent reservoir)

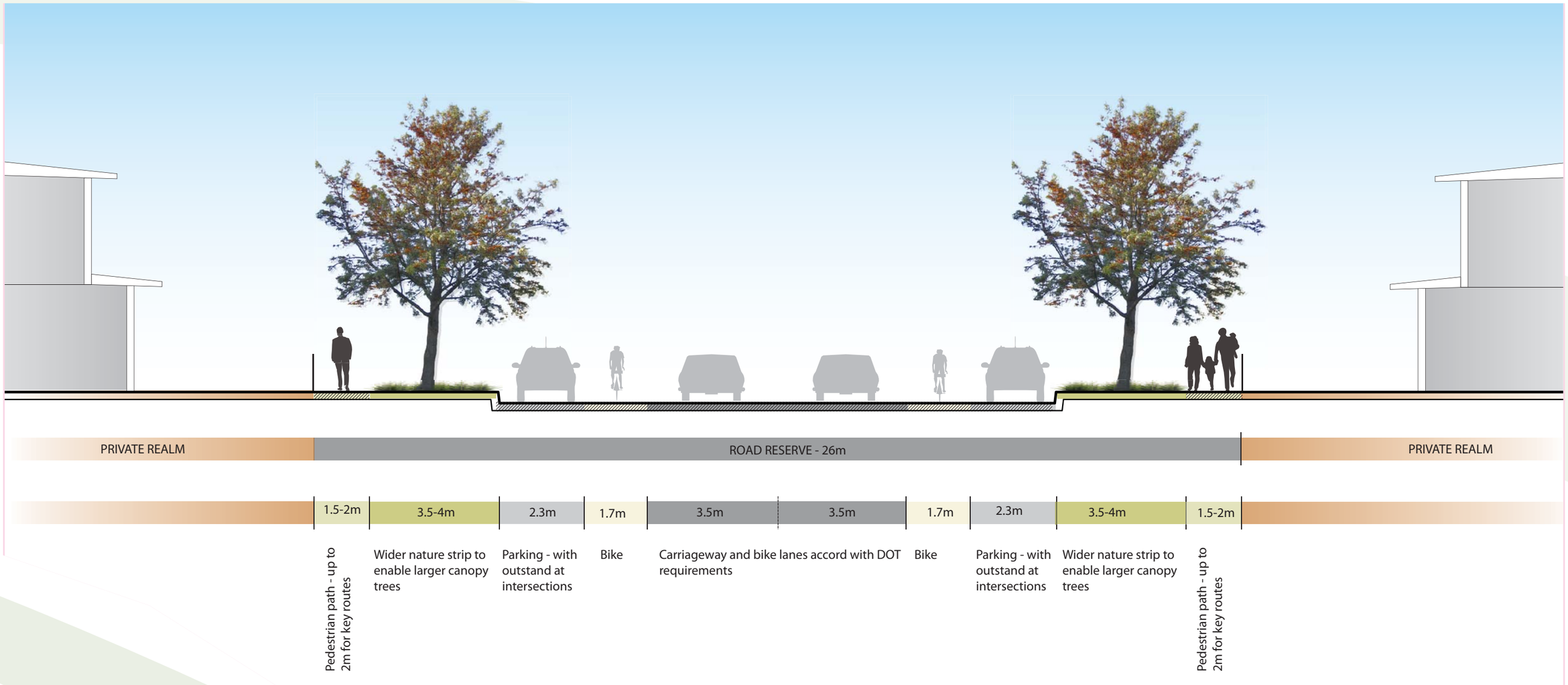
PRIVATE REALM | ROAD RESERVE - 17m

1.5m	3.2m	2.3m	3.5m	3.5m	3.0m	Landscape Section
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		Nature strip suitable for medium to large canopy trees	

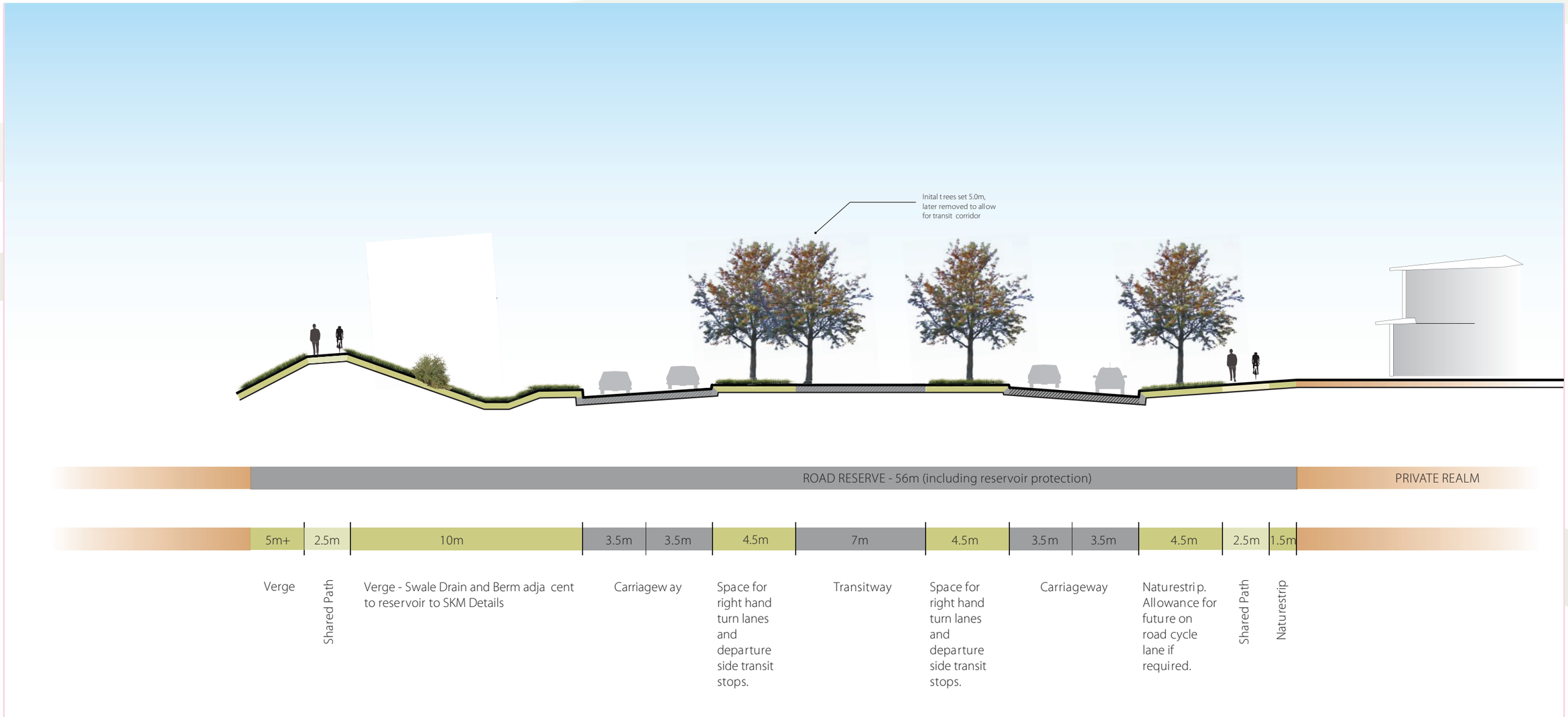
Cross-Section 5: Access Street - Level 2 - 15.3m adjoining open space



Cross-Section 6: Connector Street - Residential - 26m



Cross-Section 7: Aitken Boulevard with Transit Corridor - 46m with a 10m Reservoir protection mechanism



Note:

Access between bus stops and the shared pedestrian/cycle path must be compliant with the *Disability Discrimination Act 1992*

Median planting proposed needs to be consistent with VicRoads clear zone requirements

4.7 UTILITIES AND DEVELOPMENT STAGING

4.7.1 UTILITIES OBJECTIVES

The utilities objective is:

- Provide all developed lots within the Greenvale R1 PSP with:
  - a potable water supply;
  - electricity;
  - a reticulated sewerage service;
  - drainage;
  - gas, and
  - telecommunications.

4.7.2 IMPLEMENTATION

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

» ***Meeting requirements of the relevant service authority / provider; and***

» ***Planning and design guidelines.***

Table 8: Utility Providers

Service	Provider
Water supply	Yarra Valley Water Limited
Sewerage	Yarra Valley Water Limited
Electricity	Alinta Energy
Gas	TXU
Telecommunications	Telstra

4.7.3 PLANNING AND DESIGN GUIDELINES

ELECTRICITY

The following planning and design guidelines must be met:

- All new electricity supply infrastructure must be provided underground (excluding substations);
- New substitutions must be identified at the subdivision design response stage to ensure efficient integration with the surrounding neighbourhood and to minimise amenity impacts; and
- The design of subdivision electricity infrastructure must consider the practicality of removing existing above ground electricity lines in the local road network by re-routing lines underground through the subdivision.

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

5.0 PRECINCT INFRASTRUCTURE PLAN

5.1 INTRODUCTION

This Precinct Infrastructure Plan sets out infrastructure and services required to meet the needs of 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 requirements; and
- Agreements enshrined via separate legal agreements such as Section 173 agreements.

5.1.1 METHODOLOGY

In calculating contributions required through development of the Greenvale North R1 PSP area, the approach will be:

- Recognise that catchments and impacts of the transport network are different to catchments for community and social infrastructure;
- Separate road infrastructure catchments from the communities of interest that form the catchments for social and community infrastructure;
- Calculate road infrastructure contributions on the basis of improvements to the planned network generated by the PSP Area;
- Calculate community and recreational infrastructure contributions by identifying the wider catchments for each item of infrastructure and apportioning the share the PSP contributes to the facility as a DCP item.

KEY STEPS IN THE PROCESS:

- Identify the infrastructure items to which the PSP will generate demand;
- Identify the population /household catchment for each item;
- Identify the wider communities that will be generating demand for the infrastructure items and the proportion that the PSP forms as part of that catchment;
- Identify the proportional contribution for the PSP Area (Table 9);
- Recognise that the "Mickleham Neighbourhood" will contribute to infrastructure items in Greenvale West R3 PSP.

5.1.2 SUBDIVISION CONSTRUCTION WORKS BY DEVELOPERS

As part of subdivision construction works, new development is required to meet the total cost of delivering the following infrastructure:

- Connector and collector roads and local streets;
- Provide bus routes and stops in accordance with the Public Transport network (Plan 17), Walking and Trails Network (Plan 18) and in consultation with the Department of Transport to provide maximum accessibility to public transport;
- Landscaping of all existing and future roads and local streets;
- Intersection works and traffic management measures along arterial roads, collector roads and local streets;
- Council approved fencing and landscaping (where required) along arterial roads;
- Local pedestrian and bicycle paths along arterial roads, collector roads and local streets and within local parks;
- Basic improvements to local parks and passive open space including leveling, grassing, tree planting and shared paths and footpaths;
- Local drainage systems; and
- 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 Contribution Plan has been prepared for the Greenvale North R1 Precinct in conjunction with this PSP. The Development Contribution Plan is an incorporated document of the Hume Planning Scheme.

5.2.1 INFRASTRUCTURE AND SERVICES REQUIRED TO SUPPORT DEVELOPMENT OF THE PRECINCT.

Table 9 sets out the list of infrastructure and services required t to support the development of the precinct, 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
- Indicative Capital Cost - (in 2010 dollars)

5.3 DELIVERY AND MONITORING

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

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

Table 9: **Infrastructure and Services required to support the development of the precinct.**

Mt Aitken Neighbourhood

PROJECT CATEGORY	TITLE	APPORTIONMENT	INDICATIVE COST ($2010)
ROADS			
Road	Provision of kerb and channel on south boundary of James Mirams Dve for 800m. (Upgrade road to urban standard to accommodate increased traffic flows)	100%	$300,000
Intersection	Signalised intersection at Aitken Bvd and James Mirams Dve	50%	$3,454,500
COMMUNITY			
Buildings	Construction of sports pavilion at Greenvale Lakes East	37%	$1,100,000
Buildings	Construction of regional library and learning centre at Craigieburn	4.21%	$15,000,000
Buildings	Construction of regional indoor active recreation centre at Craigieburn	4.21%	$30,000,000
OPEN SPACE			
Works	Construction of 2 ovals, car parking, landscaping at Greenvale Lakes regional reserve	37%	$3,300,000

Mickleham Neighbourhood

PROJECT CATEGORY	TITLE	APPORTIONMENT	INDICATIVE COST ($2010)
COMMUNITY			
Works	Construction of one pavilion to serve active playing oval (senior football/cricket oval), landscaping and car parking at Greenvale Reserve (south of Somerton Rd)	22%	$1,100,000
Land	Land for community centre within Greenvale R3 PSP (0.7ha)	22%	$1,400,000
Buildings	Construction of Multi-purpose community centre (including dual kindergarten) with landscaping and car parking.	22%	$4,250,000
Buildings	Construction of public amenties (including changerooms and umpire rooms)	22%	$250,000
Buildings	Construction of regional library and learning centre at Craigieburn	4.21%	$15,000,000
Buildings	Construction of regional indoor active recreation centre at Craigieburn	4.21%	$30,000,000
OPEN SPACE			
Land	Land for an active playing field (3 hectares) as an addition to the neighbourhood park with associated landscaping and car parking.	22%	$5,250,000
Works	Construction of one Active Playing Oval (3 hectares) landscaping and car parking. Oval to be provided in addition to neighbourhood park.	22%	$1,957,000
Works	Construction of one full size active playing oval (senior football/cricket oval), landscaping and car parking at Greenvale Reserve	22%	$1,957,000

6.0 PROTECTION OF THE GREENVALE RESERVOIR

6.1 OVERVIEW OF RESERVOIR AND CATCHMENT

The Plan area falls within the natural catchment of the Greenvale Reservoir, which is a key distribution storage facility for Melbourne's north-western suburbs. This natural catchment is referred to as the Greenvale Reservoir Protection Area, and is shown on Plan 5. Maintaining high water quality is imperative to Melbourne Water. The Greenvale Reservoir (Reservoir) is currently protected from excessive runoff and the risk of contamination by a diversion channel close to the Reservoir base.

Melbourne Water, as the water storage manager, has an obligation to protect Melbourne's water supply from a range of potential contaminants. This includes ensuring that land use intensity and increased urban development does not lead to a decline in water quality and contamination of the Reservoir through storm water run-off. The protection of the Reservoir is essential to the health of all communities that rely on the Reservoir for drinking water.

6.2 ENVIRONMENTAL OBJECTIVES

The environment objectives to be achieved are as follows:

- To protect the Reservoir from the impacts of surrounding development, particularly where new development has the potential to increase surface storm water run-off or the potential to reduce the quality of storm water runoff;
- To ensure the cumulative effect of land use and development in the Greenvale Reservoir Protection Area maintains or reduces the level of risk to the quality of water supplied from the Reservoir;
- To ensure development and land use is consistent with the Greenvale Reservoir Catchment: *Drinking Water Quality Risk Management Plan (March 2008);*
- To protect the water quality of the Reservoir from storm events with an annual recurrence interval up to a 1 in1,000,000 AEP flood event;
- To ensure that development and land use is compatible with the protection of the Reservoir; and
- To ensure the provision of protection measures for the Reservoir are integrated with other measures being undertaken by Council and the Victorian Government to achieve coordinated urban development in the relevant locality.

Melbourne Water requires that all new developments must be designed to protect the Reservoir from stormwater contamination. *The Greenvale Reservoir Catchment: Drinking Water Quality Risk Management Plan* (March 2008) sets out objectives and requirements for the protection of the Greenvale Reservoir. Any application for subdivision or development within the Greenvale Reservoir Protection Area must demonstrate how the development responds to this document and must provide a waterway management easement over the areas of land affected by overland flows in favour of Melbourne Water and to Melbourne Water's satisfaction.

6.3 SUMMARY OF PROTECTION REQUIREMENTS

Melbourne Water's key Reservoir protection requirements include:

- The provision of a durable, reliable and impervious reservoir protection mechanism between any urban development area and the Reservoir to divert floodwaters away from the Reservoir. This measure may include a bund or floodwall within the development area or within Melbourne Water land to divert storm water flows out of the area of land which otherwise fall towards the Reservoir;
- Suitable land shaping within the development area or within Melbourne Water land to divert storm water flows out of the area of land which otherwise fall towards the Reservoir; and
- Compliance with a variety of sewer reticulation requirements, including the sealing of all joints and pits, a ban on sewerage pump stations or emergency relief structures and a number of additional construction control measures.

The developer must comply with above Reservoir protection requirements in manner which does not increase the risk of flooding or spillage to surrounding communities and infrastructure.

6.4 SPECIFIC PROTECTION REQUIREMENTS

All urban development in the Greenvale Reservoir Protection Area must include protection measures to prevent stormwater or other overflows from flowing to the Reservoir. These measures must divert stormwater safely away from the Reservoir. Recreational and/ or community ponds, wetlands, or artificial lakes with connection to the stormwater system must not be built within the Greenvale Reservoir Protection Area without the written approval of Melbourne Water.

6.4.1 PERFORMANCE REQUIREMENTS

Reservoir protection measures to achieve this objective must comply with the following requirements to the satisfaction of Melbourne Water:

- The reservoir protection measures must be designed and constructed to withstand the flows associated with the 1 in 1,000,000 AEP flood event;
- The reservoir protection measures must be able to resist erosion from the flows associated with the 1 in 1,000,000 AEP flood event. The reservoir protection measures must be robust and tamper proof and minimise maintenance and inspection requirements;
- The extent of existing and future development in the Greenvale Reservoir Protection Area must be considered during the design of reservoir protection measures;
- The impact which a partial or complete failure of one or more parts of the reservoir protection measures could have must be evaluated. All reservoir protection measures must be investigated collectively as a whole system within the Greenvale Reservoir Protection Area.
- The reservoir protection measures must be designed to minimise adverse flood impacts;
- All reservoir protection measures and adjacent land must be configured, designed and constructed to minimise the need for ongoing maintenance and inspection and to facilitate these activities as required;
- The construction of the reservoir protection measures may be staged to the satisfaction of Melbourne Water and must cater for all stormwater runoff within the relevant part of the Greenvale Reservoir Protection Area for that stage, irrespective of land ownership and intended stages of development;
- The flows associated with the reservoir protection measures must not come into contact with any infrastructure associated with the Reservoir (including embankments, foundations, spillways and spillway drains) unless approved by Melbourne Water;
- The reservoir protection measures must be clearly visible and must be able to be easily identified and inspected by Melbourne Water.

6.4.2 MANAGEMENT REQUIREMENTS

The reservoir protection measures must be located:

- On public land; or
- On private land with a suitable easement and covenant; or
- Within land owned by Melbourne Water; or
- A combination of the above;

To prevent unauthorised works and ensure Melbourne Water has access to the reservoir protection measures at all times.

Melbourne Water will manage and maintain critical reservoir protection structures subject to suitable arrangements with the developers.

6.4.3 DOCUMENTATION REQUIREMENTS

- All information relevant to the design and construction of the reservoir protection measures must be presented in the form of a design report. The design report is to adequately address these requirements;
- A Work Method Statement must be prepared which details the placement and compaction of layers and testing methods to ensure that the Reservoir protection measures are constructed to a standard to the satisfaction of Melbourne Water;
- All aspects and details of the design and construction of reservoir protection measures must be certified by an appropriately qualified engineer.

6.4.4 REQUIREMENTS FOR STRUCTURAL WORKS

Where the reservoir protection measures consist of a bund, floodwall or land shaping, they must be to the satisfaction of Melbourne Water and:

- Be designed using appropriate durability and stability analyses and practices;
- Comply with best dam, waterway and levee engineering practices;
- Include foundation treatments (bonding of the embankment to the foundation);
- Incorporate a freeboard provision above the 1 in 1,000,000 AEP flood level to the satisfaction of Melbourne Water;
- In the case of an earthen embankment, be protected with appropriate treatments to the satisfaction of Melbourne Water;
- Include a chainmesh fence along the alignment of the bund unless otherwise approved by Melbourne Water;
- Be suitably landscaped to restrict access to the Reservoir fence;
- Include educational signage which highlights the purpose and function of the Bund;
- In the case of an earthen embankment, achieve suitable compaction levels and appropriately cater for cracking or dispersive soils (e.g. intercepting filters or outer zones comprising dimensionally stable, non-dispersive soils);
- Be durable and impervious and must take the form of a "core" rather than a "liner" to reduce the effects of drying which may lead to cracking;
- Exclude inappropriate vegetation particularly on earthen embankments (as this could negatively affect structural integrity, surveillance and maintenance);
- In the case of earthen embankments, have slopes with a minimum of 3H:1V; and
- Be designed and constructed so that any overtopping will not affect the short term or long term structural stability (e.g. due to sub-sequential undermining or breaching).

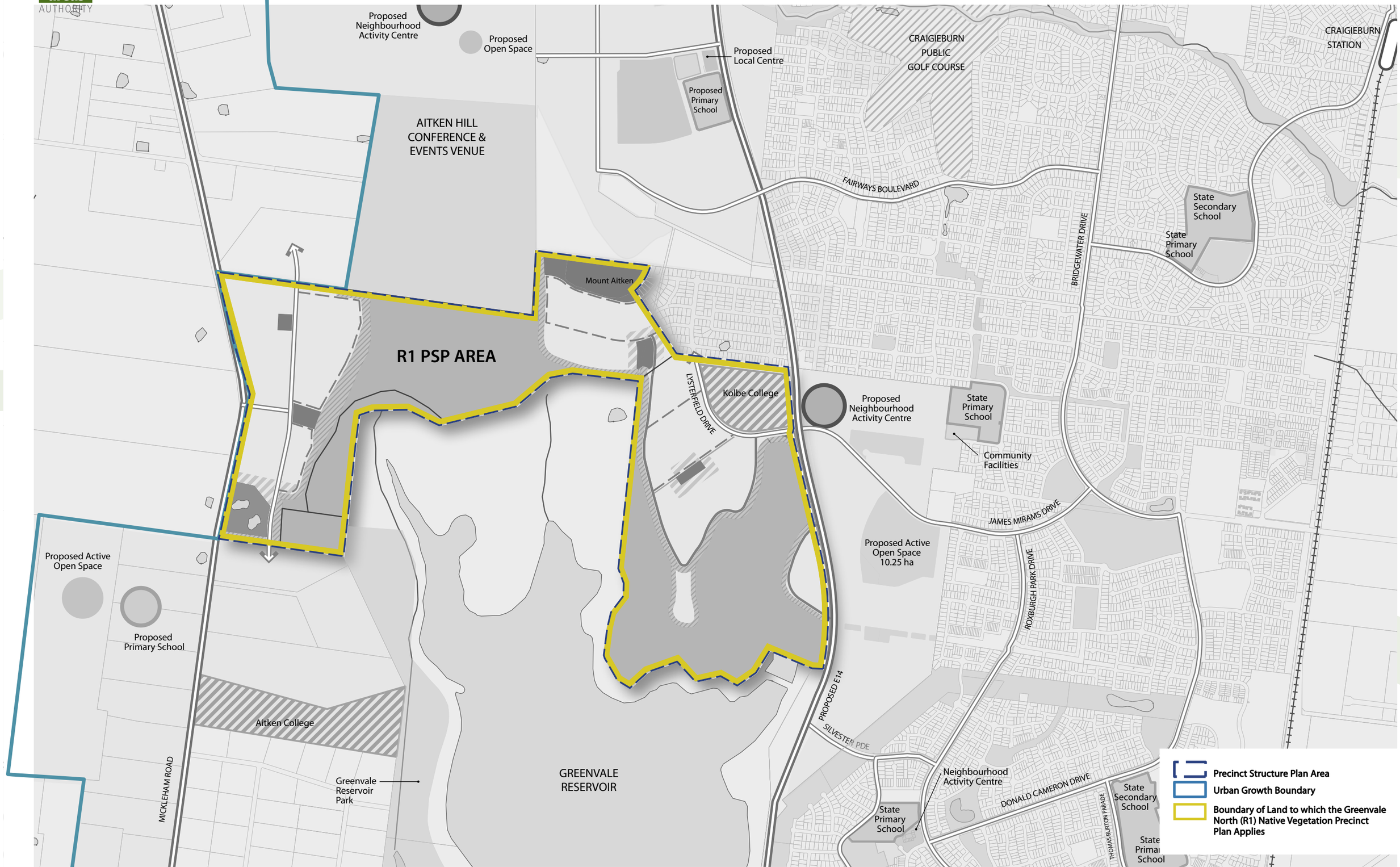
6.4.5 REQUIREMENTS FOR SEWERAGE WORKS

- All sewers must be constructed with gravity flow and no emergency relief structure can be located within the Greenvale Reservoir Protection Area;
- All sewage systems must be:
  - Constructed of plastic pipes with fully welded joints or a suitable alternative, to Melbourne Water's satisfaction having regard to the views of Yarra Valley Water Limited; and
  - Otherwise designed, constructed and sited to the satisfaction of Melbourne Water having regard to the 1 in 1,000,000 AEP storm event.
- All residential or other development within the Greenvale Reservoir Protection Area must be connected to a reticulated sewage system and no septic tanks or similar onsite wastewater treatment systems are to be used within the Greenvale Reservoir Protection Area.

6.5 LAND OUTSIDE THE RESERVOIR PROTECTION AREA

Part of the Greenvale North R1 PSP site area is located outside the Greenvale Reservoir Protection Area Land outside the Greenvale Reservoir Protection Area is generally west of the north-south ridgeline that bisects the Mickleham Neighbourhood, as identified on Plan 5.

Development within this area, where flows do not drain toward the reservoir, does not require the written consent of Melbourne Water before use, development or subdivision may commence. The written consent of Melbourne Water will be required to divert flows towards Brodies Creek or into the Greenvale Reservoir Protection Area.



NVPP map 1

area to which the NVPP applies

greenvale north [R1] precinct structure plan

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PART TWO: GREENVALE NORTH R1 NATIVE VEGETATION PRECINCT PLAN (NVPP)

This is the Greenvale North R1 Native Vegetation Precinct Plan (NVPP) listed under the Schedule to Clause 52.16 of the Hume Planning Scheme. The removal, destruction or lopping of native vegetation in accordance with this Native Vegetation Precinct Plan, does not require a permit, provided conditions and requirements specified in this Native Vegetation Precinct Plan are met.

The Greenvale North R1 Native Vegetation Precinct Plan applies to all land identified in Map 1.

PURPOSE

The purpose of the Greenvale North R1 NVPP is to:

- Specify the native vegetation to be protected;
- Ensure that areas set aside to protect native vegetation are managed to conserve ecological values in accordance with the Greenvale North R1 NVPP;
- Ensure the removal, destruction or lopping of native vegetation specified to be protected is consistent with conserving the ecological values of these areas and is in accordance with the three-strep 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.

THE NATIVE VEGETATION TO BE PROTECTED

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

Vegetation Protection Objectives to be achieved are:

- To manage and conserve the retained native vegetation and allow for passive recreation on the periphery of habitat zones, without damaging native vegetation, such as walking and cycling tracks, and passive recreation facilities;
- To protect and manage the habitat zones and scattered native trees identified for retention, 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 across the landscape, and provide a focus for revegetation activities;
- To improve the long-term health and habitat value of retained native vegetation; and
- To protect revegetated areas of native vegetation as required by the responsible authority.

Applications for removal of native vegetation to be protected

- The native vegetation identified to be protected in Tables 1 and 2 and Map 2 of this NVPP should not be removed;
- The native vegetation identified to be protected in Tables 1 and 2 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 the NVPP rather than a site by site approach; and
- Decisions relating to the removal of certain individual trees or areas of native vegetation have been made in a holistic manner taking into account scattered trees and 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 this NVPP.

NATIVE VEGETATION THAT CAN BE REMOVED, DESTROYED OR LOPPED

The native vegetation described in NVPP Table 3 and shown in Map 2 to this plan as 'native vegetation that can be removed', may be removed, destroyed or lopped subject to the requirements and conditions set out under this NVPP.

CONDITIONS FOR THE REMOVAL OF NATIVE VEGETATION

The native vegetation described in Table 3 and shown in Map 2 as 'native vegetation that can be removed', can be removed, destroyed or lopped subject to the following requirements and conditions:

- Any native vegetation to be removed (in accordance with this NVPP) must be clearly marked on site;
- The native vegetation (habitat zones or scattered trees) as indicated in Table 3 and Map 2 of this Native Vegetation Precinct Plan may be removed if the removal of the native vegetation is offset in accordance with the offset targets or offsets set out in Table 4 of the Native Vegetation Precinct Plan and those offsets are secured to the satisfaction of the Department of Sustainability and Environment .
- The native vegetation must not be removed until the offsets required are identified and secured to the Department of Sustainability and Environment .
- Prior to felling of any trees with nest or hollows, the tree must be examined for fauna by a suitably qualified zoologist. If native fauna species are found, they must be salvaged and relocated where possible, to the nearest suitable habitat, in consultation of the Department of Sustainability and Environment;
- Any construction stockpiles and machinery must be placed away from areas supporting native vegetation, fill and drainage lines to the satisfaction of the responsible authority;
- 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 designated biodiversity reserves; and
- Prior to the commencement of any works during the construction phase, a highly visible vegetation protection fence must be erected around twice the canopy of each scattered tree and more than 2 metres from all other native vegetated areas which have been identified to be protected in the NVPP referred to in the schedule to Clause 52.16.

CONDITIONS FOR SUBDIVISIONS, BUILDINGS AND WORKS OR VEGETATION REMOVAL WITHIN 50 METRES OF NATIVE VEGETATION TO BE PROTECTED

The following conditions must be included on all planning permits for subdivisions, buildings, works or vegetation removal within 50 metres of native vegetation identified 'to be protected' in Tables 1 and 2 and Map 2 of this NVPP:

- 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 in the NVPP referred to in the Schedule to Clause 52.16, unless otherwise agreed to in writing by the Department of Sustainability and Environment;
- 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; and.
- All earthworks must be undertaken in a manner that will minimise soil erosion and adhere to Construction Techniques for Sediment Pollution Control (EPA 1991).

NVPP map 2

native vegetation to be protected/removed

greenvale north [R1] precinct structure plan

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NVPP Table: 1: Habitat Zones to be protected

PROPERTY DETAILS	PROPERTY ID IN PLAN	EVC DESCRIPTION	HABITAT ZONE ID	SIZE	EVC CONSERVATION STATUS	OVERALL CONSERVATION SIGNIFICANCE
Lot J PS612449 (1170 Mickleham Rd, Greenvale)	Property 1	Stony Knoll Shrubland	HZ1	0.64ha	Endangered	High
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	Plains Grassy Woodland	HZ2	0.76ha	Endangered	High
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	Plains Grassy Woodland	HZ3	0.3ha	Endangered	High

NVPP Table: 2: Scattered Trees to be Protected

PROPERTY DETAILS	PROPERTY ID IN PLAN	TREE ID	SPECIES	EVC	SIZE	CONSERVATION SIGNIFICANCE	X-LATITUDE	Y-LONGITUDE
Lot J PS612449 (1170 Mickleham Rd, Greenvale)	Property 1	1	Eucalyptus Camaldulensis	55_61	VLOT	High	0314364	5834857
Lot J PS612449 (1170 Mickleham Rd, Greenvale)	Property 1	2	Eucalyptus Camaldulensis	55_61	VLOT	High	0314362	5834904
Lot J PS612449 (1170 Mickleham Rd, Greenvale)	Property 1	3	Eucalyptus Camaldulensis	55_61	LOT	High	0314388	5834933
Lot J PS612449 (1170 Mickleham Rd, Greenvale)	Property 1	4	Eucalyptus Camaldulensis	55_61	MOT	High	0314466	5834992
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	5	Eucalyptus Camaldulensis	55_61	MOT	High	0315157	5833982
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	6	Eucalyptus Camaldulensis	55_61	MOT	High	0315243	5834121
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	7	Eucalyptus Camaldulensis	55_61	SOT	High	0315177	5834227
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	8	Eucalyptus Camaldulensis	55_61	SOT	High	0315139	5834284
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	9	Eucalyptus Camaldulensis	55_61	SOT	High	0315114	5834299
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	10	Eucalyptus Camaldulensis	55_61	SOT	High	0315106	5834429
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	11	Eucalyptus Camaldulensis	55_61	SOT	High	0315571	5834015

NVPP Table: 3: Scattered Trees which can be removed, destroyed or lopped

PROPERTY DETAILS	PROPERTY ID IN PLAN	TREE ID	SPECIES	EVC	SIZE	CONSERVATION SIGNIFICANCE	X-LATITUDE	Y-LONGITUDE
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	12	Eucalyptus Camaldulensis	55_61	MOT	High	315276	5834179

NVPP Table: 4: Offset requirements for scattered trees which can be removed, destroyed or lopped

PROPERTY DETAILS	PROPERTY ID IN PLAN	TREE ID	SPECIES	EVC	SIZE	CONSERVATION SIGNIFICANCE	LOSS OF MOT'S	OFFSET TO BE ACHIEVED (RECRUITMENT ONLY)	OFFSET TO BE ACHIEVED (PROTECT & RECRUIT)
Lot B P614242C (400 Somerton Rd, Roxburgh Park)	Property 4	12	Eucalyptus Camaldulensis	55_61	MOT	High	1	60 trees	Protect 2 trees and recruit 20 trees

EXEMPTIONS

In addition to the exemptions set out under 52.16-4 of the Hume Planning Scheme, native vegetation may be removed, destroyed or lopped to the minimum extent necessary without approval if any of the following apply:

- There are no additional exemptions for the Greenvale North R1 Native Vegetation Precinct Plan.

PROCEDURES FOR THE COLLECTION OF ANY PAYMENT

No payments are necessary or specified.

REFERENCE DOCUMENTS

Eco Logical Australia (2009). Referral of Proposed Action; Residential Developments at Greenvale R1 and Craigieburn R2 EPBC Referral for Peet Ltd. (EPBC referral was withdrawn).

Ecology Partners (2009a). Flora and Fauna Assessment, and Targeted Golden Sun Moth and Matted Flax-lily Surveys for land at 1170 Mickleham Rd, Peet Ltd

Ecology Partners (2009b). Flora and Fauna Assessment, and Targeted Golden Sun Moth and Matted Flax-lily Surveys for land at 400 Somerton Rd,.Peet Ltd.

Ecology Partners (2010) Targeted Surveys for the Golden Sun Moth Final Report: Targeted surveys for the Golden Sun Moth Synemon plana at 1170 Mickleham Road and 400 Somerton Road, Peet Ltd.

ERM (2008). Greenvale Environmental Assessment Plan – Review and Gaps Analysis, GAA.

ERM (2006). Aitken Hill Conference and Events Venue - Proposed Expansion of Existing Facilities; Biological Features/Net Gain Assessment, Aitken Green Pty Ltd.

Earth Tech (2006a). Draft Flora and Fauna Assessment Mt Aitken, Peet and Company Pty Ltd.

Earth Tech (2006b). Flora and Fauna Assessment Mickleham Road, Peet and Company Pty Ltd.

Brett Lane & Associates (2002). Somerton Defence Property Flora and Fauna Survey, Department of Defence.

7.0 OTHER INFORMATION

7.1 GLOSSARY

ACTIVE OPEN SPACE

Land set aside for the specific purpose of formal outdoor sports by the community.

ACTIVITY CENTRE

Focus for business, shopping, working and leisure, and usually community facilities. Well served by public transport and containing higher density development. Growth areas include Principal Activity Centres, Major Activity Centres, Specialised Activity Centres, Neighbourhood Activity Centres and Local Centres.

AFFORDABLE HOUSING

Housing provided by the private sector for households on low to moderate incomes.

ARTERIAL ROAD

A higher order road providing for moderate to high volumes at relatively high speed 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. (Local Arterial Road)

CAPITAL EXPENDITURE

A payment made, or to be made for one-off long term infrastructure in terms of the Precinct Infrastructure Plan or Development Contributions Plan

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.

CO-LOCATION

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

COMMUNITY FACILITIES SEE COMMUNITY INFRASTRUCTURE

COMMUNITY INFRASTRUCTURE

Public and private, State, Council and non-council facilities which accommodate community support services, programs and activities (e.g. preschool, child care, youth services, aged services, community meetings, sporting competition, arts, performing arts, informal recreation, cultural activities, health programs, education activities, emergency services, civic, community support)

CONVENTIONAL DENSITY HOUSING

Housing with an average density of 10 to 14 dwellings per net developable hectare

CORRIDORS OF OPEN SPACE

Mainly along river and creek valleys, the coast, disused railways lines and aqueducts, that link together to form a network and provide active transport connections in the community to key destinations and facilities

DCP SEE DEVELOPMENT CONTRIBUTIONS PLAN

DEVELOPMENT CONTRIBUTIONS PLAN

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

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.

GAA see Growth Areas Authority

GAFP see Growth Area Framework Plan

GREENVALE RESERVOIR PROTECTION AREA

The natural catchment of the Greenvale Reservoir, being the area shown as the Greenvale Reservoir Protection Area on Plan 5

GROSS DEVELOPABLE AREA

Total area bounded by the precinct boundary.

GROSS HOUSING DENSITY see Housing Density (gross)

GROWTH AREA

Areas on the fringe of metropolitan Melbourne designated for large-scale growth. The following municipal councils: Cardinia Shire; Hume City; Hume City; Melton Shire; Whittlesea City; Wyndham City

GROWTH AREA FRAMEWORK PLAN

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

GROWTH AREAS AUTHORITY

A statutory authority established by the Victorian Government to work in partnership with councils and government agencies, and provide advice to government on the coordination of land development, infrastructure and service provision in the growth areas.

HIGHER DENSITY HOUSING

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

HOUSING DENSITY (GROSS)

Housing yield divided by gross developable area.

HOUSING DENSITY (NET)

Housing yield divided by net developable area.

HOUSING YIELD

Number of dwellings

INTEGRATION

Either shared use or co-location

JOINT USE see Shared Use

LINEAR OPEN SPACE NETWORK

LOCAL ARTERIAL ROAD

Similar to an arterial road, but generally more modest in terms of speed and volume. Supplements the declared arterial network and managed by the relevant local council.

LOCAL CENTRE

An activity centre smaller than a neighbourhood activity centre with a catchment of about 400m2, and may include a small supermarket or convenience store of 500m2 to 1,500m2.

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 lower than 10 dwellings per hectare.

MAC see Major Activity Centre

MAJOR ACTIVITY CENTRE

Defined in Melbourne 2030, page 48

MEDIUM DENSITY HOUSING

Housing with an average density of 15 to 30 dwellings per net developable hectare

NAC see Neighbourhood Activity Centre

NATIVE VEGETATION

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

NATIVE VEGETATION PRECINCT PLAN

Sets out requirements for the protection and removal of native vegetation for a defined area or precinct

NEIGHBOURHOOD ACTIVITY CENTRE

Defined in Melbourne 2030, page 49. In growth areas, retail element to be anchored by a 2,500m2 supermarket, with a broad range of supporting retail goods and services.

NET DEVELOPABLE AREA

Area of precinct available for development for housing or employment. Includes lots, local and connector streets. Excludes schools, open space, conservation areas, drainage, arterial roads.

NET HOUSING DENSITY see Housing Density (net)

NVPP see Native Vegetation Precinct Plan

OPERATIONAL EXPENDITURE

An ongoing cost for infrastructure in terms of the Precinct Structure Plan or Development Contributions Plan (PSP Guidelines, 2008, Section 8)

PAC see Principal Activity Centre

PASSIVE OPEN SPACE

Parks, gardens, linear corridors, conservation bushlands and reserves that are made available for passive recreation, play and relatively low levels of physical activity including walking, cycling, hiking, revitalisation, contemplation and enjoying nature.

PIP see Precinct Infrastructure Plan

PPTN see Principal Public Transport Network

PRECINCT INFRASTRUCTURE PLAN

Summarises how infrastructure and services necessary for the precinct will be delivered.

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 PSP sets out the broad environmental, social and economic parameters for the use and development of land within the precinct.

PRINCIPAL ACTIVITY CENTRE

Defined in Melbourne 2030, page 47

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.

PSP see Precinct Structure Plan

PUBLIC HOUSING

Housing provided by Government for households on low to moderate incomes.

PUBLIC OPEN SPACE

Land set aside in a plan or land in a plan zoned or reserved under a planning scheme 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.

ROAD

Includes highway, street, lane, footway, square, court, alley or right of way, whether a thoroughfare or not and whether accessible to the public generally or not.

SHARED USE

When schools, councils and community organisations come together to plan, build and in some cases jointly manage a single facility to be used by multiple service providers, e.g. the concept of using a school as a community facility is about enabling the school to provide for wider community utilisation.

SOCIAL HOUSING

Housing provided by Housing Associations for households on low to moderate incomes.

SOCIAL INFRASTRUCTURE

Community Infrastructure plus public open space.

SPECIALISED ACTIVITY CENTRE

Defined in Melbourne 2030, page 49

SPORTING OPEN Space see Active Open Space

UGB see Urban Growth Boundary

UGZ see Urban Growth Zone

URBAN GROWTH BOUNDARY

A management tool to contain urban areas and limit their expansion. It divides land that is urban – to be used for housing, shops, factories – from land that is non-urban and to be used for purposes such as conservation, agriculture, mineral extraction, airports and the like.

URBAN GROWTH ZONE

Applies to land identified for future urban development to manage transition of non-urban land into urban land; to encourage development of well-planned and well-serviced new urban communities in accordance with an overall plan; to reduce the number of development approvals needed in areas where an agreed plan is in place; and to safeguard non-urban land from use and development that could prejudice its future urban development.

WATER SENSITIVE URBAN DESIGN

Aims to provide water-quality treatment as well as flood management and to reduce the pollution carried to our waterways. 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; using temporary rainfall storage (retarding basins/wetlands) to reduce the load on drains

WSUD see Water Sensitive Urban Design

7.2 ACRONYMS

AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AFL	Australian Football League ovals
CAD	Central Activities District
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
MCH	Maternal & Child Health
MSS	Municipal Strategic Statement
NAC	Neighbourhood Activity Centre
NDA	Net Developable Area
NDHa	Net Developable Hectare
NGO	Non Government Organisation
NVPP	Native Vegetation Precinct Plan
PAC	Principal Activity Centre
PIP	Precinct Infrastructure Plan
PPTN	Principal Public Transport Network
PSP	Precinct Structure Plan
P-6	State School Prep to Year 6
P-12	State School Prep to Year 12
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

7.3 SUPPORTING INFORMATION

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

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