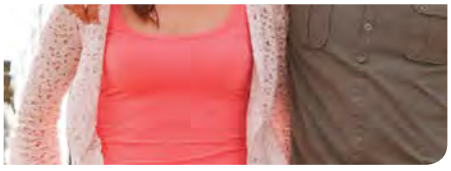
Playford Growth Area Structure Plan

December 2013



Government of South Australia
Department of Planning, Transport and Infrastructure

Playford Growth Area Structure Plan

December 2013

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Introduction

1.0 Introduction

The 30-Year Plan for Greater Adelaide (the Plan) outlines how the South Australian Government proposes to balance population and economic growth with the need to improve accessibility, preserve the environment, support community well-being, and protect the character of the Greater Adelaide region.

The Plan is used by the State Government to guide the planning and delivery of the state's services and infrastructure such as transport, health, schools and community facilities.

Structure Plans are central to the implementation of the Plan. The role of these plans is to:

- spatially represent the objectives for particular areas
- ensure that the impact of new development on communities and the environment is appropriately managed
- detail the range and location of strategic land uses including activity centres, transit corridors and new growth areas
- foster the new urban form as outlined in the Plan
- describe the relevant area's planning and design framework for development and investment.

The Plan's vision is to create places where everything people need for their day-to-day lives is easily accessible by walking, cycling or using public transport. In doing so, the Plan seeks to break away from older models of urban growth and develop a new urban form that promotes sustainability and liveability.

The Plan recognises that a growing and diverse economy is vital if we are to attract and retain more people to develop South Australia. To achieve this, the Plan works on the premise that greater flexibility in land use will attract and enhance industries of strategic importance to the state's future. A key role of the Plan is therefore to ensure that there is an adequate supply of employment land which is well located and protected from incompatible land uses.

The Plan also seeks opportunities for energy efficient and water-sensitive urban design, along with new greenways and open space precincts (including for structured sport), which will result in a city and townships that are more resilient to the effects of climate change.

1.1 Purpose of Structure Planning

The structure planning process:

- assists in achieving the population, dwelling and employment targets set out in the Plan
- identifies and facilitates the resolution of strategic infrastructure issues
- fosters the design and development of a new sustainable and liveable urban form across Greater Adelaide
- facilitates the rezoning of land for residential and employment purposes.

1.2 Structure Plan Study Area

The scope of this Structure Plan is shown on the map on the following page. The term ‘study area’ is used when referring to this area.

The study area encompasses the western portion of the City of Playford, extending from the Adelaide-Gawler railway line to the coast. The study area also includes land within the City of Salisbury that is part of Greater Edinburgh Parks. Areas of existing or planned development at Buckland Park and Playford North, including the Playford Alive development, are included within the study area to ensure connectivity between new development areas.

The Structure Plan considers the whole of the study area but focuses attention on the following growth areas:

- Angle Vale Urban Growth Area
- Playford North Extension
- Virginia Urban Growth Area
- Greater Edinburgh Parks.

These growth areas are referred to either by these terms or their common geographic (suburb) names.

Angle Vale Urban Growth Area

The Angle Vale Urban Growth Area covers approximately 944 hectares (ha) of land in total, including the existing Angle Vale township (244 ha) and approximately 700 ha of land in the growth area to the north, south and east of the township.

Playford North Extension Urban Growth Area

The 729 ha of land within Penfield, MacDonald Park, Munno Para West and Munno Para Downs—known as the Playford North Extension—includes:

- land located between the Northern Expressway and Andrews Road (bounded by Womma Road to the south and Angle Vale Road to the north)
- land to the north of the existing residential zoned land at Munno Para Downs bounded by Andrews, Dalkeith, Angle Vale and Coventry roads.

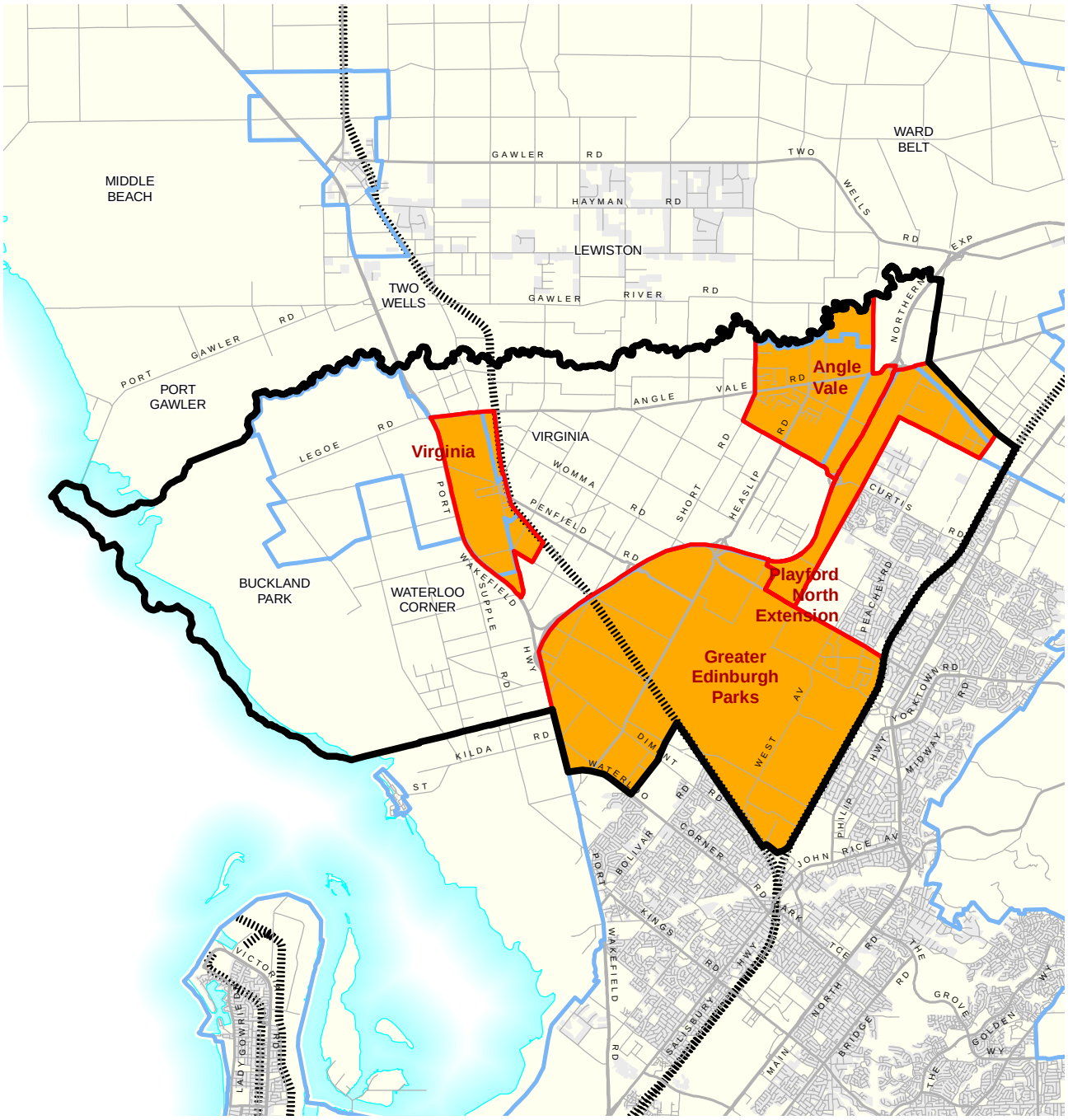
Virginia Urban Growth Area

The Virginia Urban Growth Area includes approximately 580 ha of land, including the existing Virginia township and adjoining land to the north, south and west of the township. The growth area is generally bounded by Port Wakefield Road, Angle Vale Road and the Adelaide-Darwin railway line.

Greater Edinburgh Parks Urban Growth Area

Greater Edinburgh Parks is comprised of over 4150 ha of land (1550 ha of new land) bounded by Port Wakefield Road, the Northern Expressway, Womma Road, the Adelaide-Gawler railway line, the Adelaide-Darwin railway line, Helps Road and Waterloo Corner Road.

In addition to the Edinburgh Defence Precinct, this area includes existing zoned and/or developed areas at Direk, Edinburgh Parks and Edinburgh North.



Playford Growth Area Structure Plan

Study Area and Urban Growth Areas

- Study Area boundary
- Urban Growth Areas
- Planned urban lands to 2038
- Built-up Area
- Main road
- Other road
- Railway / tramway

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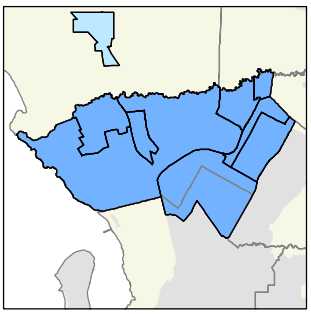


PLN ID: 3975

Regional Context

2.0 Regional Context

The four Urban Growth Areas that are the focus of this Structure Plan are wholly located within the Northern Adelaide region.

Bounded by the Gawler River to the north, the escarpment of the Mount Lofty Ranges to the east, the River Torrens and the City of Prospect to the south, and the coastline of Gulf St Vincent to the west, the Northern Adelaide region:

- covers an area of approximately 610 square kilometres (61 000 ha)
- accommodates approximately 370 000 persons (as at the 2011 census)
- encompasses the full spectrum of land uses from highly urbanised living, industrial and commercial activities through to agricultural and biodiversity / water catchment activities.

The Northern Adelaide region is particularly important for South Australia because it:

- is the largest—in terms of population and employment—of all the government regions in the state
- accounts for the majority of residential and employment land supply. (At June 2012, 32% of total residentially zoned broadhectare land and 43% of developable industry land in Greater Adelaide was within the Northern Adelaide region.)
- offers expanding housing and employment opportunities and well-established social, educational, health, recreational and commercial facilities
- accommodates valuable horticultural land that satisfies a significant proportion of South Australia's food requirements and boosts the state's export base.

Significant growth has already occurred within the Northern Adelaide region in the past 10 years. Moreover the region is projected to accommodate a significant proportion of Greater Adelaide's future growth in terms of new dwellings, people and employment.

This growth has been supported by significant capital investment in infrastructure including:

- the Northern and Port River expressways
- re-sleepering of the Adelaide-Gawler passenger rail line
- upgrading of stations along the Adelaide-Gawler passenger rail line.

The region will also be further supported through the electrification of the Adelaide-Gawler passenger rail line and the construction of the Northern Connector.

Of particular relevance to this Structure Plan are the following targets from the Plan:

- 'Plan for strategic new growth areas, comprising a net land supply of 10 650 hectares (gross total of 14 200 hectares, including buffers).'[1]

  These areas include (among others):

  - Angle Vale
  - Buckland Park/Buckland Park South
  - Playford North Extension/Munno Para Downs
  - Virginia/Virginia North.
- 'Provide for 124 000 dwellings and 44 500 jobs in these areas as well as the existing urban land supply and other fringe growth opportunities.'[2]

[1] *The 30-Year Plan for Greater Adelaide*, Target P, page 84

[2] ibid. Target Q, page 84

- Provide 40-60% of the total land mass to be developed for non-residential purposes (for example, roads, open spaces, commercial, retail, utilities and local employment)[3].
- 'Provide for 282 000 additional jobs during the next 30 years. The regional distribution of additional jobs is:
    - 50 000 in the City of Adelaide
    - 6500 in Eastern Adelaide
    - 40 500 in Western Adelaide
    - **79 000 in Northern Adelaide**
    - 43 000 in Southern Adelaide
    - 38 500 in the Barossa
    - 13 000 in the Adelaide Hills and Murray Bridge
    - 11 500 in the Fleurieu.'[4]
- 'Distribute jobs across Greater Adelaide as:
    - 94 000 in transit-oriented developments and transit corridors
    - 15 000 in key regeneration areas and in activity centres that are outside corridors
    - **44 500 in growth areas**
    - 128 500 broadly distributed across the region.'[5]
- 'Plan for net growth of at least two million square metres of extra employment floor space.'[6]

[3] ibid. Target S, page 84

[4] ibid. Target A, page 103

[5] ibid. Target B, page 194

6 ibid. Target D, page 104

Process

3.0 Process

In 2010, following the release of the Plan and its call for structure planning of key growth areas, the then Department of Planning and Local Government (now the Department of Planning, Transport and Infrastructure [the Department]) developed draft *Structure Plan Guidelines* to guide this work.

Also in 2010, the Government Planning and Co-ordination Committee (GPCC) was established to:

- bring an awareness to all State Government agencies of the directions of the Plan for key growth areas
- provide State Government agencies with a forum at which opportunities, constraints and issues regarding the key growth areas could be raised, debated and reconciled
- formalise State Government agencies' sign-off on structure plans.

A sub-committee of the GPCC was established for the above purposes to deal with this Structure Plan. Simultaneously, the City of Playford (the Council) was engaged for the same purposes and has been a key partner in the structure planning process.

Landowners in the Urban Growth Areas at Angle Vale, Virginia and Playford North Extension have also partnered with the Department by financing investigations to inform this Structure Plan. These landowner-funded investigations were mediated by the Department, GPCC and the Council before informing the preparation of this Structure Plan and two associated Development Plan Amendments (DPA), namely:

- *Playford Urban Growth Areas (Angle Vale, Playford North Extension and Virginia) and General Section Amendments DPA*
- *Greater Edinburgh Parks Employment Lands DPA.*

Drafts of this Structure Plan and the two DPAs were made available for public comment in May 2013 for a period of 10 weeks. During June and July 2013, the Department conducted a series of community engagement events in addition to seeking written submissions.

During the 10 week consultation period some 17 500 households were letter box dropped a postcard, a dedicated website was available and there were six public display points where information could be obtained by members of the public. Representatives of the Department met with more than 300 affected landowners, received feedback from 180 people at three open house events and spoke with 80 people at six coffee and chat sessions.

By the close of the public consultation period, the Department had also received 163 submissions on the draft Structure Plan and DPAs. Submissions were reviewed by the Department and informed changes to this endorsed final version of the Structure Plan. Submissions were also reviewed by the Development Policy Advisory Committee, an independent statutory body that provides advice to the Minister for Planning on DPAs.

A comprehensive report on the community engagement associated with the Playford Growth Project, including details of the DPA public consultation, can be found at: www.dpti.sa.gov.au/planning/playfordgrowth.

In parallel with the public consultation process, Renewal SA facilitated negotiations with landowners, government agencies, utility providers and the City of Playford on infrastructure provision and funding. These negotiations will result in Infrastructure Deeds being signed for financial contributions for road, stormwater and social infrastructure. These Deeds are required before the DPAs will be approved by the Minister for Planning and land is be rezoned in accordance with this Structure Plan.

Vision

4.0 Vision

The City of Playford has developed its *Playford Community Vision 2043*[7], which describes Playford as "the City of Opportunity, supporting the community's hopes and aspirations to be vibrant, thriving and sustainable. It provides an enviable lifestyle that is connected, healthy, happy, ambitious and proud, where each individual can take advantage of the many opportunities offered, making the City prosperous, liveable and happy."

This Structure Plan provides an integrated strategic land use and infrastructure framework to support this vision for the study area to provide capacity for approximately:

- 38 000 additional dwellings
- 103 000 additional people
- 43 000 additional jobs[8].

These figures include the growth attributed to each of the urban growth areas, in addition to other development areas covered by the Structure Plan, i.e. Playford Alive, Buckland Park and proposed Future Urban areas.

Prosperity[9]

The Playford Growth Area will take advantage of the strategic advantages enjoyed by connections to local, interstate and international markets supported by major road and rail transport networks. New and existing employment lands provide opportunities for:

- local jobs
- diversifying industries and businesses
- investment in new industries.

The Virginia Triangle will be recognised as the food bowl of South Australia supplying clean, green food and wines, not only for the local community but also for a thriving export market. The protection of valuable primary production land with access to water, energy and transport links will provide opportunities for increased food security and sustainable employment. Associated industries such as vegetable packing and farm gate sales will add to the prosperity of the horticultural areas.

[7] Available at www.playford.sa.gov.au

[8] Potential based on land area designated for retail, commercial and industrial uses, and potential education and home-based employment

[9] Adapted from *Playford Community Vision 2043*

Liveability[10]

A diversity of lifestyle choices will be on offer in the Playford Growth Area based on being connected, well-planned and attractive with the appropriate infrastructure and services to support a village type atmosphere for both urban and rural living.

The Playford Growth Area will retain its mix of urban and rural areas, which provide different lifestyle choices. New buildings will complement the existing character of their area, particularly in the existing townships of Angle Vale and Virginia.

New walkable neighbourhoods will be connected to local centres and community hubs providing the services and facilities that residents need within easy reach of their homes. Growth areas will be well planned, resulting in mixed use, vibrant, transit-oriented communities with the right housing density for each location. A range of dwelling types and allotment sizes will meet the needs of an increasingly diverse population and household types.

Open space will be dispersed with housing providing green spaces, walking and cycling routes and opportunities to integrate stormwater management through water-sensitive urban design.

Sustainability[11]

The Playford Growth Area will be a sustainable place that is economically, environmentally, and socially resilient. It will benefit from a strong and healthy community centred economy where people engage in meaningful employment opportunities. Providing accessible and responsive training and education programs will enable the workforce to adjust to future needs.

Playford will have a healthy climate and environment through protecting and enhancing local and regional ecosystems and biological diversity. This will involve preservation and sustainable use of natural resources. Natural assets will be protected to enhance the liveability of the area for generations to come.

Reinstatement of native vegetation will be encouraged through the maintenance of biodiversity corridors and the protection of significant trees, coastal habitats, samphire ecosystems and other areas of high environmental significance.

Playford will be at the forefront of new water technologies, with reticulation pipes and water sensitive urban design principles rolled out to new housing developments to secure our long term water supplies.

[10] Adapted from *Playford Community Vision 2043*

[11] Adapted from *Playford Community Vision 2043*

Design Principles

5.0 Design Principles

The Plan seeks to maintain and improve Greater Adelaide's liveability; increase its competitiveness; and drive its sustainability and resilience to climate change. The Vision for this Structure Plan aligns to these objectives.

The following design principles have been developed to implement the Plan's principles and policies and the Vision for the Playford Growth Area.

5.1 Land use and design

The Structure Plan's key design principles regarding land use and the design and form of development are:

- developing walkable neighbourhoods that cluster to form towns/villages with relatively intense, mixed-use town centres capable of fostering a broad range of employment, social opportunities and services
- developing a mix of lot sizes and housing choices with a street layout and subdivision pattern that maximises the solar orientation and cross ventilation of dwellings; accommodates efficient servicing and infrastructure delivery; and reflects a diverse community at all stages of life
- encouraging forms of urban development that:
    - minimise non-renewable energy use and car dependence
    - encourage greater local self-containment
    - protect natural and cultural assets
    - minimise potential for impacts such as air and noise pollution.
- increasing residential diversity through higher density housing options to achieve an increase in overall density
- taking advantage of proximity to services, public transport and nearby amenities when siting new residential developments
- integrating affordable housing with other new dwellings to avoid inappropriate concentrations of social housing
- encouraging adaptive reuse to promote sustainable development where possible
- ensuring the provision of an appropriate interface with state and local heritage places/items and areas
- developing high quality public realm and open space with new district level sporting facilities, greenways and neighbourhood parks
- separating land uses through the use of buffer separations and treatments, including:
    - ensuring a 40 metre (m) buffer from areas of primary production significance
    - developing a 100 m wide infrastructure corridor for the existing and replacement, 275 kilovolt (kV) ElectraNet transmission lines
    - providing potential acoustic treatments to road and rail corridors, such as separation buffers, landscaping, mounding, fencing, dwelling design and construction materials.
- preserving historic farm buildings, if safe and practical.

In addition:

- where a new residential development interfaces with a strategic road, a primary/secondary freight route, roads that carry more than 25 000 vehicles per day or a railway corridor, methods to deal with noise and air quality will be applied through Development Plan policy

- all development will be subject to a soil and groundwater assessment prior to development, particularly for land identified as having any potential site contamination.

The open space network will be designed to:

- conserve, protect and enhance the natural drainage system, remnant landscape and native vegetation
- incorporate areas of established vegetation into open spaces where suitable
- establish a hierarchy of green spaces providing a diverse range of uses, microclimates and visual prominence
- create a series of vistas to capture internal and external views
- emphasise the street pattern and hierarchy by ensuring road reserves are of a width that enables intense street tree plantings along footpaths and the retention of existing vegetation in road reserves (including the avenue of trees along Andrews Road)
- use existing homesteads and stands of trees to give structure to the city and open spaces
- cluster public open space, schools and sports grounds near medium- to high-density housing to share amenity and promote activity.

5.2 Liveability, community and sense of place

Development within the study area will be designed to attract residents and businesses and create a sense of place, connectedness and safety (for example through fostering crime prevention through environmental design principles [CPTED]) by:

- providing opportunities for people at different stages of life to be physically active
- ensuring neighbourhoods are within a walkable distance of community parks, town squares and public spaces
- creating well-designed, multi-functional open spaces
- developing urban environments that celebrate local culture and encourage participation in their development
- preserving the established character of neighbourhoods by incorporating sensitive, low-scale infill development where appropriate
- developing greenways as major pedestrian and cycle links, and identifying opportunities for additional linkages with open space
- maintaining and improving existing open spaces; maximising the opportunities to establish adjacent residential and mixed-use development; and improving their connection with other open spaces
- including facilities for active recreation and structured sport where appropriate
- developing major community sports hubs to provide important community facilities, and promote community development and the multiple benefits of active living.

5.3 Movement and access

The Structure Plan promotes the design of transit-focused, accessible and well-connected places. Regard has therefore been given to the following design principles:

- mixing land uses to provide easy access—visually and physically—and prioritising walking, cycling and using mass transit to serve the daily needs of the local population

- creating a highly interconnected, grid-based street network, based around walking and cycling, that responds to and capitalises on the existing network, to:
    - clearly distinguish between arterial roads and local streets
    - create a clear and legible road functional hierarchy
    - establish good internal and external access for residents
    - maximise safety
    - support mass transit.
- creating sufficient space to accommodate pedestrian/cycle paths, including establishing a network of well designed, safe and attractive greenways and linear places which will incorporate local indigenous trees
- protecting current and future major traffic and freight routes, freight handling facilities and land for future upgrades—consistent with the new urban form—through measures such as targeted access points and appropriate setbacks
- implementing a network of high quality primary and secondary cycling routes, which will form part of the Adelaide Bike*direct* network, to provide both safe direct routes and attractive alternative routes, including off-road as well as on-road routes
- planning primary bus trunk routes to link major activity centres and link to existing rail stations (where possible)
- creating a clear and legible public transport network hierarchy providing an affordable high quality primary public transport system connecting most centres and supported by an accessible local bus network (combined with walking to and from local neighbourhoods, centres, active recreation sites and schools)
- incorporating narrow streets with car parking to calm traffic and protect pedestrians and cyclists
- designing roads so they incorporate remnant vegetation within road reserves
- ensuring off-site highway infrastructure considers landscape character and visual qualities
- creating a street network for all travel modes and users, including a clear spatial definition between modes providing safe and convenient access between key destinations
- improving key streets to create a comprehensive network of local streets that facilitate safe and enjoyable lower speeds, particularly for the benefit of cyclists and pedestrians.

5.4 Economy and employment

The Structure Plan will promote a range of local employment and business activities in addition to providing state-significant employment lands.

Local employment land in growth areas will:

- encourage local employment self-sufficiency
- allow for existing uses that are incompatible with a mixed-use and main street environment to be relocated from centres
- be connected with the transport network on the edge of townships to reduce the interface with future residential areas.

Regional employment lands will:

- provide sufficient land for state-significant employment that has effective access to freight networks, infrastructure and employment bases

- have a connected road system that meets access requirements for industry-related vehicles (including Performance Based Standards [PBS] Level 3 Class B Vehicles, such as road trains) and that safely accommodates pedestrians and cyclists
- provide opportunities for education and vocational training within easy access (including in local activity centres)
- be protected from encroachment by sensitive or incompatible land uses
- locate odour-, light- and noise-producing industrial activities furthest away from residential areas and local activity centres
- ensure office and administration buildings are provided close to the street and are clearly visible
- include vegetated water detention wetlands and drainage swales (subject to requirements of the Department of Defence in respect to bird attraction) to improve the appearance of industrial areas and provide greenway connections to nearby residential areas.

District, neighbourhood and local centres will be strategically located throughout the study area to provide localised employment opportunities and services. The key design principles for these centres are to:

- establish mixed-use centres with active street frontages within easy access to residents
- co-locate centres with schools, community facilities, and public open spaces
- locate centres on planned public transport routes
- provide higher densities and a greater mix of land use types and sizes in and around centres
- prioritise pedestrian, cyclist and public transport movement
- utilise secondary streets and laneways to accommodate servicing, loading and vehicle access
- encourage shop-top housing to provide surveillance to streets and public spaces
- develop buildings that do not have long, unbroken walls facing the street or public open spaces
- establish local centres to serve the daily needs of workers (including shops, consulting rooms, child care and support services for businesses)
- establish taller landmark buildings at prominent intersections.

5.5 Environmental assets

The Plan seeks to create a robust urban ecology across Greater Adelaide. Regard has therefore been given to the following design principles in this Structure Plan:

- minimising the disturbance to, and modification of, the natural landforms through design that accommodates landforms, views, prevailing breezes and environmental features
- establishing functional ecological systems by creating natural biodiversity corridors and greenways to both integrate and define the built and natural environment
- maximising neighbourhood- and precinct-level water and energy efficiency through optimising orientation to suit energy-efficient housing, and including stormwater solutions and water-sensitive urban design principles and techniques
- restoring, rejuvenating and reinforcing urban waterways to achieve better stormwater management, while increasing the community's awareness of, and engagement in, ways to contribute to a healthy urban biodiversity

- introducing wetland sites to contribute to the broader water strategy and public open spaces
- capitalising on opportunities to achieve integrated, water-sensitive urban design initiatives within redevelopment sites to contribute to the sustainability, amenity and character of the public realm/streetscapes
- maximising opportunities to re-establish natural waterways to better manage stormwater quality and extreme weather event flows
- conserving, enhancing, and restoring biodiversity and remnant vegetation, most large trees (including dead trees and stumps that provide habitat for fauna)
- incorporating the existing remnant vegetation within road reserves
- designing urban development near native vegetation so there are adequate fire breaks within the development area.

5.6 Infrastructure

The Structure Plan provides for accessible, integrated and adaptable community services and infrastructure. The following design principles are considered appropriate:

- distributing utilities and services in a timely, cost-efficient, equitable, coordinated and effective manner
- locating social infrastructure so that people can easily gain access to it and providing facilities for all stages of life
- locating emergency services to minimise response times
- preserving critical infrastructure corridors (including major transmission lines, sub-stations, water and gas pipelines and new utility corridors)
- encouraging a wide range of sports facilities, including open space for structured sport, as well as indoor recreation/sport facilities and community club rooms
- incorporating water-sensitive urban design principles and techniques, greenways, green streets, green roofs/walls and other forms of green infrastructure.

Structure Plan

6.0 Structure Plan

A Structure Plan has been developed to provide the framework for new Urban Growth Areas identified by the Plan. It also covers other areas not currently being considered in detail for land use changes (i.e. proposed Future Urban and Rural Living areas) to provide linkages to those areas currently being planned for potential rezoning.

The Structure Plan also highlights how individual urban growth areas link together under a regional framework, in particular the location and size of activity centres.

Growth within the study area is divided into three zones. The eastern zone encompasses the existing suburbs and development areas of Playford North and the new urban growth areas of Playford North Extension and Angle Vale, which are aligned to the District Centre at Munno Para and a series of neighbourhood centres at Munno Para Downs, Munno Para West, Penfield and Angle Vale.

The western zone is centred on the future district centre at Buckland Park and includes the new Buckland Park development (otherwise known as Riverlea) and the Virginia Urban Growth Area. The Virginia town centre will be an important focal point for the Virginia community and the early stages of the Buckland Park development.

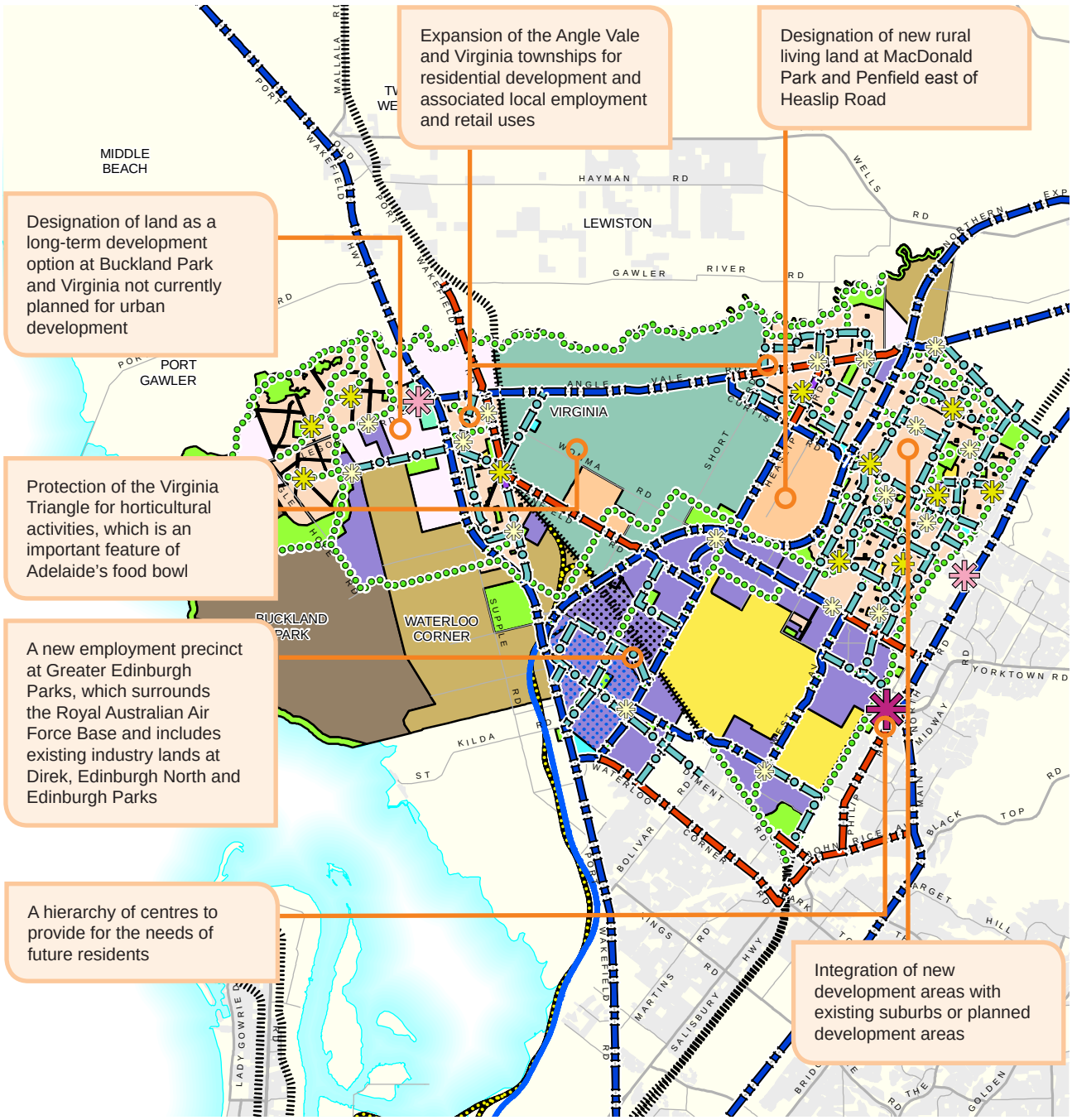
The southern zone encompasses the employment precinct of Greater Edinburgh Parks which surrounds the Royal Australian Air Force (RAAF) Base and the existing employment lands at Direk, Edinburgh North and Edinburgh Parks.

Between the eastern and western zones lies the Virginia Triangle, which is an important feature of Adelaide's food bowl. This area will be retained and protected for horticultural activities, albeit with some change to areas east of Heaslip Road at MacDonald Park and Penfield which are proposed for rural living.

These three zones are connected by a regional transport network focused on the Northern Expressway and Port Wakefield Road which provide connectivity to Adelaide City and other regions in Greater Adelaide. East-west movements will be improved through road upgrades and the redistribution of freight traffic along Angle Vale and Curtis roads.

Public transport will be improved within the study area with an expanded bus network that connects to the Adelaide-Gawler passenger railway. Under the proposal, high frequency bus services will connect Buckland Park and Virginia to the Elizabeth Regional Centre and Elizabeth Station. New bus services are proposed to link Munno Para Downs and Angle Vale to the Munno Para Station via the neighbourhood centre on Curtis Road, which is a focal point for the Playford Alive development, or the proposed new neighbourhood centre at Munno Para Downs.

Open space links will be provided along key waterways, in particular the Gawler River and Smith Creek. New drainage corridors within urban growth areas will also provide important open space and biodiversity functions, linking larger areas of open space and providing opportunities to protect areas of remnant vegetation and significant trees.



Playford Growth Area Structure Plan

Regional Structure Plan

- Regional Centre
- District Centre
- Neighbourhood Centre
- Local Centre
- Primary local network
- Arterial road
- Major traffic and/or freight route
- High street
- Greenway
- Centre
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway
- Proposed Northern Connector Road
- Proposed Northern Connector Rail
- Intermodal Policy Area
- Potential Coordinated Mixed Use Precinct

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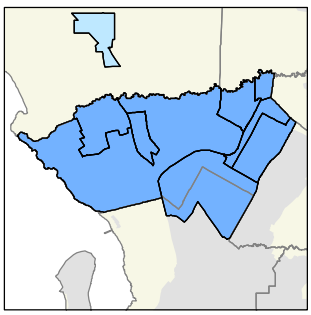


PLN ID: 4002

6.1 Angle Vale

Angle Vale will be a self-contained urban area bordered by the Gawler River to the north, the Northern Expressway to the east, rural living activities to the south-east and productive agricultural activities to the south-west and west.

Focused around the existing town centre of Angle Vale will be a diverse range of housing types, primarily of low density. Built form will predominantly be housing of one and two storeys transitioning towards more intense built forms of up to three storeys within the town centre. Mixed use development will occur within the town centre.

The amenity of the existing town centre will be enhanced through the diversion of regional and heavy vehicles, which currently use Angle Vale and Heaslip roads, to the Northern Expressway and an upgraded Curtis Road. The existing town centre will be expanded southwards along Heaslip Road, but be maintained at a neighbourhood scale serving Angle Vale. New retail development will be oriented to Heaslip Road to provide a main street environment. The expansion of the town centre will incorporate the Virgara Winery and provide for expanded tourism and conference-related activities.

An area for light industry and commerce will be provided at the eastern edge of the urban growth area adjacent the Angle Vale Road / Northern Expressway interchange.

An area for bulky goods retailing will be provided adjacent to the Curtis Road / Northern Expressway interchange.

Angle Vale will enjoy a high degree of connectivity to strategic transport infrastructure including the Northern Expressway, Main North Road and the Adelaide-Gawler railway corridor.

The Gawler River corridor will be preserved and developed to offer passive and active recreation opportunities, with a large regional reserve to be provided on the north-western edge of the growth area.

Noise attenuation will be provided along the Northern Expressway to maximise development potential. This will predominantly consist of vegetated earth mounding with fencing on top. At key gateways (such as major intersections) noise attenuation will be achieved through articulated concrete walling that will also contribute to the region's identity.

When fully developed, Angle Vale will have the potential to accommodate up to 15 600 people. (The population at the 2011 Census was 2363 people.)

The proposed expansion area for Angle Vale is approximately 705 ha, which is broken down into various land uses:

Land Use	Area (ha)	Percent (%)
Residential allotments	411.96	58.42
Roads / buffers / other infrastructure	103.03	14.61
Public open space (including 50% of stormwater management system)[12]	98.72	14
Stormwater management (excluding land counted as public open space)	25.87	3.67
Neighbourhood (Town) Centre	4.72	0.67
Bulky Goods Retail Centre	12.93	1.83
Light industrial / commercial	47.77	6.77
Local centres	0.14	0.02
Total[13]	**705.13**	**100.00**

Angle Vale township statistics (existing)

Minimum allotment size (Development Plan)	1800 m^2
Existing dwellings	763 du
Average household size (2011)	3.1 persons
Existing population (2011)	2363

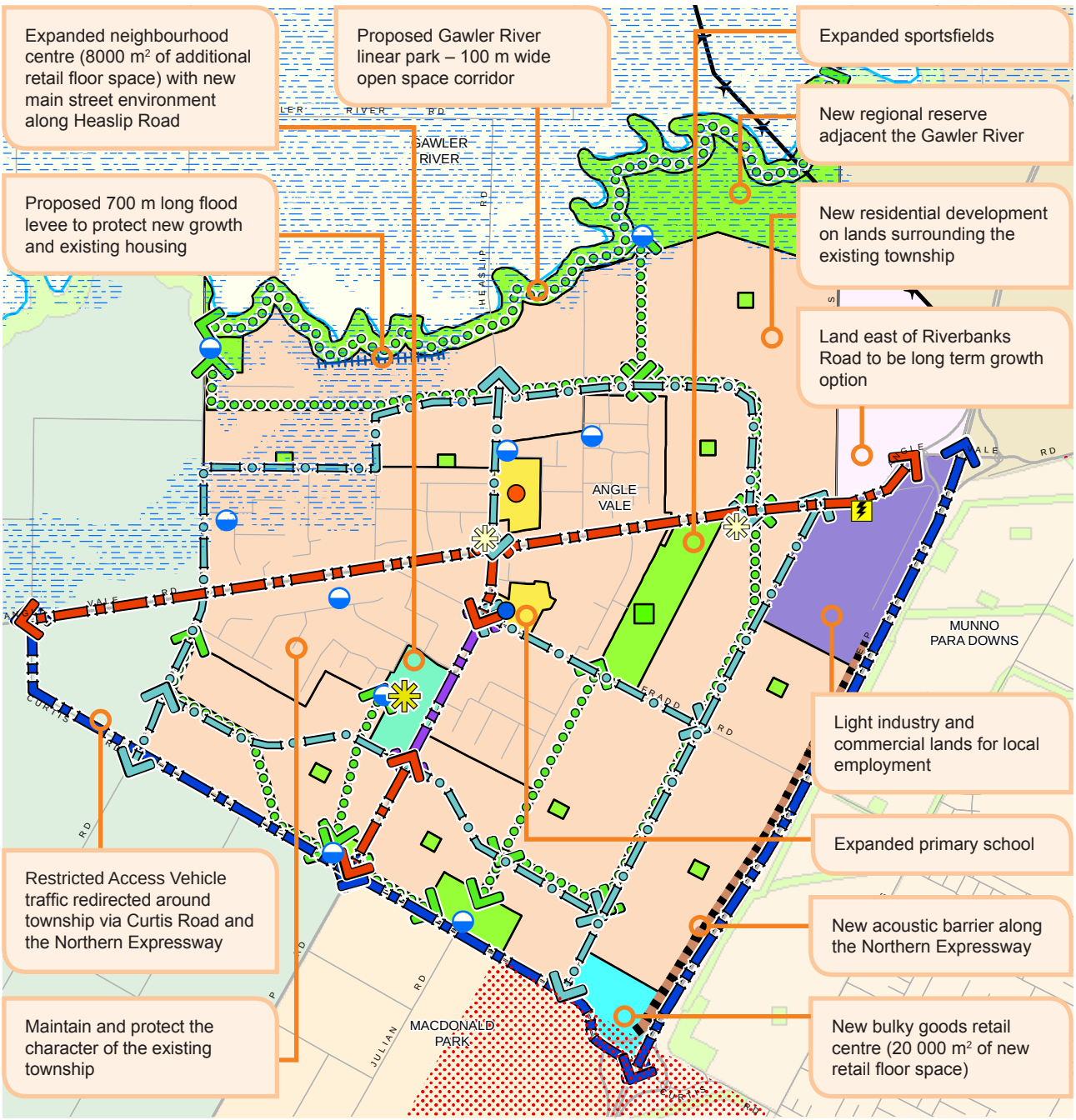
Urban Growth Area statistics

Gross land area	705 ha
Net residential land area	412 ha
Average allotment size	700 m^2
Gross density	8.4 du/ha
Net residential site density	14.3 du/ha
Dwelling capacity	5887 du
Dwelling yield (25 % disc.)	4414 du
Average household size	3.0 persons
Projected population	13 240
Projected total population (Angle Vale)	15 600
Potential jobs[14]	2420

[12] The City of Playford accepts up to a maximum of 50% of stormwater infrastructure as open space. For trunk infrastructure, as proposed in the Structure Plan, the maximum allocation is considered appropriate.

[13] Total land area does not include land within existing township, including existing sportsfields on Fradd Road.

[14] Potential based on land area designated for retail, commercial and industrial uses, and potential education and home-based employment.



Playford Growth Area Structure Plan

Angle Vale Structure Plan

- Built-up Area
- Main road
- Other road
- Railway / tramway
- Waterway
- Flood affected areas (1 in 100 year flood)
- Areas of potential site contamination
- Neighbourhood Centre
- Local Centre
- Electricity transmission line
- Recreation centres/facilities
- Storm detention basin/wetland
- Electricity substation
- Government school
- Non-government school
- Noise barrier
- Levee
- Primary local network
- Arterial road
- High street
- Greenway
- Major traffic and/or freight route
- Centre
- Commercial/Office
- Future urban
- Industry/Employment
- Institutional
- Open Space/Recreation
- Residential

N

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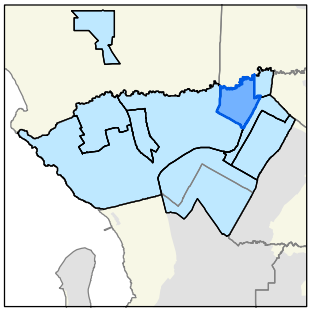


PLN ID: 3929

6.2 Playford North Extension

The Playford North Extension will be an orderly and complementary extension of the existing urban areas of Andrews Farm, Penfield, Munno Para Downs and Munno Para West.

The prevailing form of development will be low to medium density residential development of up to three storeys transitioning towards more intense built forms (of up to six storeys) within and adjacent to two evenly distributed neighbourhood scale activity centres. This will offer a diversity of housing (in terms of form, size and affordability).

Larger allotments (minimum allotment size of 1200 m^2) will be provided along the north eastern edge of the urban growth area between the ElectraNet electricity transmission line corridor and Dalkeith Road. These will provide an orderly transition into land zoned for rural activities within the Town of Gawler.

A 100 m wide corridor will be preserved for future upgrade and replacement of the ElectraNet transmission line. Residential allotments will be prevented from encroaching on the corridor to protect this significant infrastructure. Opportunities will exist for the corridor to be developed as open space, providing walking and cycling paths connecting to other areas of open space. There may also be the potential for the corridor to be utilised for stormwater management purposes.

The two new neighbourhood scale activity centres will include street level uses that are primarily retail, service and office and principally residential upper floor land uses. These activity centres will provide a main street environment and be connected to the Munno Para railway station by a local bus network.

Land in the south-western corner of the growth area adjacent Womma Road will be developed for employment uses integrated with the Greater Edinburgh Parks precinct. Commercial or industrial land uses established within this location will provide a buffer to residential activities to the east of Andrews Road.

Walking and cycling trails will be provided alongside stormwater management infrastructure such as open drainage channels, which will connect to larger district level sporting fields and open spaces.

Noise attenuation will be provided along the Northern Expressway to maximise development potential.

When fully developed, Playford North Extension has the potential to accommodate up to 17 340 people. (The population at the 2011 Census was 676 people.)

The Playford North Extension encompasses approximately 693 ha of land, which is divided into various land uses:

Land Use	Area (ha)	Percentage (%)
Residential allotments	330.47	47.67
Rural Interface Policy Area allotments	62.66	9.04
Roads / buffers / other infrastructure (excluding ElectraNet corridor)	96.92	13.98
Public open space (including 50% ElectraNet corridor and 50% of stormwater management system)	75.46	10.89
Stormwater management (excluding land counted as public open space)	44.12	6.36
ElectraNet corridor (not counted as open space)	12.69	1.83
Neighbourhood centres	5.60	0.81
Local centres	0.32	0.05
Industry/Employment	49.0	7.07
Schools	16.00	2.31
Total	**693.24**	**100.00**

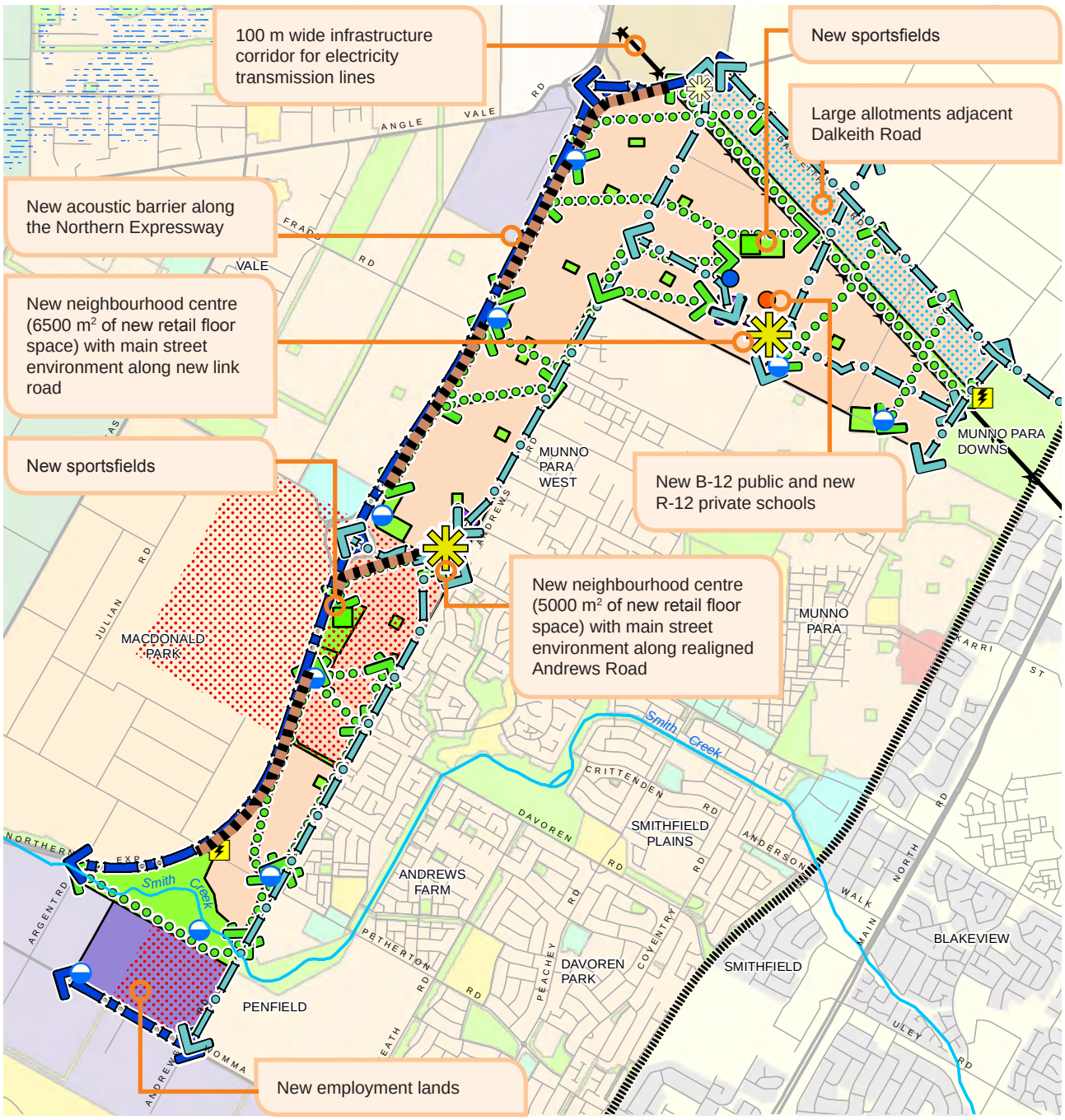
Playford North Extension statistics (existing)

Minimum allotment size	N/A – Rural
Existing dwellings	275 du
Average household size (2011)	2.5 persons
Existing population (2011)	676

Urban Growth Area statistics

Gross land area	693 ha
Net residential land area	372 ha
Average allotment size	470 m^2
Gross density	11.9 du/ha
Net residential site density	22.2 du/ha
Net Rural Interface Policy Area	63 ha
Average allotment size	2000 m^2
Dwelling capacity	8230 du
Dwelling yield (25 % disc.)	6173 du
Average household size	2.7 persons
Projected population	16 666
Projected total population (incl. existing population)	17 342
Potential jobs[15]	2530

[15] Potential based on land area designated for retail, commercial and industrial uses, and potential education and home-based employment.



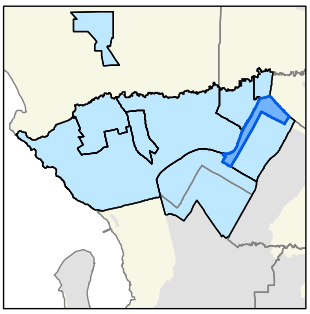
Playford Growth Area Structure Plan

Playford North Extension Structure Plan

- Built-up Area
- Main road
- Other road
- Railway / tramway
- Waterway
- Flood affected areas (1 in 100 year flood)
- Neighbourhood Centre
- Local Centre
- Electricity transmission line
- Recreation centres/facilities
- Storm detention basin/wetland
- Electricity substation
- Government school
- Non-government school
- Noise barrier
- Primary local network
- High street
- Major traffic and/or freight route
- Greenway
- Industry/Employment
- Open Space/Recreation
- Residential
- Rural Interface Policy Area
- Area of potential site contamination

N

0 1 km



PLN ID: 3929

6.3 Virginia

Virginia is to be a self contained township centred on the existing township heart and bordered by Angle Vale Road to the north, productive agricultural activities to the east, south and south west and Port Wakefield Road to the west.

Whilst being self contained, the Virginia Urban Growth Area will perform an important support role for the development of Buckland Park (opposite Port Wakefield Road). This role will wane as Buckland Park matures and satisfies the needs of its community.

Built form within the Virginia Urban Growth Area will predominantly be housing of one and two storeys transitioning towards more intense built forms of up to three storeys within the town centre and other activity centres. Mixed use development will occur within the town centre.

The amenity of the existing Virginia town centre will be enhanced through the diversion of heavy vehicle movements to Angle Vale Road.

A number of local scale activity centres will be interspersed throughout the Urban Growth Area to provide residents with walkable access to services and facilities.

An area for light industry and commerce will be provided in the south-eastern corner of the growth area, allowing for the relocation of service industry and commercial development from the redeveloped town centre.

Virginia will enjoy a high degree of connectivity to strategic transport infrastructure including the Northern Expressway, Port Wakefield Road and the future Northern Connector.

Noise attenuation will be provided along residential interfaces to the Adelaide-Darwin railway line and Port Wakefield Road to maximise development potential.

When fully developed, Virginia has the potential to accommodate a community of approximately 12 000 people (population at 2011 Census was 713 people).

The Virginia Urban Growth Area encompasses 580 ha of land of which 325 ha in Virginia South can be developed in the short term. The remaining land is affected by flooding from the Gawler River and is being considered for longer term growth.

Land Use	Area (ha)	Percent (%)
Existing residential land (allotments <4000 m^2)	26.29	4.53
Proposed residential allotments	334.49	57.69
Roads / buffers / other infrastructure	84.14	14.51
Public open space (including 50% of stormwater management system)	49.43	8.52
Stormwater management (excluding land counted as public open space)	26.00	4.49
Town centre	20.71	3.57
Local centres	0.48	0.08
Industry	33.65	5.80
Schools	4.59	0.79
Total	**579.77**	**100.00**

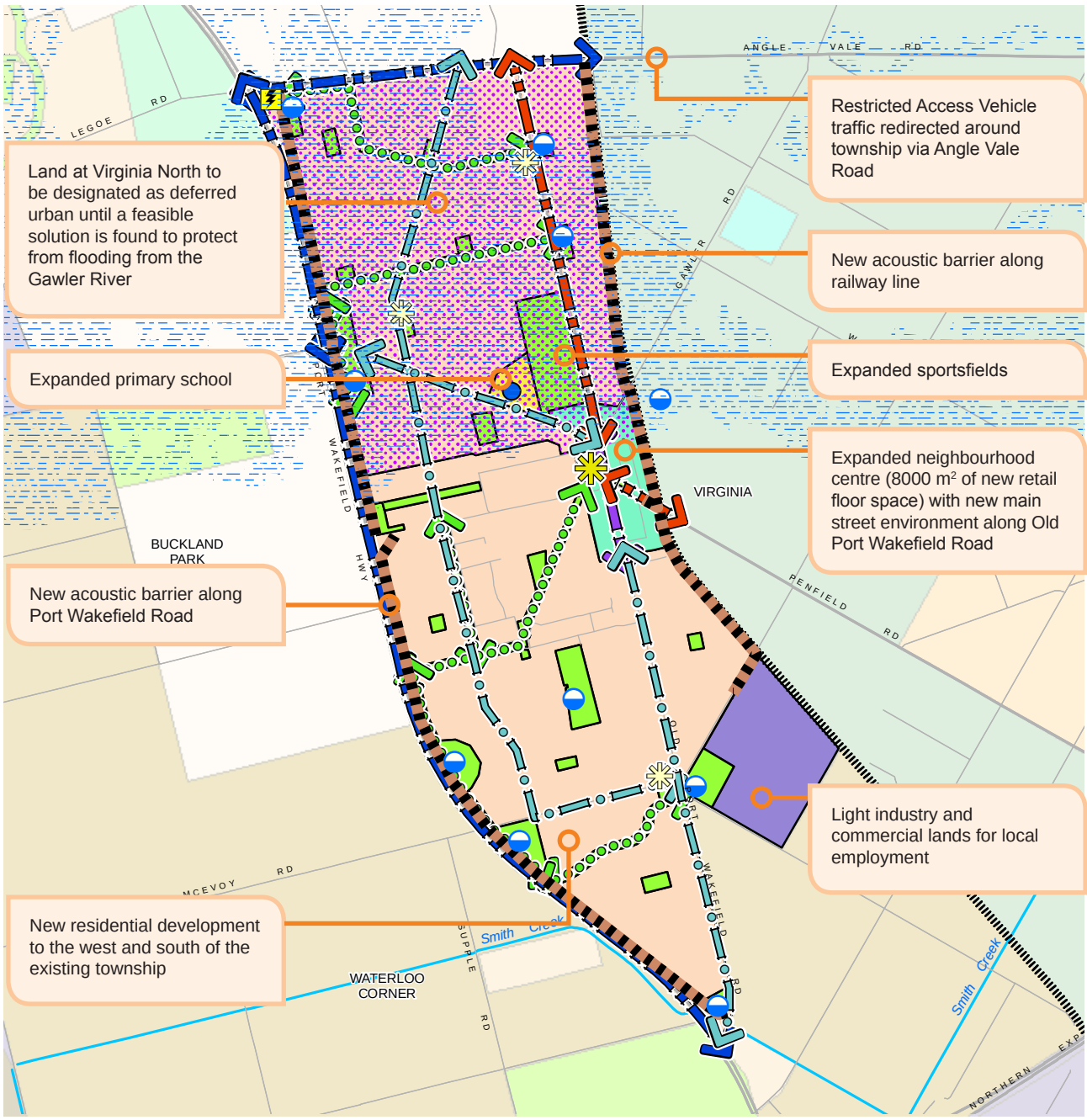
Virginia township statistics (existing)

Minimum allotment size (Development Plan)	1200 m^2
Existing dwellings	255 du
Average household size (2011)	2.8 persons
Existing population (2011)	713

Urban Growth Area statistics (Virginia South statistics in brackets)

Gross land area	580 ha (325 ha)
Net residential land area	335 ha (196 ha)
Average allotment size	600 m^2
Gross density	9.6 du/ha (8.7 du/ha)
Net residential site density	16.7 du/ha (14.5 du/ha)
Dwelling capacity	5575 du (2833 du)
Dwelling yield (25 % disc.)	4181 du (2125 du)
Average household size	2.7 persons
Projected population	11 290 (5738)
Projected total population (Virginia)	12 000 (6451)
Potential jobs[16]	1660

[16] Potential based on land area designated for retail, commercial and industrial uses, and potential education and home-based employment.



Playford Growth Area Structure Plan

Virginia Structure Plan

- Built-up Area
- Main road
- Other road
- Railway / tramway
- Waterway
- Flood affected areas (1 in 100 year flood)
- Neighbourhood Centre
- Local Centre
- Deferred Urban
- Storm detention basin/wetland
- Electricity substation
- Government school
- Noise barrier
- Primary local network
- Arterial road
- High street
- Major traffic and/or freight route
- Greenway
- Centre
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Residential
- Rural Living

N

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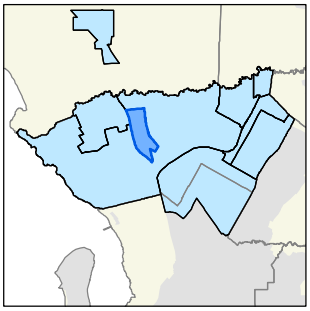


PLN ID: 3929

6.4 Greater Edinburgh Parks

Greater Edinburgh Parks encompasses 1550 ha of designated new employment lands as well as existing zoned industry land at Direk, Edinburgh North and Edinburgh Parks, RAAF Base Edinburgh and the Defence, Science and Technology Organisation (DSTO).

Greater Edinburgh Parks will be a high quality enterprise and employment destination attracting a specialised workforce and providing a focus for manufacturing, research and technology, logistics and transport services, intermodal operations and expansion of defence industries.

Bounded by the Northern Expressway to the north and west; the existing urban areas of Davoren Park and Elizabeth to the east; and the existing urban area of Salisbury to the south; Edinburgh Parks enjoys superior road and rail infrastructure which connects it to ports and harbours, specialised defence precincts at Osborne and Mawson Lakes, and the Elizabeth and Salisbury activity centres.

Greater Edinburgh Parks will present opportunities for 24 hour, seven day a week activity via careful interface with sensitive land uses. In particular:

- advanced manufacturing will be clustered north of Bellchambers Road at Edinburgh North
- road-based logistics, warehousing, distribution and transport services will be clustered in an intermodal precinct around the interstate railway line at Penfield, building upon the investments of SCT
- activity centres accommodating local shops (including cafes and restaurants), consulting rooms, service trade premises, child care facilities, recreation facilities, and training and educational facilities will be interspersed throughout the precinct to support the workforce and businesses generally
- a bulky goods node will be established at the intersection of Port Wakefield and Waterloo Corner roads to capitalise on exposure and accessibility offered by these two arterial roads.

Opportunities exist for the development of a 'coordinated mixed-use precinct' at Penfield / Waterloo Corner (in the area west of Heaslip Road and south of the intermodal precinct). A coordinated mixed-use precinct is an area primarily accommodating employment activities in which residential development is also featured.

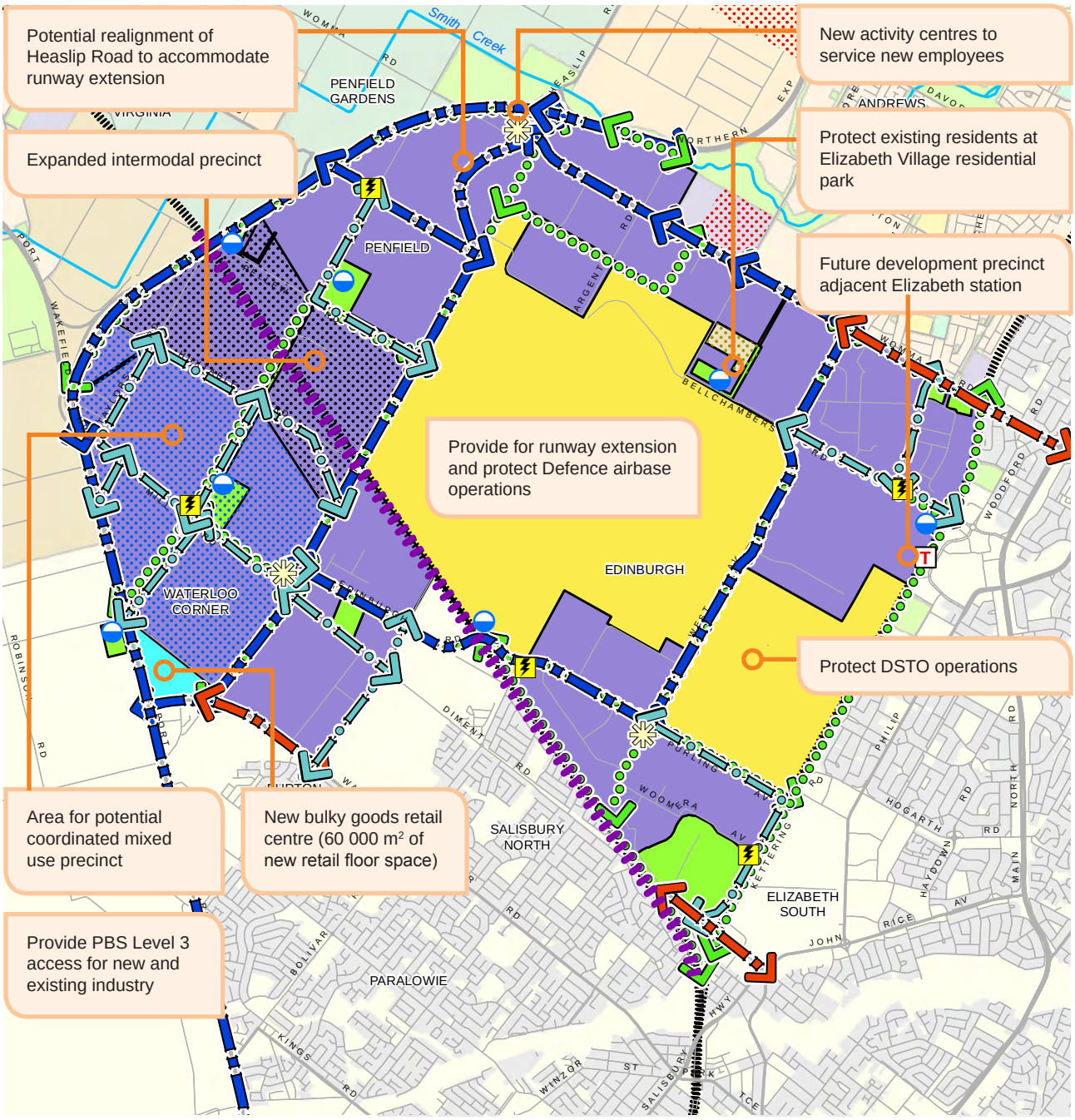
Any such precinct must demonstrate innovation in the integration of compatible living and workplace environments. Niche employment activities including green-tech and high-tech industries, and research and training facilities, will be encouraged within these precincts.

An area of land located adjacent to the Elizabeth Station will be investigated for more intensive forms of mixed-use development linked to the Elizabeth Regional Centre, which may not be available for industrial development. Detailed investigations are to be undertaken by Renewal SA; however this is a long-term prospect and the land will be land banked until an appropriate time.

The existing Elizabeth Village Residential Park will be protected by locating low impact light industrial and commercial developments adjacent to its boundaries. Some intensification of the residential park within its current zone boundaries is appropriate with the provision of buffers to potential employment uses adjacent.

Water sensitive urban design systems will take advantage of the extent of impervious surfaces and offer recreation opportunities for workers.

Landscaping will form a key component of Greater Edinburgh Parks to provide entrance statements, line arterial roads and soften the appearance of development.



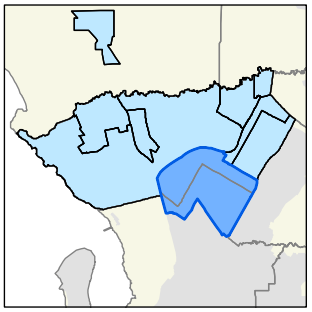
Playford Growth Area Structure Plan

Greater Edinburgh Parks Structure Plan

- Built-up Area
- Main road
- Other road
- Railway / tramway
- Waterway
- Areas of potential site contamination
- Intermodal Policy Area
- Potential Coordinated Mixed Use Precinct
- Residential Park
- Electricity substation
- Storm detention basin/wetland
- Transport interchange
- Freight rail
- Local Centre
- Arterial road
- Major traffic and/or freight route
- Primary local network
- Greenway
- Commercial/Office
- Residential
- Institutional
- Industry/Employment
- Open Space/Recreation

N

0 1 km



PLN ID: 3929

Existing employment lands

Within existing zoned lands at Greater Edinburgh Parks, there is currently some 480 ha of land (excluding 100 ha land adjacent to the Elizabeth Station) of which 256 ha (net) of land is available for industrial development after discounts are applied.

Gross land supply (ha)	50% discount for private land (ha)	15% discount for all land (ha)	Available (net) land supply (ha)
480	-179	-45	256

Proposed employment lands

Within proposed employment lands, there is currently some 1550 ha of land of which 702 ha (net) of land is available for industrial development after discounts are applied.

Gross land supply (ha)	50% discount for private land (ha)	15% discount for all land (ha)	Available (net) land supply (ha)
1550	-725	-124	702

Land supply and demand

The net supply of vacant employment land from new and existing sources at Greater Edinburgh Parks has been deemed to be 958 ha. Based on different demand scenarios, this equals an employment land supply which will meet between 24 and 38 years of demand. However, the medium demand scenario is considered to be the most appropriate scenario.

Demand scenario (GEP)	Net land supply (ha)	Years Supply	30-Year Supply (ha)
Low – 25.0 ha/yr	958	38	750
Medium – 33.3 ha/yr	958	29	1000
High – 40.0 ha/yr	958	24	1200

Employment

Based on average employment rates for industrial and commercial operations, Greater Edinburgh Parks has potential capacity for some 26 830 additional jobs[17].

[17] Potential based on land area designated for retail, commercial and industrial uses.

Infrastructure

7.0 Infrastructure

A range of infrastructure has been identified as required to support the vision for urban development described in this Structure Plan. The various items of infrastructure are proposed only and do not represent a commitment to their funding or provision. State and local governments will monitor the need for infrastructure and service provision as development occurs.

Regional and state government infrastructure will be subject to future detailed planning and budget bids as required. Infrastructure provided within urban growth areas will largely be funded by developers.

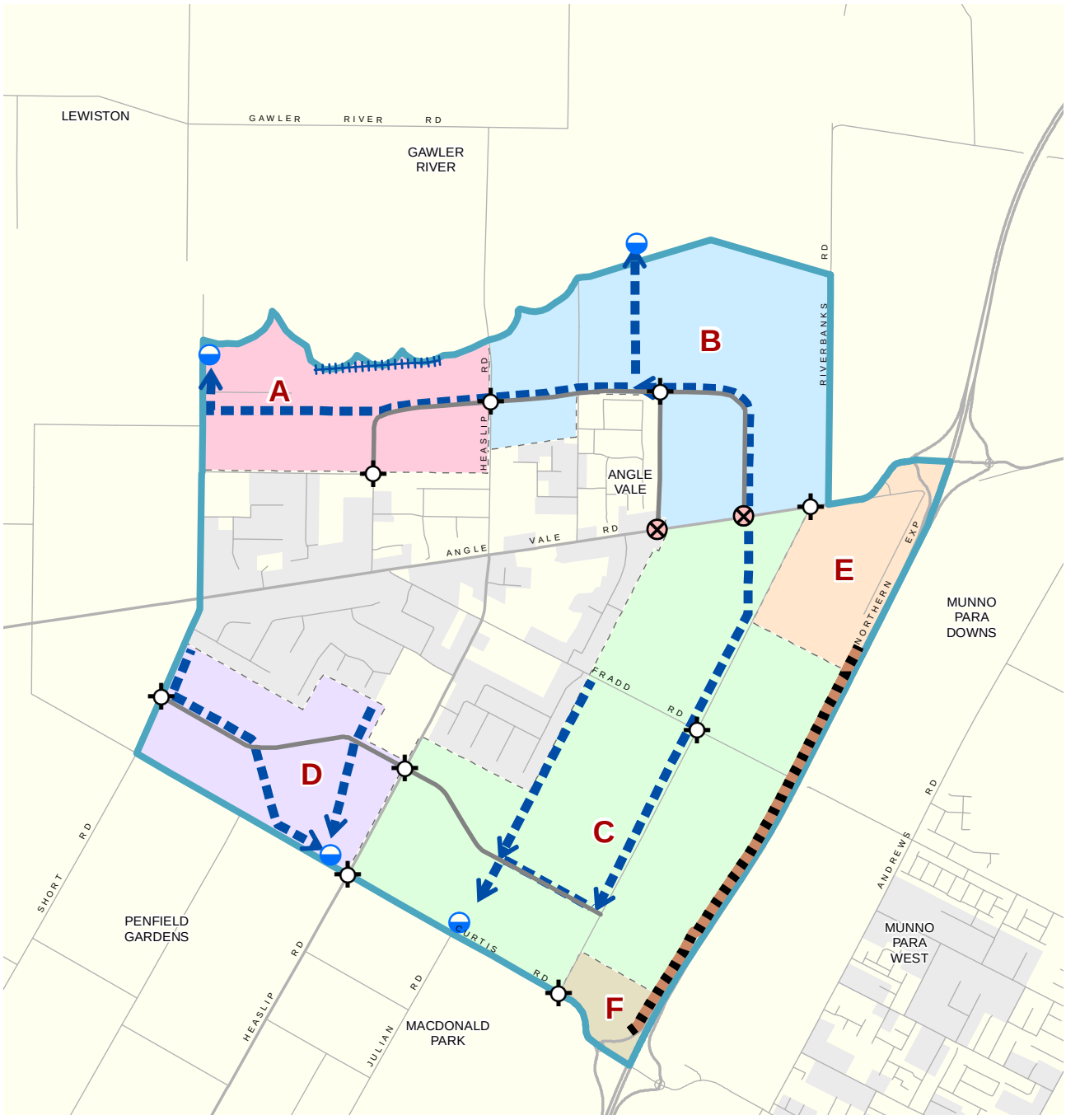
7.1 Infrastructure coordination

Implementation of the Structure Plan relies on landowners coordinating and committing to providing the necessary infrastructure, which may influence the way in which rezoning proceeds and when.

In particular, the *Playford Urban Growth Areas (Angle Vale, Playford North Extension and Virginia) and General Section Amendments DPA* and the *Greater Edinburgh Parks Employment Lands DPA* could be 'divided' to allow a portion or portions of the urban growth areas to be rezoned at different times based on the resolution of related infrastructure matters.

The potential to 'divide' the DPAs recognises the current fragmented land ownership pattern across the urban growth areas and the likelihood that infrastructure coordination and commitments will be met over time either by individual landowners or groups of landowners with a common goal, provided the overall Structure Plan vision can be met.

Indicative groupings of land for infrastructure coordination have been developed for Angle Vale, Playford North Extension, Virginia and Greater Edinburgh Parks.



Playford Growth Area Structure Plan

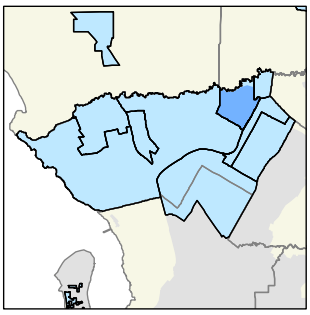
Angle Vale Infrastructure Coordination*

Infrastructure Precincts
- A
- B
- C
- D
- E
- F
- Concept Plan boundary
- Built-up Area
- Main road
- Other road
- Railway / tramway

- Single lane roundabout
- Other intersection
- Storm detention basin/wetland
- Local road - 2 lanes
- Noise barrier
- Levee
- Stormwater flows

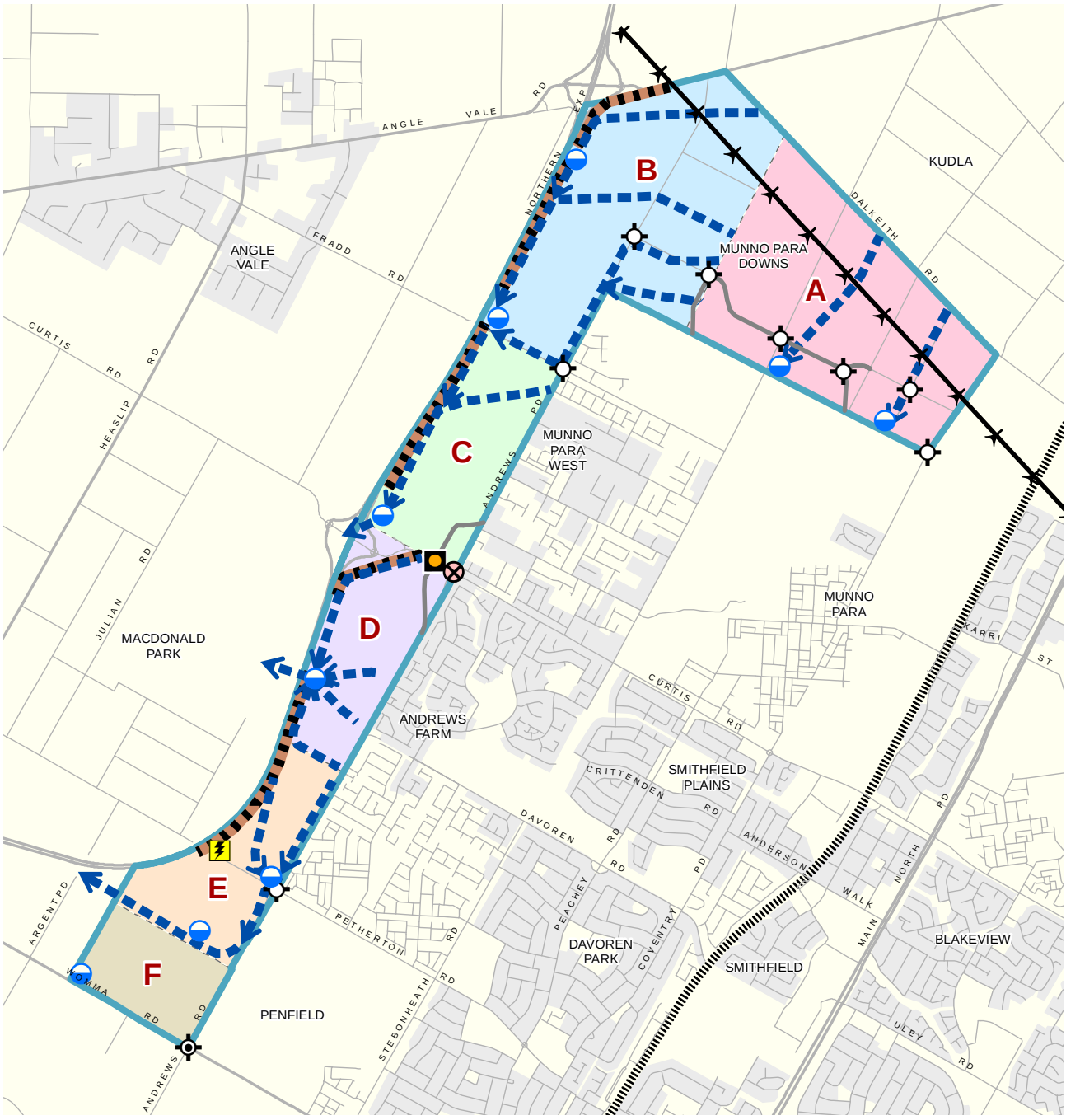
N

0 1 km



PLN ID: 4226

* Subject to detailed investigations and infrastructure negotiations



Playford Growth Area Structure Plan

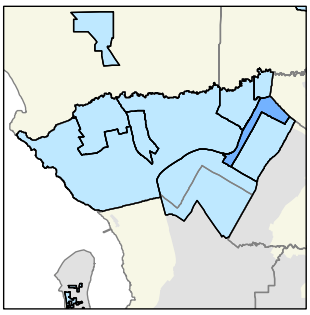
Playford North Extension Infrastructure Coordination*

N

0 1 km

Infrastructure Precincts
- A
- B
- C
- D
- E
- F
- Concept Plan boundary
- Built-up Area
- Main road
- Other road
- Railway / tramway

- Traffic signal
- Dual lane roundabout
- Single lane roundabout
- Other intersection
- Storm detention basin/wetland
- Electricity substation
- Local road - 2 lanes
- Noise barrier
- Levee
- Stormwater flows
- Electricity transmission line



PLN ID: 4226

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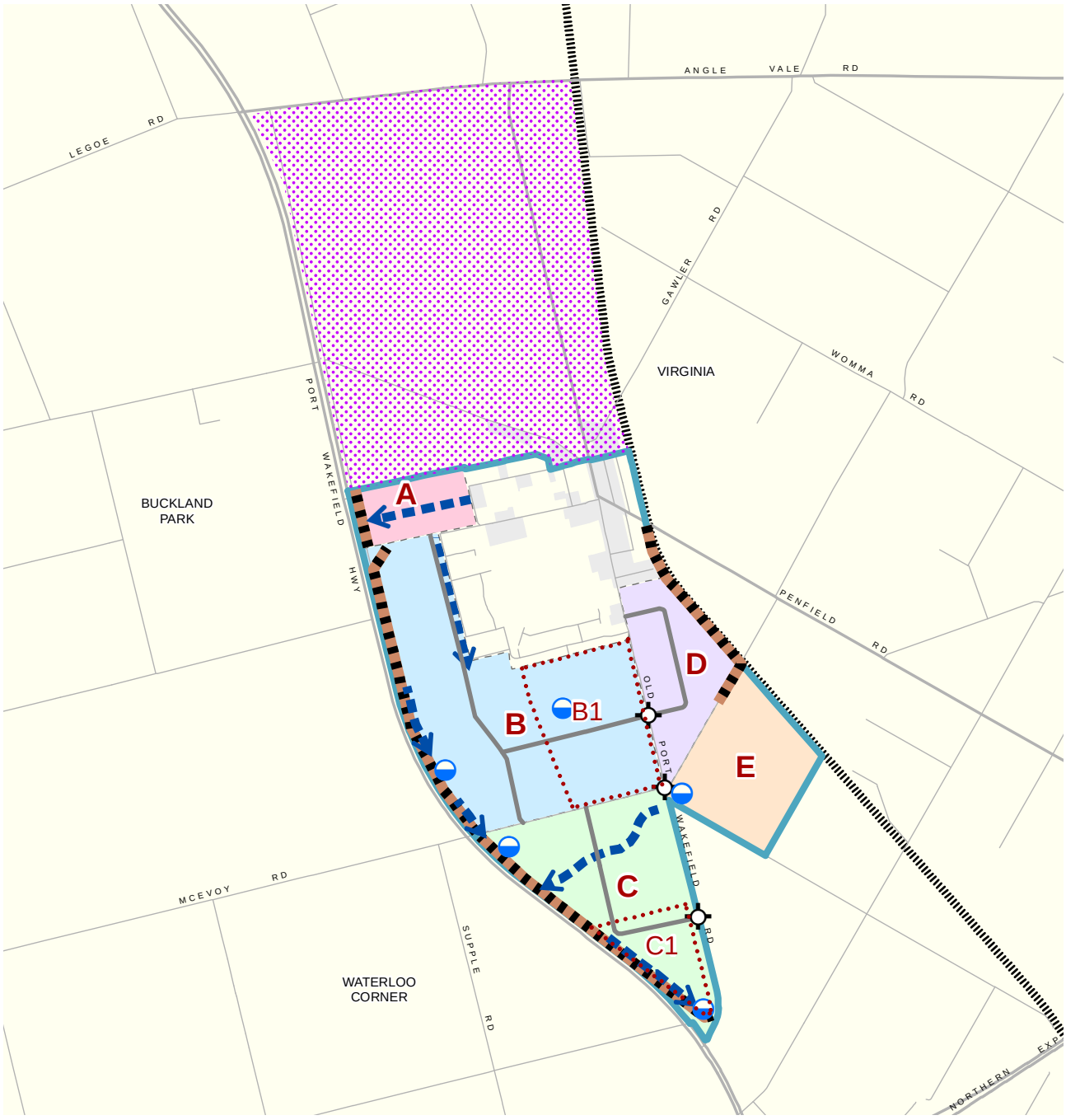


Playford Growth Area Structure Plan

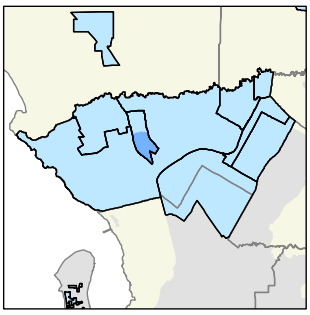
Virginia Infrastructure Coordination*

Infrastructure Precincts
- A
- B
- C
- D
- E
- Sub Precinct
- Concept Plan boundary
- Built-up Area
- Main road
- Other road
- Railway / tramway

- Single lane roundabout
- Storm detention basin/wetland
- Local road - 2 lanes
- Noise barrier
- Stormwater flows
- Deferred Urban

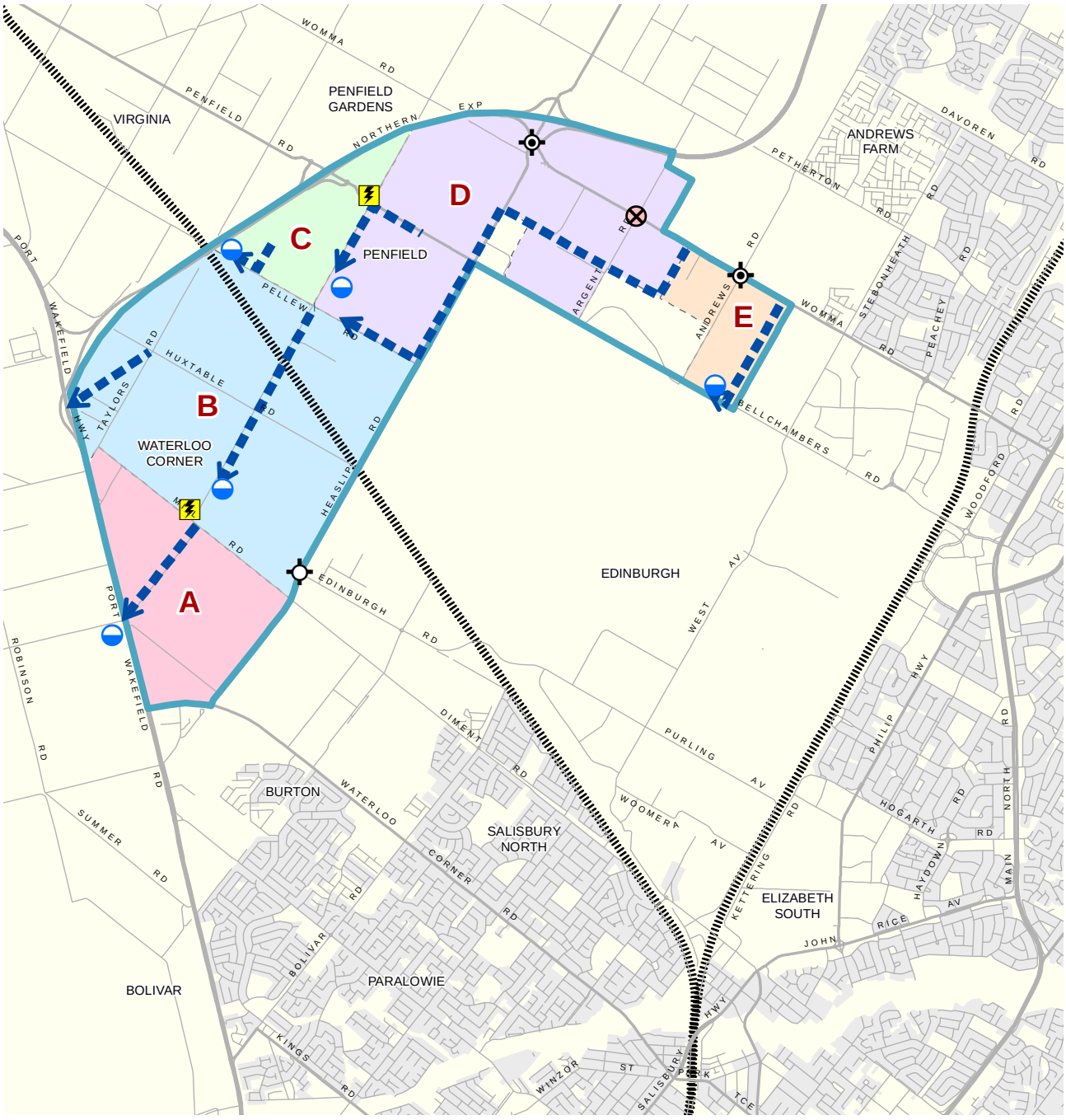
N

0 1 km



PLN ID: 4226

* Subject to detailed investigations and infrastructure negotiations



Playford Growth Area Structure Plan

Greater Edinburgh Parks Infrastructure Coordination*

Infrastructure Precincts
- A
- B
- C
- D
- E

Concept Plan boundary

Built-up Area

Main road

Other road

Railway / tramway

Dual lane roundabout

Single lane roundabout

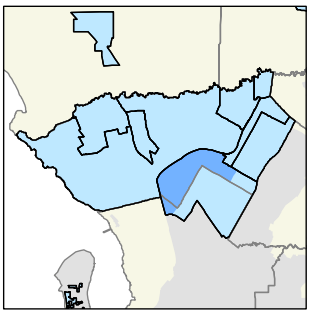
Other intersection

Storm detention basin/wetland

Electricity substation

Stormwater flows

Deferred Urban



PLN ID: 4226

* Subject to detailed investigations and infrastructure negotiations

7.2 Transport

The proposed transport networks within this Structure Plan are consistent with the draft *Integrated Transport and Land Use Plan*[18].

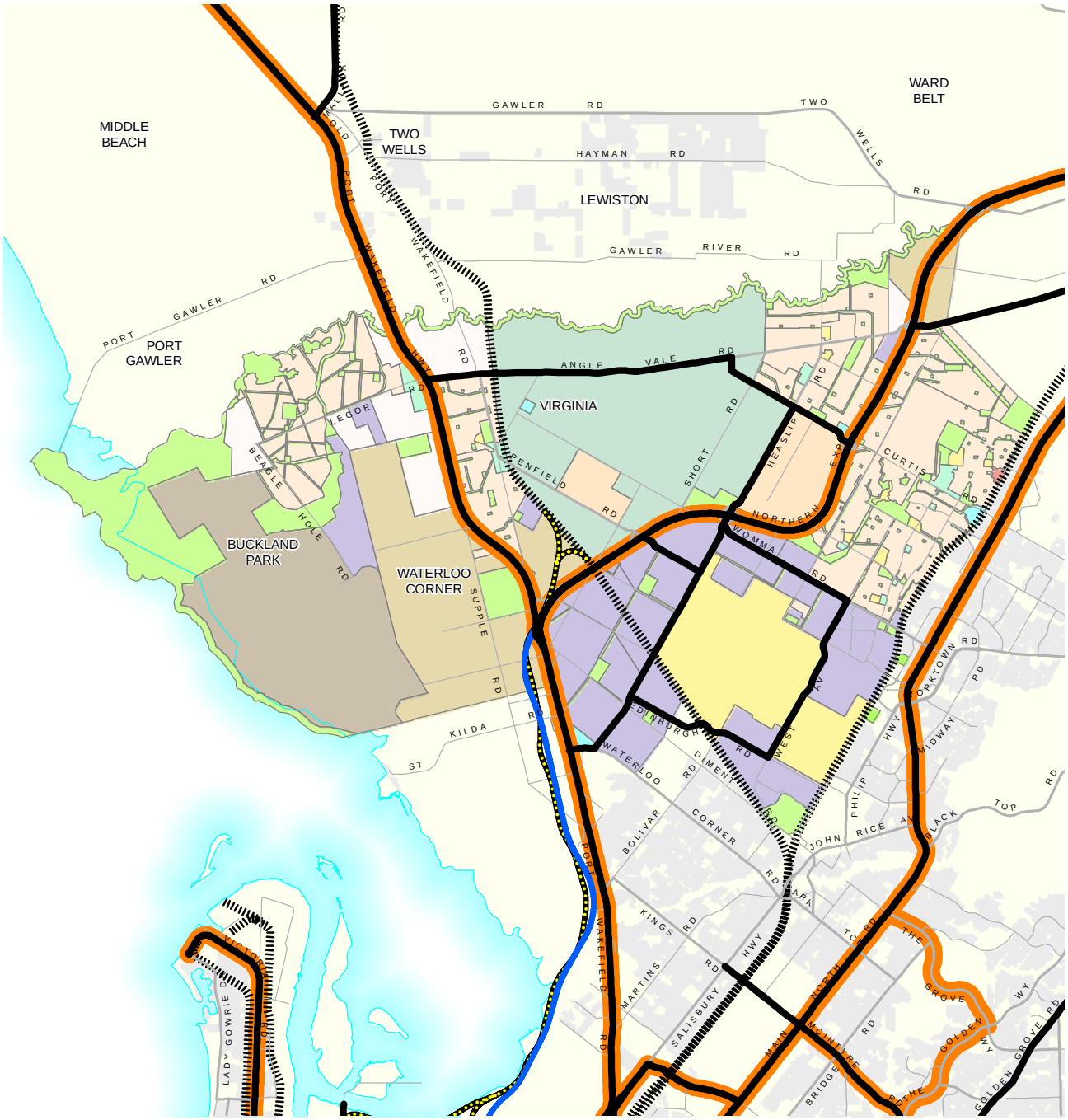
7.2.1 Major Traffic and Freight

Major traffic routes and freight routes to accommodate the planned development within the study area have been identified.

A key aspect of the proposed freight network is the removal of routes through the Angle Vale and Virginia townships. An east-west freight route using Angle Vale and Curtis roads will connect Port Wakefield Road and the Northern Expressway.

General freight traffic will still need to access businesses in the area and will still be able to use all the arterial roads and some local roads, including within Angle Vale and Virginia. This may include Restricted Access Vehicles (RAV), such as B-Doubles, on some roads.

[18] www.transportplan.sa.gov.au



Playford Growth Area Structure Plan

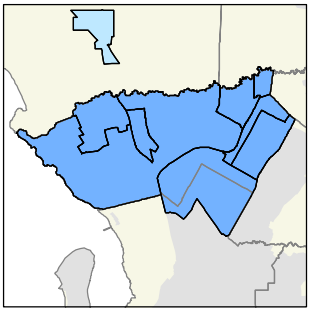
Proposed Freight Network

N

0 1 2 3 4 5 km

Produced by DPTI - Planning Division

- **Major traffic route**
- Proposed Northern Connector Road
- Proposed Northern Connector Rail
- **Freight route**
- **Centre**
- **Commercial/Office**
- **Extractive industry**
- **Future urban**
- **Horticulture/Viticulture**
- **Industry/Employment**
- **Infrastructure**
- **Institutional**
- **Open Space/Recreation**
- **Primary Production/Rural**
- **Residential**
- **Rural Living**
- **Urban node**
- **Built-up Area**
- **Main road**
- **Railway / tramway**



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7.2.2 Public Transport

Public transport within Northern Metropolitan Adelaide will focus on and reinforce the role of the Adelaide-Gawler train line. This will be supported by a network of feeder buses, including higher frequency routes that connect with key stations.

Six train stations are located within the study area, namely Munno Para, Smithfield, Broadmeadows, Womma, Elizabeth and Elizabeth South.

Bus services will typically run only along arterial or major collector roads and will connect to major nodes of activity, such as centres and transport interchanges. Higher frequency routes are proposed to connect areas of high activity, as well as providing a connection from Buckland Park and Virginia to Elizabeth.

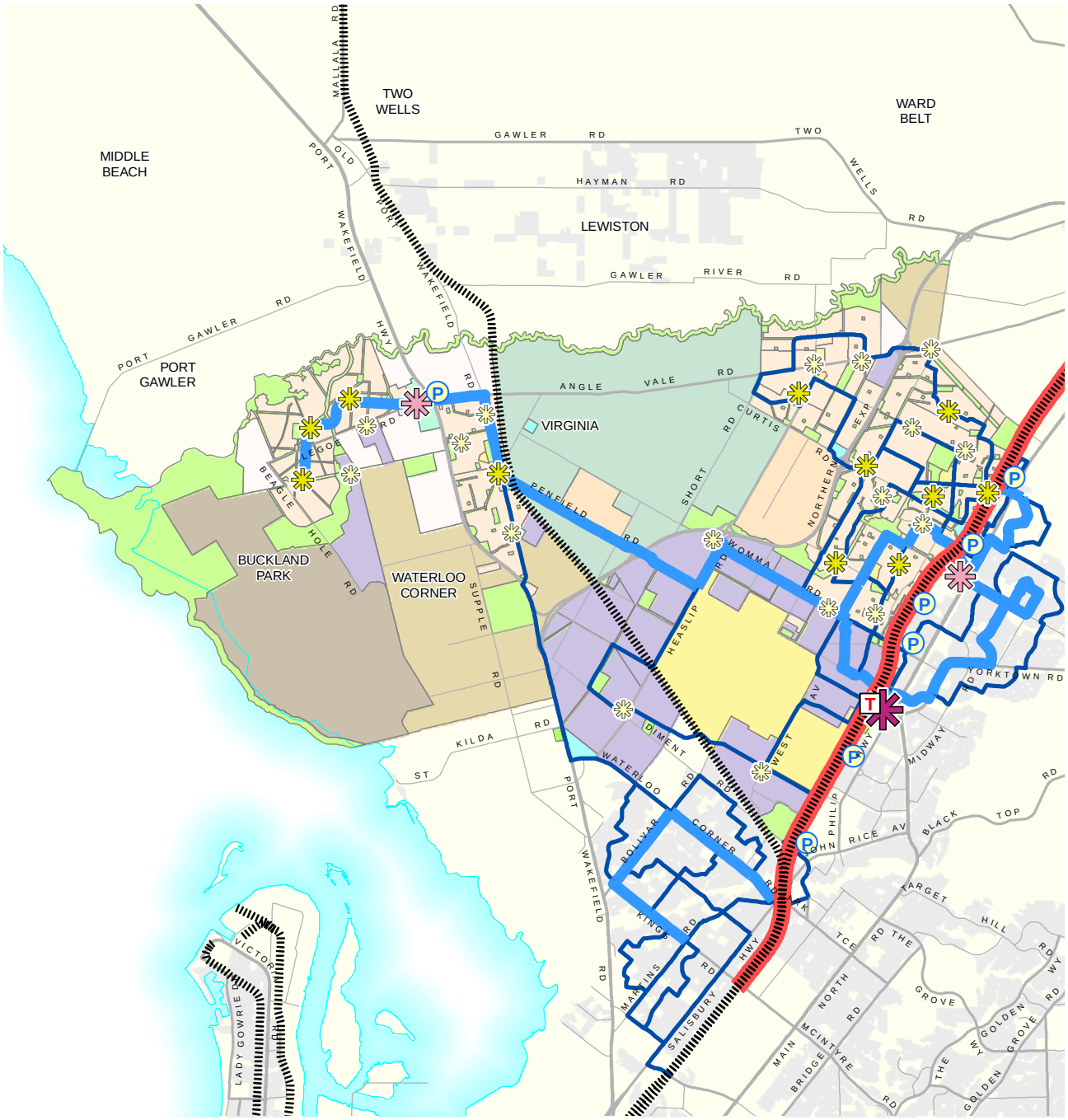
7.2.3 Pedestrian and Cycle Network

The Stuart O'Grady bikeway adjacent to the Northern Expressway is proposed to be the backbone of the local cycling network. Cycling opportunities will also be provided both internal and external to the urban growth areas via integrated open space and swale networks.

Walking opportunities will be integral to the design of all roadways and within the shared network of open spaces.

In addition to active transport routes there is a well-developed trail along Smith Creek. This trail is the City of Playford's most complete and significant recreation trail and currently runs in an east-west direction for about eight kilometres. This trail is close to the Playford North Extension and the creek traverses this urban growth area providing an opportunity to continue this link and provide for additional pedestrian and cycle connectivity to surrounding areas.

The Gawler River provides an opportunity for a linear park with shared use paths for recreation, linking with local open space networks at Angle Vale, Virginia and Buckland Park.



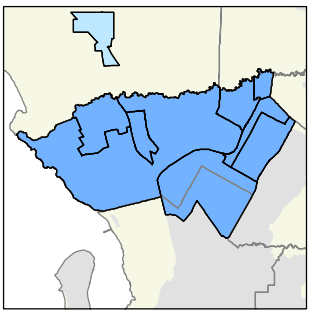
Playford Growth Area Structure Plan

Proposed Public Transport

- Primary Transit Link
- Secondary Transit Link
- Local service
- Regional Centre
- District Centre
- Neighbourhood Centre
- Local Centre
- Park and ride
- Transport interchange
- Centre
- Commercial Infill
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway

N

0 1 2 3 4 5 km



PLN ID: 4000

7.2.4 Network Improvements

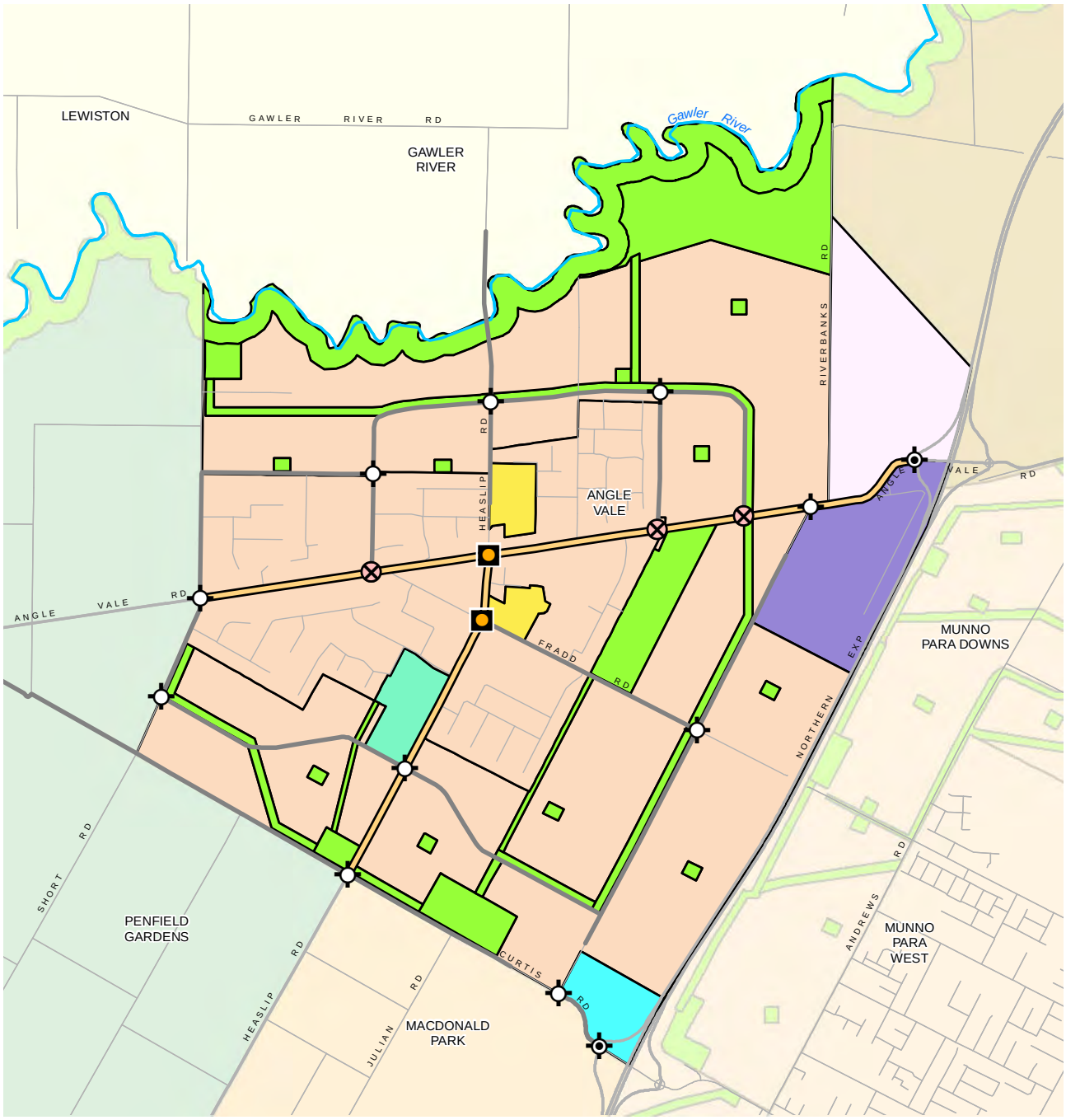
The transport network improvements identified on the following pages are subject to detailed investigations and infrastructure negotiations. The interventions described to roads and intersections may change as a consequence of this process.

Angle Vale

The proposed road layout and intersection treatments for Angle Vale are shown on the next page.

Existing roads are expected to carry the majority of traffic within, to and from the growth area. Key improvements proposed include:

- a new local 'ring road' which will provide access to the new areas utilising existing roads and segments of new roads between:
    - Short and Frisby roads (south of the existing town centre)
    - Angle Vale and Heaslip roads (north of the existing town centre)
- new signals at the intersections of:
    - Angle Vale and Heaslip roads
    - Heaslip and Fradd roads
- installation of a number of new roundabouts
- modification of Heaslip Road to provide a main street environment through the expanded neighbourhood scale activity centre while still retaining its arterial road function
- upgrading Curtis Road to a suitable standard to accommodate freight traffic, including RAVs.



Playford Growth Area Structure Plan

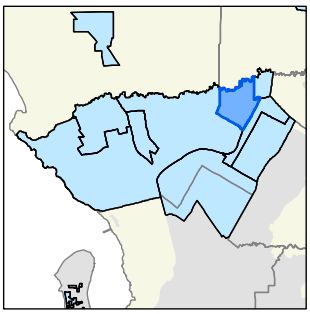
Proposed Transport Infrastructure - Angle Vale*

N

0 1 km

Built-up Area
Main road
Other road
Railway / tramway
Waterway

Other intersection
Dual lane roundabout
Single lane roundabout
Traffic signal
Arterial road - 2 lanes
Local road - 2 lanes
Centre
Commercial/Office
Future urban
Industry/Employment
Institutional
Open Space/Recreation
Residential



PLN ID: 3929

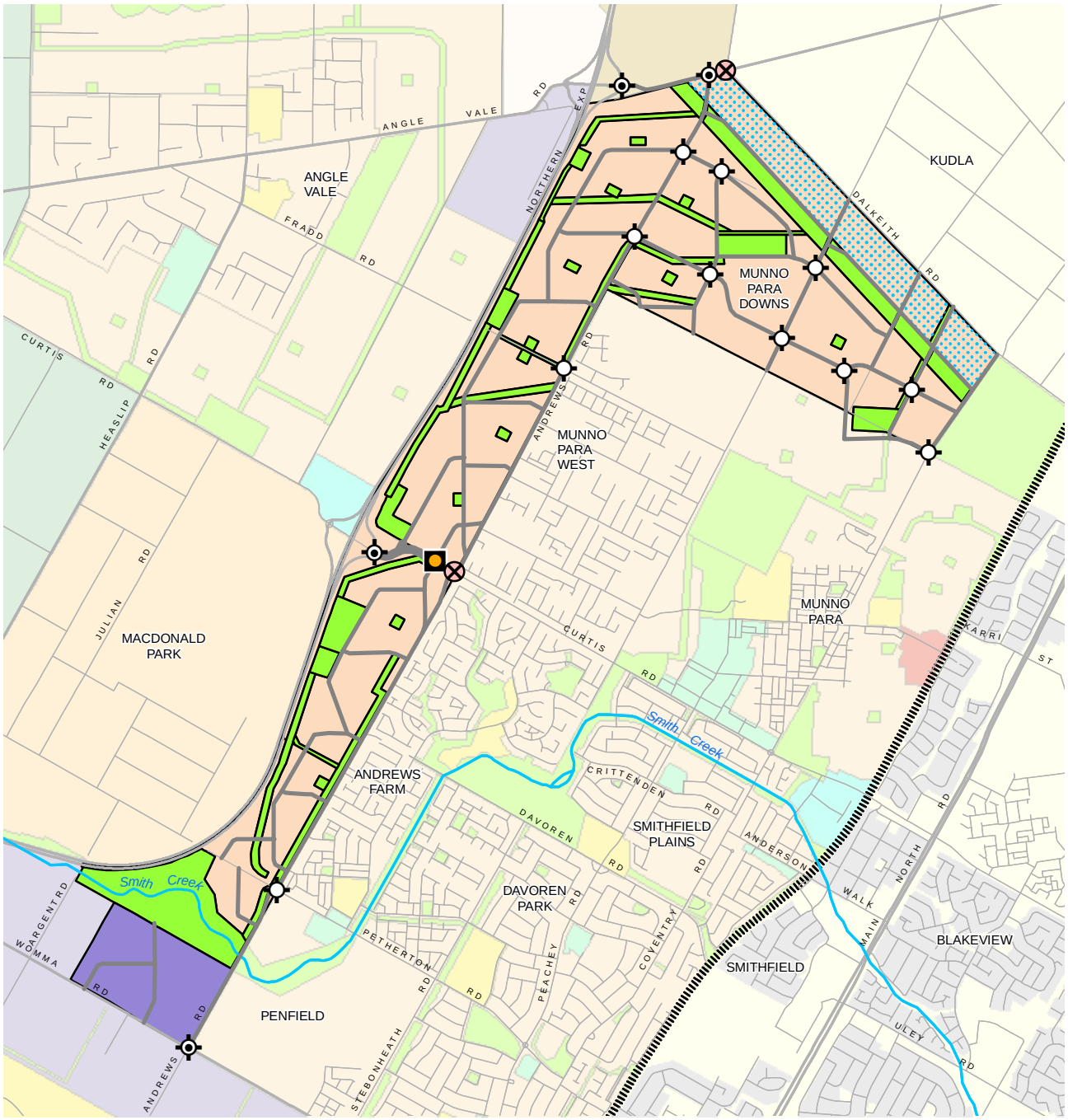
* Subject to detailed investigations and infrastructure negotiations

Playford North Extension

The proposed road layout and intersection treatments for Playford North Extension are shown on the next page, including modifications to the layout to improve connectivity with existing and planned development areas.

For the most part, new road infrastructure required to service the Playford North Extension consists of local roads. Required improvements to existing roads are comparatively minor in scale and include:

- realignment of part of Andrews Road to provide a main street environment for the envisaged neighbourhood scale activity centre
- provision of new signals at the intersection of Andrews Road and Curtis Road
- provision of or upgrades to roundabouts at:
    - the Angle Vale Road / Northern Expressway interchange
    - the intersection of Andrews Road and Angle Vale Road
    - the Curtis Road / Northern Expressway interchange
    - the intersection of Andrews Road and Womma Road.



Playford Growth Area Structure Plan

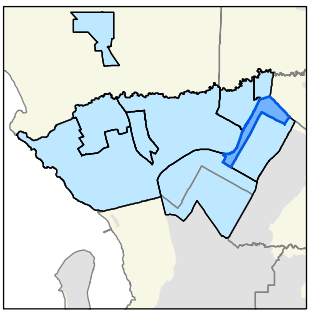
Proposed Transport Infrastructure - Playford North Extension*

N

0 1 km

Built-up Area
Main road
Other road
Railway / tramway
Waterway

Traffic signal
Dual lane roundabout
Single lane roundabout
Other intersection
Local road - 4 lanes
Local road - 2 lanes
Industry/Employment
Open Space/Recreation
Residential
Rural Interface Policy Area



PLN ID: 3929

* Subject to detailed investigations and infrastructure negotiations

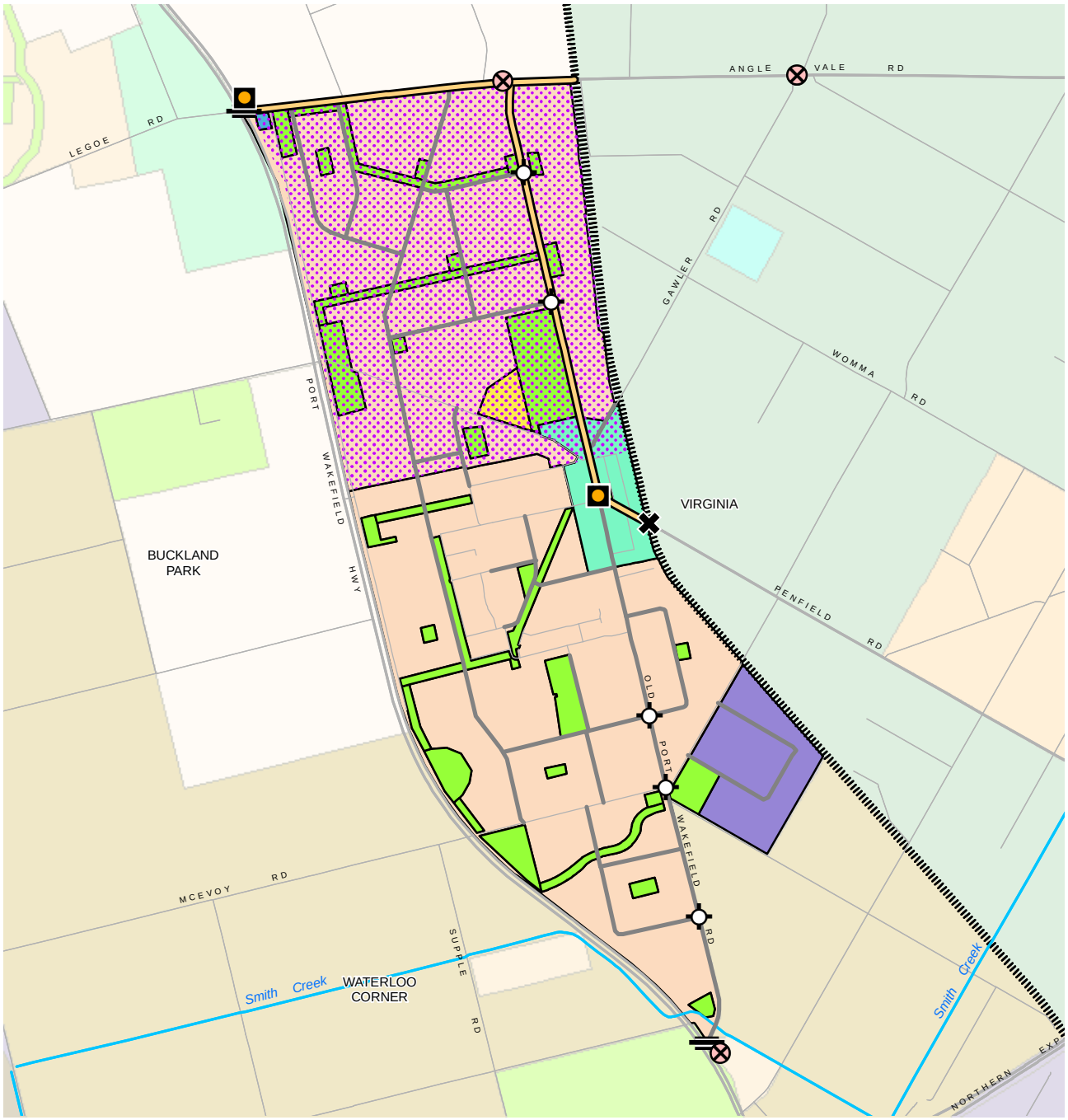
Virginia

The revised road configuration for the Virginia Urban Growth Area is shown on the following page.

As is the case with the Playford North Extension, new road infrastructure required to service growth at Virginia consists, for the most part, of local roads. Required improvements to existing roads include:

- provision of new signals at the intersection of Angle Vale Road and Port Wakefield Road
- modification of the intersection of Angle Vale Road and Old Port Wakefield Road
- improvements to level crossings at Penfield and Gawler roads
- provision of new signals at the intersection of Penfield Road and Old Port Wakefield Road
- modification of the intersection of Port Wakefield Road and Old Port Wakefield Road to improve safety.

Provision also needs to be made for a potential grade separation at the intersection of Port Wakefield Road and Old Port Wakefield Road to ensure free-flowing traffic movements along the National Highway network in the longer term. A grade separation is also being considered for the intersection of Angle Vale Road and Port Wakefield Road in the longer term as part of planning for the Buckland Park (Riverlea) development.



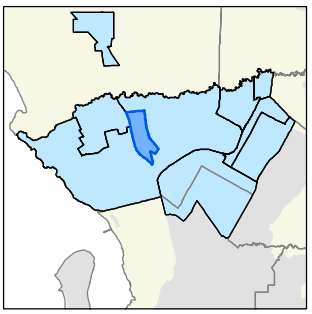
Playford Growth Area Structure Plan

Proposed Transport Infrastructure - Virginia*

- Built-up Area
- Main road
- Other road
- Railway / tramway
- Waterway
- Level crossing
- Other intersection
- Potential grade separation
- Single lane roundabout
- Traffic signal
- Arterial road - 2 lanes
- Local road - 2 lanes
- Centre
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Residential
- Deferred Urban

N

0 1 km



PLN ID: 3929

* Subject to detailed investigations and infrastructure negotiations

Greater Edinburgh Parks

The proposed road layout and intersection treatments for Greater Edinburgh Parks are shown on the following page.

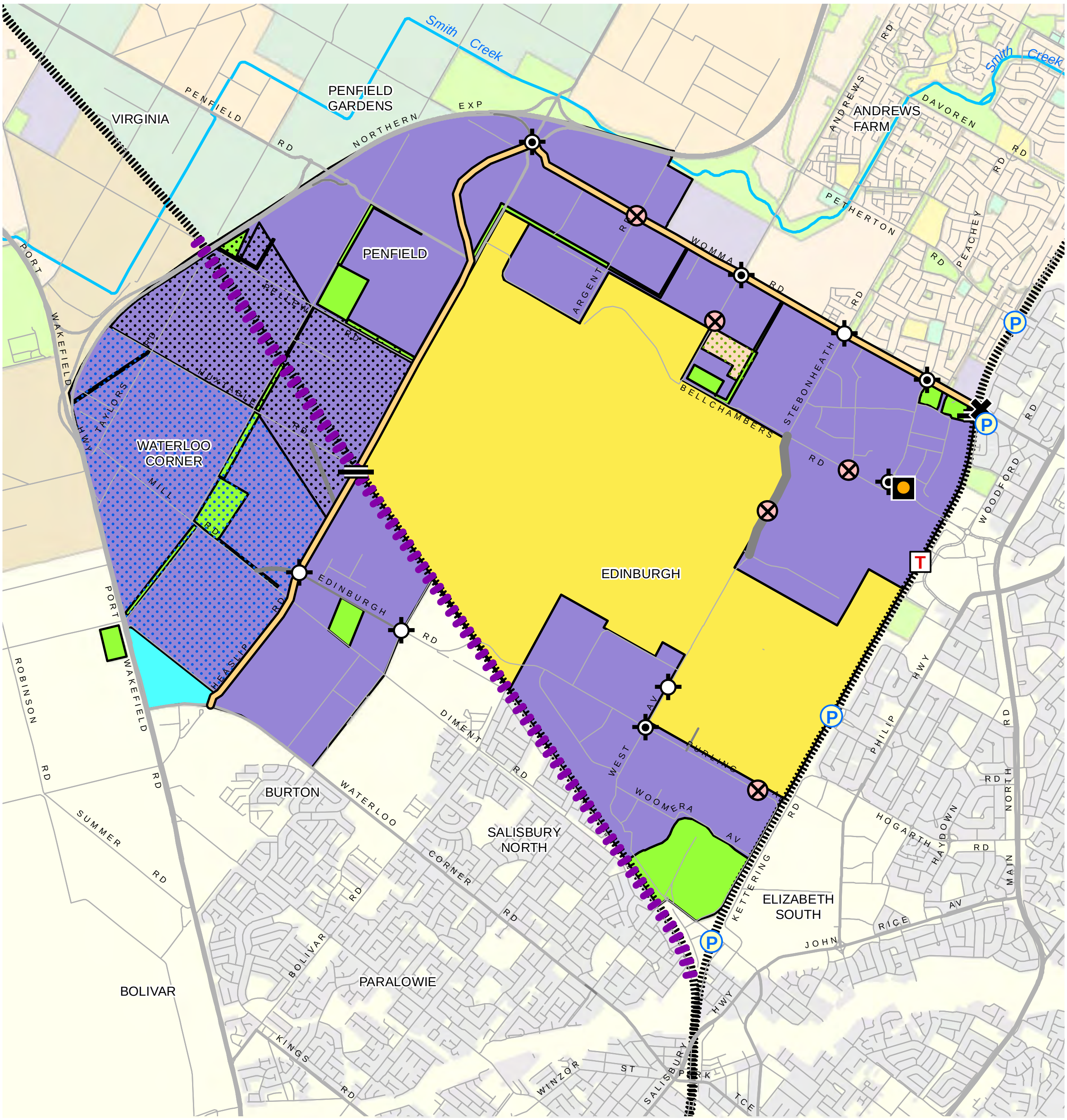
The existing road network provides the basis for a convenient upgrade to support envisaged development, key features of which are:

- upgrades to Heaslip and Womma roads and West Avenue to facilitate access for Performance Based Standards (PBS) Level 3 vehicles (e.g. double road trains)
- new or upgraded roundabouts at Heaslip / Edinburgh roads, Edinburgh / Helps roads, Womma / Stebonheath roads and Womma / Andrews roads
- upgrades to the Northern Expressway interchange at Heaslip / Womma roads.

Additional upgrades to the road network are envisioned as development progresses west of Heaslip Road, including realignment of:

- Huxtable Road to provide greater separation between its intersection with Heaslip Road and the level crossing to the north
- Mill Road to form a four-way intersection with Edinburgh Road.

Heaslip Road will also need to be realigned between Penfield and Womma Roads in the event that the main runway of RAAF Base Edinburgh is extended to the north. In the longer term, consideration may be given to the grade separation of Heaslip Road and the interstate railway line at Penfield.



Playford Growth Area Structure Plan

Proposed Transport Infrastructure - Greater Edinburgh Parks*

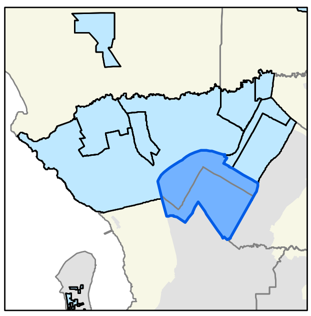
N

0 1 km

Built-up Area
Main road
Other road
Railway / tramway
Waterway

Traffic signal
Dual lane roundabout
Single lane roundabout
Other intersection
Level crossing
Potential grade separation
Park and ride
Transport interchange
Freight rail
Arterial road - 2 lanes
Local road - 4 lanes
Local road - 2 lanes
Road - unclassified

Commercial/Office
Residential
Institutional
Industry/Employment
Open Space/Recreation
Intermodal Policy Area
Potential Coordinated Mixed Use Precinct
Residential Park



PLN ID: 3929

* Subject to detailed investigations and infrastructure negotiations

7.3 Stormwater and Flood Management

The study area is generally flat, with a slight fall from east to west. Accordingly, managing stormwater is a significant issue for the region, requiring extensive infrastructure to manage storm events and minimise local flooding.

The Gawler River and Smith Creek are the primary waterways that convey stormwater through the study area to the coast. Gawler River is expected to receive minimal run-off from new development; however Smith Creek is expected to accommodate new flows from the development of Angle Vale, Playford North Extension and Virginia.

The City of Playford recognises that Smith Creek may not have sufficient capacity to manage stormwater run-off from the study area and other areas upstream (e.g. Blakeview) and is embarking upon a regional study to determine future capital works that may be required.

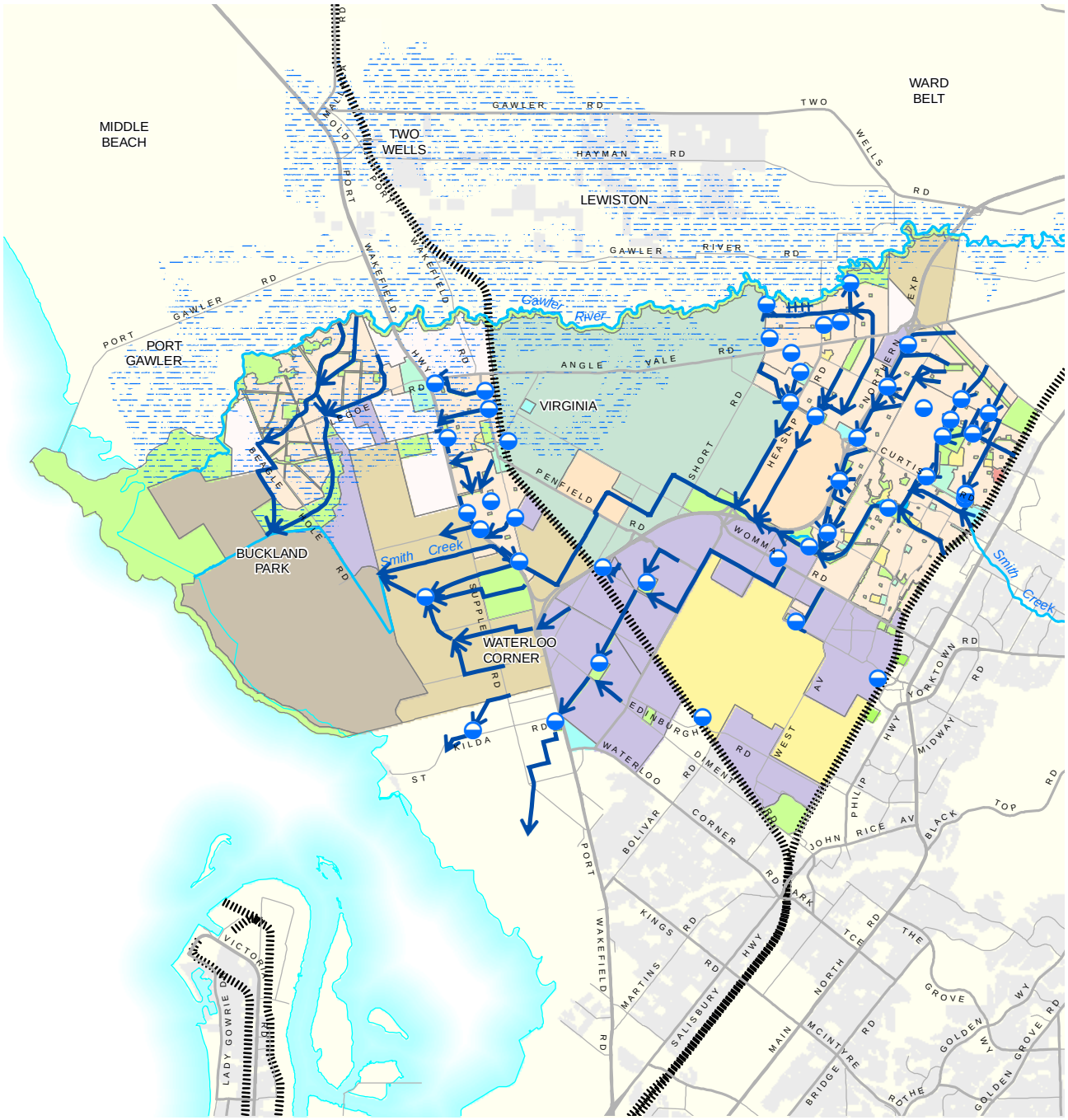
In the interim, new development will need to ensure that downstream flows of stormwater do not exceed pre-development flows.

A new drain along McEvoy Road is proposed to minimise the amount of run-off from Virginia discharging into Smith Creek.

The Gawler River is known to flood in 1:100 Average Return Interval (ARI) flood events, as shown on the map on the following page. Both Angle Vale and Virginia are impacted by flooding from the Gawler River.

At Angle Vale, existing and proposed residential development can be protected through the construction of a 700 m long flood levy (0.5 m in height), which will not exacerbate flooding downstream. However, a cost-effective and appropriate flood mitigation solution has not been found to protect land at Virginia North. Therefore, development at Virginia North is proposed for the longer term, subject to an appropriate flood mitigation solution being determined.

New stormwater infrastructure is to be provided at Buckland Park, which will also assist in flood mitigation from Gawler River. Flood mapping has not been updated to reflect the final proposed stormwater and flood mitigation system for Buckland Park, which is being prepared by the proponents for the Riverlea development.



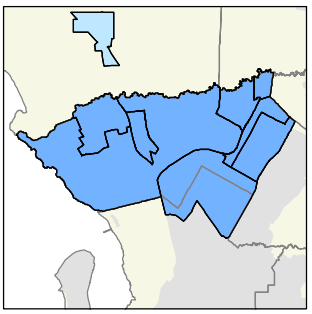
Playford Growth Area Structure Plan

Proposed Stormwater and Flooding Infrastructure*

- Storm detention basin/wetland
- Stormwater flows
- Levee
- Flood affected areas (1 in 100 year flood)
- Centre
- Commercial Infill
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway
- Waterway

N

0 1 2 3 4 5 km



PLN ID: 3997

* Subject to detailed investigations and infrastucture negotiations

7.3.1 Local Stormwater Management Solutions

The stormwater management systems identified on the following pages are subject to detailed investigations and infrastructure negotiations. The detention/retention basins and overland flow paths may change as a consequence of this process.

Angle Vale

The Angle Vale Urban Growth Area straddles seven catchments. The existing drainage system servicing existing development in this area will need to be augmented to manage runoff from envisaged further development.

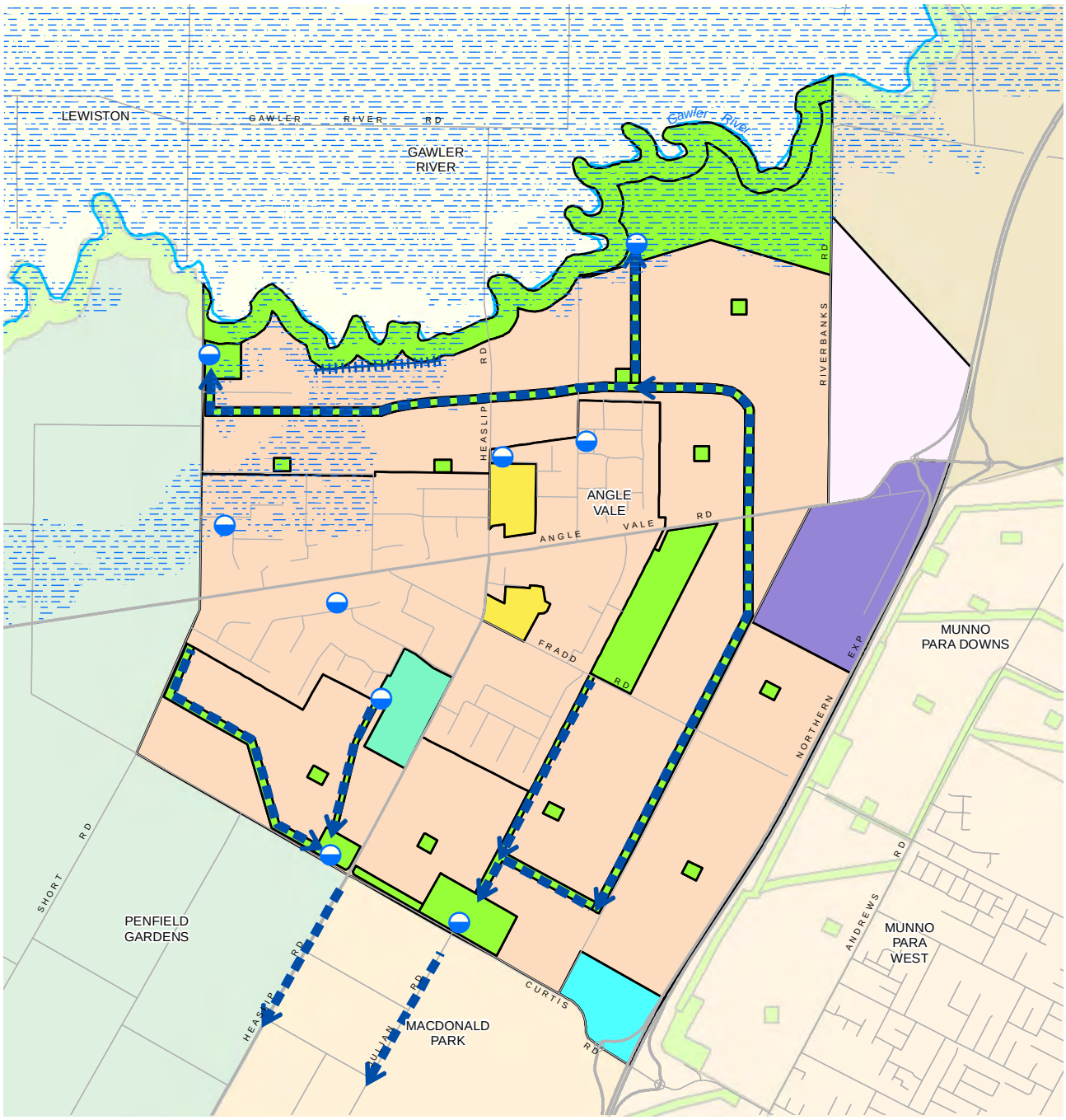
It is predicted that four new detention basins will form part of this augmentation.

A basin adjacent Curtis Road (near the intersection with Julian Road) is significantly larger than the other basins due to the need to throttle back peak flows to below existing levels before discharging into the Julian Road drain towards Smith Creek.

Trunk drainage is intended to be large, open channels of maintained grass with a depth of 0.8 m, based on the gradients of the Urban Growth Area. The widest section of channel required will be 30 m from top of bank to top of bank, with the majority of channels between 15 and 20 m wide.

Trunk drainage channels will be accommodated by 40 m wide reserves and branch drainage channels will be accommodated by 25 m wide reserves to enable incorporation of water sensitive urban design features, biodiversity plantings and recreational assets (such as cycling and walking trails).

Details of the proposed stormwater infrastructure are identified on the map on the following page.



Playford Growth Area Structure Plan

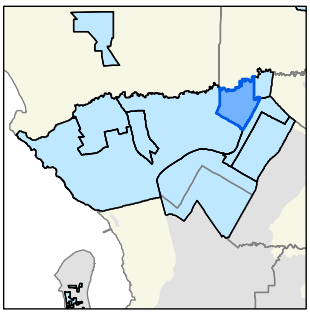
Proposed Stormwater and Flooding Infrastructure - Angle Vale*

N

0 1 km

Built-up Area
Main road
Other road
Railway / tramway
Waterway
Flood affected areas (1 in 100 year flood)

Storm detention basin/wetland
Stormwater flows
Levee
Centre
Commercial/Office
Future urban
Industry/Employment
Institutional
Open Space/Recreation
Residential



PLN ID: 3929

* Subject to detailed investigations and infrastructure negotiations

Playford North Extension

Playford North Extension straddles a number of sub-catchments of the wider Smith Creek catchment. Moreover, a significant area north of Dalkeith Road (outside the Urban Growth Area) drains in a south-westerly direction towards Playford North Extension.

It is important to highlight that the proposed development area is very flat and therefore conventional drainage systems utilising underground pits/pipes and road network are unlikely to sufficiently convey flood flows along major drainage routes.

There is currently no formal drainage system in the Playford North Extension for envisaged development to discharge to.

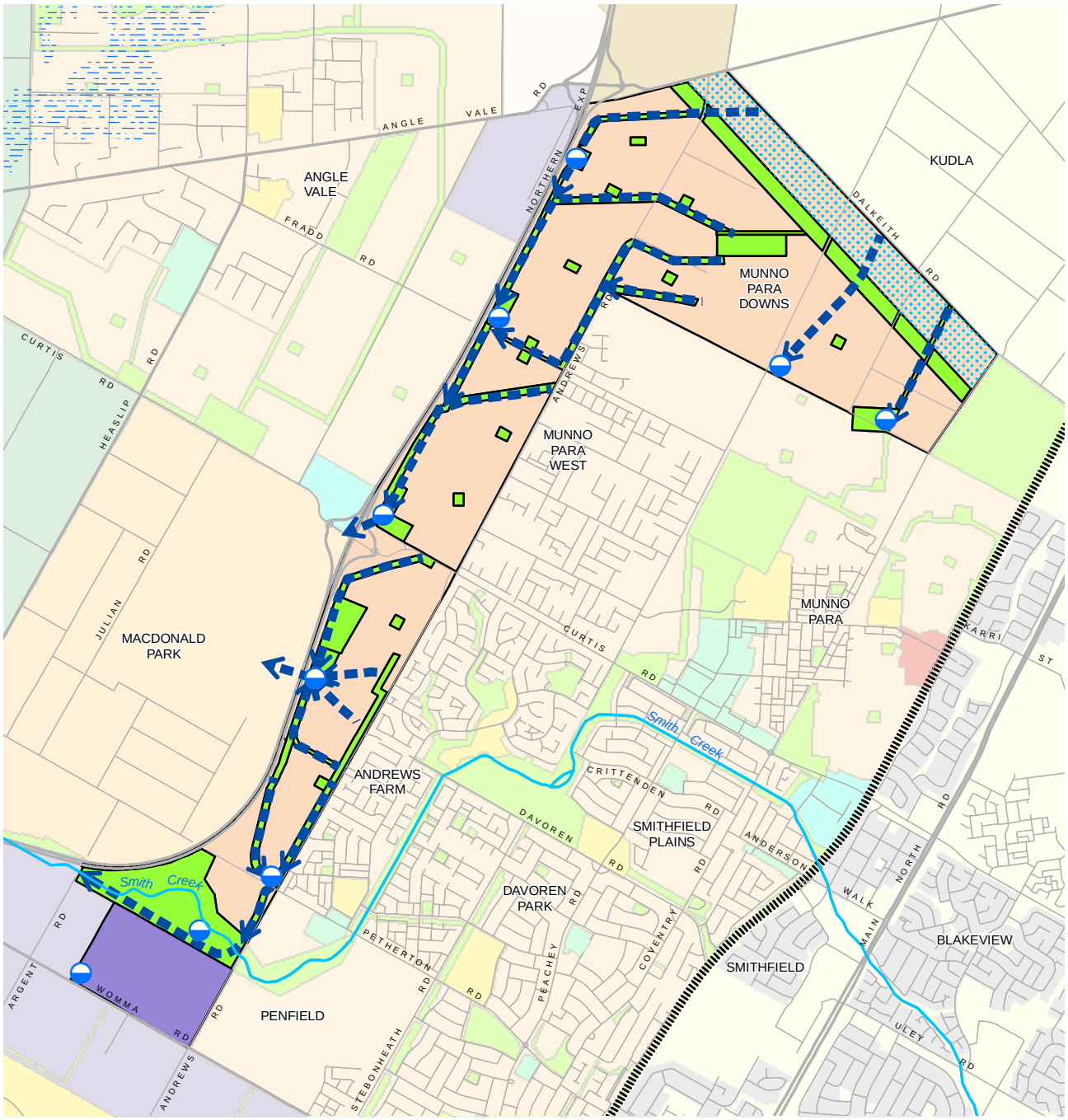
It is proposed that an open channel network (which includes wetlands and detention basins further downstream outside the growth area) be installed to manage stormwater generated by envisaged development.

Major (or “trunk”) drainage systems that consist of open channels are judged to be the most appropriate for this growth area due to its flat topography and the ability to connect smaller subsidiary pipe systems.

The proposed stormwater management solution provides a combination of large detention basins, with drainage swales providing a degree of detention within the area of Munno Para Downs.

Open drainage channels will vary from 12.5 - 22 m in width from top of bank to top of bank. As with Angle Vale, these drainage corridors are to be integrated with open space, utilise water sensitive urban design and provide biodiversity and recreation opportunities.

Details of the proposed stormwater infrastructure are identified on the map on the following page.



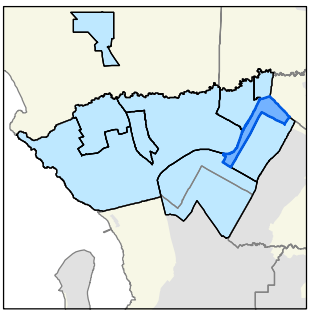
Playford Growth Area Structure Plan

Proposed Stormwater and Flooding Infrastructure Playford North Extension*

- Built-up Area
- Main road
- Other road
- Railway / tramway
- Waterway
- Flood affected areas (1 in 100 year flood)
- Storm detention basin/wetland
- Stormwater flows
- Industry/Employment
- Open Space/Recreation
- Residential
- Rural Interface Policy Area

N

0 1 km



PLN ID: 3929

* Subject to detailed investigations and infrastructure negotiations

Virginia Growth Area

The Virginia Urban Growth Area lies within a large catchment which includes the existing Angle Vale township. This ultimately discharges to Gulf St Vincent via an open channel through the salt crystallisation pans located at the western end of Thompson Road in Buckland Park.

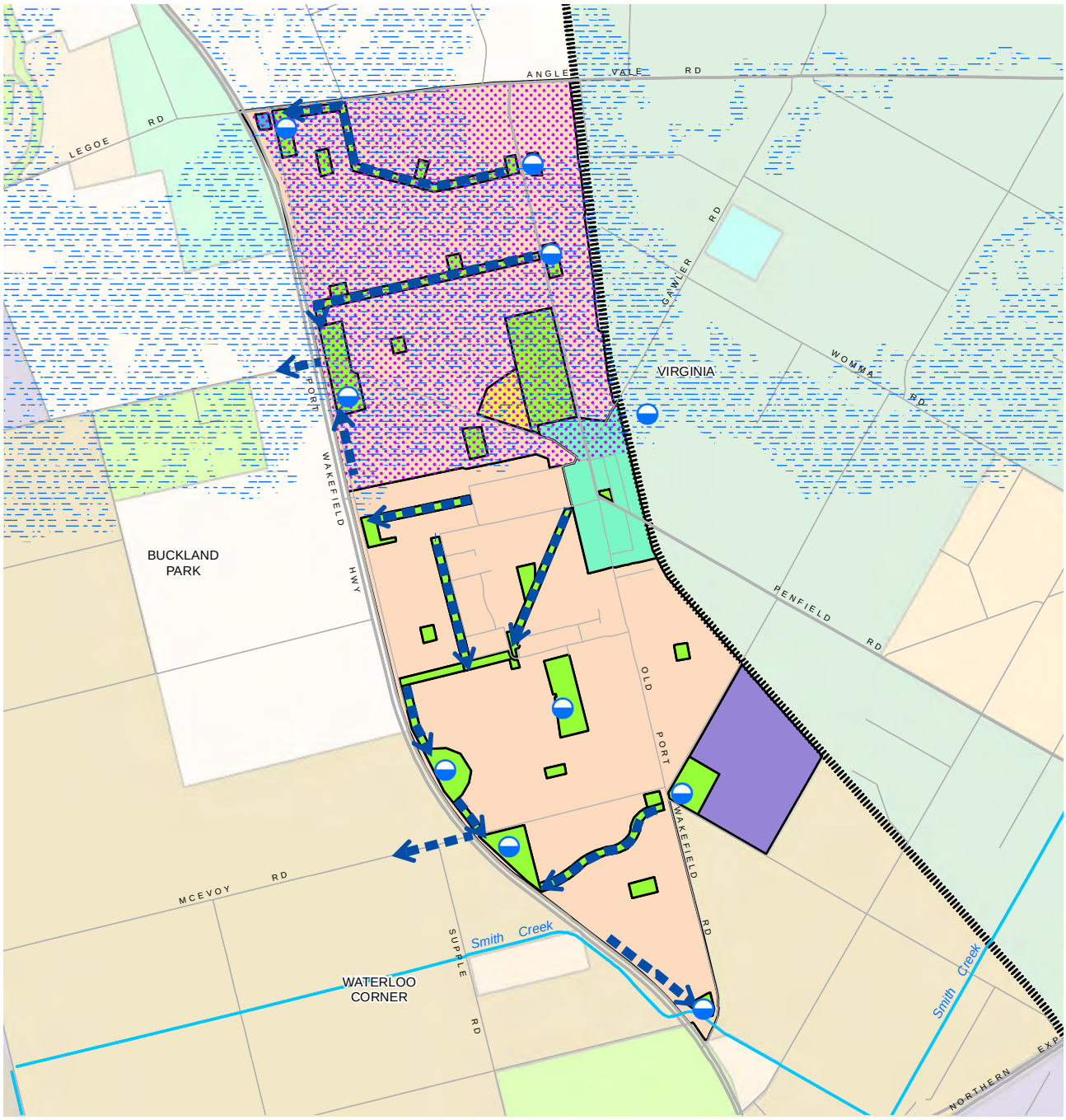
The growth area itself is generally very flat with a general gradient of 0.2% from east to west with a slight southward bias.

The primary means of conveying runoff throughout the Virginia Urban Growth Area will be open drainage channels. These are designed to be unlined to facilitate additional groundwater recharge via infiltration, with gentle side slopes.

The stormwater plan on the following page shows an approximate location of the major open channels. The drains in most instances will be too wide to fit within road reserves. A new drain is proposed outside of the Urban Growth Area along McEvoy Road to limit the amount of stormwater that discharges to Smith Creek.

Stormwater runoff is to be directed to the western (low) side of the Virginia Urban Growth Area, where it is to be directed via vegetated open swales to reserve areas that have been allocated for water quality improvement and detention from the catchments upstream of the study area. This method will also provide open space and recreation services for the community. It is considered to be the most practical and cost-effective method of achieving the required detention storage.

The stormwater detention basins are required to be sized in order to reduce the peak flows downstream so that existing downstream infrastructure can be used for larger storm events with minimal upgrade requirements and construction of downstream infrastructure.



Playford Growth Area Structure Plan

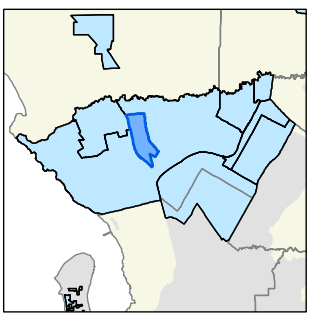
Proposed Stormwater and Flooding Infrastructure - Virginia*

N

0 1 km

Built-up Area
Main road
Other road
Railway / tramway
Waterway
Flood affected areas (1 in 100 year flood)

Storm detention basin/wetland
Stormwater flows
Infrastructure
Industry/Employment
Residential
Open Space/Recreation
Institutional
Centre
Deferred Urban



PLN ID: 3929

* Subject to detailed investigations and infrastructure negotiations

Greater Edinburgh Parks

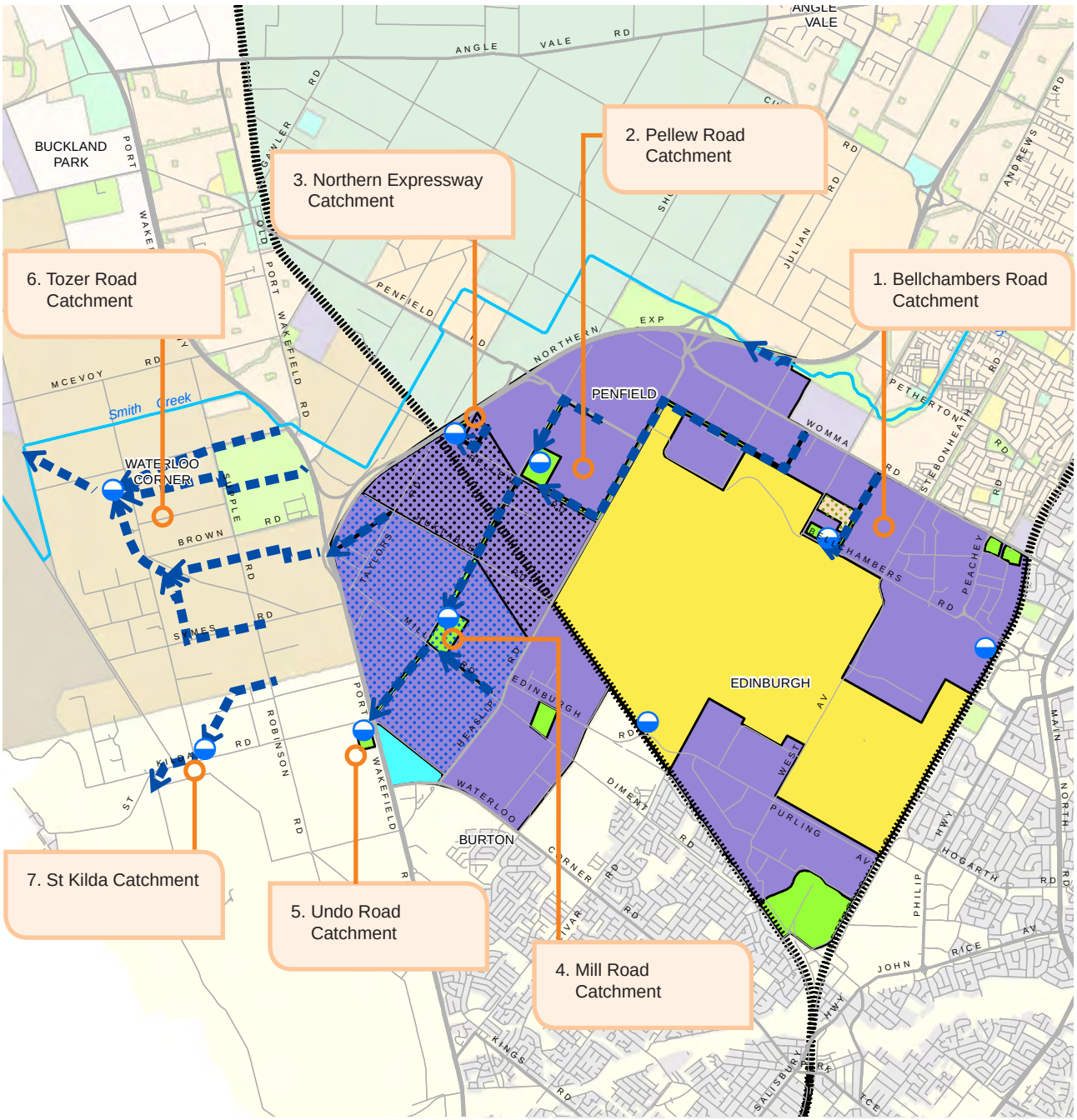
An integrated stormwater plan for Greater Edinburgh Parks (and encompassing areas west of Port Wakefield Road) was prepared which outlines the major stormwater-related infrastructure that will be required to manage flood risk, water quality and water re-use as a result of planned future development in the area.

The distinct catchment areas identified in the plan, including preferred options for stormwater management, are summarised in the following table.

Identified Catchment Area	**Basin Recommended** (Volume / size)	**Wetland Recommended** (Volume)
1. Bellchambers Road Catchment	Yes 60 ML 4 ha	No (primarily due to risk of bird strike to RAAF aircraft and relatively small-scale harvesting opportunities)
2. Pellew Road Catchment	Yes 160 ML 12 ha	No
3. Northern Expressway Catchment	Yes 30 ML 2.5 ha	Yes 6 ML
4. Mill Road Catchment	Yes 170 ML 12 ha	Yes 54 ML
5. Undo Road Catchment	Yes 65 ML (or 350 ML if Mill Road basin not constructed) 6 hectares	Yes 50 ML (or 90 ML if Mill Road basin not constructed)
6. Tozer Road	Yes 520 ML 50 hectares	No
7. St Kilda Catchment	Yes 60 ML 4 hectares	No (i.e. viability of water harvesting marginal given small catchment)

While the stormwater plan has costed and prioritised the above stormwater works, timing for their implementation (including securing and assembling the required land) will need to be considered through future negotiations with Playford and Salisbury councils, infrastructure providers/authorities, land owners and developers based on likely future staging for development. Some of the options may also be subject to change, based on further investigations, costs and land availability.

Development of the identified stormwater infrastructure needs to factor in the needs of the Department of Defence to reduce the risk of bird strike to aircraft from RAAF Base Edinburgh.



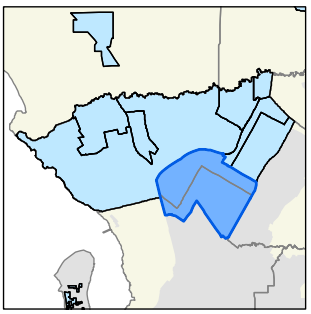
Playford Growth Area Structure Plan

Proposed Stormwater and Flooding Infrastructure Greater Edinburgh Parks*

- Built-up Area
- Main road
- Other road
- Railway / tramway
- Waterway
- Storm detention basin/wetland
- Stormwater flows
- Commercial/Office
- Residential
- Institutional
- Industry/Employment
- Open Space/Recreation
- Intermodal Policy Area
- Potential Coordinated Mixed Use Precinct
- Residential Park

N

0 1 km



PLN ID: 3929

* Subject to detailed investigations and infrastructure negotiations

7.4 Noise Attenuation

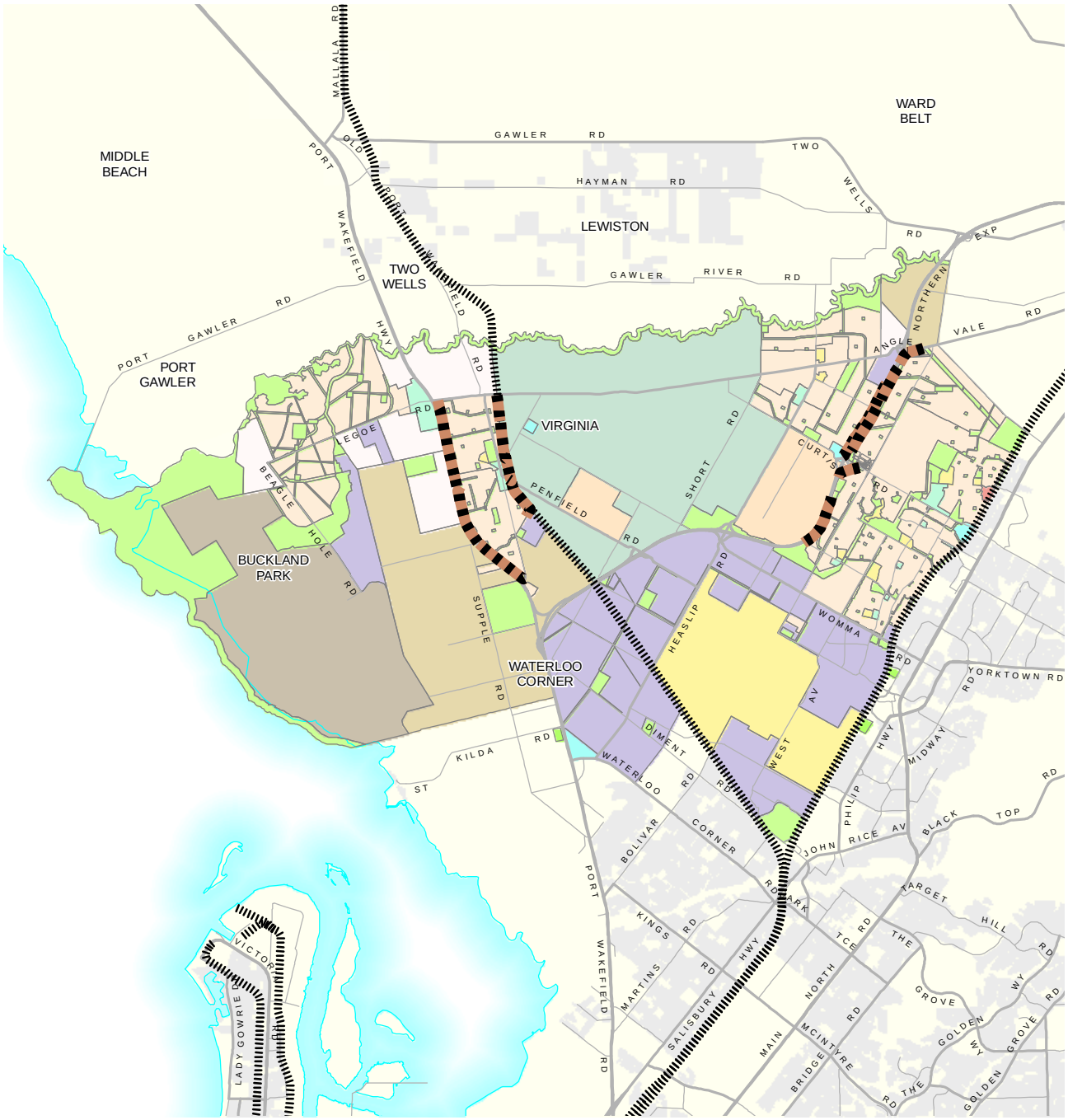
Noise attenuation treatments will be required where sensitive development such as dwellings are proposed near to major noise sources such as the Northern Expressway and Port Wakefield Road; portions of other major roads where they intersect with the aforementioned arterial roads; and the Adelaide-Darwin railway line.

A range of noise wall treatments is anticipated for this purpose. These include:

- a 5.0 m high acoustic barrier adjacent to major roads
- a 4.0 m high barrier adjacent to the Adelaide-Darwin railway line at Virginia.

Where there is the possibility of integrating open space and stormwater management, areas of no acoustic barrier may be appropriate on the basis that separation distances achieve appropriate noise mitigation levels for development.

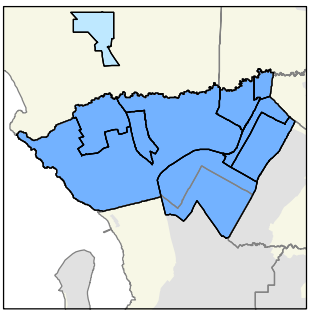
Consideration will also need to be given to the layout of residential land divisions and the orientation of dwellings for areas near the Adelaide-Darwin railway line at Virginia to deal with potential noise from wheel squeal and vibrations from passing trains.



Playford Growth Area Structure Plan

Proposed Acoustic Barriers

- Acoustic barrier
- Centre
- Commercial Infill
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway



PLN ID: 4090

7.5 Water and Wastewater Supply

Existing water and wastewater infrastructure capacity is inadequate for the growth envisaged within the study area.

Existing water infrastructure capacity can accommodate only limited growth at Buckland Park and Virginia. Angle Vale and the Playford North Extension can be more easily serviced by extensions to the existing network due to their close proximity to trunk main infrastructure.

The existing and planned development at Playford North can be connected to the wastewater network treated by the Bolivar Wastewater Treatment Plant. New development at Playford North Extension and further north within the Town of Gawler will require the provision of a new wastewater trunk main by SA Water, which has been identified in preliminary analysis to run along Andrews Road.

No wastewater network currently exists for Buckland Park or the townships of Angle Vale and Virginia, which are currently serviced by individual systems in households. It is intended that these urban growth areas will be connected to appropriate sewer networks for wastewater disposal, which may require the extension of existing networks or the provision of new facilities and networks.

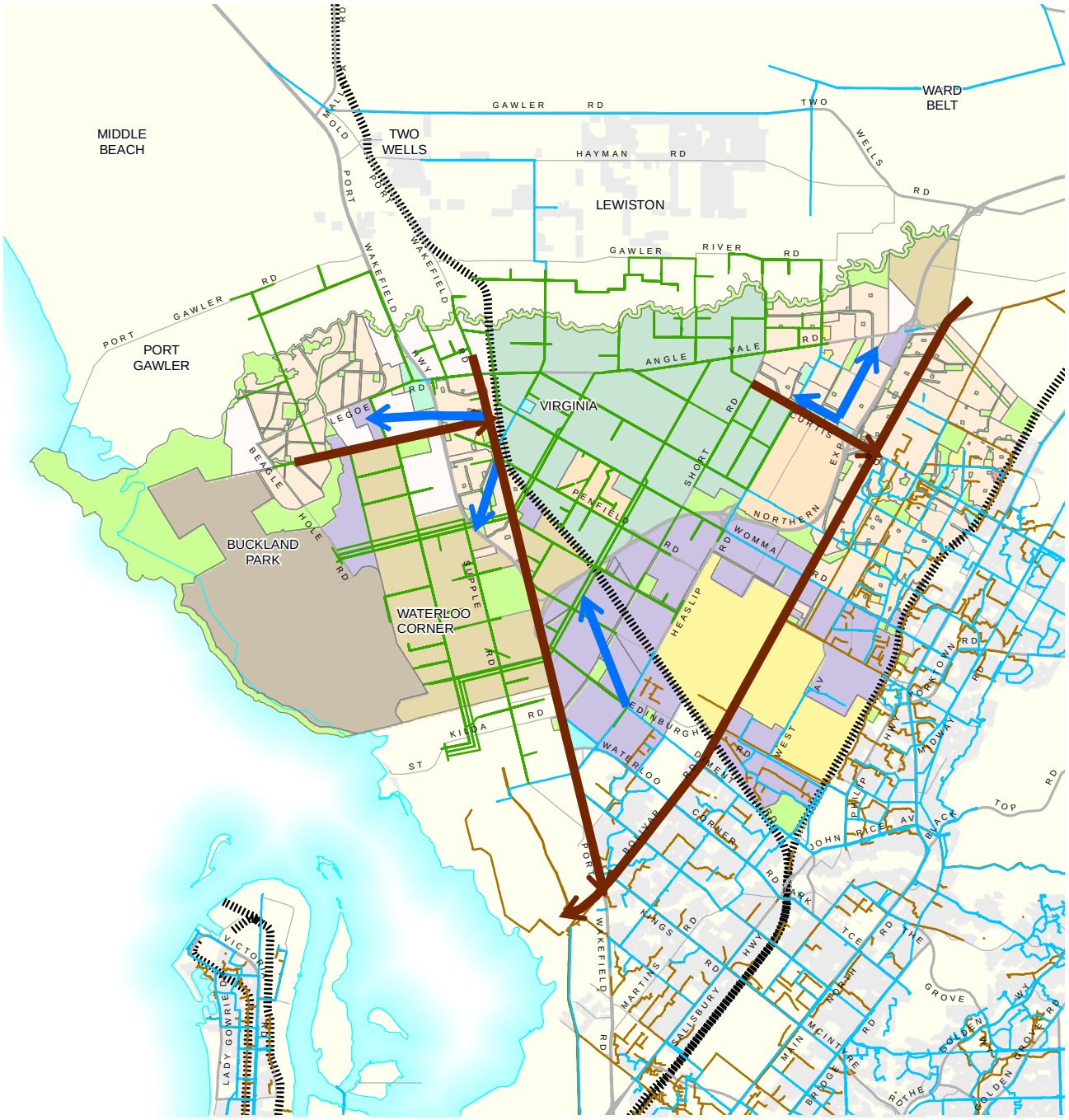
SA Water is currently investigating the water and wastewater servicing options for the Playford Projects as part of its planning for infrastructure to support the Plan. While these investigations continue, SA Water will work with developers to provide advice regarding water and wastewater solutions for their developments.

7.6 Reclaimed Water

A reclaimed water scheme is proposed by Renewal SA to supply new developments at Blakeview, Munno Para West and Penfield.

The Playford North Extension between Petherton Road and Fradd Road will be able to access this scheme subject to the payment of an augmentation charge. However, it is unlikely Angle Vale will be considered as part of the recycled water scheme for the northern suburbs.

The study area also encompasses the Virginia Reuse Network, which provides recycled water from Bolivar for use by horticultural activities within the Virginia Triangle. Intensification of horticultural activities (including industrial-scale greenhouses) within the study area could provide use more of this water supply. Further investigations are required to determine the suitability of this water for future industrial use within Greater Edinburgh Parks.



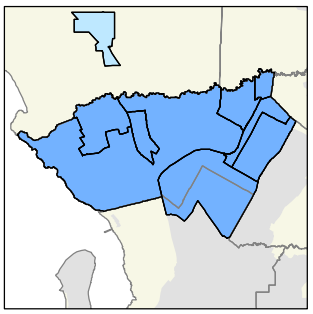
Playford Growth Area Structure Plan

Proposed SA Water Infrastructure

- Conceptual new water supply mains
- Conceptual new wastewater mains
- Existing major water supply pipes
- Existing major wastewater pipe
- Virginia reuse network
- Centre
- Commercial Infill
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway

N

0 1 2 3 4 5 km



PLN ID: 3967

7.7 Electricity

Angle Vale

All electricity lines servicing Angle Vale are currently contained within road reserve corridors, with the exception of the 275kV lines traversing private property in the north-eastern extremity of the urban growth area. This 275kV line is contained within a 50 m wide easement.

SA Power Networks (SAPN) (formerly ETSA Utilities) has advised that the proposed development will require one new distribution substation within the urban growth area, a new substation at Hillier and associated 66kV line connections to the existing Angle Vale–Evanston 66kV line. The Hillier substation will require an area of 1.0 ha to site its operation. In addition, SAPN will be upgrading the existing Angle Vale substation.

Playford North Extension

Development of the Playford North Extension will require one new connection point substation (275kV/66kV/11kV), one new distribution sub-station (66kV/11kV) and two new overhead 66kV lines to connect the new Penfield North Substation to the Penfield Substation and the Smithfield West Substation (66kV/11kV)

There are 66kV overhead mains running along the eastern side of Coventry Road and the northern side of Curtis Road.

New overhead 66kV power lines are required along Curtis Road, Andrews Road, Petherton Road and Womma Road in the vicinity of the urban growth area.

A high voltage line also runs west across the study area from Andrews Road underneath the Northern Expressway north of Petherton Road. It is expected that this line will need to remain in this alignment.

The largest service located within the urban growth area is a 275kV power line. This power line runs roughly parallel to, and 400 metres south of, Dalkeith Road between Coventry Road and Angle Vale Road.

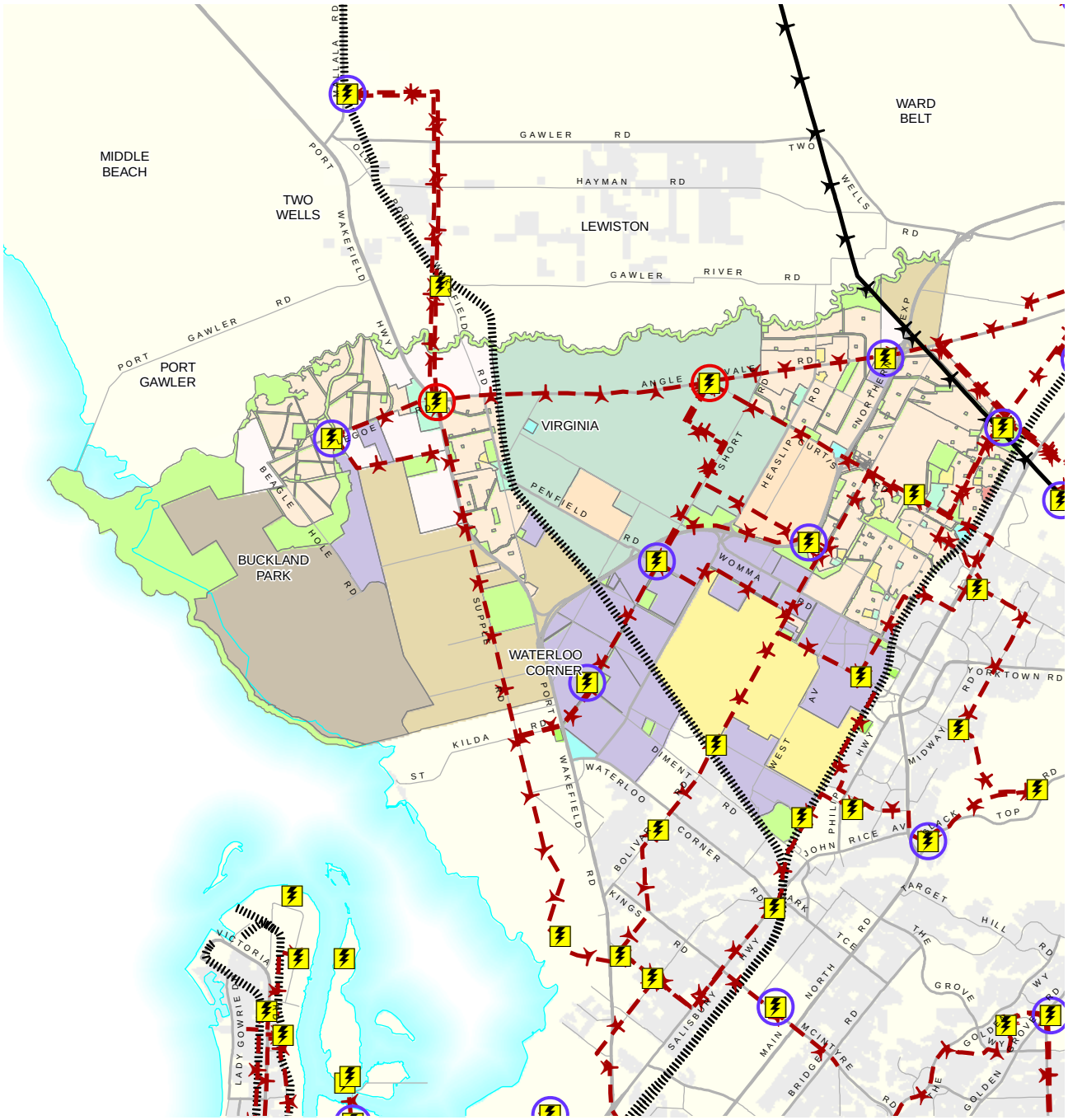
This line is currently 40-50 years old and is proposed for replacement and upgrading within the foreseeable future. The current line must remain operational whilst the upgrade and replacement works are undertaken and therefore the new line will be positioned as close as is practicable to the existing line, prior to that line being decommissioned.

An easement/clearance of 50 m will be required for the new 275kV electrical line; however, ElectraNet has advised that it may ultimately require a wider easement of approximately 100 m to enable further reconstruction and upgrade works in the future. Therefore the Structure Plan proposes a 100 m wide infrastructure corridor that can also be utilised as an open space corridor.

Virginia

Virginia is supplied by a 66 kV sub-transmission feeder line which is fed via Bolivar from the Parafield Gardens West 275kV substation. The substation at Virginia currently has sufficient capacity for the very early stages of development. However, augmentation of this substation will be required subject to the rate of growth of the township.

As both the sub-transmission 66kV feeder and step down transformer for the substation have insufficient capacity, SAPN will need to provide a second transformer at this substation. In addition, a second sub-transmission feeder will be required from the adjacent Angle Vale substation.



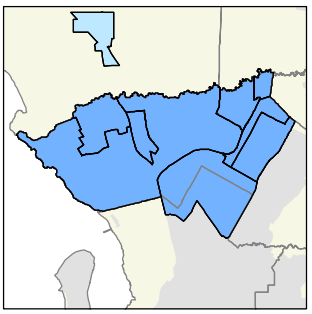
Playford Growth Area Structure Plan

Electricity Infrastructure

- Electricity substation - new
- Electricity substation - upgrade
- Electricity substation - existing
- Electricity transmission line
- Electricity distribution line
- Centre
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Infrastructure
- Industry/Employment
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway

N

0 1 2 3 4 5 km



PLN ID: 4003

Greater Edinburgh Parks

Existing 66kV sub-transmission lines and substations provide coverage to the eastern half of Greater Edinburgh Parks (i.e. at Direk, Edinburgh, Penfield and Elizabeth South). A major northern sub-transmission line also runs parallel one kilometre west of Port Wakefield Road.

Two new distribution substations (66kV/11kV) will be required in Greater Edinburgh Parks, with new 66kV overhead lines (and associated easements) anticipated to connect these substations to the existing Bolivar, Angle Vale and future Penfield North (Petherton Road) substations. Timing for this infrastructure will depend on the future scale and timing of development.

SAPN has advised that likely sites (of approximately 1.0 ha) for these substations would include:

- Short/Mill roads at Waterloo Corner, supplied from new 66kV overhead line extensions from the Bolivar and Virginia substations
- Penfield/Short roads at Penfield, supplied from new 66kV overhead line extensions from the future Waterloo Corner and future Penfield North substations. A new 66kV easement would be required to extend north from the substation to the existing Angle Vale substation.

The location of these additional substations will need to ensure no electrical interference to the operations of the Edinburgh Defence Precinct.

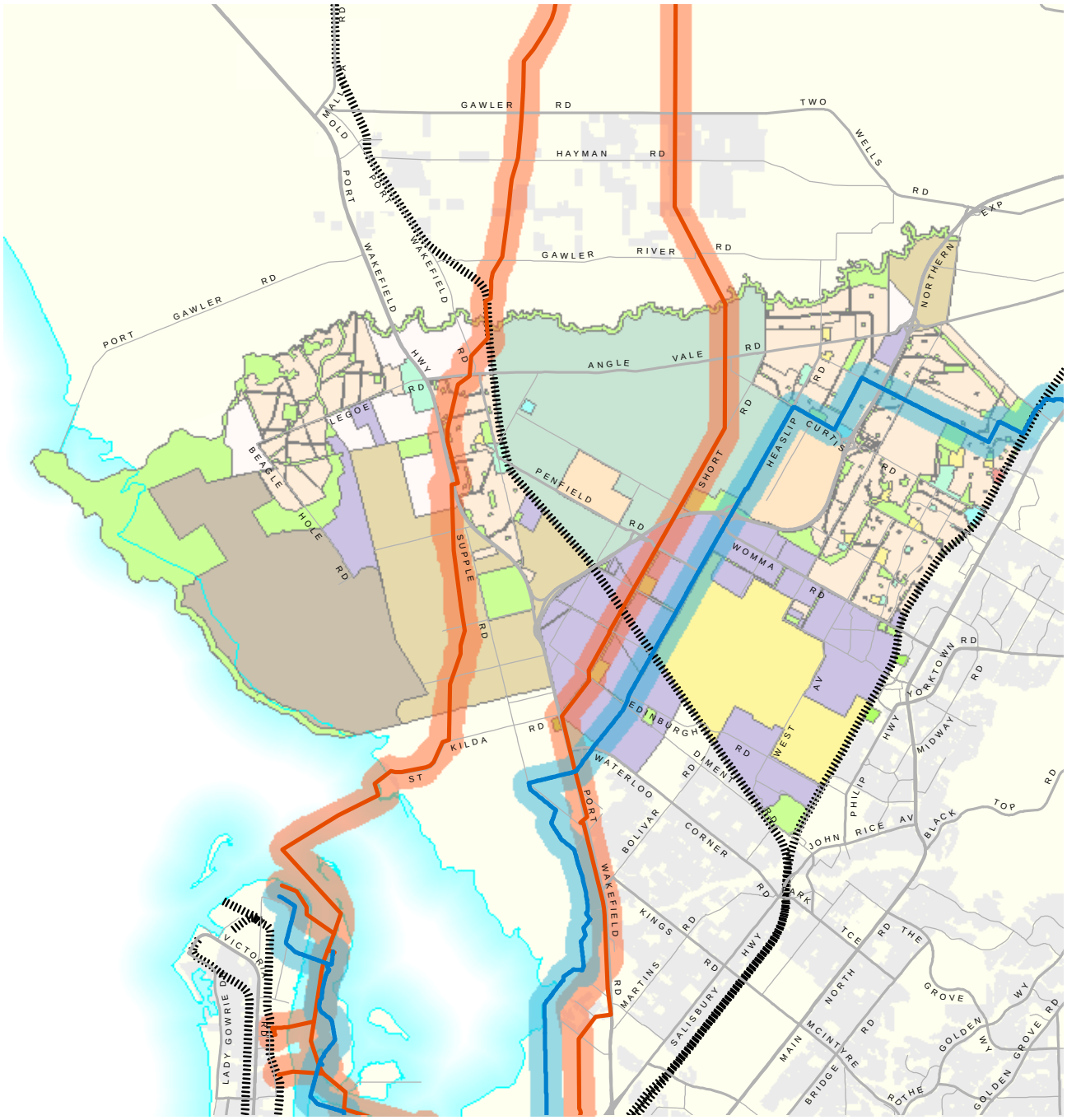
7.8 Gas Networks

7.8.1 High pressure gas pipelines

Three high pressure gas pipelines and associated easements traverse the study area and are shown in the map on the next page. These include:

- the Epic Energy SA pipeline (Moomba to Adelaide) that generally follows the alignment of Short Road and dissects the western portion of Greater Edinburgh Parks
- the ‘Wasleys Loop’ transmission main between Adelaide and Moomba (owned and operated by Epic Energy), which runs along the western and north-western boundaries of the Virginia Urban Growth Area
- the SEA Gas pipeline (Port Campbell to Adelaide) that traverses the study area from the north-west and generally follows Fradd, Frisby, Curtis and Heaslip roads, passing through Angle Vale, Playford North Extension and Greater Edinburgh Parks.

Development should ensure the protection of these pipelines in accordance with relevant legislation and Australian Standards.



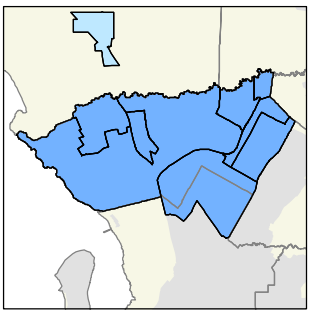
Playford Growth Area Structure Plan

High Pressure Gas Pipelines

- SEA Gas pipeline referral area
- Epic Energy SA pipeline referral area
- SEAGas pipeline
- EPIC Energy SA pipeline license (issued under the Petroleum Act, 2000)
- Centre
- Commercial Infill
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway

N

0 1 2 3 4 5 km



PLN ID: 4121

7.8.2 Local gas network

Envestra is the owner of the natural gas network in Adelaide. The APA Group operates the network on behalf of Envestra and is responsible for network construction and maintenance.

There is existing gas infrastructure located within road reserve corridors traversing the three residential urban growth areas. APA Group has advised that this has sufficient capacity to service envisaged development.

Greater Edinburgh Parks

An extensive gas reticulation system serves the eastern and southern perimeters of Greater Edinburgh Parks. This is linked to the high pressure system. It has been extended to serve current subdivisions in Edinburgh Parks. Nominally, the system is proposed to be extended along West Avenue, Edinburgh to connect with the existing reticulation in Elizabeth West.

New gas lines will also be required to connect to main lines to serve all new industrial areas proposed in the northern, western and south-western portions of this precinct. APA has advised that the network extension will be located and staged in line with land release and development patterns, and will depend on a satisfactory commercial case being developed for the provision of these services.

7.9 Telecommunications

There are numerous existing telecommunication cable networks along various road reserve corridors in the study area. These will need to remain in their current alignment and will form the basis for expansion of the network throughout the urban growth areas.

Future servicing of the study area will be the responsibility of the NBN Co.

7.10 Open Space and Recreation Facilities

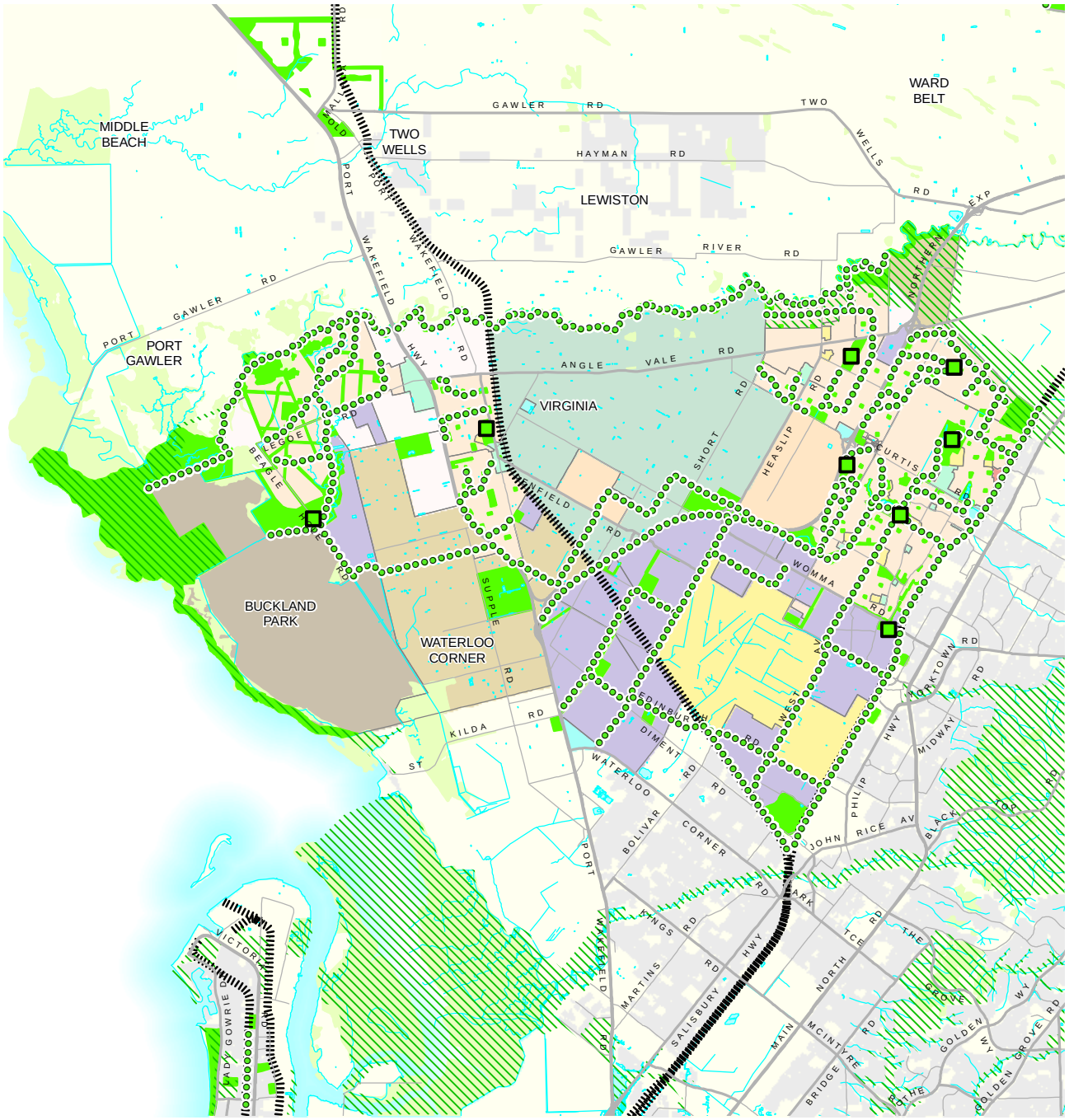
Using open space efficiently provides opportunities for multiuse activities. In particular, functional or operational open spaces can provide passive recreation areas and generally enhance the visual amenity of the area. Due to their extensive and often linear nature, drainage networks provide an opportunity for development of linked cycle and pedestrian paths, interspersed with water features. Typically these areas provide good access throughout the development area and to the surrounding areas. These areas, when landscaped, provide places for picnics, quiet reading and reflection, improved visual aesthetics, and also promote biodiversity.

An identified primary trail has been developed along Smith Creek. A further primary trail is proposed along the Gawler River. Primary trails are seen by the Council as an opportunity to maximise movement, access, localised tourism and physical activity.

Key district and regional sporting facilities are largely located in and around Elizabeth such as the Elizabeth Aquadome, Elizabeth Oval, and Argana Park. The North Lakes Golf Course is located in Munno Para West.

The new facility recently constructed at Curtis Road, Angle Vale is a district level facility with an oval, courts and a clubroom. There is also room for expansion on the site should the need arise; however additional land has been allocated to the north to cater for increased demand arising from new development.

Similarly, additional land has been allocated to the north of Virginia Oval to cater for new recreation facilities to service new residents in Virginia.



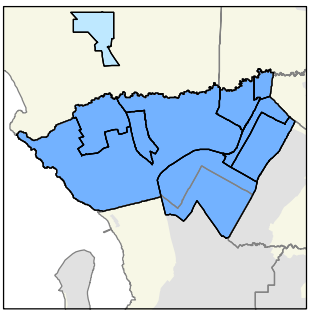
Playford Growth Area Structure Plan

Environment, Open Space and Recreation

- Greenway
- Recreation centres/facilities
- Open Space/Recreation
- MOSS study area
- Remnant vegetation
- Centre
- Commercial Infill
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Waterbody
- Watercourse
- Main road
- Railway / tramway

N

0 1 2 3 4 5 km



PLN ID: 3998

Council has advised that the demand generated by the additional population in Playford North Extension will also require two more areas of playing fields of approximately 6.0 ha. One has been located adjacent to the proposed new schools at Munno Para Downs, and the other located adjacent to the Northern Expressway at MacDonald Park, south of Curtis Road.

Indoor recreation facilities are limited within the vicinity of the study area. An indoor recreation facility of one court can be supported by the population projected for the Playford North Extension. Considering the population in the surrounding suburbs, there may be justification to support a facility of two to three courts. This will require a site of around 5000 to 7500 m^2 which should be located within a centre area. The Andrews Road centre is likely to be preferred since the Stebonheath Road centre may have indoor recreation facilities available within one of the adjacent proposed schools.

7.11 Education – Schools

The Department of Education and Child Development (DECD) advises that there is capacity within some of the existing schools to cater for short term increases in demand flowing from growth within the study area. Beyond the short term however it is acknowledged that the expansion of some existing schools and development of new schools will be required.

DECD advise that there are a number of variables that may dictate the final decision about the provision of public schools, including the timing of the new urban growth areas of Angle Vale, Playford North Extension and Virginia, as well as Buckland Park. Also to be considered is the impact of the Mark Oliphant and John Hartley schools which have the potential to change the distribution of students in existing schools, both public and private.

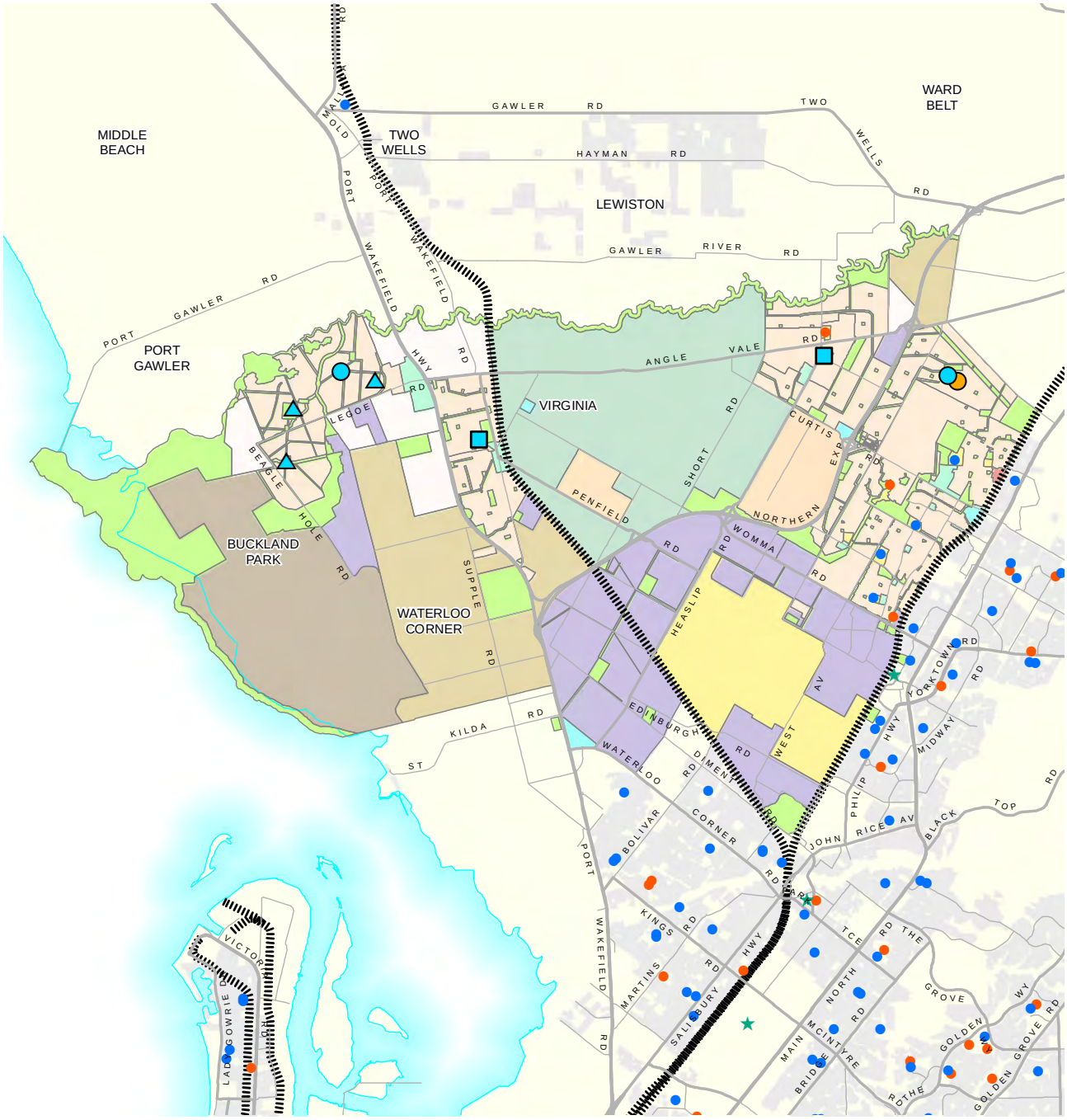
Analysis of population growth and demographic trends has been undertaken for each of the three new residential growth areas. Similar analysis was previously undertaken by Walker Corporation for Buckland Park and by the State Government for the Playford Alive development area. Each of these analyses examined demand for school places and recommended new or upgraded education facilities, some of which have already been developed, e.g. Mark Oliphant School at Munno Para.

However, DECD has recently undertaken its own demographic analysis of the entire Northern Adelaide and Barossa, Light and Lower North state government regions, which has factored in growth from new development areas outlined in the Plan. This analysis has reviewed the structure planning investigations undertaken for this Structure Plan and identified the following potential requirements for education facilities over the next 15 years (subject to population growth and school enrolments):

- upgraded primary schools at Angle Vale and Virginia
- three new Birth to Year 7 (B-7) schools at Buckland Park
- new Birth to Year 12 (B-12) schools at Buckland Park/Virginia and Munno Para Downs/Angle Vale.

DECD will continue to monitor population growth and trends in school enrolments to determine the exact timing and locations of these proposed new schools and will negotiate with landowners and/or developers regarding the purchase of appropriate sites as required. Schools sites identified on the following map are conceptual only and do not necessarily indicate that a school may be provided in that location.

It is also anticipated that new private schools may be required at Munno Para and Virginia/Buckland Park. The independent schools sector will liaise with landowners/developers as appropriate and in accordance with their own requirements. However, there may be opportunities for private and public schools to co-locate and share facilities.



Playford Growth Area Structure Plan

Proposed Education Infrastructure

- Upgraded B-7 government school
- Conceptual B-7 government school
- Conceptual B-12 government school
- Conceptual R-12 non government school
- Existing government school
- Existing non government school
- TAFE Institutions
- Centre
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure
- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway

N

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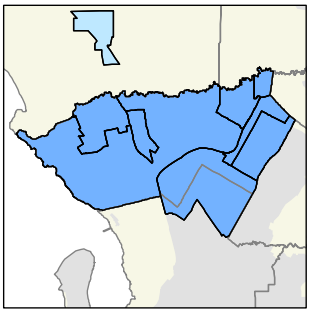


PLN ID: 3968

7.12 Health Services

The study area is reasonably well serviced with major health facilities. The Lyell McEwin Hospital at Elizabeth Vale has 287 beds and is one of the major public hospitals within the state. The Lyell McEwin has a full range of medical, surgical, diagnostic and support services and is scheduled for expansion between 2014 and 2016. This expansion will see 96 beds added to the hospital.

The Calvary Central Districts Private hospital at Elizabeth Vale is also close to the study area and has 76 beds. The Gawler Hospital is north of the study area and has 56 beds, including a 24 hour emergency facility.

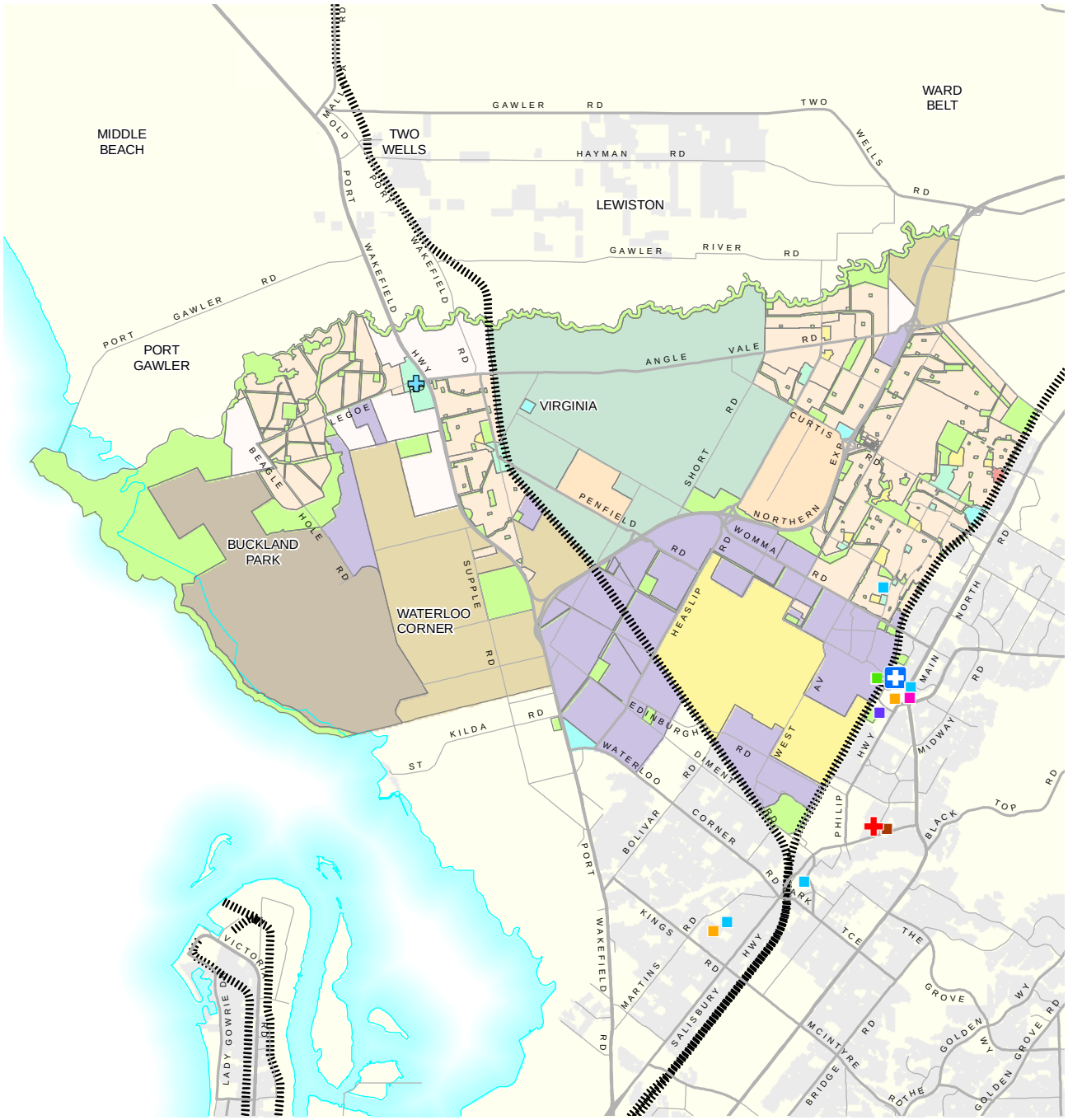
The new population residing in the study area will increase demand for hospital and other health services. SA Health advises that demand for hospital services should be able to be accommodated within the existing hospital facilities within the wider locality.

SA Health also operates GP Plus Health Care Centres which provide a broad range of secondary health services such as outpatient/ambulatory, chronic disease management, and allied health and community health services targeted to the specific needs of its catchment population. A GP Plus Health Care Centre is located at Elizabeth.

Typically, the catchment of a GP Plus Health Care Centre is a population of around 100 000. It is likely that growth within the study area will warrant, at some stage, a local GP Plus Health Care Centre. The timing of its establishment would be influenced by:

- the speed of local population increase
- the capacity of the Elizabeth GP Plus Health Care Centre to service population growth
- the quality of public transport links.

A conceptual GP Plus Health Care Centre has been identified at the future Buckland Park District Centre to serve a future regional catchment of more than 60 000 people, including Buckland Park, Virginia, Two Wells and Lewiston. A GP Plus Health Care Centre should be co-located with shopping facilities, other government services and near public transport. A site between 2500 and 5000 m^2 will be required, with the actual size subject to the range of services to be provided.



Playford Growth Area Structure Plan

Public Health Facilities

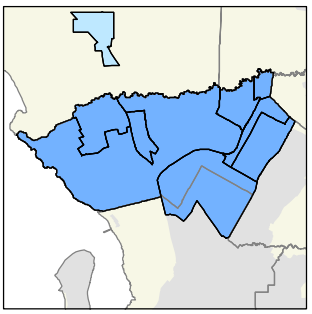
- Conceptual GP Plus Health Care Centre
- GP Plus Health Care Centre
- Public Hospital
- Aboriginal Health
- Breastscreen SA
- Child and Youth Health
- Community Health
- Dental Services
- Drug and Alcohol Services

- Centre
- Commercial Infill
- Commercial/Office
- Extractive industry
- Future urban
- Horticulture/Viticulture
- Industry/Employment
- Infrastructure

- Institutional
- Open Space/Recreation
- Primary Production/Rural
- Residential
- Rural Living
- Urban node
- Built-up Area
- Main road
- Railway / tramway

N

0 1 2 3 4 5 km



PLN ID: 3995

7.13 Emergency Services

The provision of new police and emergency services is based on the ability to meet specified response times and not on population increases.

South Australia Police, SA Ambulance Service, the Metropolitan Fire Service and the Country Fire Service have existing facilities within, or immediately adjacent to, the study area and will monitor development and respond accordingly with resource planning and allocation.

7.14 Community Services

The Northern Adelaide Region is quite well serviced with community services such as Centrelink, Housing SA, Housing Trust Tenants information, CRS Australia Rehabilitation, Australian Workplace Training, the Legal Services Commission and Families SA in nearby Elizabeth. This is supported by a public transport focus to the Elizabeth Regional Centre.

In addition, the City of Playford, either solely or in partnership with others, provides a range of community support services supplemented by non-government based services. Additional population will increase the demand for some of these services.

Implementation Plan

8.0 Implementation Plan

8.1 Development Plan Amendments

This Structure Plan does not give effect to zoning changes, which must be implemented through Development Plan Amendments (DPAs). The Minister for Planning initiated the following DPAs to implement the Structure Plan:

- *Playford Urban Growth Areas (Angle Vale, Playford North Extension and Virginia) and General Section Amendments DPA*
- *Greater Edinburgh Parks Employment Lands DPA.*

Completion of these DPAs relies on landowners coordinating and committing to providing the necessary infrastructure, which may influence the way in which rezoning proceeds and when.

In particular, the DPAs could be 'divided' to allow a portion or portions of the urban growth areas to be rezoned at different times based on the resolution of related infrastructure matters.

The potential to 'divide' the DPAs recognises the current fragmented land ownership pattern across the urban growth areas and the likelihood that infrastructure coordination and commitments will be met over time either by individual landowners or groups of landowners with a common goal, provided the overall Structure Plan vision can be met.

Future DPAs may also be undertaken by Council to amend zoning:

- for the proposed rural living areas at MacDonald Park and Penfield, east of Heaslip Road
- recognise existing land uses, such as Virginia Nursery and Jeffries Soils.

More detailed planning investigations will also be required to determine the future of lands designated as Future Urban in this Structure Plan, i.e. at Angle Vale and at Buckland Park and Virginia North. These latter areas can provide a longer term supply of land that will consolidate a larger urban agglomeration around the future district centre at Buckland Park.

Investigations into mitigating flood risk from the Gawler River at Virginia will also be required before land at Virginia North identified in this Structure Plan as residential can be rezoned for urban use. The *Playford Urban Growth Areas (Angle Vale, Playford North Extension and Virginia) and General Section Amendments DPA* does not propose to rezone this land for residential at the current time.

More detailed planning and investigations will be undertaken for land within Greater Edinburgh Parks adjacent to the Elizabeth Station. Opportunities may exist for the development of a mixed-use precinct integrated with the Elizabeth Regional Centre and employment lands to the south and north.

8.2 Infrastructure

A range of infrastructure has been identified as required to support the future vision for urban development described in this Structure Plan. The various items of infrastructure are proposed only and do not represent a commitment to funding or provision. State and local governments will monitor the need for infrastructure and services as development occurs.

Regional and state government infrastructure will be subject to future detailed planning and budget bids as required. Proposals may change in accordance with needs, population growth, rates of development or new information.

Local government infrastructure and services will also be subject to detailed planning and budget allocations.

Infrastructure provided within urban growth areas will largely be funded by developers. Renewal SA has been tasked with negotiating with landowners/developers in respect to the provision and funding of infrastructure within new growth areas. The detailed infrastructure investigations undertaken for this Structure Plan will inform these negotiations. Renewal SA will develop Precinct Infrastructure Plans and Infrastructure Framework Agreements for each of the urban growth areas in the study area.

In addition, Renewal SA will undertake detailed investigations for Greater Edinburgh Parks to examine infrastructure and land staging priorities and landowner coordination across the precinct.

Land will not be available for urban development until agreements are in place for the provision of coordinated infrastructure.

8.3 Updating the Structure Plan

This Structure Plan will be updated as required as new information is acquired or to respond to the implementation of DPAs and infrastructure. It will be considered to be a ‘live’ document.

The information in this Structure Plan will also be used to inform future updates of *The 30-Year Plan for Greater Adelaide*.

FURTHER INFORMATION

For more information visit
http://dpti.sa.gov.au/planning/playfordgrowth

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Transport and Infrastructure
GPO Box 1354 Adelaide SA 5000

ISBN 978-0-7590-0113-8
ABN 92 366 288 135