

ACKNOWLEDGEMENT TO COUNTRY

Ekistics respectfully acknowledges the traditional owners and custodians of the land on which we work and we pay our respects to Elders past and present.



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1. EXECUTIVE SUMMARY

The ‘Dublin Circular Green Economy Precinct’ will transform an underutilised site in Dublin into South Australia's first green industrial, residential, and clean energy economy using sustainable technologies.

1.1 Project Overview

Leinad Land Developments (Dublin) Pty Ltd (‘Leinad’) owns and controls 1,373 hectares of land located to the immediate south of the Dublin Township which is located approximately 50 kilometres north of the Adelaide CBD. The land parcel under the control of Leinad is identified spatially in **Figure 1.1**.

It is the vision of Leinad to develop ‘Dublin Park’ as a new master planned community and South Australia’s first Green Circular Economy Precinct positioning Dublin Park at the forefront of sustainable residential and industrial development in Australia.

Leinad have prepared an ‘Urban Framework Plan’ to deliver the Dublin Green Circular Economy Precinct. The Urban Framework Plan includes a high-level spatial framework plan that is illustrated in **Figure 1.2**.

Key features of the proposed Urban Framework Plan, include:

- The creation of a new master planned residential community (up to 1,300 dwellings) as a contiguous logical expansion of the existing Dublin town centre and ensuring the preservation of the commercial primacy of town centre with the ongoing and expanded delivery of services and activities to consolidate township function and viability;
- Location of mining activities (approx. 240 hectares) and employment land (up to 400 hectares) to act as buffer and provide the required separation distances from adjacent land uses – thereby enabling an efficient use of land, avoidance of any potential conflicts or limitations on the operation of existing adjacent land uses whilst providing a high quality living environment for future residents;

- Separation of internal road networks for future residential and commercial/industrial areas;
- Creation of buffers/green spines between housing and employment lands; and
- Generous buffer areas to the existing high value and environmentally significant coastal vegetation as well as the adjoining Winaityinaityi Pangkara (Adelaide International Bird Sanctuary)

This document provides an information base that supports the future development of land to the south of the Dublin township and has been produced based on a range of investigations into the site. These preliminary investigations have included the physical characteristics of the site and surrounding locality, the environmental, social impacts, economic impacts of future township expansion as well as the policy implications to implement township growth.

Specially these preliminary investigations have identified the following benefits associated with township expansion on the subject land:

- The subject land is a large, consolidated land holding allowing opportunity to develop and deliver a structured and master planned community that is not obstructed by fragmented ownership or control;
- The existing condition of the subject land is generally ‘degraded’ and it is considered to have low primary production value and potential;
- There is opportunity to provide for township expansion to support the growth and viability of the Dublin Township noting that up to 1,300 dwellings can be accommodated to support the expansion and viability of the Dublin township without the need for additional significant services and infrastructure (including reliance on existing

transport infrastructure without the need for major upgrades to intersections with Port Wakefield Highway);

- Expert Land Economics advice from Deep End Services has identified a strong case for up to 400 hectares of land for large site area, low cost industrial land in the region. Deep End has advised that Dublin has attractive attributes for larger scale, low intensity uses aligned with the circular economy process and approach, the renewable energy sector, Defence and manufacturing as well as transport uses hauling long, wide or high freight using Port Wakefield Highway.
- Dublin can provide employment land to suit a range of employment uses and processes not suited to, or priced out of, the smaller and more expensive industrial sites in other locations. The Dublin employment land may differentiate itself from metropolitan industrial areas as it attracts uses requiring flexibility, mobility and even temporary facilities for operations to be scaled up and down as industry demand requires, as well as a permanent location for businesses seeking a competitive edge in entry pricing;
- The establishment of a mine will result in the opportunity to extract approximately 4.7M tonnes of resource from the site which can be backfilled with genuine Waste Derived Fill (WDF) in line with the ‘SA Waste Strategy’;
- The subject land is of sufficient size to provide for generous buffers to existing adjacent land uses and activities – this will protect the ongoing operation and existing use rights of these adjacent uses and enable the creation of a high-quality living environment for future residents. The employment areas within the subject site can also

act as a buffer separating future housing from existing EPA licenced activities - maximising the efficient use of land;

- The topography is suitable for urban development (noting that proposed mining operations on site could generate resource which can be utilised to create desired site levels for required falls and stormwater management);
- The land is largely unconstrained and free from topographical and environmental constraints excluding existing vegetation adjacent the western boundary of the site within the existing ‘Conservation Zone’ that will be retained;
- There are no state or local heritage places on the land, or previously record Aboriginal Sites or Objects;
- Based on site history research, the risk of significant or gross soil and/or groundwater contamination across the whole site, that would be likely to preclude the use of the site for the proposed residential development, is considered to be low; and
- Whilst limited services currently exist, the site and township is likely to have adequate infrastructure capacity and/or augmentation capability to service and support an expanded township noting that limited township expansion of an additional 1,300 dwellings would not give rise to additional significant transport, social or community infrastructure in support of township growth and given the opportunity for localised generation and distribution of power and potable water.

This proposed modest and localised township expansion will ensure that Dublin will retain its own separate identity whilst supporting existing township function and viability.

To facilitate the growth and expansion of the Dublin Township and proceed with the next level of detailed investigations, the following key actions and directions are requested from the State Planning Commission and ultimately the Minister for Planning:

- Identification of the opportunity for the expansion of the township of Dublin within the 'Greater Adelaide Regional Plan' to support township function and viability whilst retaining and preserving the towns separate identify;
- Support the immediate initiation of a Code Amendment to rezone portion of the subject land for employment related land uses; and
- Amend the 'Environment & Food Production Area' (EFPA) boundary to exclude portion of the subject site and subsequently support the initiation of a Code Amendment to introduced a supportive Zone and policy framework to facilitate the future construction for up to 1,300 dwellings on land that is generally 'degraded' and is considered to have low primary production value and potential.

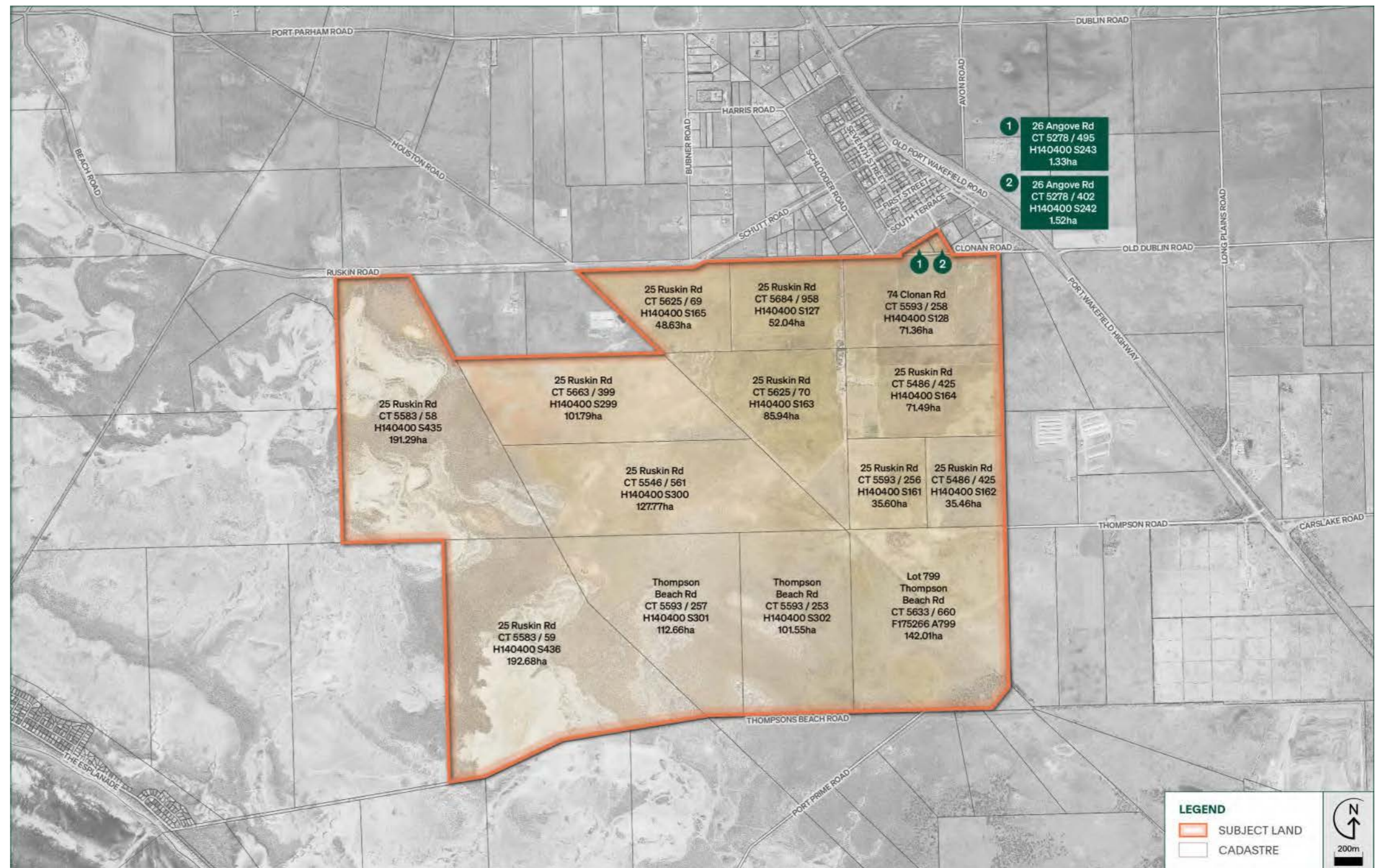


Figure 1.1 – Subject Land

1.2 Urban Framework Plan

The Urban Framework Plan (**Figure 1.2**) provides a high level spatial framework showing basic land use distribution, neighbourhood structure, key linkages and transport systems, major road connections, activity centres/nodes, open space and recreation facilities as well as overall employment and housing population/density.



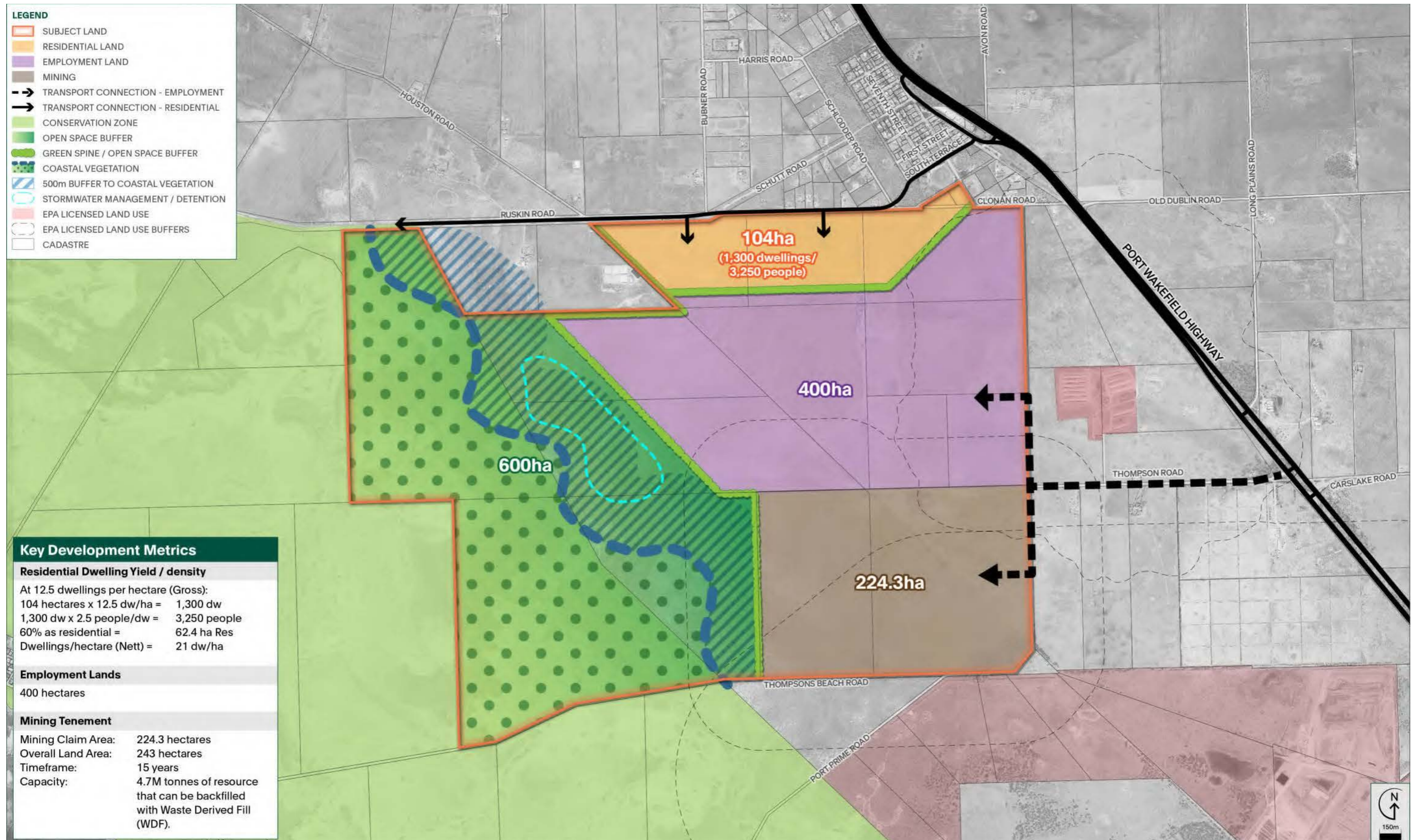


Figure 1.2 – Dublin Urban Framework Plan

2. VISION FOR DUBLIN



2.1 Dublin Green Circular Economy Precinct

The circular economy is a system that prioritises the preservation of energy, labour, and materials by promoting reuse, remanufacturing, and recycling.

It is the vision of Leinad to develop ‘Dublin Park’ as a new master planned community and South Australia’s first Green Circular Economy Precinct. This will position ‘Dublin Park’ at the forefront of sustainable residential and industrial development in Australia.

The vision for ‘Dublin Park’ is an integrated mixed use development comprising future residential development, industry, employment lands and mining opportunities facilitated and supported by sustainable infrastructure, energy, water and wastewater production.

Land use configuration within ‘Dublin Park’ will respond to the unique context of the site with up to 1,300 dwellings in a master planned community to be developed to the immediate south (adjacent) the

existing Dublin township. This residential community would transition south to a new central employment hub comprising opportunities for primary production (including intensive ‘vertical agriculture’), manufacturing, logistics and warehousing as well as sustainable infrastructure including a new 6.5MW bioreactor for energy generation. Further south, a mining licence is proposed over approximately 240 hectares of land to act as a buffer at the interface with the existing IWS waste and compost facility.

The Mining tenement will result in the ability to extract approximately 4.7M Tonnes of resource from the site which can be backfilled with genuine Waste Derived Fill (WDF) in line with the ‘SA Waste Strategy’.

The CSIRO (July 2022) identifies seven Megatrends that will shape the next 20 years including ‘Adapting to Climate Change’ and ‘Leaner, Cleaner, Greener’. The CSIRO report identifies that Australia has the highest wind and solar capacity of any developed nation and a wealth of critical energy minerals. Dublin is well located to support South Australia being a leader in the generation of clean energy.



Figure 2.1 – CSIRO, Our Future World, June 2022

The solution: Dublin Circular Green Economy

How does it work?

1. Create a housing estate close to the existing township
2. Create an industrial estate with a bioreactor and new vertical agriculture.
3. Create a mining claim to act as a buffer zone from IWS.

2.1.1 How does it work?

The circular economy is a system that prioritises the preservation of energy, labour, and materials by promoting reuse, remanufacturing, and recycling. In accordance with strategic directions of Council and Government, 'Dublin Park' will transform an underutilised site into South Australia's first green industrial, residential, and clean energy economy using sustainable technologies.

A diagrammatic flow chart of how the 'Dublin Green Circular Economy Precinct' will work and operate is provided in **Figure 2.1** including the synergistic interrelationship between land uses and activities proposed within the master planned estate. A schematic diagram of the proposed 'Dublin Green Circular Economy Precinct' is also attached in **Appendix 3**.

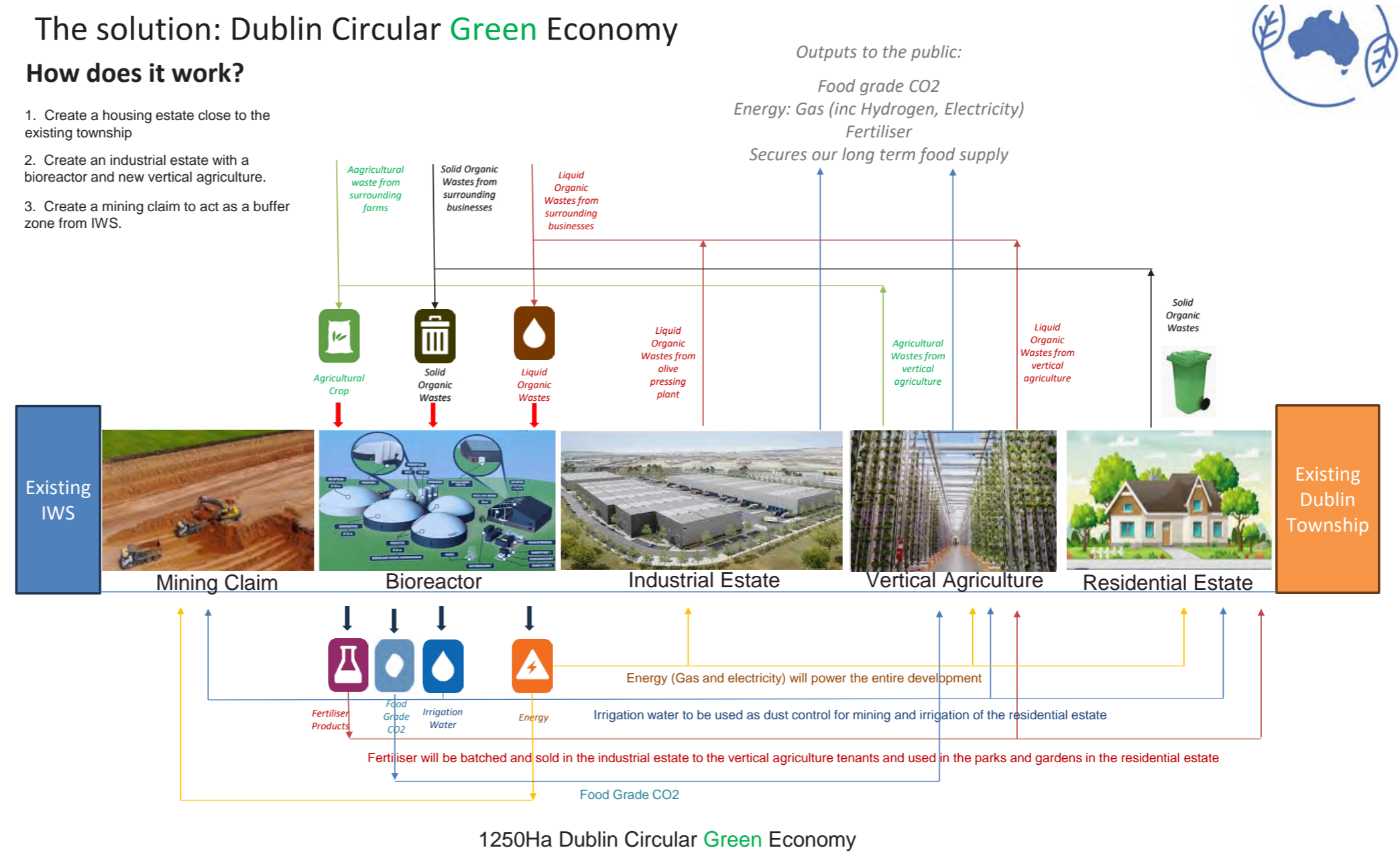


Figure 2.2 – The Dublin Green Circular Economy Precinct





The proposed 6.5MW Bioreactor that:

- Would take organic waste product from local farms and businesses (including the opportunity to take solid organic wastes generated by the future residential estate) to create gas (including CO² and hydrogen) and electricity for the entire "Dublin Green Circular Economy Precinct" including the future housing estate and employment related land uses
- Would generate fertiliser (byproduct) in the form of a compost equivalent soil conditioner and a liquid nutrient concentrate, which can also be utilised in proposed primary production activities on site or within the broad Adelaide Plains region (Note: the bioreactor would have the capacity to produce over 123,000t of soil conditioner and 37,000kL of concentrated liquid nutrient with an in-direct carbon benefit of approximately 7,000t CO²)
- Would generate CO² (food grade) which can be packaged and sold for use in the region and local food industry
- Result in an opportunity for a hydrogen refuelling station near Pt Wakefield Road that can be established straight from the bioreactors hydrogen output
- Results in the opportunity to supply energy to other employment generating activities in the region including the 'Carslake Road Strategic Employment Land' to the east, over Pt Wakefield Road.



The future residential community would:

- Have access to future employment opportunities within the proposed future employment lands reducing trip generation, travel times, congestion, energy use and pollution
- Have access to affordable, local sustainable and clean energy (electricity and gas) generated by the bioreactor with energy distribution via a dedicated micro grid which will create a competitive market where consumers costs of living is lower as a result of local sustainable energy generation and distribution
- Have access to a clean potable water supply and efficient wastewater management with access to clean energy generated on site
- Benefit from reduced upfront infrastructure costs associated with infrastructure augmentation as a result of localised generation and distribution of power and potable water.



Primary production and 'vertical agriculture' activities:

- Would be irrigated by treated wastewater generated from residential development
- Would result in wastes and byproducts from primary production activities (together with agricultural waste from the Northern Adelaide Plains Food Cluster) utilised to generate electricity within the bioreactor (green energy in the form of gas will be generated from the raw materials then converted to electricity, adopting carbon reduction)
- Benefit from a reduction of vectors and insects associated with green waste product removed and used to fuel the bioreactor.



The mining tenement would:

- Generate resource that can be utilised for residential and commercial applications (both on and off site)
- Generate resource which can be utilised to create desired site levels for required falls across the balance of the 'Dublin Park' estate
- Utilise treated wastewater for dust suppression and control.

3. REGIONAL GROWTH & INVESTMENT

3.1 A Growing Region

The Adelaide Plains area, north of the Gawler River, is one of the fastest growing regions in Greater Adelaide with population set forecast to double over the next 20 years.

Strong residential population growth and multiple opportunities for employment growth are anticipated in association with food production and agriculture, renewable energy, mining and the defence sector. Dublin's location along Port Wakefield Highway provides convenient access to the State's north where significant investments in renewable energy infrastructure (wind and solar) and hydrogen are taking place as illustrated in **Figures 3.1** and **3.2**.

Recent significant infrastructure investment (as illustrated in **Figure 3.3**) including in the North Connector, Pt Wakefield Highway duplication (including the recent duplication of the Joy Balush AM Bridge at Port Augusta) and the 'Northern Adelaide Irrigation Scheme' provide a platform for future growth.

The Adelaide Plains Council in its submission to the GARP (adopted by Council on 23 October 2023) requests that the GARP provides spatial and timing clarity for growth at Dublin.

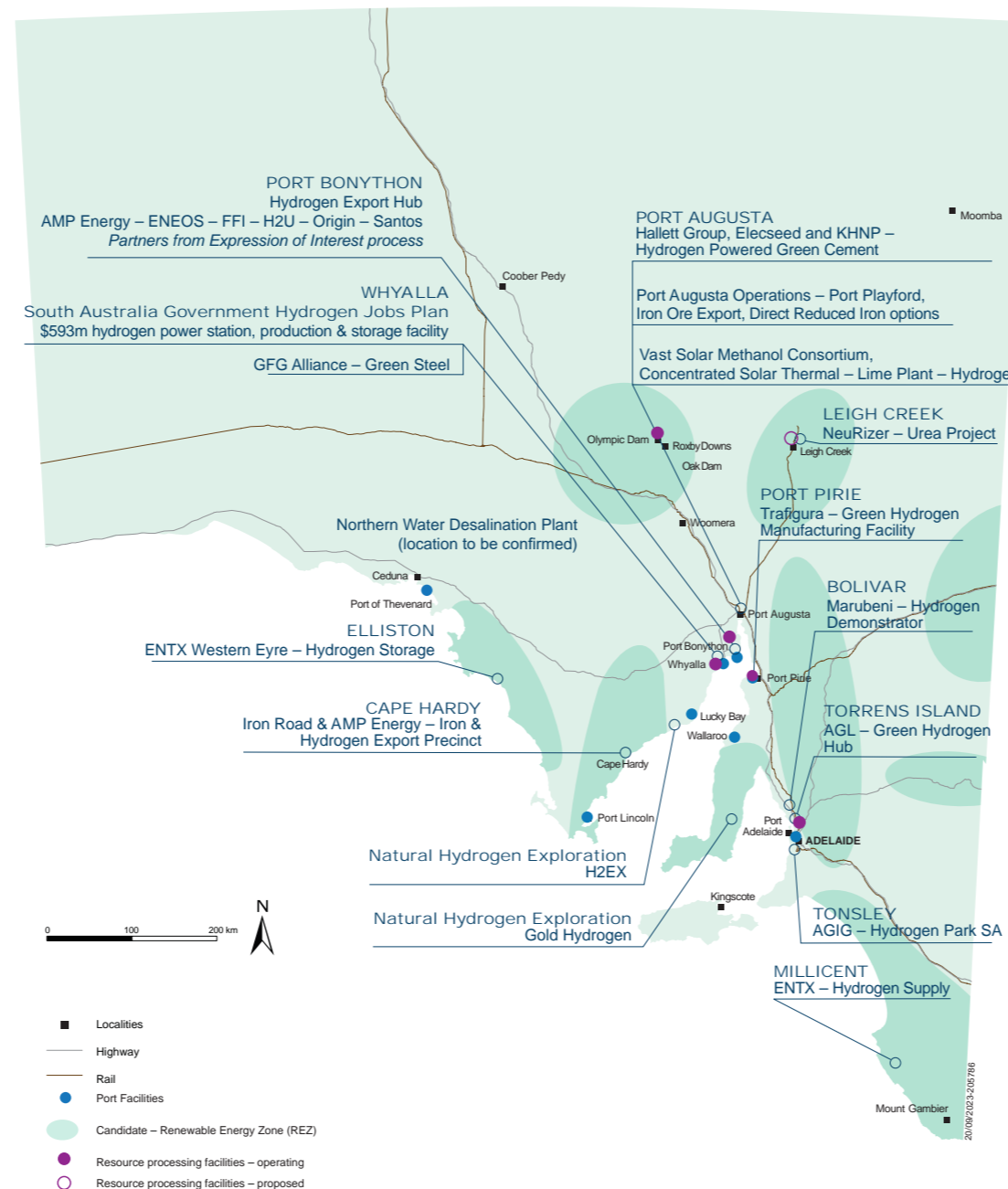


Figure 3.1 – SA Hydrogen Projects (Source: Government of South Australia)

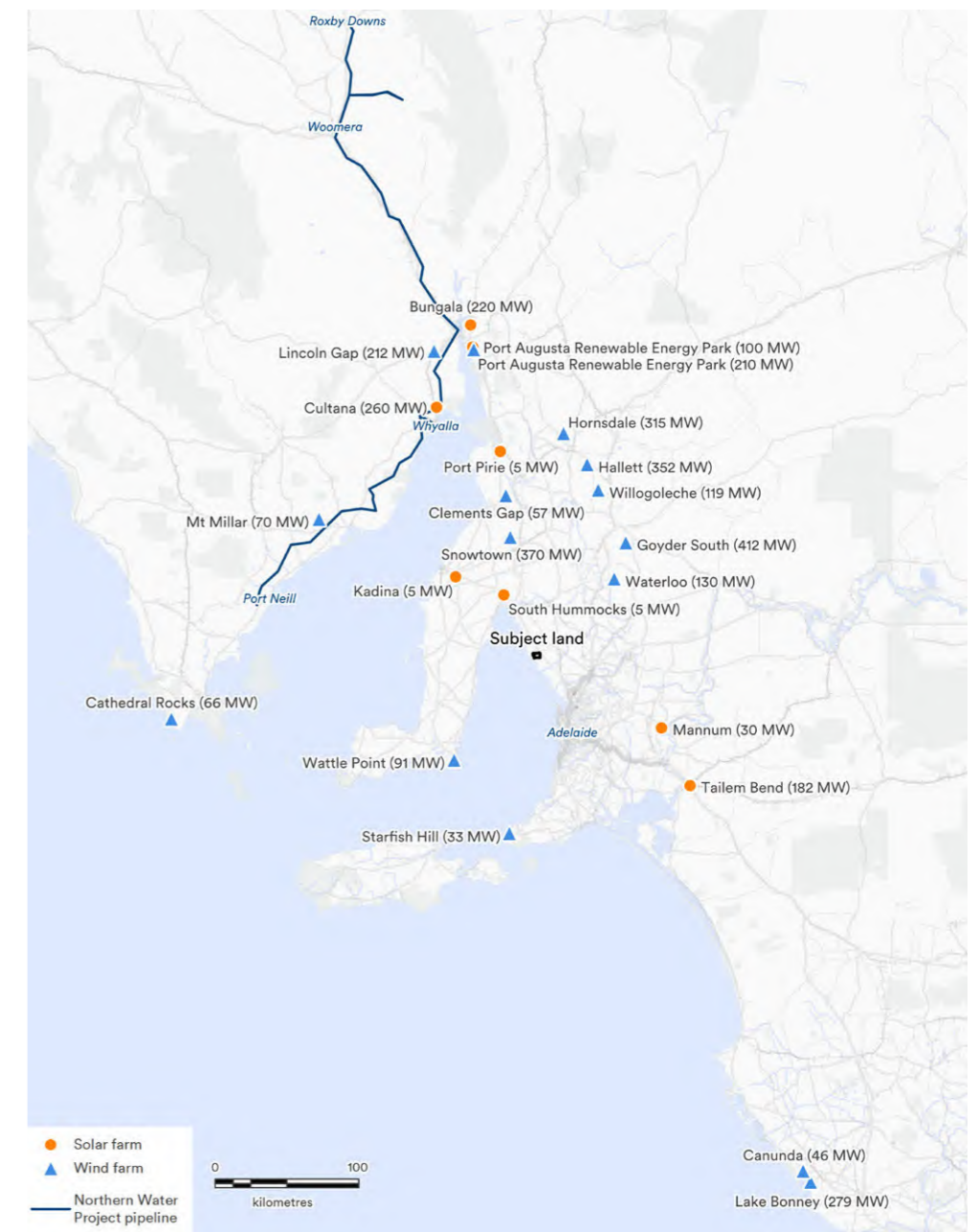


Figure 3.2 – South Australian Wind Farms, Solar Farms and Northern Water Project Pipeline (Source: Deep End Services)



Figure 3.3 – Investment & Jobs in Adelaide Plains Region (Source: Adelaide Plains Council)

French green energy giant Neoen gifts Worlds End Gorge as new SA national park, in Goyder renewable project trade-off

By David McKinnon and Ross McConnon
Posted Fri 17 Nov 2023 at 3:45am, updated Sat 18 Nov 2023 at 11:42am

Neoen Australia chief executive Louis de Sambucy accepts that the industry could do more to win over communities affected by developments. To that end, he is hoping the Goyder project and its outcomes – including Worlds End Gorge – can provide a template for others to follow.

"The speed at which Australia is moving if we look at the past is quite amazing," Mr de Sambucy said.

"Of course, when we look in front of us, we see the challenges because we're moving from 40 to 45 per cent renewables towards 80 per cent ... it's another step."

SPECIAL REPORT: BHP's \$6bn bet to make SA a global green energy force

Global mining giant BHP is betting billions that SA's abundance of copper is about to create a massive renewable energy boom. And the state's batteries that is set to benefit as a result.

BHP believes SA can become one of the world's biggest copper producers and eventually produce as much as \$6 billion worth of red metal to help surging global demand for electric vehicles and more renewable energy.

BHP finalized its \$9.6 billion takeover of the Adelaide-based Ox Minerals, which housed Caraparensa and Prominent Hill.

The South Australia government can also expect to benefit from the increased royalties on copper payments. BHP paid about \$102 million in royalties while Ox Minerals contributed \$63.2 million.

Danish firm Copenhagen Infrastructure Partners unveils \$30bn green energy plan in SA

A Danish renewable energy giant has unveiled a bold \$30bn plan to make South Australia's Eyre Peninsula a global wind, solar and green hydrogen powerhouse.

It is part of a \$100bn pipeline of Australian infrastructure projects that Copenhagen Infrastructure Partners has committed to net zero emissions. The firm's plan includes a \$10bn investment in SA's renewable energy sector, including a \$5bn investment in wind and solar, and a \$5bn investment in green hydrogen.

The Eyre Peninsula development, dubbed 'Eyre', will have a generation capacity of 10GW of wind and 7GW of solar, and equates to about 1600 wind turbines and 1000 solar panels.

CIP vice-president Matthew Stuchbery said the firm is engaging with pastoral lease holders in the region, as well as traditional owners of the Gawler Craton.

He said the region had some of the best wind resources in the world and the scale of the proposal would enable the competitive price.

New Scientist names South Australia as 'remarkable' world leader in push to net zero

The influential New Scientist journal has spotlighted South Australia as a world leader in a "remarkable" renewable energy transition, saying the state's "push to net zero offers lessons and hope for the world".

The journal's editorial says SA's political leaders have shown "a great deal of courage" to be unusually willing to try cutting-edge technologies like grid-scale batteries and virtual power plants.

Another crucial ingredient, New Scientist says, has been "widespread buy-in from citizens, who have enthusiastically covered their homes in solar panels".

"South Australia's push to net zero offers lessons – and hope – for the world," the New Scientist leader says.

"... The long-term benefits to South Australia won't just be environmental – they will be economic too, because when it can produce all of its energy on its own, it will be liberated from international coal and gas price shocks."

Easier projects 'done already'

RenewalSA this week released an Expression of Interest campaign to find a development partner to construct the Deepwater Maintenance and Modification Facility (DMMF) at Perleberg – including a 240m-long, 25m-high four-bay hangar that will be used to service military aircraft operated by the Commonwealth Department of Defence.

The purpose-built facility is designed to accommodate the long-term maintenance and servicing requirements for the Defence Force's fleet of P-8A Poseidon maritime surveillance aircraft and E-7A Wedgetail airborne early warning and control aircraft – both housing 737 variants, which have major modification programs planned over the latter half of this decade.

RenewalSA

A major defence industry facility that will provide an important sovereign capability and create hundreds of jobs in Adelaide's northern suburbs is a step closer to reality, with a call out for a principal contractor to build it.

4. SITE & REGIONAL CONTEXT

4.1 Subject Land

Leinad owns and controls in excess of 1,373 hectares of land over multiple land parcels within and to the immediate south of the existing Dublin Township (refer **Figure 1.1**).

As illustrated in **Table 4.1** below, the land is approximately 50 kilometres (45 minutes' drive) to the north of the Adelaide CBD and is approximately 35 kilometres to the south of Port Wakefield (25 minutes' drive), 15 kilometres (15 minutes' drive) to the west of Mallala and 20 kilometres (15 minutes' drive) to Two Wells. The settlement of Thompsons Beach is located to the west.

The combined land parcels have frontage to Clonan Road, Thompsons Beach Road and Ruskin Road to the north.

From Adelaide	KM	Time in Minutes
Dublin	63.9	50
Mt Barker	33.3	34
Roseworthy	49.3	45
Seaford	35.7	41
Aldinga	43.6	50
Gawler	53.1	43
Freeling	67.5	52
Nuriootpa	80	58
Kapunda	84.2	62

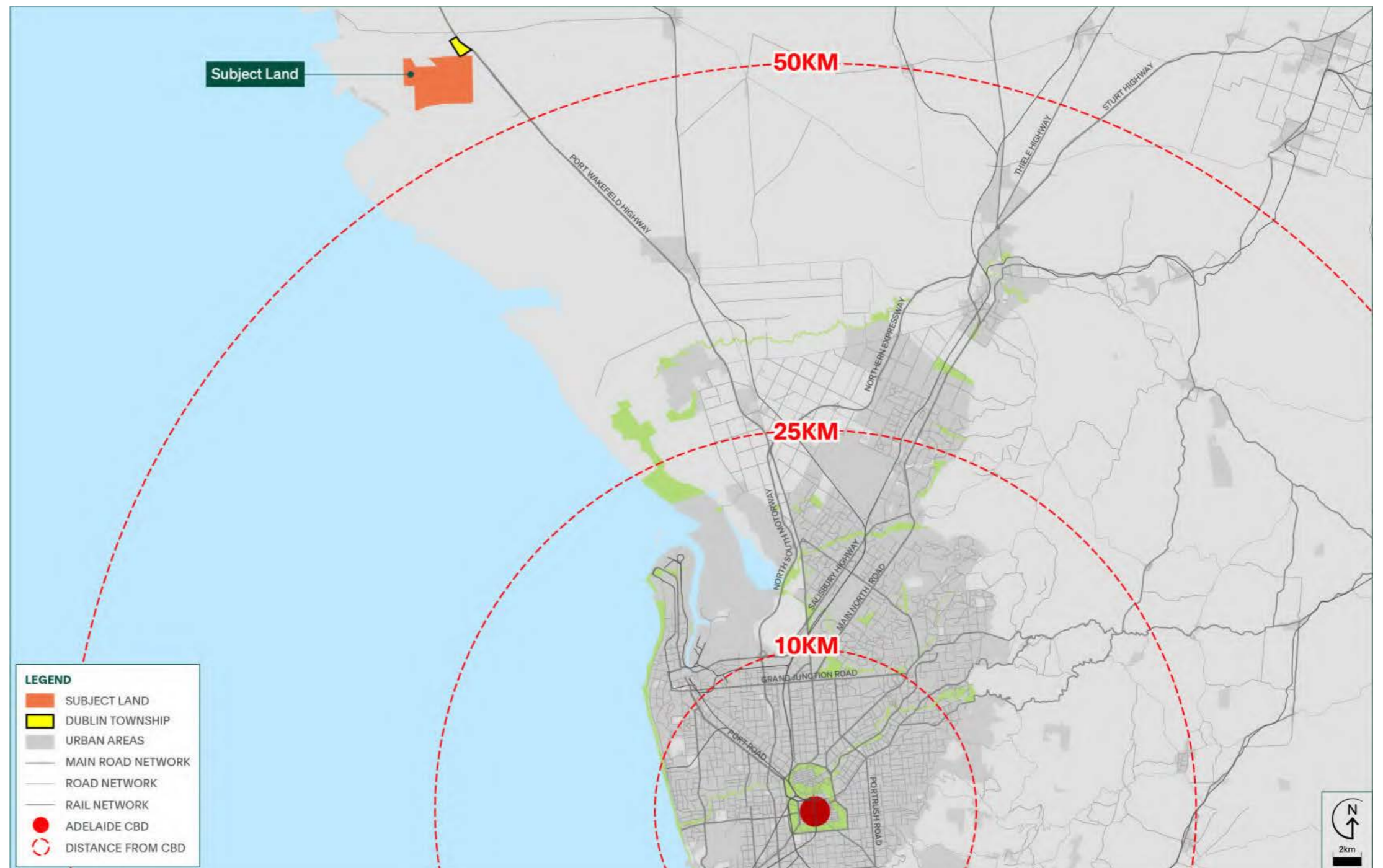


Table 4.1 – Travel Distances

4.2 Land Use & Configuration

The land uses of the subject land and surrounding locality are illustrated on **Figure 4.1**.

4.2.1 Subject Site

The significant majority of the subject land is utilised for ad-hoc agricultural purposes (low intensity grazing) and is in a relatively poor condition and 'degraded', with a low agricultural production value.

The western end of the Subject Land comprises intact samphire and saltmarsh vegetation and is subject to tidal inundation.

There are three (3) existing dwellings on the Subject Land located towards the northern section of the subject land.

4.2.1.1 Mining

Leinad are currently exploring the opportunity for a mining licence over approximately 240 hectares of land to the south of the site, at the interface with the existing IWS Waste and compost facility.

Mineral Claim #4557 is registered with a mineral lease application currently being established for the site to detail the final landform and staged operations.

A 'Program for Environment Protection and Rehabilitation' (PEPR) will describe how mining operations will be undertaken and detail required rehabilitation works to enable commencement of this activity on site.

The Mining licences will result in the ability to extract approximately 4.7M tonnes of resource from the site which can be backfilled with genuine Waste Derived Fill (WDF) in line with the 'SA Waste Strategy'.

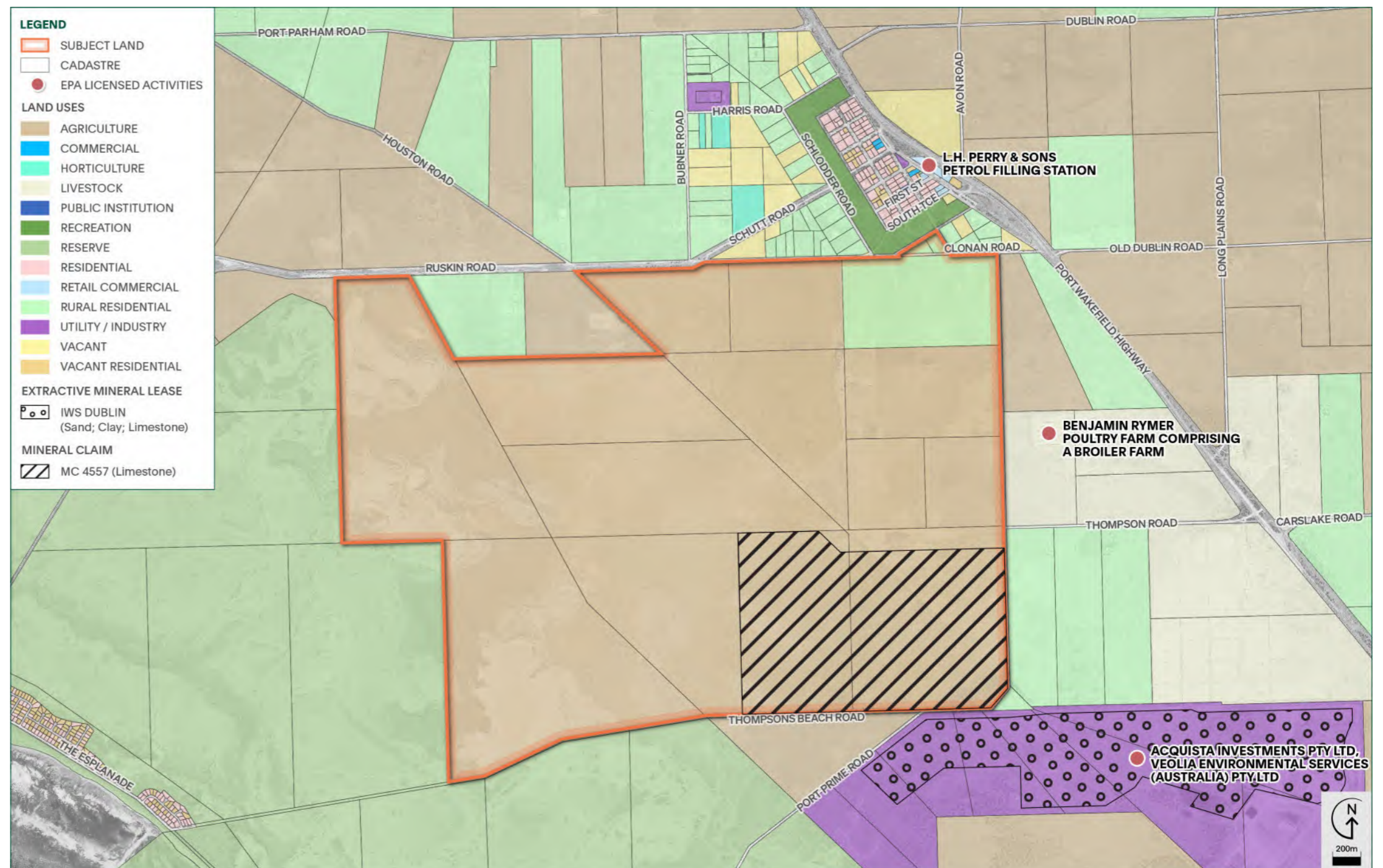


Figure 4.1 – Existing Land Uses



The resource can be utilised for residential and commercial applications (both on and off site) and utilised to create desired site levels for required falls across the balance of the 'Dublin Park' estate.

Based on proposed import and export quantities, mining activities on site are expected to employ 10 FTE staff working for 15 years (based on a 5-day working week) and will return royalties to the State of 2% of complete turnover. This is estimated to be approximately \$10M (royalties & levies) and the mine is expected to contribute approximately \$920,000 in GST revenue to the State (based on a 9.2% share of GST).

4.2.2 Adjoining & Nearby Land Uses

4.2.2.1 Dublin Township

Dublin is a small and historic settlement with a current population of around 200 people functioning as a service town for the surrounding rural and coastal community.

The town contains basic amenities including small scale shopping facilities, petrol filling station, hotel (currently closed) and oval/recreation precinct including a small clubroom.

On 12 November 2015, approval was granted to Leinad for the development of a new Neighbourhood Centre on Old Port Wakefield Road within the town centre of Dublin (the vacant parcel of land to the south-east of the Dublin Hotel). Whilst not ultimately enacted, this development comprised a supermarket, five (5) speciality shops and a total of 1,700 sqm of retail floor space to reinforce the primacy of the Dublin Main Street and support, facilitate and underpin the future growth and expansion of Dublin proposed by Leinad (refer to **Figure 7.2**).



Fruit and Veg Shops



Existing Shops



Pharmacy



Service Station

4.2.2.2 Adelaide International Bird Sanctuary

The *Winaityinaityi Pangkara* (Adelaide International Bird Sanctuary) encompasses over 60km of coastline north of Adelaide, adjacent to the Gulf of St Vincent, Adelaide's northern suburbs and spans across four (4) Council areas. The Sanctuary abuts the western boundary of the subject land as illustrated in **Figure 4.2**.

Winaityinaityi Pangkara means 'a country for all birds and the country that surrounds these birds' in the language of the Kaurna people.

The Bird Sanctuary is home to 263 unique fauna and flora species and is one of Adelaide's longest continuous conservation areas. In particular, the Bird Sanctuary helps protect resident and migratory shorebirds, including threatened species such as Curlew sandpiper, Ruddy turnstone, Red knot and Eastern Curlew as well productive mangroves, marine and coastal assets, river systems and many significant terrestrial species and ecological communities. (Ref: <https://www.parks.sa.gov.au/parks/adelaide-international-bird-sanctuary-national-park>)

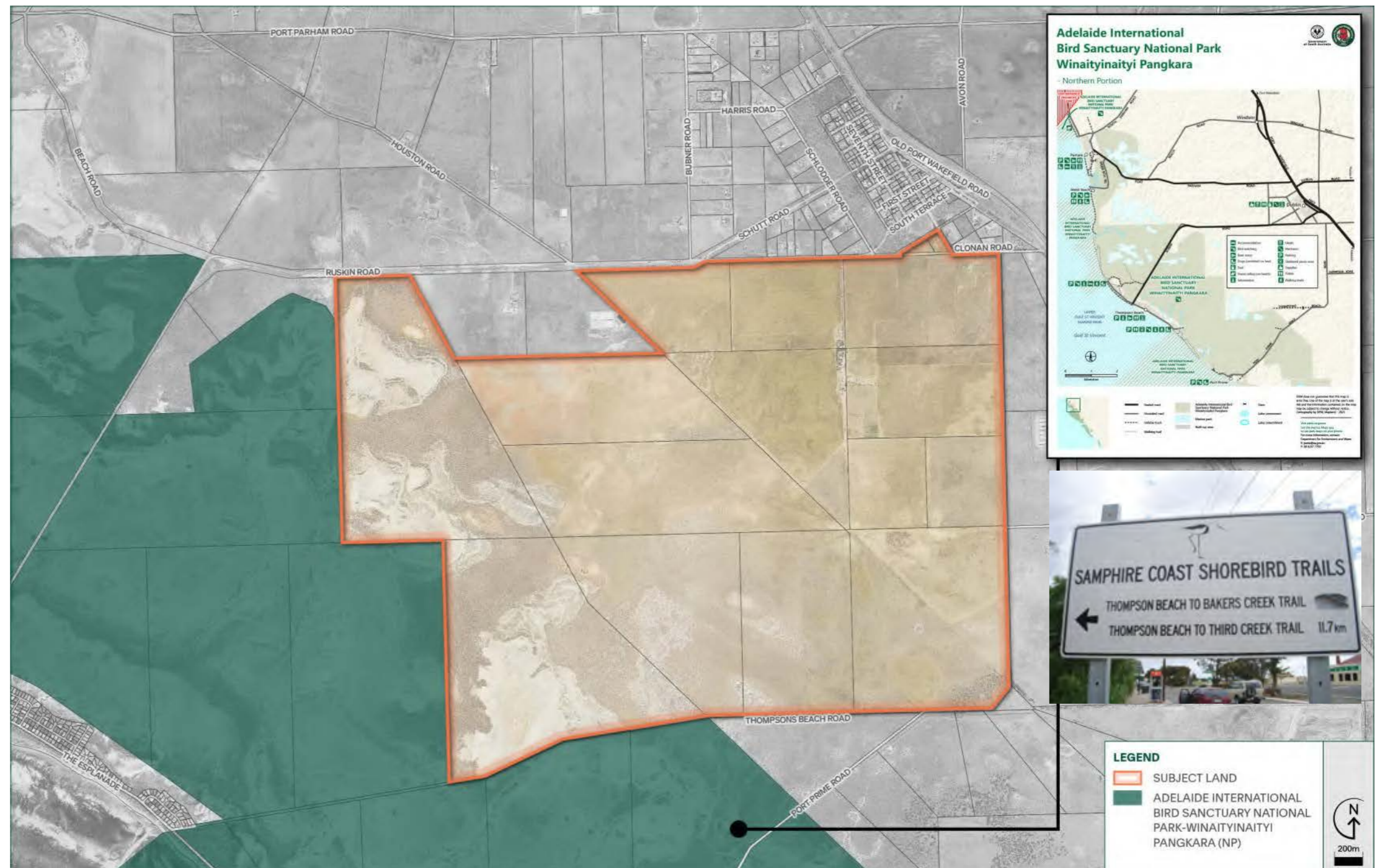


Figure 4.2 – Adelaide International Bird Sanctuary

4.2.2.3 EPA Licenced Activities

As shown on **Figure 4.1**, the following EPA Licensed Activities are located within proximity to the subject land:

- The IWS Waste Balefill and Compost Facility is located to the immediate south of the subject land and is identified as 'Utility/Industry'.
- An Intensive Animal Keeping facility (Chicken Broiler Farm) is located the east of the subject land with a current production capacity of 420,000 birds.

4.2.2.4 Carlslake Road Strategic Employment Land

An area to the east of Dublin on the other side of the Port Wakefield Highway of around 840 hectares is located within the 'Strategic Employment Zone'. According to the SA Industrial Database approximately 399 hectares is occupied by three (3) large scale uses including:

- Dublin Clean Grain (grain storage);
- South Australian Livestock Exchange (auction yards); and
- Carlslake Road quarry.

4.2.2.5 Defence

The 'Proof and Experimental Establishment Port Wakefield' (P&EE) is situated near the Dublin Township.

P&EE provides critical explosive ordnance (EO) test and evaluation capability for the Australian Defence Force (ADF). P&EE utilises a Defence Prohibited Area of 6,500 hectares. The prohibited area forms the western and southern boundary of P&EE which extends as far south and directly west of Webb Beach. This area is prohibited for public entry at all times as it has a risk of unexploded ordnance.

We note that the Dublin Township is further removed from the P&EE Port Wakefield than other existing residential development and townships, such as Port Parham and Thompsons Beach.

4.2.2.6 Primary Production

There are agricultural/farming land uses adjacent to the site to north-west, south and east of the subject land.

The primary production value of the subject land and adjoining land within the immediate locality is reviewed and discussed in **Section 6.1**.

4.3 Local Climate, Topography & Site Characteristics

4.3.1 Local Climate

Weather data from the Bureau of Meteorology indicates that the site is located in a Mediterranean climate with some areas leading to semi-arid climate with hot dry summers and cool, wet winters. Average rainfall is 352.7 millimetres (mm) per year based on the nearby Port Parham Weather Station. The average monthly temperature varies, with warm summers and moderately cool winters.

The local Windfield around Dublin was examined in some detail by Enviroscan to provide a preliminary assessment for a buffer zone around an established broiler farm located about 1.2 kilometres south of the Dublin township (refer to **Section 6.6.1**). Windrose's (detail for Year 2009 which has been decreed a typical year by SA EPA for air quality assessments) indicated dominant southeast winds for much of the year and northerlies in winter.

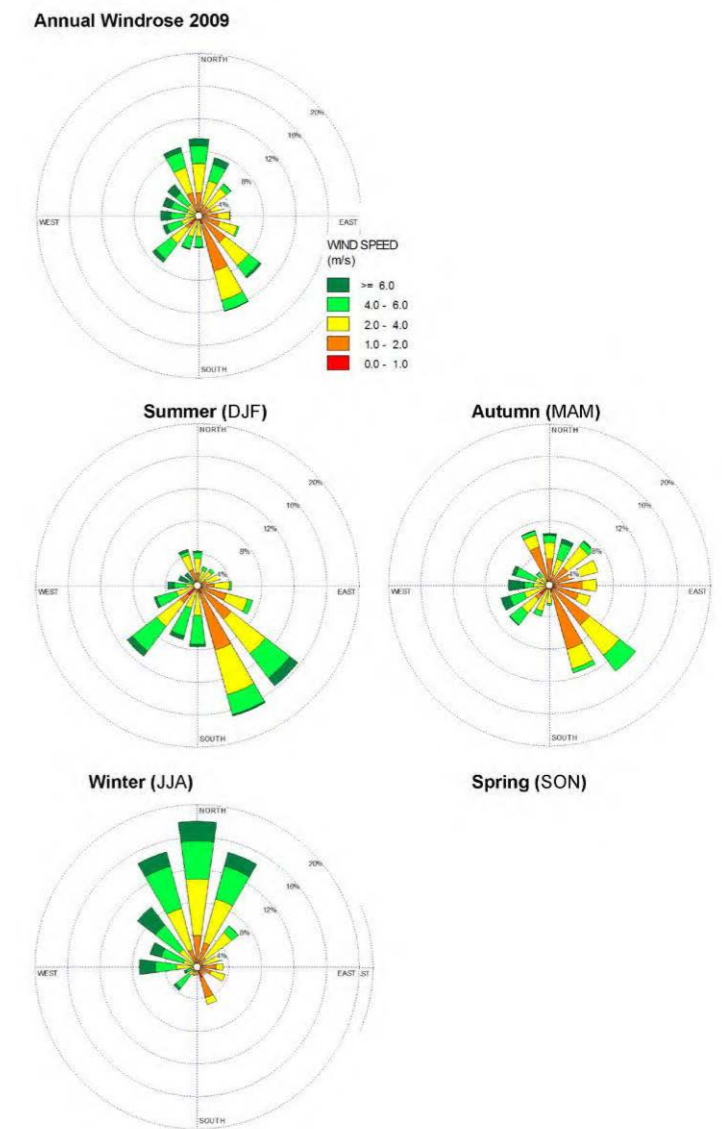


Figure 4.3 – Y2009 Seasonal Windroses for Dublin (Source: Enviroscan October 2023)

4.3.2 Topography

The site has gentle slope from east to west with a fall of approximately 7.0 metres from east to west (which represents a slope of 0.46%).

4.3.3 Geology and Soil Profile

The subject land comprises several main soil types as illustrated on **Figures 4.4** and **4.5**.

The northern section of the subject land is Hindmarsh clay with the southern section of the land shallow soil above calcrete.

The western section is coastal marine sediment with a wet soil consistent with its coastal location.

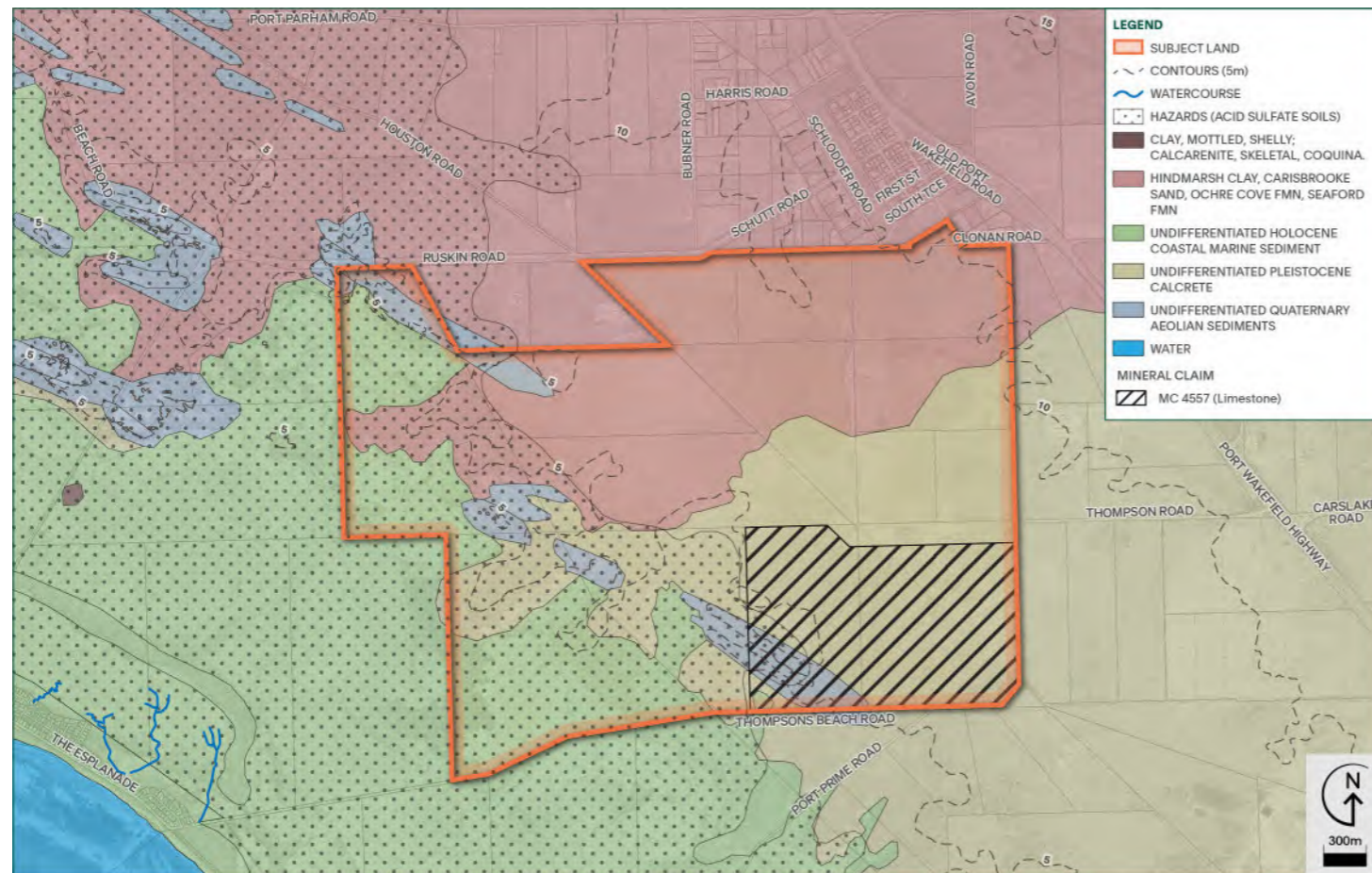


Figure 4.4 – Topography & Geology

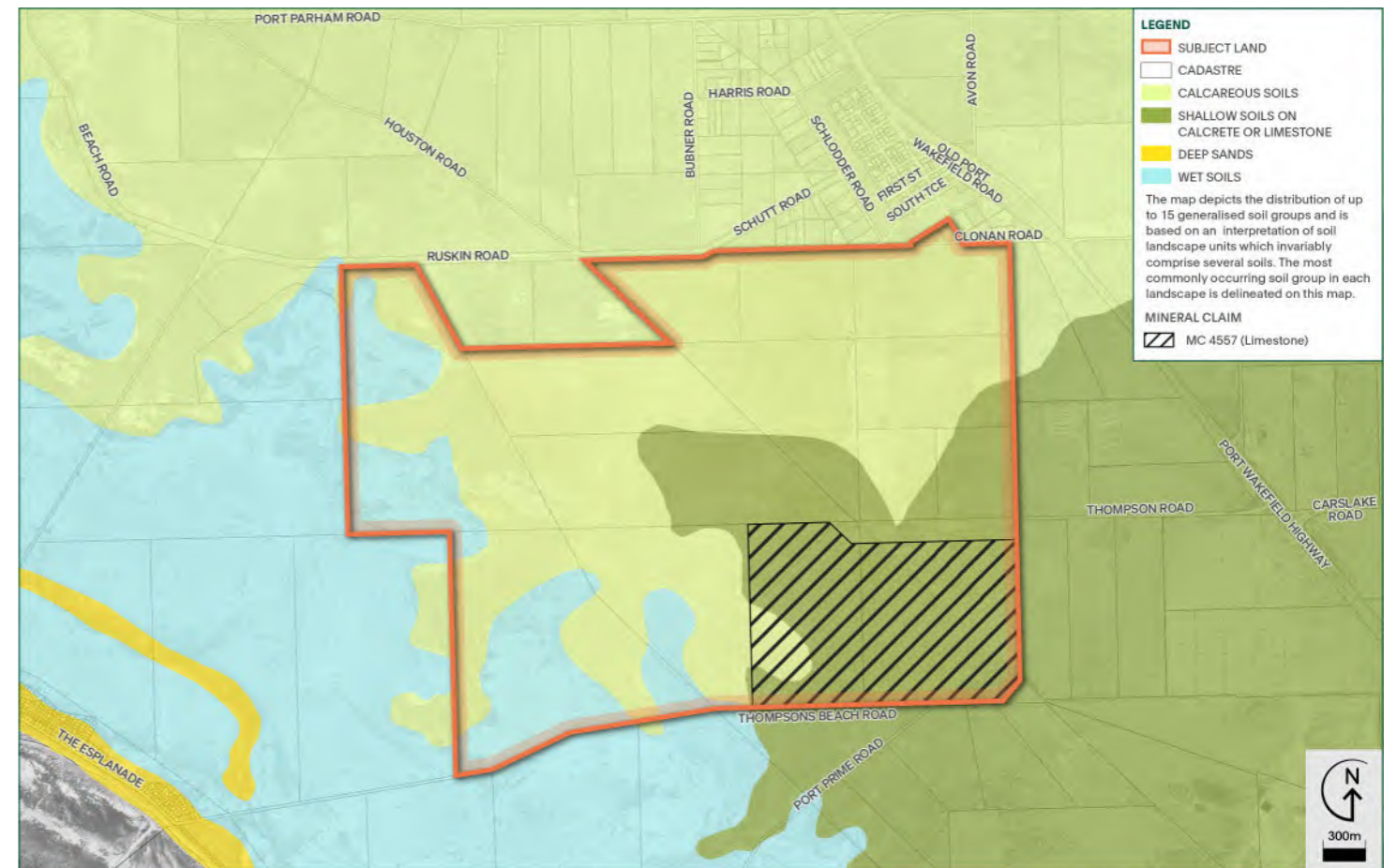


Figure 4.5 – Soil Groups

4.3.4 Flooding and Hydrology

The subject site has limited constraints in regard to flooding and groundwater with no watercourses within the land and limited flooding constraints as illustrated in **Figure 4.6**. There are several areas identified in the 'Water Resources Overlay', mostly within the coastal area to the west of the site, within the 'Conservation Zone'.

A groundwater assessment undertaken by Water Technology in 2022 indicates that groundwater levels within the site are between 2.7 metres and 3 metres below ground level. For the mining area, a two (2) metre buffer is to be established above the groundwater table.

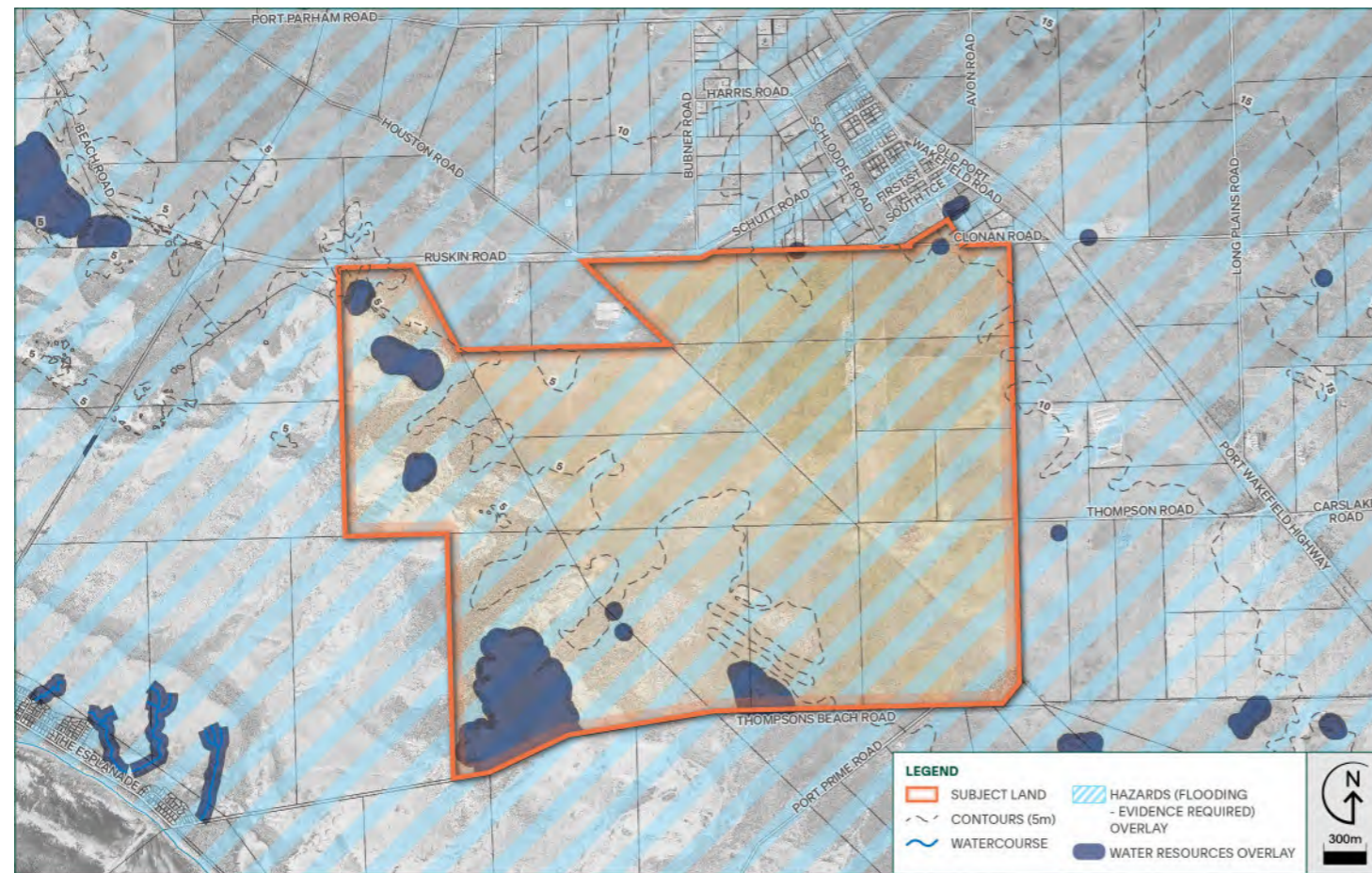


Figure 4.6 – Flooding

4.4 European & Cultural Heritage

4.4.1 European Heritage

There are no listed heritage places on the subject land.

As illustrated on **Figure 4.7** the 'Dublin Institute' is a listed Heritage Place in the Dublin township.

We understand that there is a heritage agreement in place over the northern and western sections of the Park Land belt surrounding the existing Dublin township.

4.4.2 Cultural Heritage

Investigations undertaken in 2012 and again in 2023 have not located any registered Aboriginal Heritage Sites or Objects on the subject land.

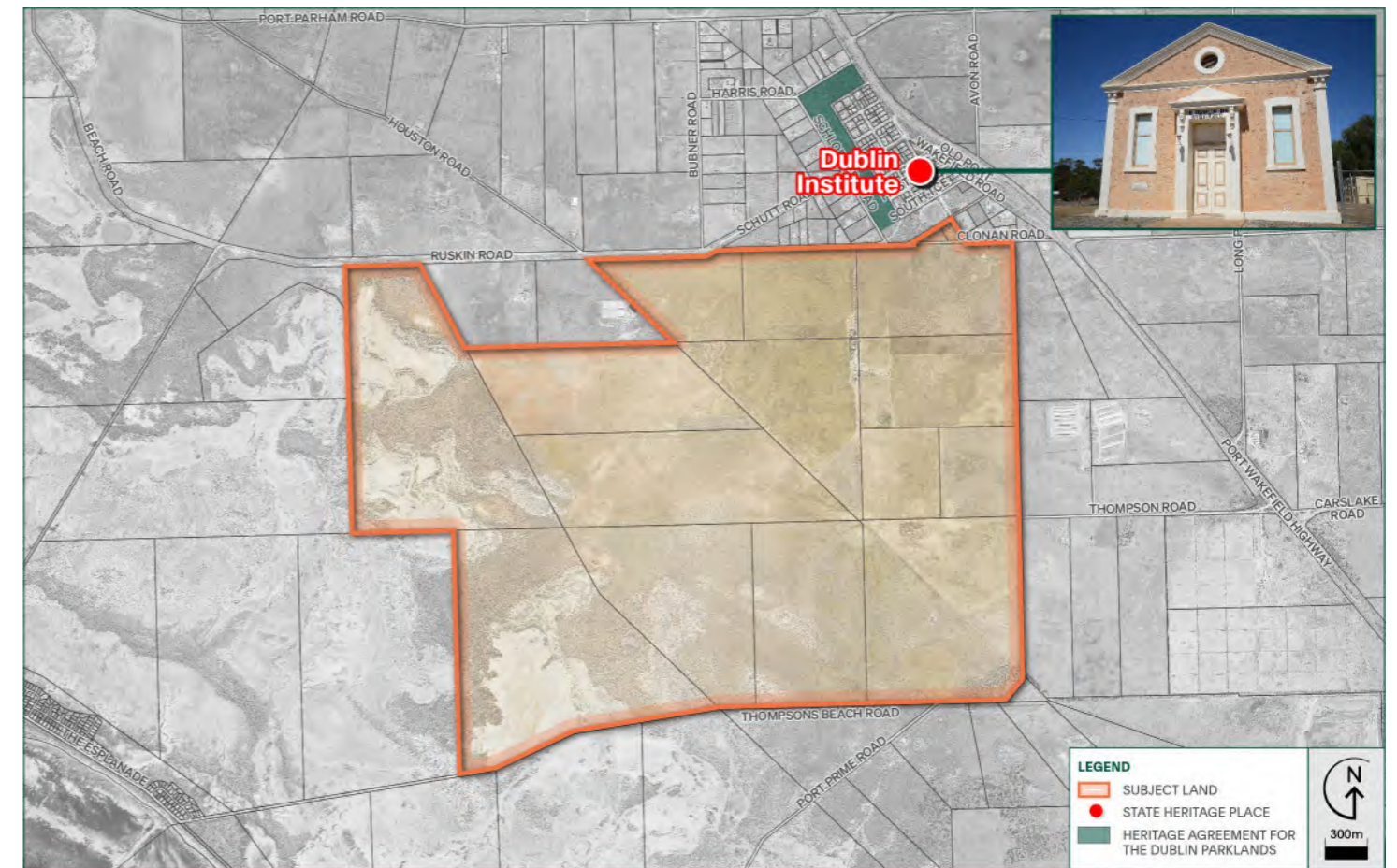


Figure 4.7 – Heritage Places

4.5 Infrastructure

4.5.1 Services & Civil Infrastructure

Investigations undertaken have identified that the subject land has existing power and water connections (refer to **Figure 4.8**).

Alano Utilities Pty Ltd and Leinad are establishing Development Agreements that will ensure a commitment to delivery of the necessary infrastructure and servicing for the future use of the subject site.



4.5.2 Social Infrastructure

The small township of Dublin has local service infrastructure including a general store and pharmacy, petrol filling station, public toilets, and hotel.

Dublin is surrounded on its northern, western and southern sides by Park Lands. Within the southern Park Lands is the local sports and recreation ground including an oval, cricket nets, old tennis courts and



sporting clubroom. Council has an adopted Master Plan to upgrade the precinct and provide additional community facilities including additional facilities for youth.

A CFS Unit was established in Dublin 1966 and an extension to the station was completed in 2020. The unit includes two (2) vehicles and the unit's response area includes Calomba, Dublin, Long Plains, Lower

Light, Parham, Thompson Beach, Webb Beach, Wild Horse Plains and Windsor. [South Australian Country Fire Service Promotions Unit \(fire-brigade.asn.au\)](http://www.fire-brigade.asn.au).

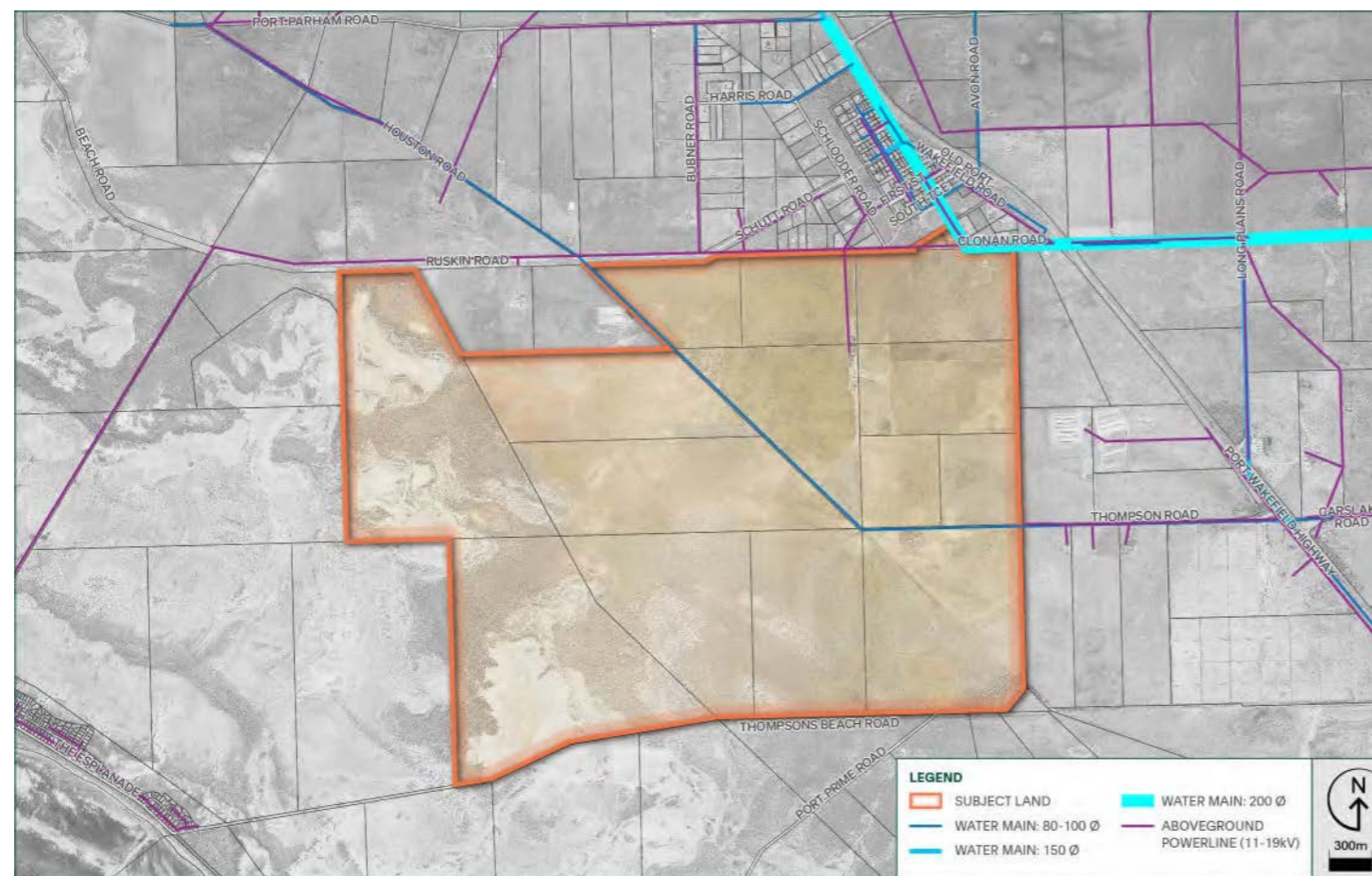


Figure 4.8 – Existing Services Infrastructure

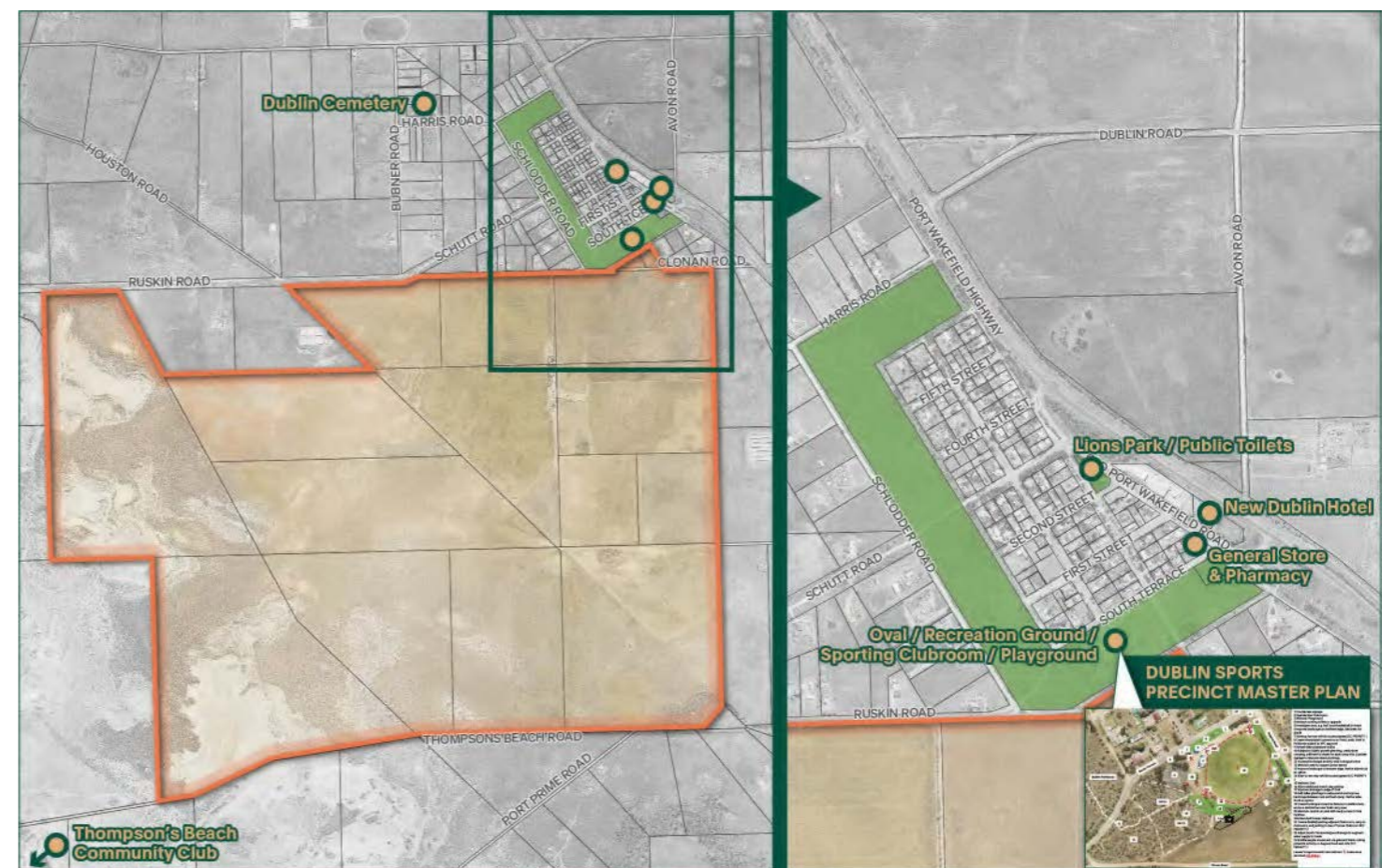


Figure 4.9 – Existing Social Infrastructure

4.6 Transport & Connectivity

The existing transport network servicing the subject land is illustrated in **Figure 4.10**.

The town of Dublin has a number of strategic locational advantages particularly for potential employment related land uses including:

- The township is bypassed by the Port Wakefield Highway (National Highway 1) which connects Adelaide to the Yorke Peninsula, Eyre Peninsula and to the Northern Territory and Western Australia;
- Port Wakefield Highway provides access to South Australia's renewable power and infrastructure projects in regional areas, generally north or west of Adelaide;
- Delivery of long, high or wide loads via over-dimension vehicles in regional South Australia via Port Wakefield Highway and other routes without transiting through Adelaide;
- A rail hub is located at Mallala 15 kilometres to the east or 30 minutes' drive to the SCT Intermodal Freight Terminal at Penfield;
- The Port Adelaide inner harbour, shipping and container yards and connecting freight networks and defence industry sites are directly connected via the Northern Expressway and Port River Expressway; and
- The township is within 30 minutes of waste streams and biomass crops on the Adelaide Plains and Barossa Valley.

The subject land has frontages to Ruskin Road, Clonan Road and Thompsons Beach Road. Connectivity to these roads is provided via Sanders Avenue/South Terrace and Thompson Road, both which intersect with Port Wakefield Highway. These intersections are treated with channelised turn lanes. In addition, There are several unnamed and unsealed roads (tracks) within the subject land that primarily provide access for farming (grazing) purposes.

Ruskin Road along the northern boundary of the subject land provides the primary access to the small beach settlement at Thompsons Beach.

There are no current pedestrian and cycle networks in the locality and limited existing public transport services.

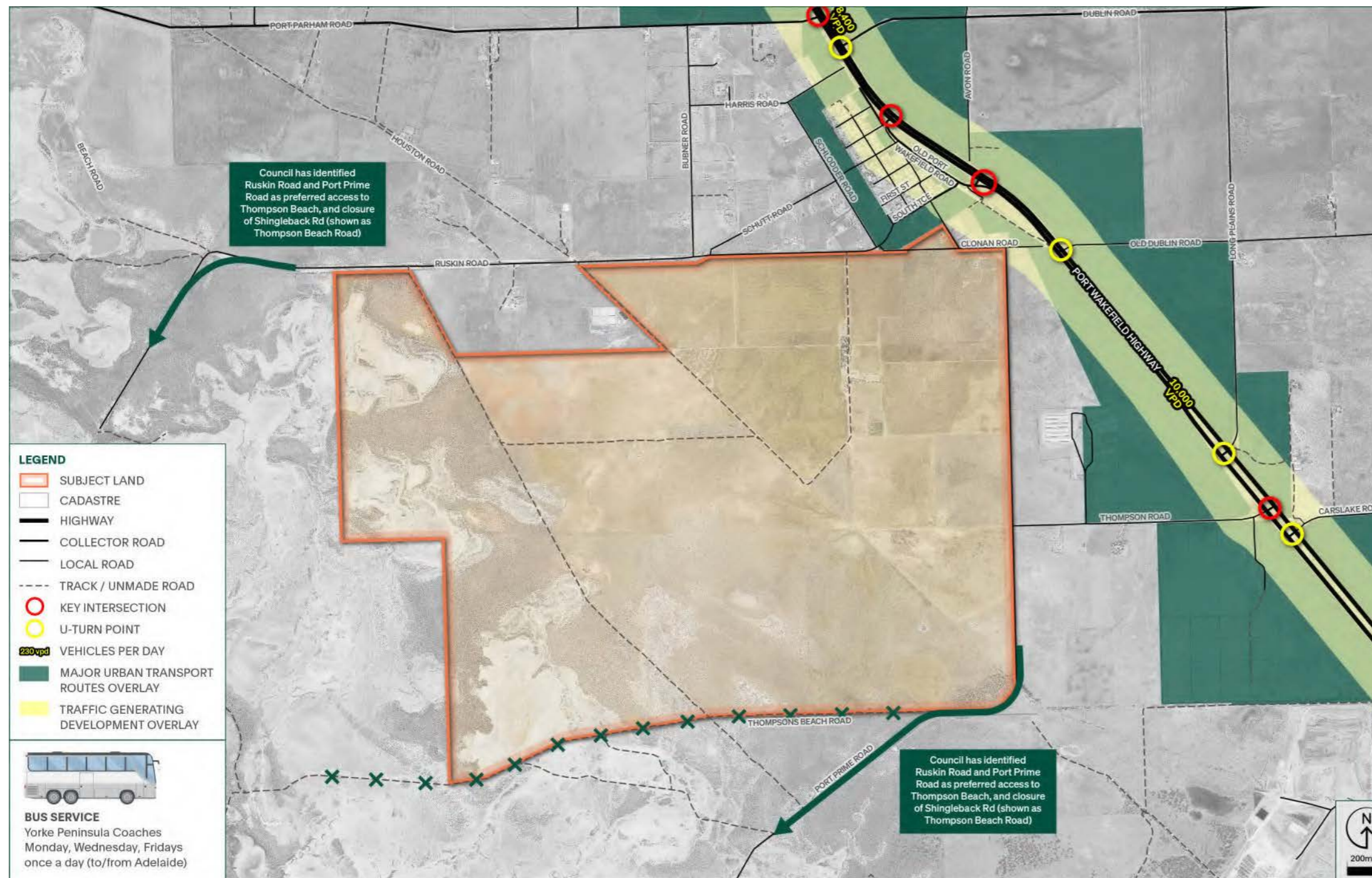


Figure 4.10 – Existing Transport Network

5. PLANNING POLICY & STRATEGIC FRAMEWORK

5.1 The Planning & Design Code

5.1.1 Existing Zone & Policy Framework

The land outside of the existing Dublin Township is currently located within both the 'Rural Zone' and the 'Conservation Zone' (refer to Figure 5.1).

The Desired Outcomes for the Rural Zone include:

Desired Outcome 1: A zone supporting the economic prosperity of South Australia primarily through the production, processing, storage and distribution of primary produce, forestry and the generation of energy from renewable sources.

Desired Outcome 2: A zone supporting diversification of existing businesses that promote value-adding such as industry, storage and warehousing activities, the sale and consumption of primary produce, tourist development and accommodation.

The Desired Outcomes for the Conservation Zone is:

Desired Outcome 1: The conservation and enhancement of the natural environment and natural ecological processes for their ability to reduce the effects of climate change, for their historic, scientific, landscape, habitat, biodiversity, carbon storage and cultural values and provision of opportunities for the public to experience these through low impact recreational and tourism development.

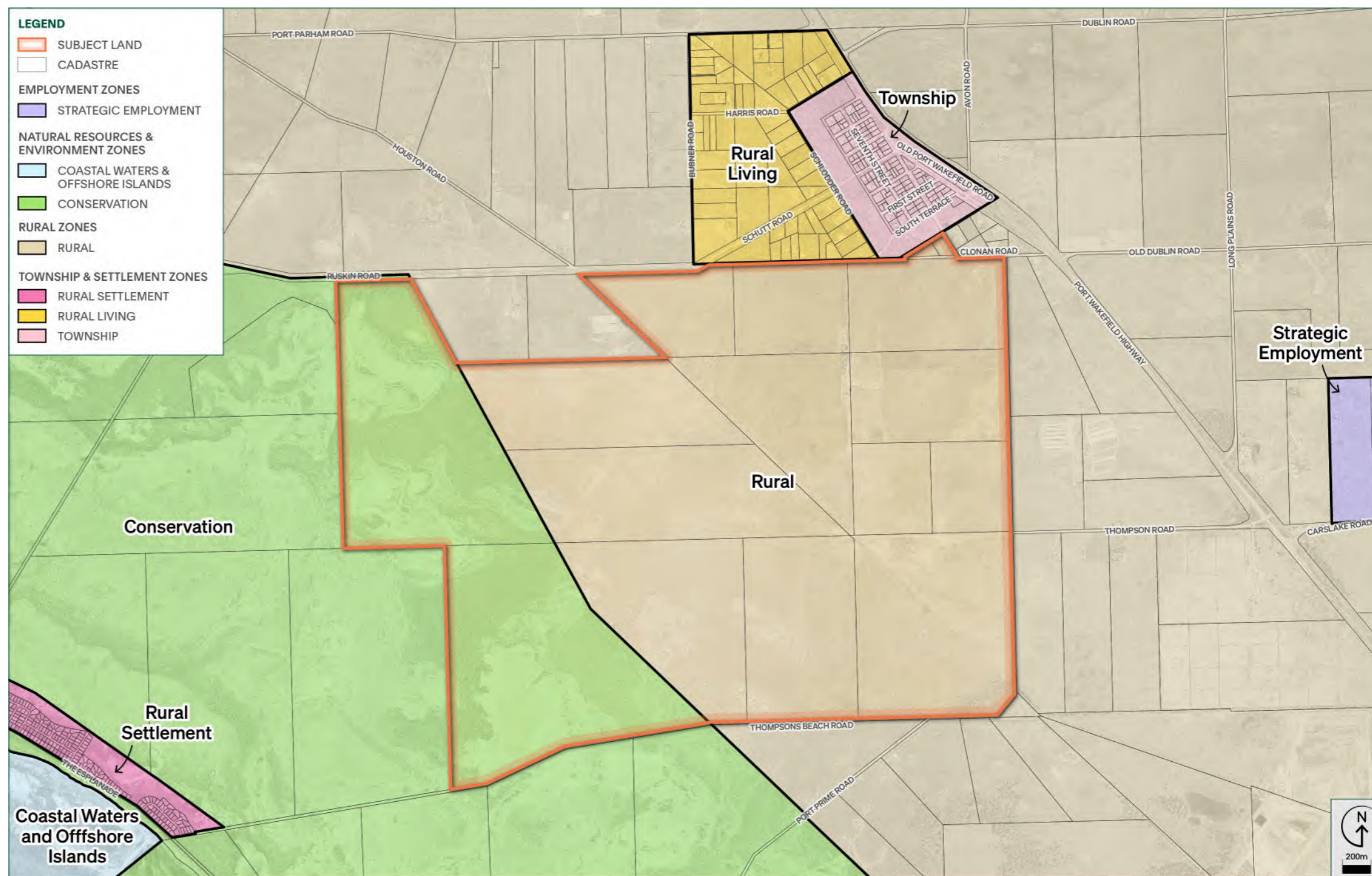


Figure 5.1 – Current Zoning

The following **Overlays** also apply to the subject land:

- 'Coastal Areas Overlay' which applies only to land located within the 'Conservation Zone')
- 'Environment and Food Production Area Overlay';
- 'Hazards (Acid Sulphate Soils) Overlay' which applies only to western portion of the site;
- 'Hazards (Bushfire – General) Overlay';
- 'Hazards (Bushfire – Medium Risk) Overlay';
- Hazards (Flooding – Evidence Required); Overlay'
- 'Native Vegetation Overlay';
- 'State Significant Native Vegetation Overlay' which applies only along the western site boundary (approximate width of 50m) adjacent the 'Adelaide International Bird Sanctuary National Park';
- 'Traffic Generating Development Overlay'; and
- 'Water Resources Overlay'.

5.2 Environment & Food Production Area (EFPA)

Importantly, the subject land under the control of Leinad is located within the 'Environment and Food Production Area (EFPA) (refer to **Figure 5.2**). The EFPA was introduced by the Minister for Planning on 1 December 2017 to protect food producing and rural areas from urban encroachment and encourage residential development within the existing urban footprint. Land division for residential purposes is prevented within the EFPA.

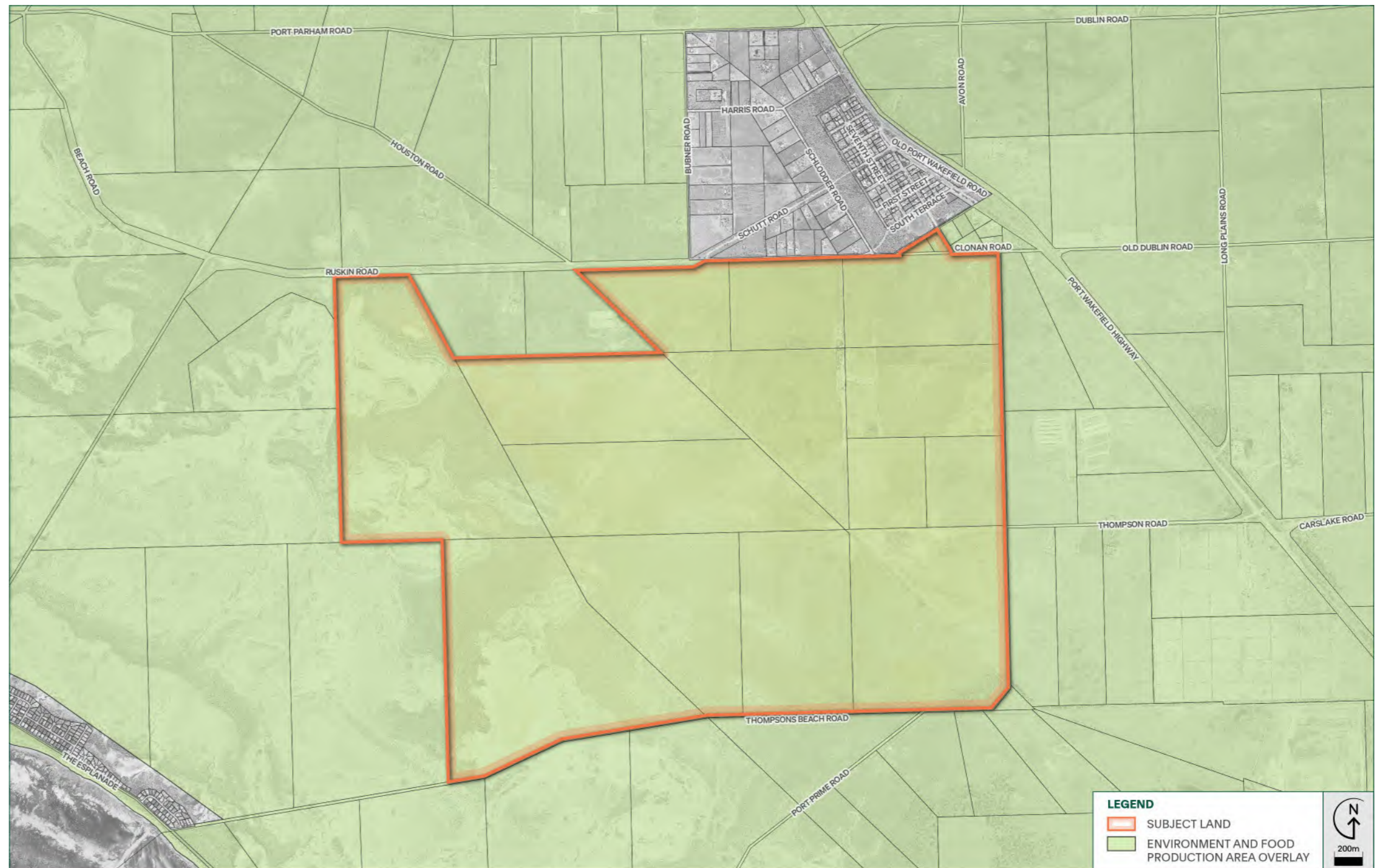


Figure 5.2 – EFPA Surrounding existing Dublin township

5.3 Local Strategic Plans



5.3.1 Growth Strategy & Action Plan

In May 2023, the Adelaide Plains Council released the final Adelaide Plains Growth Strategy and Action Plan (GSAP).

The GSAP identifies that planning for population growth of the Adelaide Plains is important, as population is forecast to double over the next 20 years. Council identifies that the majority of population growth is at Two Wells which could ultimately grow to 13,400 people. Notwithstanding, the Council supports further growth opportunities at Dublin, subject to further investigations, rezoning and infrastructure planning.

The GSAP notes that growth within the Adelaide Plains is part of the outer north that is being planned for the greatest amount of fringe growth in Greater Adelaide.

The GSAP confirms that in 2019, Council supported further investigations for potential urban growth at Dublin (i.e. the 'subject land' under the ownership and control of Leinad). The GSAP identifies the Dublin township has the potential for around 4,000 residents/1,500 dwellings in total. The report confirms that if land under the control of Leinad to the south of the existing township was fully developed by 2040, this would lead to a total population in Dublin of around 4,500 (refer to **Figure 5.3**).



Figure 5.3 – Adelaide Plains Growth Strategy and Action Plan (May 2023)

The GSAP identifies that for Dublin the following further investigations are needed:

- Opportunities to grow tourism and business experiences;
- The need for land supply for housing, including rural living as a transition to agriculture;
- An assessment of the value of soil for food production and the environment;
- Potential for conflict with established uses, such as the chicken hatchery and the waste facility to the south;
- Community infrastructure and open space; and
- Hard infrastructure, e.g. sewer and water.

Notwithstanding, the GSAP identifies that this land remains subject to the EFPA restrictions and the release of this land is therefore unknown and unlikely to occur prior to 2026 (i.e. the State Planning Commission's next quinquennial review of the EFPA).

The GSAP identifies that Adelaide Plains is envisaged to retain a three (3) major town structure (Two Wells, Mallala and Dublin) which would be complemented by twelve (12) coastal and rural settlements across the region (refer to **Figure 5.4**).



Figure 5.4 – Three Town Service Model
(Source: Adelaide Plains GSAP)

5.3.2 Adelaide Plains Council Strategies & Actions

We note that the Adelaide Plains Council strategies and actions are structured based on the 'Strategic Plan' outcomes of 'Enviably Lifestyle', Emerging Economy', 'Remarkable Landscapes' and 'Proactive Leadership'.

The Strategy identifies the following key actions to occur that are relevant to the Dublin township and the 'subject land' under the control of Leinad:

“Enviably Lifestyle Action Plan #1: Land supply and demand - Monitor to understand likely timing and nature of future land releases for urban growth. Consider level of infrastructure needed, and an orderly approach to land release. This is at Two

Wells, **Dublin** and Lewiston, and also associated with the next review of the Environment and Food Production Area in 2026;

Enviably Lifestyle Action Plan #7: Dublin – scope future urban growth, noting 2019 decision to support investigating Leinad land south of existing township. Consider near coastal tourism role, agriculture, proximity to established industries and Carlslake Industrial Area, community and open space facilities, recreation and sport, water reuse and necessary infrastructure;

Emerging Economy Strategies: Foster established town centres, principally at Two Wells Main Street, Mallala Town Centre and centre functions at Dublin;

Proactive Leadership – The level of success in achieving the GSAP depends upon cooperation between the public and private sectors, in particular:

(b) State Government:

(ii) **Support** public service provision and incorporation of GSAP policies into the 30 Year Plan for Greater Adelaide, and where relevant, the Planning and Design Code.

(d) Land owners and developers:

(i) **Participate in planning that supports the GSAP.**

(ii) Enter into agreements with Council and State Government to fund infrastructure to support the GSAP.

(iii) Work with Council to establish and promote a consistent and recognisable Adelaide Plains offering for marketing and promotion of major developments.

(iv) Provide affordable and diverse housing.



5.4 The Regional Plan

5.4.1 30 Year Plan for Greater Adelaide

The existing township of Dublin is identified within the 30 Year Plan for Greater Adelaide - 2017 update, as 'Planned Urban Lands to 2045' with land west of Schlotter Road designated as 'Rural Living' (refer to **Figure 5.5**). The subject land is not included in the '30 Year Plan for Greater Adelaide - 2017 Update' as a future urban growth area and is located within the Environment and Food Production Area.

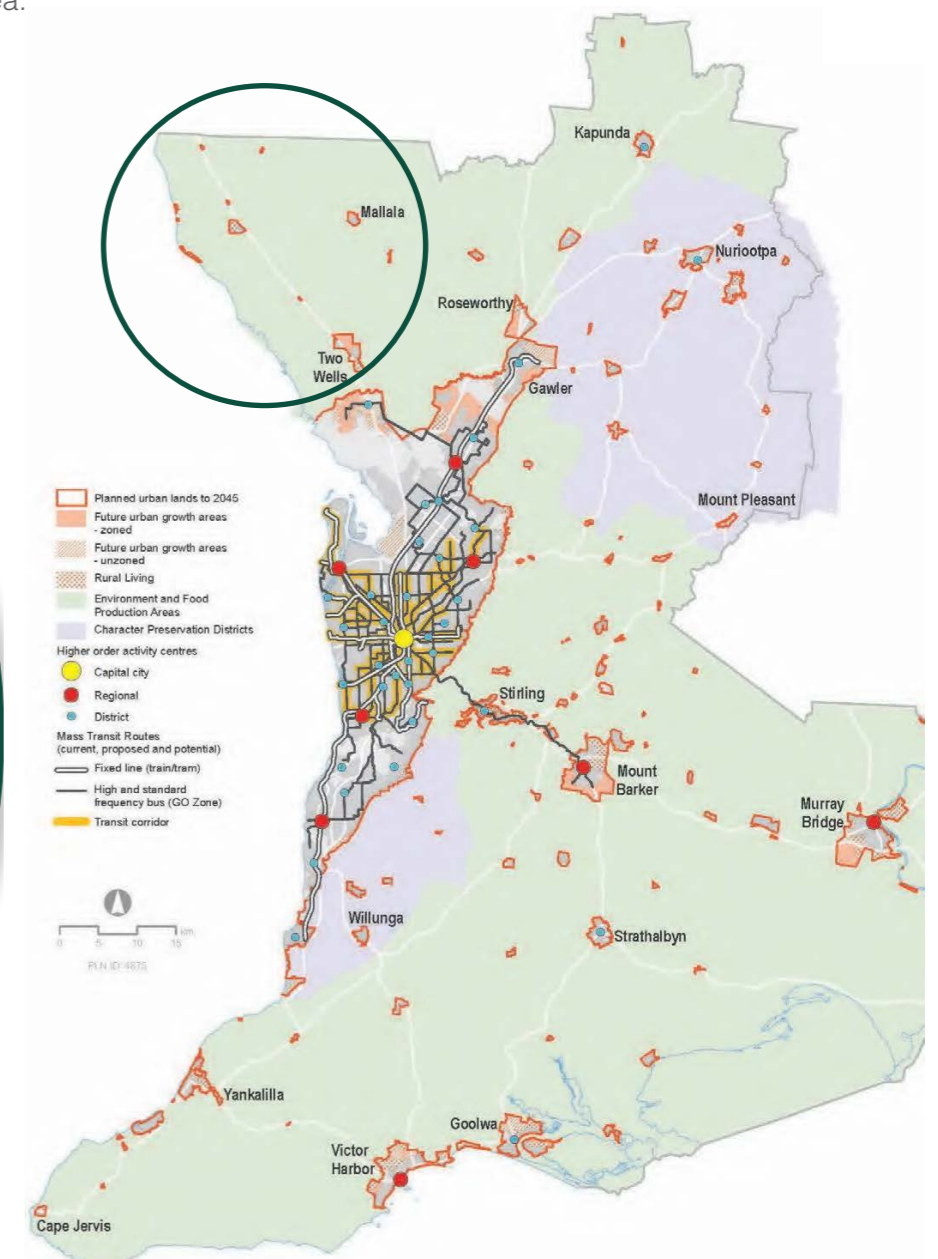
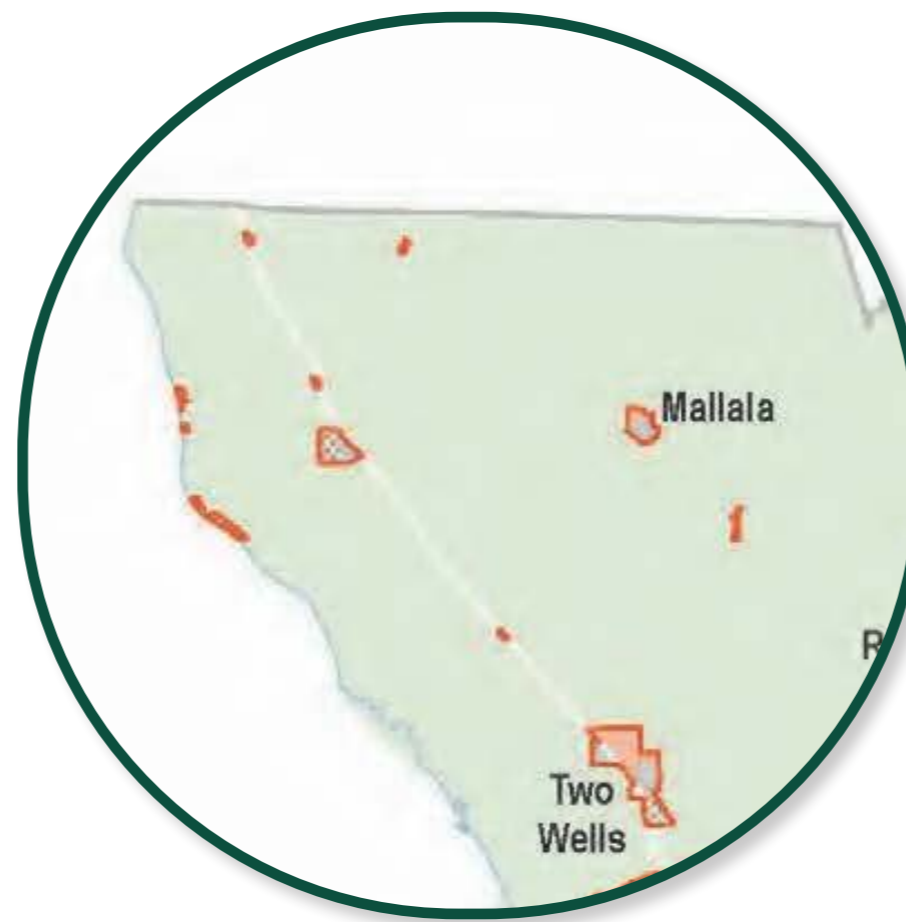


Figure 5.5 – 30 Year Plan for Greater Adelaide (Extract)



5.4.2 Greater Adelaide Regional Plan – Discussion Paper

The Greater Adelaide Regional Plan (GARP) Discussion Paper (the ‘Discussion Paper’) indicates a projected growth in population within Greater Adelaide of 670,000 by 2051. This represents a 47% increase in Greater Adelaide’s current population.

The Discussion Paper also forecasts the need to supply 300,000 new homes to meet this projected population increase and identifies that there is a current capacity for an additional 200,000 homes (164,000 homes in land already zoned for residential development and a further 47,000 homes that could be accommodated on land already identified for future residential rezoning). The Discussion Paper identifies the need to therefore supply an additional 100,000 homes by 2051 or based on current estimates under a high growth scenario - we will run out of land for future residential development within 30 years unless an ongoing rezoning program is established.

The GARP ‘Discussion Paper’ has identified that growth will balance greenfield, township and infill development, in the right places, with well-timed infrastructure provision. In respect to ‘Greenfield Development’, the Discussion Paper identifies that master planning and upfront consideration of infrastructure and services is critical to success.

The GARP ‘Discussion Paper’ identifies four (4) main greenfield ‘Investigation Areas’ on the fringe of Metropolitan Adelaide for future housing, with these areas being based on the State Planning Commission’s seven (7) identified land supply principles identified in the Paper. The areas proposed for detailed investigation extend from Adelaide’s four (4) major transport spines with the intent to capitalise on ongoing government investment along these growth corridors.

This includes a ‘north-west spine’ that begins at the south end of the Port Wakefield Highway stretching northwards from Buckland Park (including the Walker Riverlea development) to Two Wells. Importantly, the GARP ‘Discussion Paper’ identifies the investigation areas along the north-west spine do not extend as far as the towns of Dublin and Mallala. However, the Discussion Paper does identify that for Dublin and Mallala that:

“These towns will keep their own separate identity but may expand locally to support township function and growth”

The GARP ‘Discussion Paper’ also states that it will ‘*carefully plan and sequence growth and infrastructure to ensure timely access to services and amenities for new communities:*’ and will:

“Build on existing infrastructure capacity in townships, where local councils have identified growth opportunities.

The GARP ‘Discussion Paper’ identifies that the SPC considers Greater Adelaide’s growth should be guided by the following four (4) outcomes:

- A Greener Wilder and climate resilient environment;
- A more equitable and socially cohesive place
- A strong Economy built on a smarter, cleaner, regenerative future
- A greater choice of housing in the right place.



5.5 The Circular Economy

The circular economy is a prominent focus for Green Industries SA. The *Green Industries SA Act 2004* incorporates the concept of circular economy as a guiding principle. The potential benefits of a circular economy in South Australia have been measured (Green Industries SA, 2017), which describes gains to be achieved in local job creation and reductions in greenhouse gas emissions by 2030.

‘*South Australia’s Waste Strategy 2020-2025*’ outlines actions that can contribute to the development of a circular economy – that is, an economy that realises the best or full value from products and materials produced, consumed and recovered in South Australia.



6. SITE ANALYSIS

6.1 Agricultural / Horticultural Assessment

The condition of the subject land is described as 'degraded' and is considered to have low production potential.

Importantly, the subject land is not identified as a 'Primary Production Priority Area' (PPPA) by PIRSA, with the majority of the site located within a 'Non-Primary Production priority Area' Area' (comprising that part of the subject land within the 'Rural Zone') or an 'Excluded Area' (comprising that part of the subject land within the 'Conservation Zone') (refer to **Figure 6.1**).

Developed by Primary Industries of South Australia (PIRSA), PPPA's have been identified in response to Planning Strategy directives including the 30 Year Plan for Greater Adelaide to identify 'areas of primary production significance' (Government of South Australia, 2010, P. 106).

PPPA's have been identified with reference to a variety of factors including "land capability, industry investment and land use, access to water, climatic considerations (including anticipated climate change) and any local conditions that give rural land special significance for primary production" (Location SA, 2010).

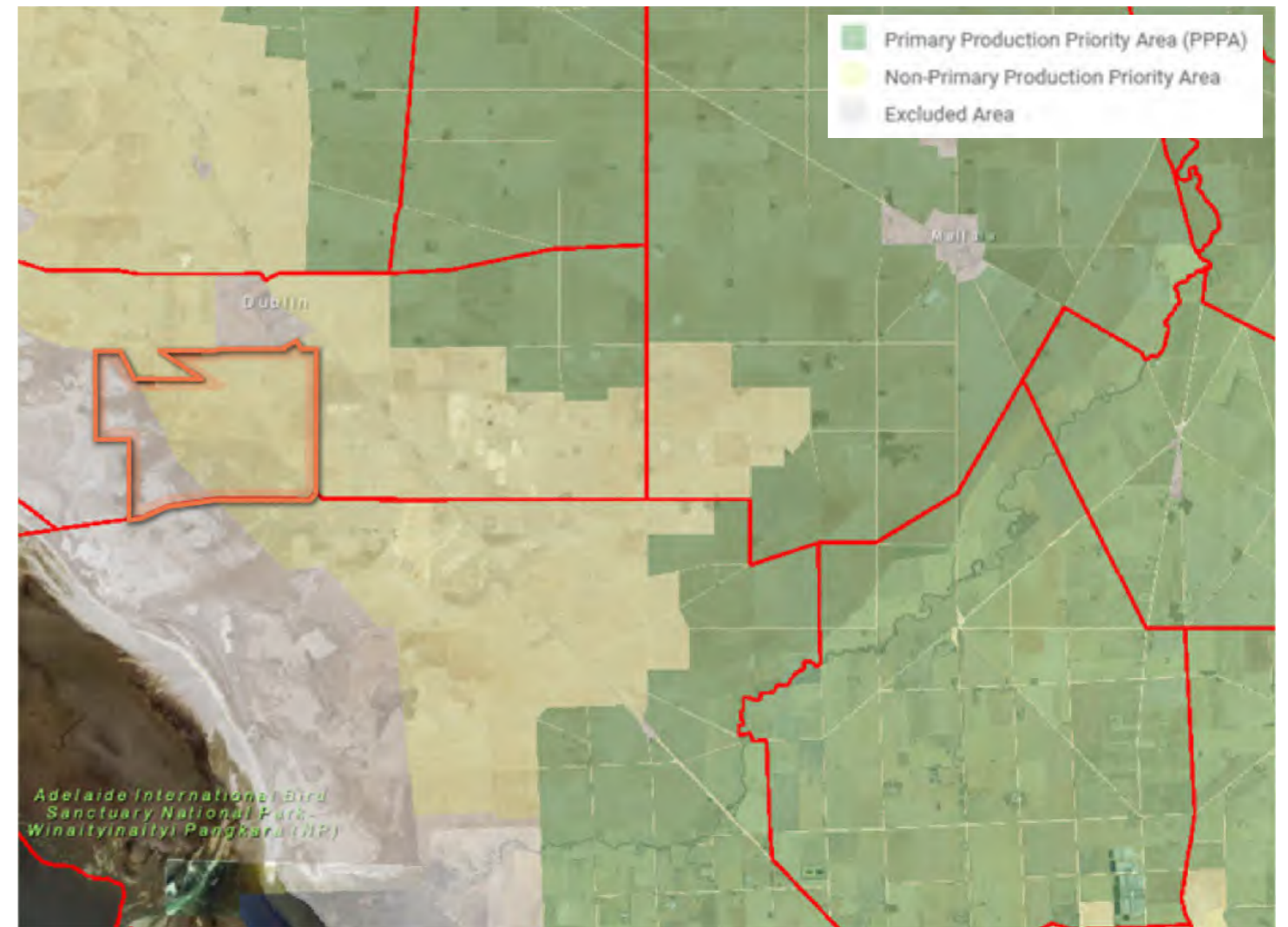


Figure 6.1 – Primary Production Priority Areas (Source: Location SA)



6.2 Cultural & European Heritage

An analysis of likely Aboriginal heritage was undertaken by 'Australian Cultural Heritage Management' (ACHM) in 2012 (refer **Appendix 2**). This included a review of the 'Central Archive' and the 'Register of Aboriginal Sites and Objects', the 'South Australian Museum Collection Database', and the consultant's own corporate archives.

The study also reviewed Aboriginal cultural heritage report and literature relating to mythologies and oral histories. The review work identified that the land is within the Kurna Native Title Claim area but that no specific Aboriginal Cultural Heritage sites have been identified on the subject land (refer to **Figures 6.2 and Figure 6.3**).



Figure 6.2 - Kurna Peoples Native Title Boundary

In 2023, this research has been supplemented by updated research as part of the preparation of the Program for Environment Protection and Rehabilitation (PEPR) for the mining tenement. The new research has reached the same findings.

Notwithstanding that there are no known sites, the area is identified as one of historic activity for the Kurna People and therefore artefacts scatters, campsites and human remains may be encountered. Aboriginal heritage sites have a high degree of association with water features and thus the Samphire Coast area and the coastal dunes would provide the most likely areas for finds. All Aboriginal

artefacts, sites, or remains are protected under the *Aboriginal Heritage Act 1998* (AHA).

It is an offence under Section 23 of the AHA to damage, disturb or interfere with an Aboriginal site, objects or remains unless written authorisation from the Minister for Aboriginal Affairs and Reconciliation has been obtained.

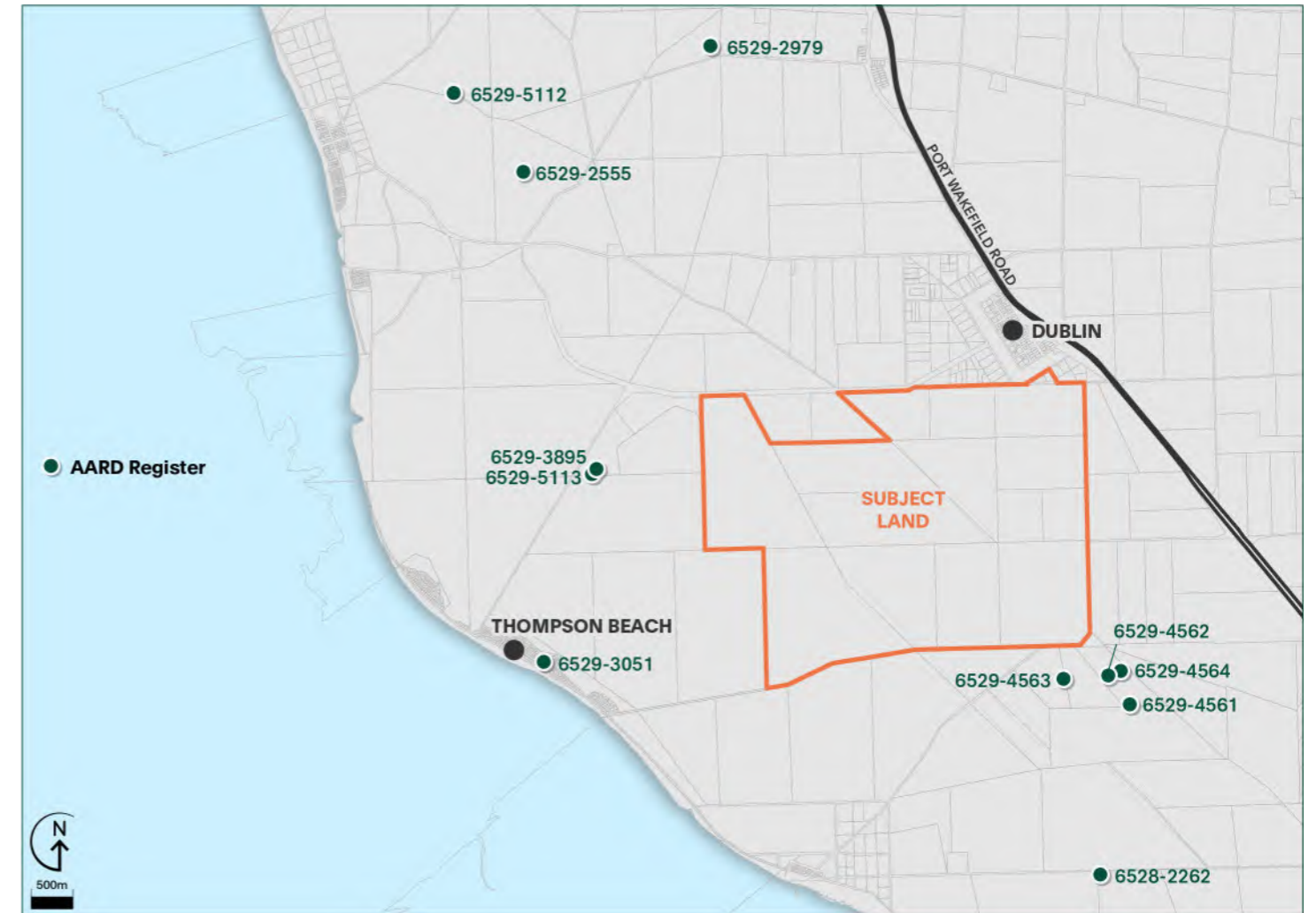


Figure 6.3 - Cultural Heritage Sites (within 5km of subject land)



6.3 Environment (Flora & Fauna)

An extensive flora and fauna analysis was undertaken by EBS Ecology in 2012 (refer Appendix 2). This analysis identified eight (8) broad vegetation associations within the overall landholding, of which three (3) were dominated by native flora species and five (5) were dominated by introduced flora species.

Figures 6.4 and 6.5 below identifies the vegetation associations and vegetation condition across the subject land.

The entire 'Conservation Zone' to the west of the subject land comprises intact samphire and saltmarsh vegetation subject to tidal inundation (refer to **Figure 6.4**). The area is of very high ecological

value. The saltmarsh and sapphire communities are in good condition and resemble probably pre-European structure, forming part of a much larger intact system. This zone is of high importance for fauna, including the state vulnerable Slender-Biller Thornbill and a range of shorebirds. Provided a suitable buffer is provided to the 'Conservation Zone', the proposed development should not have significant impact on the coastal vegetation or shorebird habitat.

Further investigations are recommended if development is to have any impact (direct or indirect) on the Conservation Zone, including further

survey of the 'Conservation Zone' to ensure all vegetation/areas of conservation significance are recorded.

For the remainder of the subject land, the study identified native vegetation was highly modified and of very poor condition, limited to scattered low shrub land that has persisted in grazing paddocks. The vegetation is highly degraded with high levels of disturbance and exotic species. In general, this area of the subject land is of low habitat value and is likely to support a low diversity of fauna species common to the area.

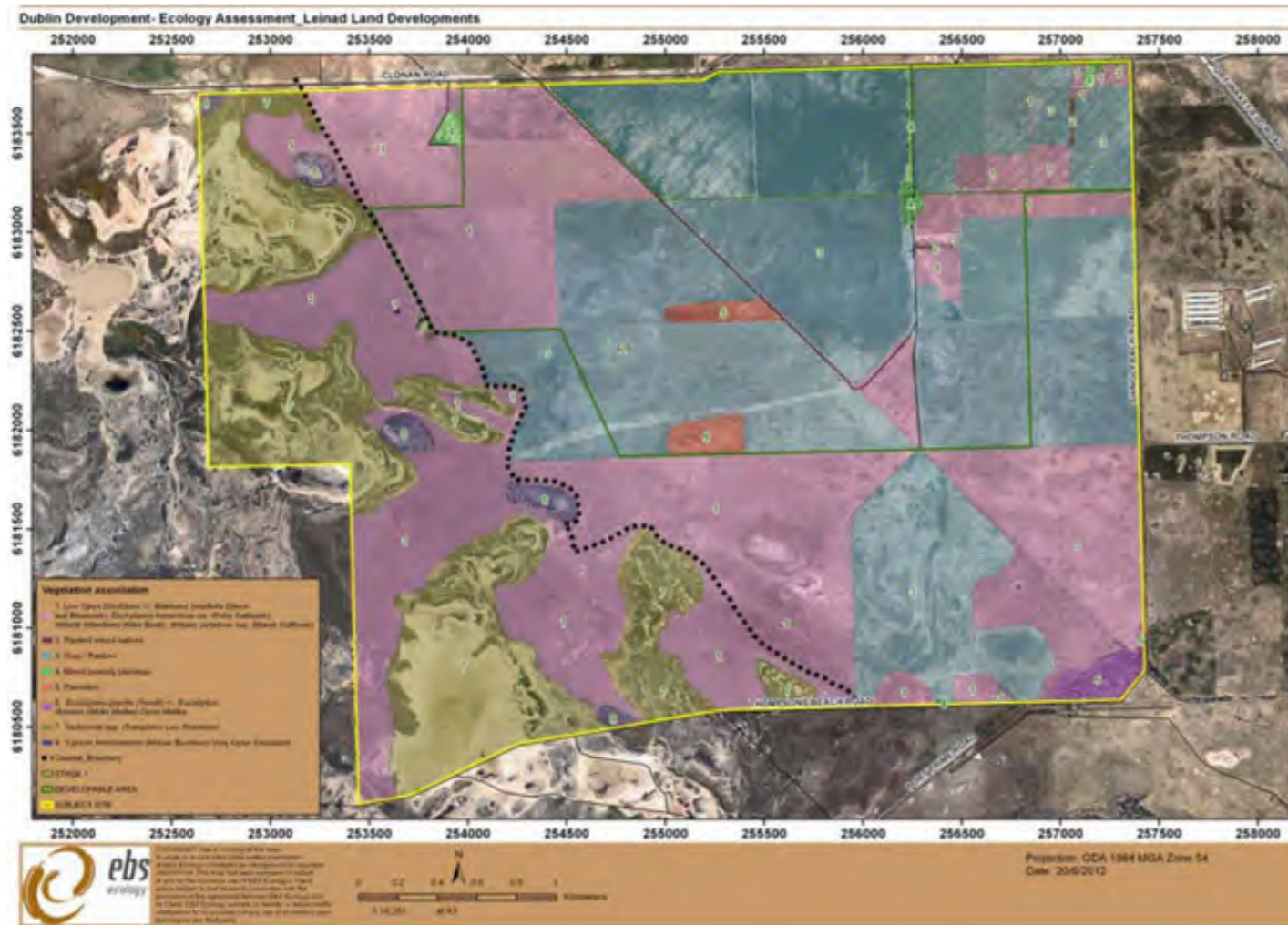


Figure 6 4 - Vegetation Associations

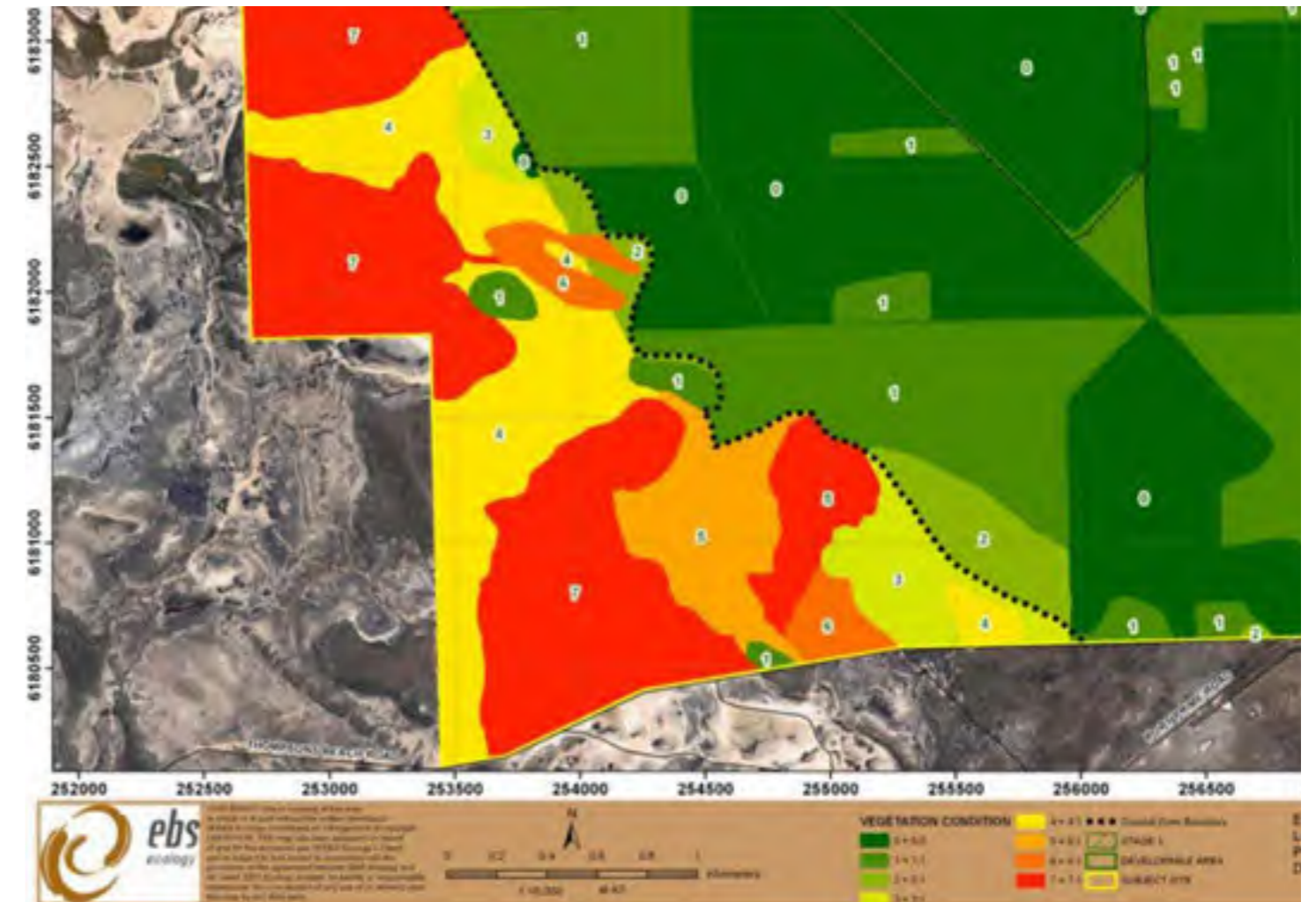


Figure 6 5 - Vegetation Condition



6.4 Environmental Site History

A partial 'Stage 1 Environmental Site History' Report was prepared by TMK Engineers in 2012.

The purpose of the site history research was to assess the potential for gross or widespread soil contamination to exist as a result of current or previous land uses. The site history report was also prepared to establish if there are any significant impediments to the proposed future redevelopment of the site for residential purposes from a site contamination perspective.

The report indicated that the risk of significant or gross soil and/or groundwater contamination across the whole site, that would be likely to preclude the use of the site for future residential development, is considered to be low.

There are no known new activities since this report was undertaken that would lead to the likelihood of any new site contamination sources arising. Given the date that these investigations were undertaken it is acknowledged that further steps in the planning process (including rezoning and/or future development applications for more sensitive land uses) is likely to require additional and more detailed site contamination investigations.

6.5 Bushfire

The subject land is located within the 'Hazards (Bushfire – General Risk) Overlay' and 'Hazards (Bushfire – Medium Risk) Overlay' of the Planning and Design Code.

On this basis, it is envisaged that future development will be required to incorporate required bushfire protection measures.

As development proceeds and the subject land transitions to urban and employment land, potential may exist for the Country Fire Service (CFS) to reassign the bushfire risk of at least portion of the area and therefore the extent of bushfire prevention measures which needs to be encapsulated in future development applications. This will be subject to future negotiation and consultation with the CFS.



6.6 EPA Buffer / Separation Distances

There are land uses and activities that interface with the subject land that require that application of suitable 'buffer' separation distances to both protect future urban development from external impacts (i.e dust, noise, chemical spray drift etc) and also ensure the protection of existing lawful non-urban uses (i.e primary production, intensive animal keeping and Defence operations etc) from encroachment by urban development.

The overall subject site interfaces with agricultural and horticultural activities, intensive animal keeping, the IWS Waste Treatment and Composting Facility as illustrated on **Figure 6.6**.

6.6.1 Chicken Broiler Farm

The adjoining Poultry farm comprising a broiler farm is a Licenced EPA activity (EPA Licence Number 51462 in favour of Dublin Farm Pty. Ltd).

Enviroscan (refer **Appendix 3**) have undertaken an analysis of the minimum required buffer separation distance from the existing poultry farm to inform the potential location of sensitive receptors in association with the proposed future southern expansion of the Dublin Township.

The adjacent licensed broiler farm has an approved capacity for 420,000 birds.

As a preliminary estimate, the Enviroscan report has recommended an approximate minimum buffer distance of 1,000m (representing an odour exposure up to ≤4 OU).

Further assessment is recommended at future stages of site planning, depending on the location of sensitive land uses on the subject land.

The land within the buffer separation distance is appropriate for other uses, including employment land.



6.6.2 IWS Waste & Composting Facility

The IWS Waste Facility is Licenced for both 'Composting Works' and as a 'Landfill Depot' (EPA Licence Number 51568 in favour of 'Pelican Asset Co Pty Ltd.'). The waste management facility is also permitted to receive and dispose of low-level contaminated waste as well as the treatment and disposal of high-level contaminated waste.

In accordance with the publication 'Evaluation distances for effective air quality and noise management' prepared by the EPA in August 2016 and updated in January 2023, a buffer evaluation distance of 500m is recommended for a landfill facility that disposes of waste to land whilst a buffer evaluation distance of 1,000m is recommended for composting works of greater than 200 tonnes/ year.

On this basis, a conservative separation distance of 1,000 metres has been applied to this composting Works facility and landfill Depot (refer to **Figure 6.6**)

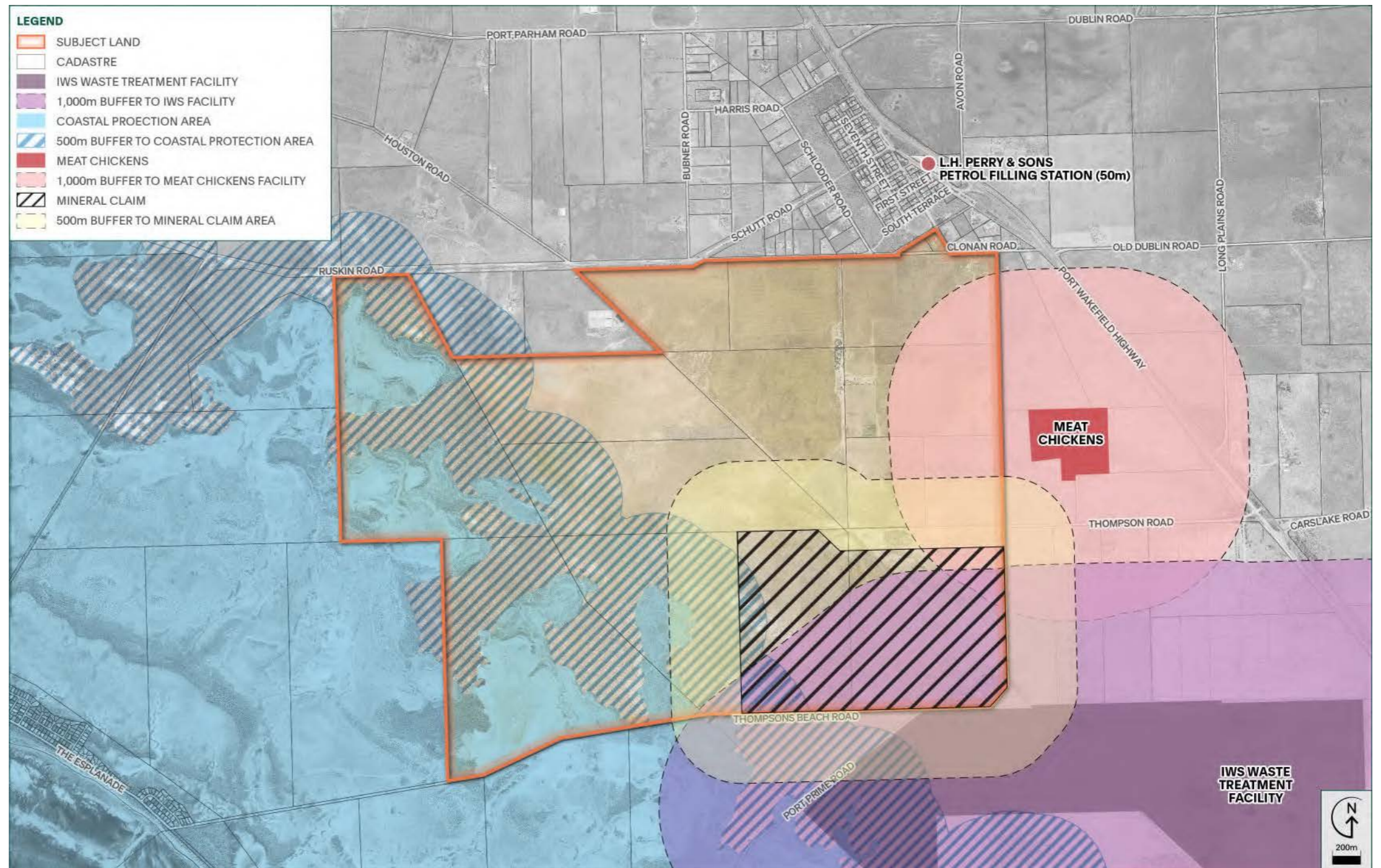


Figure 6.6 – Buffer/Separation Distances

6.7 Social & Community Infrastructure

6.7.1 Human Service Requirements

Preliminary investigations have found that an additional population of 3,250 people (i.e. 1,300 dwellings with 2.5 persons per household) is unlikely to result in the need for:

- An additional primary school or high school;
- A public hospital facility in its own right;
- Community health facilities (potential for an outreach service in Dublin, with base likely in Two Wells);
- A library branch;
- A dedicated community centre;
- A dedicated police station;
- An ambulance station;
- A CFS Station (in addition to the existing CFS unit based in Dublin);
- An SES unit; or
- New sporting and recreational facilities within the current level of facility provision considered reasonably good (noting that however a playground could be added to the existing oval and court complex)

This population increase will likely create demand for local GPs and other medical practitioners, and possibly a child care centre. These services would be likely to be provided by the private sector on a commercial basis and could be located within the existing town centre or a local centre.

The population increase may also create demand for an aged care facility comprising 19 to 25 beds on a site of approximately 4,500m² (including car parking).

Any proposed development is likely to be affordable given the location of the subject land.

6.8 Servicing & Infrastructure

Historic background investigations undertaken have revealed the following:

6.8.1 Potable Water

Historic background investigations undertaken by Leinad and TMK Engineers have identified existing potable water services and infrastructure on the subject land.

Leinad is now working closely with Alano Utilities Pty Ltd ['Alano'] to plan and implement required infrastructure to service future development. This would include maintaining the redundancy of SA Water potable water assets and connections currently located on the site.

Alano upholds a strong focus on balancing the long-term needs of communities, industries, development groups and the environment. Alano is working closely with Leinad to ensure that the solution provided to service development fully integrates into the master plan for the *Dublin Green Circular Economy Precinct*.

Potable water currently exists onsite via multiple SA Water meter connections and Alano have confirmed that this existing infrastructure can be utilised to establish a new network to service the site on demand and as demand progressively increases.

The water meters are serviced by existing infrastructure installed by SA Water in the form of a 200mm high pressure water main running for approximately 500 metres along Clonan Road, immediately adjacent the subject land (refer to **Figure 4.8**).



Additional supply to the site comes from a 100mm diameter high pressure water main that dissects the site (from Houston Road down through the site and across to Port Parham) with multiple water meters connected and currently in use (refer to **Figure 4.8**).

If required, there is also an alternative option to utilise an existing 150mm water main running on Port Wakefield Road which could be extended if required (refer to **Figure 4.8**).

Alano and Leinad are establishing Development Agreements to ensure a commitment to required infrastructure assets and servicing that would be owned and operated by Alano.



6.8.2 Sewer

There is currently no non-potable recycled water supply on site, and SA Water will not be required to service the area in the future given the following potential systems to supply recycled non-potable water:

1. Treated waste water i.e. from a community waste water system (CWMS)
2. Treated storm water; and,
3. Combination of both treated waste water and storm water

Opportunities exist for water harvesting and re-use including the use of storm water for establishing and maintaining open space and recreational areas.

Adelaide Plains Council are likely to expect better water quality than the undeveloped site with the value of water required to match the Environmental Protection Authority (EPA) guidelines including the implementation of Water Sensitive Urban Design (WSUD).

A staged development approach will require the construction of temporary stormwater runoff control measures as part of the 'Construction Environmental Management Plan' to throttle and limit the amount of flow to downstream catchments (a temporary detention system can be utilised with a dual purpose for stormwater detention and as a sedimentation basin required during construction).

The Dublin Township is currently not connected to any formal wastewater collection scheme and new wastewater disposal infrastructure will be required for the proposed expansion and could comprise the following four (4) possible waste water collection systems:

- Vacuum;
- Pressure;
- Gravity; or
- A Community Wastewater Management Scheme (CWMS)

Alano will provide services to the Dublin Green Circular Economy Precinct with connection into an internal wastewater treatment facility network to be constructed on site.

Alano and Leinad are establishing Development Agreements to ensure a commitment to required infrastructure assets and servicing that would be owned and operated by Alano.

The Dublin Township will have an opportunity to connect to the wastewater collection scheme established at the *Dublin Green Circular Economy Precinct*.

6.8.3 Power

Historic background investigations undertaken by Leinad and TMK Engineers have identified the existing power supply services and infrastructure on the subject land (refer to **Figure 4.8**). These existing services will be supported and augmented with a micro grid that will be established on site, once there is enough on-site demand. This will close off the circular economy at peak operation and occupancy, maintaining the redundancy of SA Power network provision on site.

An overhead 19KV High Voltage Power line has been established on the site which enters the site from Ruskin Road to service the existing farming operation and the dwelling (refer to **Figure 4.8**). The 19KV line provides sufficient supply for likely future site requirements.

If required, SA Power could provide a connection to an 11KV High Voltage Power line at the junction of Thompson Road and Thompsons Beach Road.

In addition, there is an alternative option to connect to a 11KV High voltage Power line established along the northern boundary of the subject land along Ruskin Road and Clonan Road.

Irrespective, there is potential to have multiple transformers connected at the developers cost.

An upgrade can be undertaken at the developers cost for three phase power. SA Power Networks have previously advised a 66kV power line located approximately 8 kilometres to the east of Dublin, across the Port Wakefield Highway, could be extended to service the subject land.

In all situations, the developer can connect up to 4.9MW of power back into the grid with the infrastructure available.

6.8.4 Gas

There is currently no gas connection to the site. The township of Dublin is currently serviced by individual gas bottles. The construction of a bioreactor as part of the *Dublin Green Circular Economy Precinct* may create opportunities for on-site gas supply generation, subject to further investigations.

6.8.5 Telecommunications

NBN connection is available to the site. Leinad are establishing Development Agreements to ensure NBN connection is provided to the site for each stage of the future site development. New connection and extensions for individual stages of the development is to be achieved at the developers cost.

Importantly, The circular economy model will generate on-site electricity and water, as described in Section 2 above, which will reduce infrastructure augmentation as a result of localised generation and distribution of power and potable water.



6.9 Traffic Impact Assessment

6.9.1 Movement & Access

Traffic analysis has been undertaken by MFY (refer **Appendix 4**) in respect to the prospective development of the site including SIDRA intersection modelling and liaison with the Department for Infrastructure and Transport.

Based on this analysis, MFY have confirmed that the implementation of the proposed development and vision for Leinad will not result in significant investment in transport infrastructure. In particular, MFY have confirmed that:

A review of the volumes at the existing southern intersection of Port Wakefield Road and the Dublin service road (Sanders Avenue) identified that the subject land could accommodate 1,300 dwellings (up to a design year of 2040). Given that the current future road design year is 2041, it is reasonable to suggest that there would be no road works required at the intersection for this growth. The current channelised left and right turn lanes comply with Austroads criteria for 110km/h at this intersection. The intersection does not currently include acceleration lanes and the additional northbound traffic associated with the dwellings will not change the functionality of the existing turning movement at this intersection.

The balance of the subject land is identified for a potential mining tenement and employment (industrial) areas. These land uses should be accessed via Thompson Road to minimise any impact on the Dublin township created by large vehicles. The Thompson Road/Port Wakefield Highway intersection has been designed to cater for large commercial vehicles and currently provides access to and from the existing chicken farm.

Additional volumes generated by development in the employment and mining area will be dependent on the ultimate land use. As an example, however, the potential mining tenement is forecast to generate in the order of 20 trips a day which is very low and would have a negligible impact on the operation of

the intersection. Further, the existing low volumes at the intersection are low and there is therefore significant spare capacity. Accordingly, while each land use application would be subject to a separate assessment, there is potential for the intersection to cater for the envisaged development

6.9.2 Public Transport

Given the existing and proposed future population densities and thresholds within the Dublin Township, it is unlikely that public transport would extend to Dublin in the foreseeable future. Notwithstanding, the planned growth in the northern suburbs of Adelaide (including Buckland Park and Two Wells) may bring regular services closer and/or may provide critical mass for a private operator to extend services.



7. MARKET ANALYSIS

7.1 Residential Land Supply

As outlined in **Section 5.4.2**, additional residential land supply of 100,000 homes is anticipated to be required to meet projected growth by 2051.

The Adelaide Plains Growth Strategy & Action Plan (GSAP) (refer **Section 5.3.1**) identifies population growth in low, medium and high scenarios across the Council area. The medium scenario includes growth that is known and factors in population growth within Dublin (refer to **Figure 7.1**).

The GSAP identifies the Dublin township has the potential for around 4,000 residents/1,500 dwellings in total. The report confirms that if land under the control of Leinad to the south of the existing township was fully developed by 2040, this would lead to a total population in Dublin of around 4,500 people.

The increase in population growth at Dublin supports the Adelaide Plains Council's envisaged three (3) town structure (see **Section 5.3.1**), and will result in the following positive outcomes to the Dublin township:

- Supports the provision of a range of new services and facilities that will be convenient and accessible to the population within the township and surrounding areas;
- Includes opportunities for future community and recreational facilities, health and education services and employment;
- Provides opportunity for transport upgrades and new services to the community; and
- Facilitates improved connection to the smaller coastal and rural settlements located north-west of Dublin, due to an increase in services and opportunities within the township.

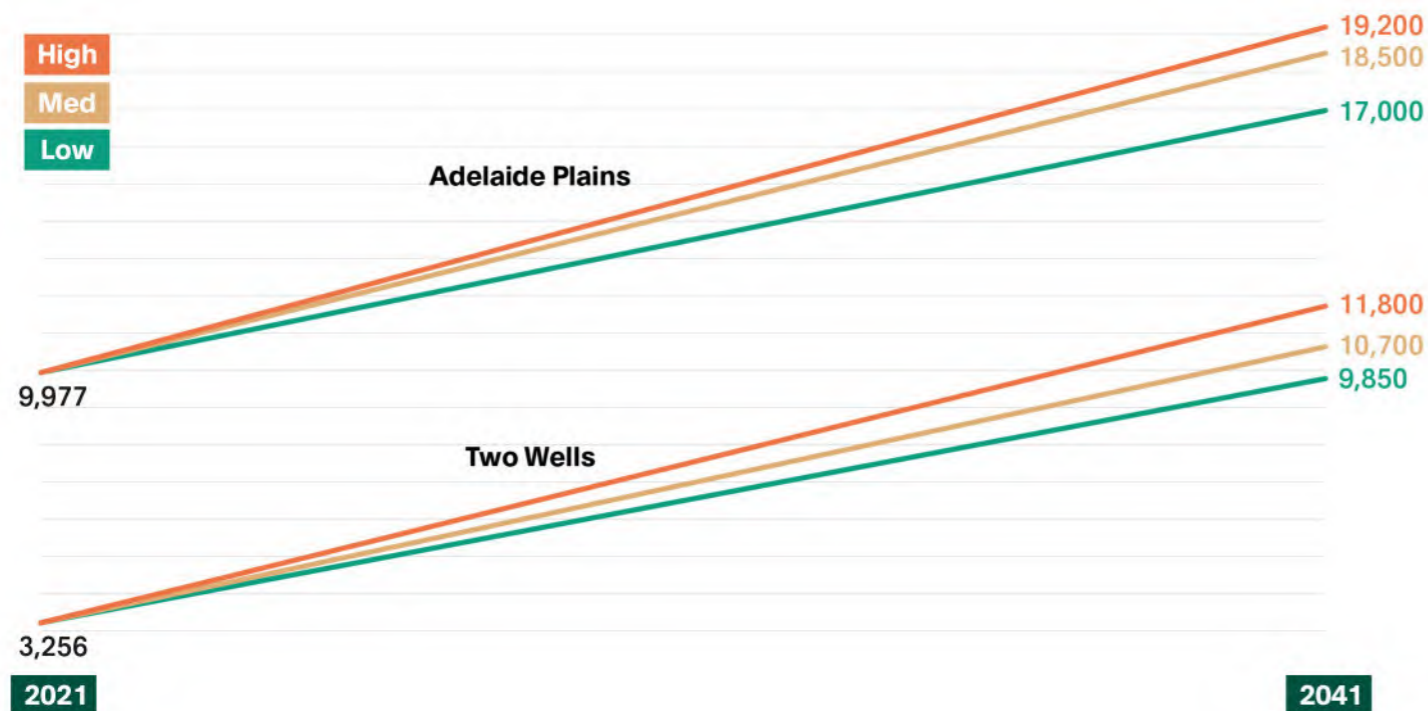


Figure 7.1 – Growth Population Scenarios (Source: Adelaide Plains Council, GSAP)

7.2 Employment Strategy / Opportunities

7.2.1 Retail

The future growth of the township of Dublin will provide critical population mass to support commercial and retail investment within the town centre and will assist to improve the aesthetic quality and commercial strength and viability of the Dublin mainstreet.

It is anticipated that the majority of additional retail floor space would be accommodated within the existing Dublin Town Centre with perhaps a single local centre supporting and serving the new growth south of Ruskin Road. This is likely to be combined with additional non-retail uses in the town centre including small scale medical facilities (i.e GP Practice, dental practice, etc.) and small scale commercial and office uses (i.e. real estate agents and accountants etc.).

As identified in **Section 4.2.2.1**, approval was previously granted to Leinad for the development of a new Neighbourhood Centre comprising a supermarket, five (5) speciality shops and a total of 1,700 sqm of retail floor space on Old Port Wakefield Road within the town centre of Dublin. If supported by future township growth, Leinad would seek to apply to obtain/extend and/or enact this consent (or similar) to reinforce the primacy of the Dublin Main Street and support, facilitate and underpin the future growth and expansion of the Dublin township.

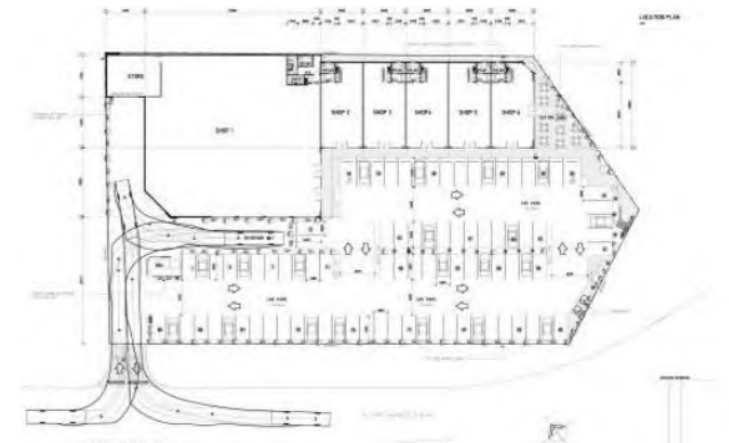


Figure 7.2 – Approved Neighbourhood Centre on Dublin Main Street (Development Application DA No. 312/17/2014)

7.2.2 Employment Land

Deep End Services have undertaken an analysis of the future demand for employment lands including identifying the key sectors where growth is anticipated in the region and an estimate of the likely area of land to be required for long-term development (refer to **Appendix 5**).

Deep End have advised that there is a strong case for a significant proportion of the 1,373-hectare Dublin land holding to be designated for employment uses.

The land can accommodate a range of employment uses and processes not suited to, or priced out of, the smaller and more expensive industrial sites in Edinburgh Parks which are targeting more intensive manufacturing, food processing and warehouse and logistics operations.

Dublin has attractive attributes for larger scale, low intensity uses which can leverage:

- Location with access from along Port Wakefield Highway with short travel times back to the workforce and industrial support services of Outer North Adelaide;
- Access to nearby rail corridors with loading facilities;
- The growing regional population including projected growth in the Adelaide Plains local government area;
- Emerging interest in Green Circular Economy projects and processes stimulated by South Australia's investment in renewable energy generation with ready regional sources of biomass and other inputs;
- Strong linkages to the agricultural sector of the Northern Plains, the renewable energy and infrastructure projects of regional South Australia (to the north & west) and to a lesser extent, Defence contracts and related work.

- Support from Adelaide Plains Council and their planning strategy based on a three towns service model including residential growth at Dublin; and
- Affordable and larger land parcels.

The sectors which appear to be well-suited to the site based on the location and expressed interest from occupiers are:

- The circular processes of a local Green Economy including innovative farming and food production methods, recycling industries, energy production from biomass, fertiliser harvesting and distribution and links or interdependencies with residential and industrial uses;

- Manufacturing, fabrication or logistics for the renewable (wind, solar and hydrogen) energy sector in metropolitan and regional SA;
- Defence and infrastructure contractors or sub-contractors requiring more land extensive sites; and
- Manufacturing or transport uses hauling long, wide or high freight to destinations using Port Wakefield Highway.

The Dublin employment land may differentiate itself from metropolitan industrial areas as it attracts uses requiring flexibility, mobility and even temporary facilities for operations to be scaled up and down as industry demand requires, as well as a permanent

location for businesses seeking a competitive edge in entry pricing.

There is no model-driven formula at this stage for the calculation of industrial land needs for a per-urban location such as Dublin. Notwithstanding based on the expressions of interest received to date, larger land area requirements, existing Strategic Employment land reserves to the east, the long term nature of the estate and the need for an area to develop a critical mass and provide a range of land options, **up to 400 hectares of employment land** can be justified and planned for. This is less than half the area of the existing 'Strategic Employment Zone' east of Dublin.



8. DUBLIN URBAN FRAMEWORK PLAN

8.1 Site Opportunities & Constraints

The following key site opportunities and constraints have been identified:

- The subject land is a large, consolidated land holding allowing opportunity to develop and deliver a structured and master planned community that is not obstructed by fragmented ownership or control;
- There is opportunity to provide for township expansion to support the growth and viability of the Dublin Township that is conveniently located to the nearby towns in the Adelaide Plains region and the northern suburbs of Adelaide;
- 1,300 dwellings can be accommodated to support the expansion and viability of the Dublin township without the need for additional significant services and infrastructure, including major upgrades to the intersections with the Port Wakefield Highway;
- There is a strong case for up to 400 hectares of new employment land to suit a range of employment uses and processes not suited to, (or priced out of), the smaller and more expensive industrial sites in other locations, with Dublin having attractive attributes for larger scale, low intensity uses aligned with circular economy processes, the renewable energy sector, Defence and manufacturing or transport uses hauling long, wide or high freight using Port Wakefield Highway.
- The subject land is of sufficient size to provide for generous buffers to existing adjacent land uses and activities which will protect the ongoing operation and existing use rights of these adjacent uses and enable the creation of a high-quality living environment for future residents. The employment areas within the subject site can also act as buffer separating future housing from existing EPA licenced activities - maximising the efficient use of land;
- The topography is suitable for urban development (noting that proposed mining operations on site could generate resource which can be utilised to create desired site levels for required falls across the balance of the 'Dublin Park' estate to facilitate appropriate stormwater management);
- The existing condition of the subject land is generally 'degraded' and it is considered to have low primary production value and potential;
- The land is largely unconstrained and free from topographical and environmental constraints, excluding the area along the western boundary of the land within the existing 'Conservation Zone'.
- There are no state or local heritage places on the land, or previously recorded Aboriginal Sites or Objects;
- Based on site history research, the risk of significant or gross soil and/or groundwater contamination across the whole site, that would be likely to preclude the use of the site for the proposed residential development, is considered to be low; and
- The site and township is likely to have adequate infrastructure capacity and/or augmentation capability to service and support an expanded township noting that limited township expansion of an additional 1,300 dwellings would not give rise to additional significant transport, social or community infrastructure in support of township growth. In addition, the circular economy model will generate on-site electricity and water, which will reduce infrastructure augmentation as a result of localised generation and distribution of power and potable water. Notwithstanding SA Water connections exist on site currently and multiple options exist for connections to SAPN.

8.2 Dublin Urban Framework Plan

The Urban Framework Plan (See **Figure 8.1**) has been developed through an iterative process and responds to:

- Leinad's vision for this strategic land holding;
 - Consideration of identified site opportunities and constraints;
 - Preliminary feedback of the Adelaide Plains Council ;
 - Statutory and legislative requirements;
 - Preliminary expert and technical inputs.
- The preferred site structure plan will retain the separate identity of Dublin with expansion to support the township function and viability including the following key features that together will achieve the vision of the Dublin Green Circular Economy Precinct:
- The creation of a new 400 hectare Employment Precinct to support larger scale, low intensity employment related land uses;
 - Provision of 1,300 new residential allotments adjoining the existing Dublin Township to support the ongoing vitality of the township and provide a local supply of workers for the Employment Precinct whilst providing sufficient separation to enable the ongoing operation of existing land uses and activities including Defence, a licensed poultry farm and the IWS Waste Treatment Facility;
 - A new mine that will extract resource which can be backfilled with genuine Waste Derived Fill (WDF) waste;
 - Walking and cycling connections to the existing Dublin Township and adjacent Bird Sanctuary utilising open space and biodiversity corridors;
 - A green network of open space within the expanded township to link with the historic existing parkland belt of the Dublin township and support local amenity, stormwater drainage and water quality treatment;
 - Utilising the existing natural features of the adjacent coastal location and Bird Sanctuary as part of the wider open space network promoting wellbeing through connections to nature; and
 - Separating industrial and commercial freight and vehicle movements from the proposed housing and through road network design avoiding convenient travel paths through the existing Dublin Township.

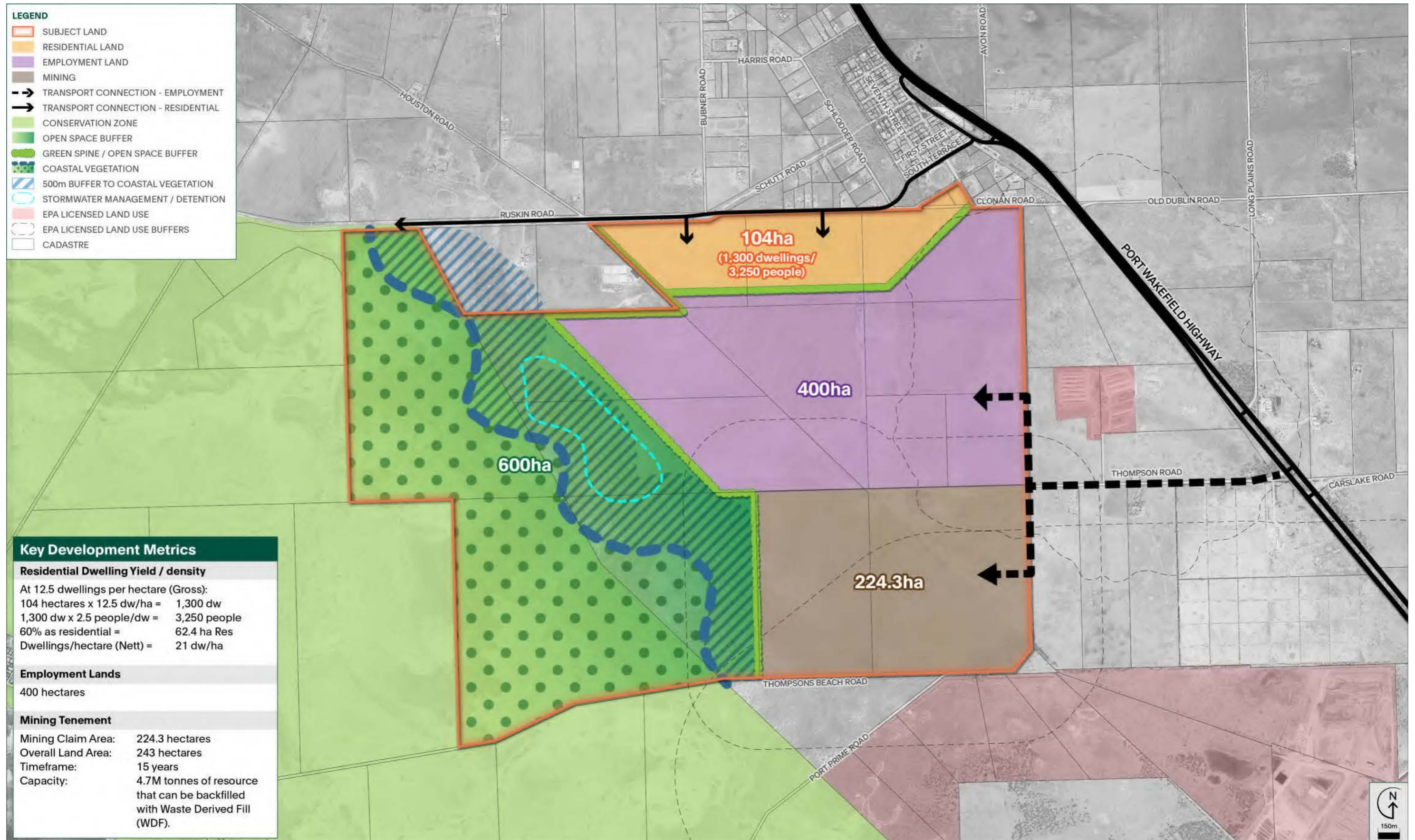
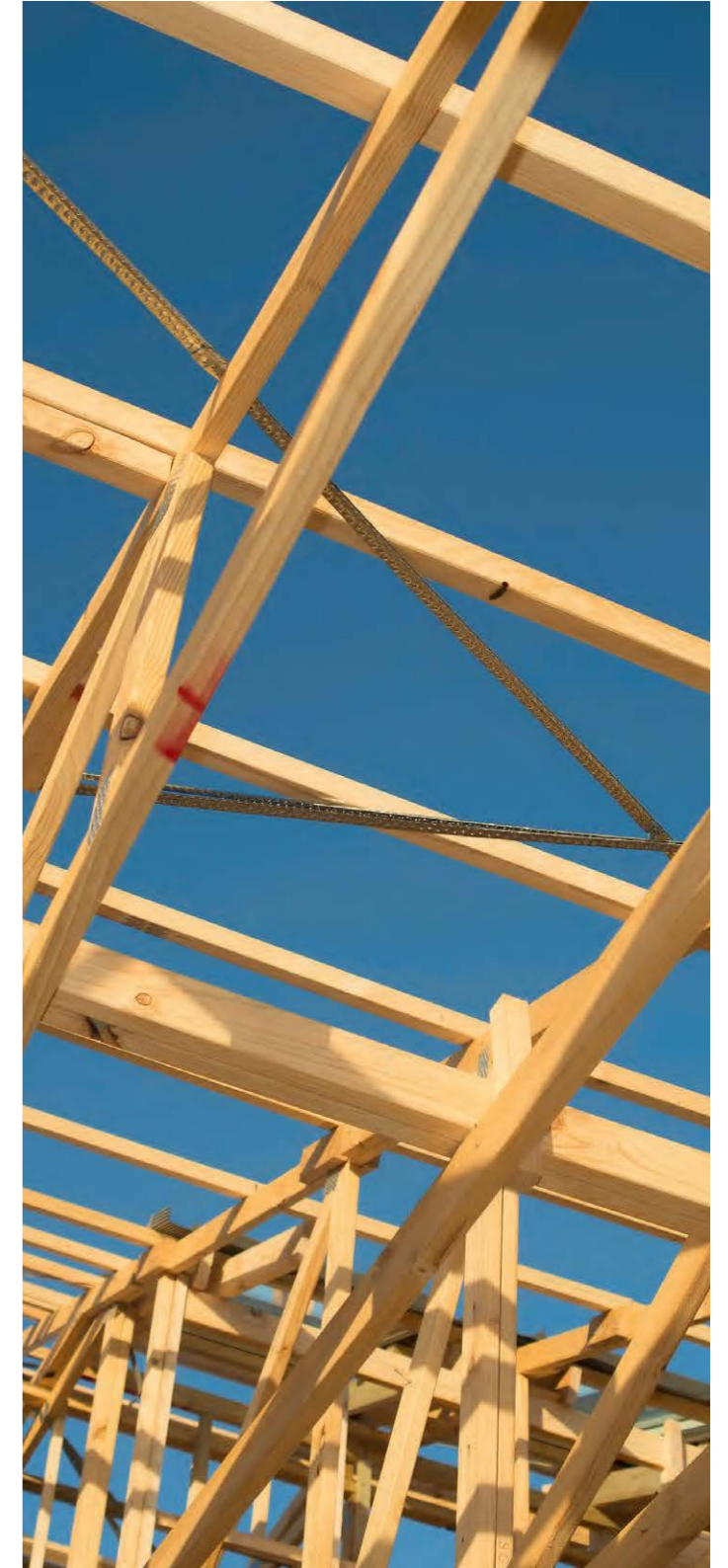


Figure 8.1 – Dublin Urban Framework Plan

9. IMPLEMENTATION

The Urban Framework Plan will be implemented through:

- Identification of land as a future housing and employment growth area in the Greater Adelaide Regional Plan;
- Review of the Environment and Food Protection Area (EFPA) boundary to allow for limited growth for the expansion of the Dublin Township;
- Code Amendment/s to rezone the land for its intended purposes; and
- Agreements for the delivery of necessary infrastructure and services.



10. REFERENCES ABBREVIATIONS

Adelaide Plains Council, Dublin Oval Precinct 2022-2032 Update Concept Plans, Feb 2022

Adelaide Plains Council, Growth Strategy and Action Plan, May 2023

Adelaide Plains Council, Strategic Plan 2021-2024

Adelaide Plains Council, Tourism and Economic Development Strategy 2022-2025

CSIRO, Our Future World, Global Megatrends impacting the way we live over coming decades, July 2022

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Greater Adelaide Regional Plan – Discussion Paper 30 Year Plan for Greater Adelaide, 2010

30 Year Plan for Greater Adelaide, 2017 Update

Environment Protection Authority, Evaluation distances for effective air quality and noise management, Updated January 2023

<https://www.parks.sa.gov.au/parks/adelaide-international-bird-sanctuary-national-park>

National Waste Policy Action Plan 2019

Planning and Design Code, Version 2023.14 / South Australian Property and Planning Atlas

URPS, Allied Food Industries Land Supply Study, July 2017

ACHM Australian Cultural Heritage Management

AHD Adelaide Height Datum

ABS Australian Bureau of Statistics

ADF Australian Defence Force

AHA Aboriginal Heritage Act 1998.

CFS Country Fire Service

CPTED Crime Prevention through Environmental Design

EFPA Environment & Food Production Area

EPA Environment Protection Authority

EPBC Environment Protection and Biodiversity Conservation

GARP Greater Adelaide Regional Plan Discussion Paper

GSAP Adelaide Plains Growth Strategy and Action Plan

P & EE Proof and Experimental Establishment Port Wakefield

PEPR Program for environment protection and rehabilitation

PIRSA Primary Industries & Resources South Australia

PPPA Primary Production Priority Area

SPC State Planning Commission

SAPOL South Australian Police

SES State Emergency Services